TOSHIBA

SERVICE MANUAL

MULTIFUNCTIONAL DIGITAL COLOR SYSTEMS

e-STUDIO2020C/2330C/2820C
e-STUDIO2830C/3520C/3530C
e-STUDIO4520C

Model: FC-2020C/2330C/2820C/2830C/3520C/3530C/4520C
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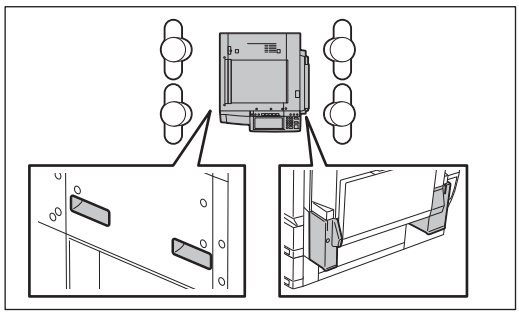
GENERAL PRECAUTIONS REGARDING THE SERVICE FOR e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C

The installation and service should be done by a qualified service technician.

1. **Transportation/Installation**
   - When transporting/installing the equipment, employ four persons and be sure to hold the positions as shown in the figure.
     The equipment is quite heavy and weighs approximately 121 kg (266.75 lb.) or 123 kg (271.16 lb.), therefore pay full attention when handling it.



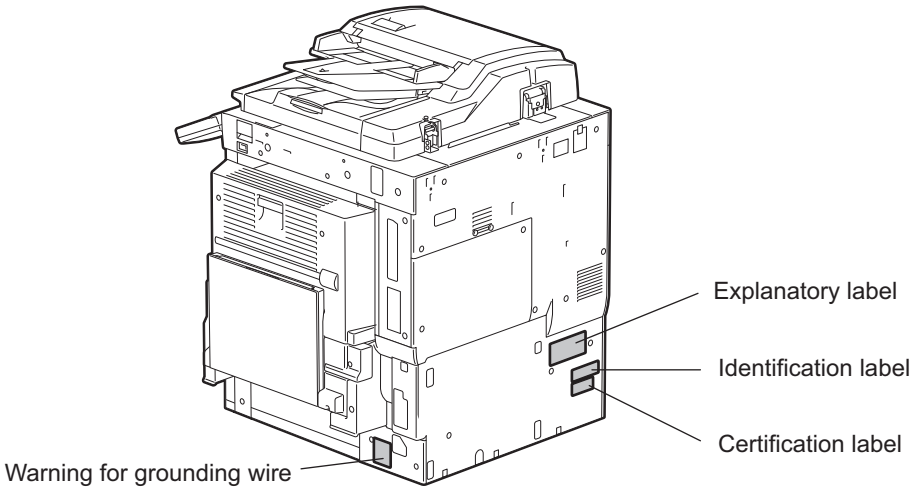
   - Be sure not to hold the movable parts or units (e.g. the control panel, ADU or RADF) when transporting the equipment.
   - Be sure to use a dedicated outlet with AC 110 V / 13.2 A, 115 V or 127 V / 12 A, 220-240 V / 8 A for its power source.
   - The equipment must be grounded for safety.
   - Select a suitable place for installation. Avoid excessive heat, high humidity, dust, vibration and direct sunlight.
   - Provide proper ventilation since the equipment emits a slight amount of ozone.
   - To insure adequate working space for the copying operation, keep a minimum clearance of 80 cm (32”) on the left, 80 cm (32”) on the right and 10 cm (4”) on the rear.
   - The equipment shall be installed near the socket outlet and shall be accessible.
   - Be sure to fix and plug in the power cable securely after the installation so that no one trips over it.
   - If the unpacking place and where the equipment is to be installed differ, perform image quality adjustment (automatic gamma adjustment) according to the temperature and humidity of the place of installation and the paper to be used.

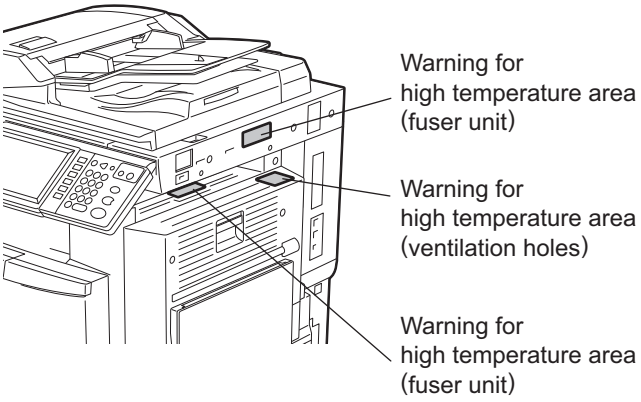
2. **General Precautions at Service**
   - Be sure to turn the power OFF and unplug the power cable during service (except for the service should be done with the power turned ON).
   - Unplug the power cable and clean the area around the prongs of the plug and socket outlet once a year or more. A fire may occur when dust lies on this area.
   - When the parts are disassembled, reassembly is the reverse of disassembly unless otherwise noted in this manual or other related documents. Be careful not to install small parts such as screws, washers, pins, E-rings, star washers, harnesses in the wrong places.
   - Basically, the equipment should not be operated with any parts removed or disassembled.
   - The PC board must be stored in an anti-electrostatic bag and handled carefully using a antistatic wrist band since the ICs on it may be damaged due to static electricity.

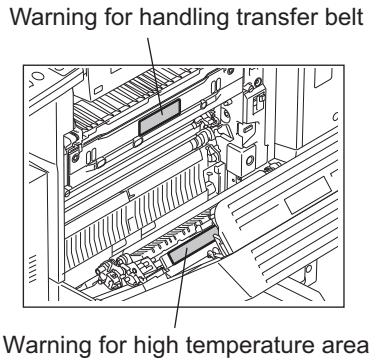
     Caution: Before using the wristband, unplug the power cable of the equipment and make sure that there are no charged objects which are not insulated in the vicinity.
   - Avoid expose to laser beam during service. This equipment uses a laser diode. Be sure not to expose your eyes to the laser beam. Do not insert reflecting parts or tools such as a screwdriver on the laser beam path. Remove all reflecting metals such as watches, rings, etc. before starting service.
   - Be sure not to touch high-temperature sections such as the exposure lamp, fuser unit, damp heater and areas around them.
   - Be sure not to touch high-voltage sections such as the chargers, transfer belt, 2nd transfer roller, developer, high-voltage transformer, exposure lamp control inverter, inverter for the LCD backlight and power supply unit. Especially, the board of these components should not be touched since the electric charge may remain in the capacitors, etc. on them even after the power is turned OFF.
   - Make sure that the equipment will not operate before touching potentially dangerous places (e.g. rotating/operating sections such as gears, belts pulleys, fans and laser beam exit of the laser optical unit).
   - Be careful when removing the covers since there might be the parts with very sharp edges underneath.
   - When servicing the equipment with the power turned ON, be sure not to touch live sections and rotating/operating sections. Avoid exposing your eyes to laser beam.
   - Use designated jigs and tools.
   - Use recommended measuring instruments or equivalents.
   - Return the equipment to the original state and check the operation when the service is finished.
   - Be very careful to treat the touch panel gently and never hit it. Breaking the surface could cause malfunctions.

3. **Important Service Parts for Safety**
   - The breaker, door switch, fuse, thermostat, thermofuse, thermistor, IC-RAMs including lithium batteries, etc. are particularly important for safety. Be sure to handle/install them properly. If these parts are short-circuited and their functions become ineffective, they may result in fatal accidents such as burnout. Do not allow a short-circuit or do not use the parts not recommended by Toshiba TEC Corporation.

4. **Cautionary Labels**
   - During servicing, be sure to check the rating plate and cautionary labels such as “Unplug the power cable during service”, “CAUTION. HOT”, “CAUTION. HIGH VOLTAGE”, “CAUTION. LASER BEAM”, etc. to see if there is any dirt on their surface and if they are properly stuck to the equipment.







5. **Disposal of the Equipment, Supplies, Packing Materials, Used Batteries and IC-RAMs**
   - Regarding the recovery and disposal of the equipment, supplies, packing materials, used batteries and IC-RAMs including lithium batteries, follow the relevant local regulations or rules.

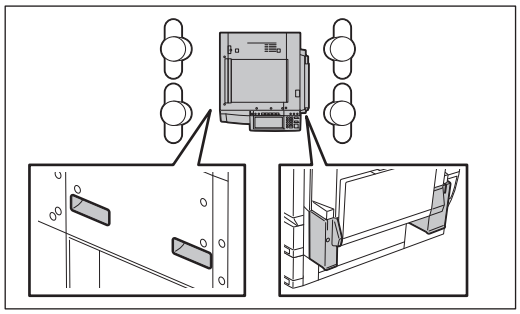
6. **When the option has been installed:**
   When the EFI printer board has been installed, be sure to unplug the power cable before performing maintenance and inspection, otherwise troubles such as a communication error may occur.

Caution:
Dispose of used batteries and IC-RAMs including lithium batteries according to this manual.
Attention:
Se débarrasser de batteries et IC-RAMs usés y compris les batteries en lithium selon ce manuel.
Vorsicht:
Entsorgung der gebrauchten Batterien und IC-RAMs (inclusive der Lithium-Batterie) nach diesem Handbuch.

ALLEGEMEINE SICHERHEITSMASSNAHMEN IN BEZUG AUF DIE WARTUNG FÜR e-STUDIO2020C/2330C/2820C/ 2830C/3520C/3530C/4520C

Die Installation und die Wartung sind von einem qualifizierten Service-Techniker durchzuführen.

1) Transport/Installation
   - Zum Transportieren/Installieren des Gerätes werden 4 Personen benötigt. Nur an den in der Abbildung gezeigten Stellen tragen.
     Das Gerät ist sehr schwer und wiegt etwa 121 kg oder 123 kg; deshalb muss bei der Handhabung des Geräts besonders aufgepasst werden.



   - Beim Transportieren des Geräts nicht an den beweglichen Teilen oder Einheiten (z.B. das Bedienungsfeld, die Duplexeinheit oder die automatische Dokumentenzuführung) halten.
   - Eine spezielle Steckdose mit Stromversorgung von AC 110 V / 13.2 A, 115 V oder 127 V / 12 A, 220-240 V / 8 A als Stromquelle verwenden.
   - Das Gerät ist aus Sicherheitsgründen zu erden.
   - Einen geeigneten Standort für die Installation wählen. Standorte mit zuviel Hitze, hoher Luftfeuchtigkeit, Staub, Vibrieren und direkter Sonneneinstrahlung sind zu vermeiden.
   - Für ausreichende Belüftung sorgen, da das Gerät etwas Ozon abgibt.
   - Um einen optimalen Kopierbetrieb zu gewährleisten, muss ein Abstand von mindestens 80 cm links, 80 cm rechts und 10 cm dahinter eingehalten werden.
   - Das Gerät ist in der Nähe der Steckdose zu installieren; diese muss leicht zu erreichen sein.
   - Nach der Installation muss das Netzkabel richtig hineingesteckt und befestigt werden, damit niemand darüber stolpern kann.
   - Falls der Auspackungsstandort und der Installationsstandort des Geräts verschieden sind, die Bildqualitätsjustierung (automatische Gammajustierung) je nach der Temperatur und Luftfeuchtigkeit des Installationsstandorts und der Papiersorte, die verwendet wird, durchführen.

2) Allgemeine Sicherheitsmassnahmen in bezug auf die Wartung
   - Während der Wartung das Gerät ausschalten und das Netzkabel herausziehen (ausser Wartung, die bei einem eingeschalteten Gerät, durchgeführt werden muss).
   - Das Netzkabel herausziehen und den Bereich um die Steckerpole und die Steckdose die Umgebung in der Nähe von den Steckerzacken und der Steckdose wenigstens einmal im Jahr reinigen. Wenn Staub sich in dieser Gegend ansammelt, kann dies ein Feuer verursachen.
   - Wenn die Teile auseinandergenommen werden, wenn nicht anders in diesem Handbuch usw erklärt, ist das Zusammenbauen in umgekehrter Reihenfolge durchzuführen. Aufpassen, dass kleine Teile wie Schrauben, Dichtungsringe, Bolzen, E-Ringe, Stern-Dichtungsringe, Kabelbäume nicht an den verkehrten Stellen eingebaut werden.
   - Grundsätzlich darf das Gerät mit enfernten oder auseinandergenommenen Teilen nicht in Betrieb genommen werden.
   - Das PC-Board muss in einer Anti-elektrostatischen Hülle gelagert werden. Nur Mit einer Manschette bei Betätigung eines Armbandes anfassen, sonst könnte es sein, dass die integrierten Schaltkreise durch statische Elektrizität beschädigt werden.

     Vorsicht: Vor Benutzung der Manschette der Betätigung des Armbandes, das Netzkabel des Gerätes herausziehen und prüfen, dass es in der Nähe keine geladenen Gegenstände, die nicht isoliert sind, gibt.
   - Setzen Sie sich während der Wartungsarbeiten nicht dem Laserstrahl aus. Dieses Gerät ist mit einer Laserdiode ausgestattet. Es ist unbedingt zu vermeiden, direkt in den Laserstrahl zu blicken. Keine reflektierenden Teile oder Werkzeuge, wie z. B. Schraubendreher, in den Pfad des Laserstrahls halten. Vor den Wartungsarbeiten sämtliche reflektierenden Metallgegenstände, wie Uhren, Ringe usw., entfernen.
   - Auf keinen Fall Hochtemperaturbereiche, wie die Belichtungslampe, die Fixiereinheit, die Heizquelle und die umliegenden Bereiche, berühren.
   - Auf keinen Fall Hochspannungsbereiche, wie die Ladeeinheiten, das Transferband, die zweite Transferwalze, die Entwicklereinheit, den Hochspannungstransformator, den Steuerumrichter für die Belichtungslampe, den Umrichter für die LCD-Hintergrundbeleuchtung und das Netzgerät, berühren. Insbesondere sollten die Platinen dieser Komponenten nicht berührt werden, da die Kondensatoren usw. auch nach dem Ausschalten des Geräts noch elektrisch geladen sein können.
   - Vor dem Berühren potenziell gefährlicher Bereiche (z. B. drehbare oder betriebsrelevante Bereiche, wie Zahnräder, Riemen, Riemenscheiben, Lüfter und die Laseraustrittsöffnung der optischen Lasereinheit) sicherstellen, dass das Gerät sich nicht bedienen lässt.
   - Beim Entfernen von Abdeckungen vorsichtig vorgehen, da sich darunter scharfkantige Komponenten befinden können.
   - Bei Wartungsarbeiten am eingeschalteten Gerät dürfen keine unter Strom stehenden, drehbaren oder betriebsrelevanten Bereiche berührt werden. Nicht direkt in den Laserstrahl blicken.
   - Ausschließlich vorgesehene Werkzeuge und Hilfsmittel verwenden.
   - Empfohlene oder gleichwertige Messgeräte verwenden.
   - Nach Abschluss der Wartungsarbeiten das Gerät in den ursprünglichen Zustand zurück versetzen und den einwandfreien Betrieb überprüfen.
   - Das berührungsempfindliche Bedienungsfeld stets vorsichtig handhaben und keinen Stößen aussetzen. Wenn die Oberfläche beschädigt wird, kann dies zu Funktionsstörungen führen.

3) Sicherheitsrelevante Wartungsteile
   - Der Leistungsschutzschalter, der Türschalter, die Sicherung, der Thermostat, die Thermosicherung, der Thermistor, die IC-RAMs einschließlich der Lithiumakkus usw. sind besonders sicherheitsrelevant. Sie müssen unbedingt korrekt gehandhabt und installiert werden. Wenn diese Teile kurzgeschlossen und funktionsunfähig werden, kann dies zu schwerwiegenden Schäden, wie einem Abbrand, führen. Kurzschlüsse sind zu vermeiden, und es sind ausschließlich Teile zu verwenden, die von der Toshiba TEC Corporation empfohlen sind.

4) Warnetiketten
   - Im Rahmen der Wartung unbedingt das Leistungsschild und die Etiketten mit Warnhinweisen überprüfen [z. B. „Unplug the power cable during service“ („Netzkabel vor Beginn der Wartungsarbeiten abziehen“), „CAUTION. HOT“ („VORSICHT, HEISS“), „CAUTION. HIGH VOLTAGE“ („VORSICHT, HOCHSPANNUNG“), „CAUTION. LASER BEAM“ („VORSICHT, LASER“) usw.], um sicherzustellen, dass sie nicht verschmutzt sind und korrekt am Gerät angebracht sind.

5) Entsorgung des Geräts, der Verbrauchs- und Verpackungsmaterialien, alter Akkus und IC-RAMs
   - In Bezug auf die Entsorgung und Wiederverwertung des Geräts, der Verbrauchs- und Verpackungsmaterialien, alter Akkus und IC-RAMs, einschließlich Lithiumakkus, sind die einschlägigen nationalen oder regionalen Vorschriften zu befolgen.

Caution:
Dispose of used batteries and IC-RAMs including lithium batteries according to this manual.
Attention:
Se débarrasser de batteries et IC-RAMs usés y compris les batteries en lithium selon ce manuel.
Vorsicht:
Entsorgung der gebrauchten Batterien und IC-RAMs (inclusive der Lithium-Batterie) nach diesem Handbuch.

- **Laseremissionseinheit**

  Diese Einheit besteht aus der Laserdiode, dem Fokussierungsobjektiv, der Blende und dem Zylinderobjektiv.

  - Laserdiode

  Diese Laserdiode zeichnet sich durch eine geringe Regeldifferenz, eine kleine Laservariation und einen niedrigen Schwellenstrom aus.
  Die Blende der Laseremissionseinheit ist unter dem Fokussierobjektiv angeordnet, um die Form der Laserstrahlen in der primären und sekundären Scanrichtung festzulegen.
  Die Laserdiode gibt Laserstrahlen als Reaktion auf die Signale der Laseremissionssteuerung (ein/aus) von der Lasertreiber-PC-Platine (LDR) aus. Die durch das Fokussierobjektiv geführten Laserstrahlen werden auf die Trommeloberfläche fokussiert.

  - Vorsichtsmaßnahmen im Zusammenhang mit Lasern

  Dieses Gerät enthält eine Laserdiode, die einen unsichtbaren Laserstrahl emittiert.
  Da man diesen Laserstrahl nicht sehen kann, ist bei der Handhabung der Komponenten der optischen Lasereinheit, bei der Durchführung von Arbeiten und bei der Justierung des Laserstrahls äußerste Vorsicht geboten. Arbeiten dürfen niemals anhand anderer als den vorgeschriebenen Anleitungen durchgeführt werden; andernfalls kann es zu einer Schädigung Exposition durch Laserstrahlung kommen.
  Die Lasereinheit ist vollständig mit einer Schutzabdeckung versiegelt. Solange ausschließlich die Arbeitsschritte der vorgeschriebenen Anleitungen durchgeführt werden, tritt der Laserstrahl nicht aus, und es besteht keine Gefahr, der Laserstrahlung ausgesetzt zu werden.

  Das folgende Laser-Warnetikett ist an der Abdeckung vorne rechts angebracht.

- Warnhinweise:
  - Setzen Sie sich während der Wartungsarbeiten nicht dem Laserstrahl aus.
    Dieses Gerät ist mit einer Laserdiode ausgestattet. Es ist unbedingt zu vermeiden, direkt in den Laserstrahl zu blicken. Keine reflektierenden Teile oder Werkzeuge, wie z. B. Schraubendreher, in den Pfad des Laserstrahls halten. Vor den Wartungsarbeiten sämtliche reflektierenden Metallgegenstände, wie Uhren, Ringe usw., entfernen.
  - Bei Wartungsarbeiten am eingeschalteten Gerät dürfen keine unter Strom stehenden, drehbaren oder betriebsrelevanten Bereiche berührt werden. Nicht direkt in den Laserstrahl blicken.
  - Im Rahmen der Wartung unbedingt das Leistungsschild und die Etiketten mit Warnhinweisen überprüfen [z. B. „Unplug the power cable during service“ („Netzkabel vor Beginn der Wartungsarbeiten abziehen“), „CAUTION. HOT“ („VORSICHT, HEISS“), „CAUTION. HIGH VOLTAGE“ („VORSICHT, HOCHSPANNUNG“), „CAUTION. LASER BEAM“ („VORSICHT, LASER“) usw.], um sicherzustellen, dass sie nicht verschmutzt sind und korrekt am Gerät angebracht sind.

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1. FEATURE

1.1 Main Feature of e-STUDIO2020C/2330C/2820C/2830C/3520C/ 3530C/4520C

- **The scanning speed of color originals is improved by using the color CCD high speed sensor.**

Color / Black (600 dpi x 600 dpi)	45 spm
Color / Black (400 dpi x 400 dpi)	53 spm
Color / Black (300 dpi x 300 dpi)	57 spm

* When scanning single-sided A4/LT landscape originals using the RADF

- **The printing speed is increased by adding a cooling duct/fan to EPU. (e-STUDIO4520C only)**
- **The printing speed is increased by adding a sub heater lamp to the heat roller. (e-STUDIO4520C only)**
- **The capacity is increased by using the waste toner box.**

	e-STUDIO2020C/2330C/2820C/ 2830C/3520C/3530C/4520C	**e-STUDIO2500C/3500C/3510C**
Black (100%)	Approx. 56,000 sheets	Approx. 28,000 sheets
Full color (100%)	Approx. 14,000 sheets	Approx. 7,000 sheets

- **Toner dusting inside the equipment is prevented by adding a developer filter to the EPU.**
- **The durability is improved by changing the material of the transfer belt / driving roller.**
- **The color matching accuracy is upgraded by adding the drum phase sensor.**
- **The supporting efficiency is increased by classifying the total counter by size.**
- **The supporting efficiency is increased by storing the USB media in the list print mode.**
- **The 8.5 inch color control panel is adopted.**

	e-STUDIO2020C/2330C/2820C/ 2830C/3520C/3530C/4520C	**e-STUDIO2500C/3500C/3510C**
Control Panel size	800 x 480 dots	640 x 240 dots

- **The Hanging Finisher (optional) is adopted.**

Item	**Model name**
Hanging Finisher	MJ-1031

- **The standard capacity of Main memory / Page memory is increased.**

	e-STUDIO2020C/2330C/2820C/ 2830C/3520C/3530C/4520C	**e-STUDIO2500C/3500C/3510C**
Main memory	1 GB	512 MB + optional memory (512 MB)
Page memory	512 MB	256 MB + optional memory (256 MB)

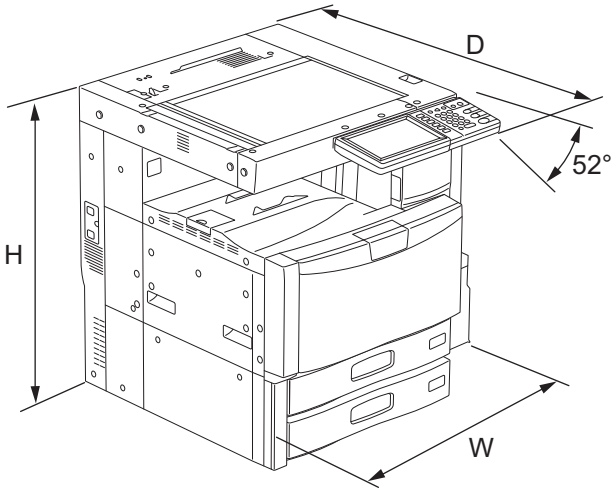
2. SPECIFICATIONS/ACCESSORIES/OPTIONS/SUPPLIES

2.1 Specifications

2.1.1 General

Type		Desktop type (Console type: when optional Paper Feed Pedestal (PFP) or optional Large Capacity Feeder (LCF) is installed.)
Original glass		Fixed
Color		Full color, Twin color
Copy process		Indirect electrophotographic method (dry)
Developing system		2-component magnetic brush developing
Fixing method		Belt fusing system
Photosensor type		OPC
Original scanning sensor		Linear CCD sensor
Scanning light source		Xenon lamp
Resolution	Scanning	600 dpi x 600 dpi
	Writing	2400 dpi x 600 dpi (black print, except gray scale) 600 dpi x 600 dpi (color print / gray scale)
Gradation		256
Paper feeding		2 drawers + Bypass feeding + PFP 1 drawer (optional) 2 drawers + Bypass feeding + PFP 2 drawers (optional) 2 drawers + Bypass feeding + LCF (optional)
Paper supply	Drawers / PFP (optional)	Stack height 60.5 mm, Approx. 550 sheets (80 g/m^2, 21.3 lb. Bond), Approx. 500 sheets (105 g/m^2, 28 lb. Bond)
	Bypass feeding	Stack height 11 mm, Approx. 100 sheets (80 g/m^2, 21.3 lb. Bond), Approx. 80 sheets (105 g/m^2, 28 lb. Bond)
	LCF (optional)	Stack height 137.5 mm, Approx. 2500 sheets (80 g/m^2, 21.3 lb. Bond), Approx. 2000 sheets (90 g/m^2, 28 lb. Bond)
Paper size	Drawers / PFP (optional)	A3, A4, A4-R, A5-R, B4, B5, B5-R, FOLIO, 8K, 16K, 16K-R, LD, LG, LT, LT-R, ST-R, COMPUTER, 13"LG, 8.5" x 8.5",
	Bypass feeding	A3, A4, A4-R, A5-R, B4, B5, B5-R, FOLIO, 8K, 16K, 16K-R, 305 x 457 mm (A3Wide), 320 x 450 mm (SRA3), 320 x 460 mm, LD, LG, LT, LT-R, ST-R, COMPUTER, 13"LG, 8.5" x 8.5", 12" x 18" (Full Bleed), Non-standard: Paper size within 100 - 320 mm (5 1/2" - 12.6") (Length), 148 - 460 mm (8 1/2" - 18.1") (Width) <For printing functions, within 461 mm - 1200 mm (18.15" - 47.24") (width)>
	LCF (optional)	A4, LT
Paper type	Drawers / PFP (optional)	Plain paper, Recycled paper, Thick 1, Thick 2, Thick 3
	Bypass feeding	Plain paper, Recycled paper, Thick 1, Thick 2, Thick 3, Thick 4, Sticker labels, OHP film, Tab paper, Water proof paper, Extra large paper
	LCF (optional)	Plain paper, Recycled paper
Paper weight	Drawers / PFP (optional)	64 g/m^2 to 256 g/m^2 (17 lb. Bond to 94.5 lb. Cover)
	Bypass feeding	64 g/m^2 to 280 g/m^2 (17 lb. Bond to 150 lb. Index)
	LCF (optional)	64 g/m^2 to 105 g/m^2 (17 lb. Bond to 28 lb. Bond)

Automatic duplexing unit	Type	Stackless, Switchback type
	Acceptable paper size	A3, A4, A4-R, A5-R, B4, B5, B5-R, FOLIO, 8K, 16K, 16K-R, 305 x 457mm (A3Wide), LD, LG, LT, LT-R, ST-R, COMPUTER, 13"LG, 8.5" x 8.5", 12" x 18" (Full Bleed)
	Acceptable paper weight	64 g/m^2 to 256 g/m^2 (17 lb. Bond to 94.5 lb. Cover)
Toner supply		Automatic toner density detection/supply
Density control		Automatic density mode and manual density mode selectable in 11 steps
Total counter		Electronic counter
Memory (RAM)	Main memory	1 GB
	Page Memory	512 MB
HDD		80 GB
Account Codes		10,000 codes
Department Codes		1,000 codes
Machine version		NAD: North America, Brazil MJD: Europe AUD: Australia ASD: Asia, Hong Kong, Latin America TWD: Taiwan SAD: Saudi Arabia ASU: Saudi Arabia, Asia CND: China KRD: Korea ARD: Argentina JPD: Japan
Warm-up time	e-STUDIO2020C e-STUDIO2330C e-STUDIO2820C e-STUDIO2830C e-STUDIO3520C e-STUDIO3530C	Approx. 99 sec. (100 V series) <Stand-alone, temperature: 20°C> Approx. 89 sec. (200 V series) <Stand-alone, temperature: 20°C>
	e-STUDIO4520C	Approx. 160 sec. <Stand-alone, temperature: 20°C>
Power requirements		AC 110 V / 13.2 A, 115 V or 127 V / 12 A 220-240 V / 8 A (50/60 Hz) * The acceptable value of each voltage is ±10%.
Power consumption		1.5 kW or less (100 V, 115 V) 1.6 kW or less (127 V) 2.0 kW or less (200 V series) * The electric power is supplied to the RADF, Finisher, PFP and LCF through the equipment.
Weight		Approx. 121 kg (266.75 lb.) (for NAD and MJD) Approx. 123 kg (271.16 lb.) (for others)

Dimensions of the equipment	W 699 x D 742 x H 759 (mm) * When the tilt angle of the control panel is 52 degrees. 

2.1.2 Copy

[1] Copy specifications

Storage capacity		Max. 1000 sheets or until the memory is full
Original glass	Original scanning system	Flat surface scanning system (the left rear corner used as guide to place originals)
	Original type	Sheets, books and 3-dimensional objects
	Original size	Max. A3/LD
Reversing Automatic Document Feeder (optional)	Original scanning system	Fixed scanning system by feeding the original (the center used as guide to place originals)
	Original type	Sheets (carbon, bounded or stapled originals cannot be accepted)
	Original size	A3, A4, A4-R, A5-R, B4, B5, B5-R, FOLIO, LD, LG, LT, LT-R, ST-R, COMPUTER
	Original paper weight	Single-sided copy: 35-157g/m^2 (9.3 lb. Bond - 58 lb. Cover) Double-sided copy: 50-157 g/m^2 (13.3 lb. Bond - 58 lb. Cover)
	Original capacity	Max. 100 sheets (80 g/m^2) (Stack height 16 mm)
Eliminated portion	Black copy	Leading edges: 3.0 ± 2.0 mm, Trailing edges: 3.0 ± 2.0 mm, Side edges: 2.0 ± 2.0 mm
	Color copy	Leading edges: 5.0 ± 2.0 mm, Trailing edges: 3.0 ± 2.0 mm, Side edges: 2.0 ± 2.0 mm
Multiple copying		Up to 999 copies: Key in set numbers

[2] First copy time

e-STUDIO2020C e-STUDIO2330C e-STUDIO2820C e-STUDIO2830C e-STUDIO3520C	Black	Approx. 6.5 sec.
	Color	Approx. 8.4 sec.
e-STUDIO3530C	Black	Approx. 5.2 sec.
	Color	Approx. 8.4 sec.
e-STUDIO4520C	Black	Approx. 5.2 sec.
	Color	Approx. 6.8 sec.

[3] Copy speed (Copies/min.)

[3-1] Plain paper

- Plain paper: 64 g/m^2 to 105 g/m^2 (17 lb. Bond to 28 lb. Bond)

e-STUDIO2020C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	20 (20)	20 (20)	12 (12)	20 (20)	20 (20)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	17 (17)	17 (17)	12 (12)	17 (17)	-
B4, LG, FOLIO, COMPUTER	14 (14)	14 (14)	12 (12)	14 (14)	-
A3, LD	12 (12)	12 (12)	12 (12)	12 (12)	-
305 x 457mm, 320 x 450mm (SRA3)	-	11 (11)	-	-	-

e-STUDIO2330C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	28 (23)	28 (23)	16 (12)	28 (23)	28 (23)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	22 (17)	22 (17)	16 (12)	22 (17)	-
B4, LG, FOLIO, COMPUTER	19 (14)	19 (14)	16 (12)	19 (14)	-
A3, LD	16 (12)	16 (12)	16 (12)	16 (12)	-
305 x 457mm, 320 x 450mm (SRA3)	-	15 (11)	-	-	-

e-STUDIO2820C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	28 (28)	28 (28)	16 (16)	28 (28)	28 (28)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	22 (22)	22 (22)	16 (16)	22 (22)	-
B4, LG, FOLIO, COMPUTER	19 (19)	19 (19)	16 (16)	19 (19)	-
A3, LD	16 (16)	16 (16)	16 (16)	16 (16)	-
305 x 457mm, 320 x 450mm (SRA3)	-	15 (15)	-	-	-

e-STUDIO2830C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	35 (28)	35 (28)	18 (16)	35 (28)	35 (28)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	26 (22)	26 (22)	18 (16)	26 (22)	-
B4, LG, FOLIO, COMPUTER	22 (19)	22 (19)	18 (16)	22 (19)	-
A3, LD	18 (16)	18 (16)	18 (16)	18 (16)	-
305 x 457mm, 320 x 450mm (SRA3)	-	17 (15)	-	-	-

e-STUDIO3520C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	35 (35)	35 (35)	18 (18)	35 (35)	35 (35)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	26 (26)	26 (26)	18 (18)	26 (26)	-
B4, LG, FOLIO, COMPUTER	22 (22)	22 (22)	18 (18)	22 (22)	-
A3, LD	18 (18)	18 (18)	18 (18)	18 (18)	-
305 x 457mm, 320 x 450mm (SRA3)	-	17 (17)	-	-	-

e-STUDIO3530C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	45 (35)	45 (35)	22 (18)	45 (35)	45 (35)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	32 (26)	32 (26)	22 (18)	32 (26)	-
B4, LG, FOLIO, COMPUTER	26 (22)	26 (22)	22 (18)	26 (22)	-
A3, LD	22 (18)	22 (18)	22 (18)	22 (18)	-
305 x 457mm, 320 x 450mm (SRA3)	-	22 (17)	-	-	-

e-STUDIO4520C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	45 (45)	45 (45)	22 (22)	45 (45)	45 (45)
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	32 (32)	32 (32)	22 (22)	32 (32)	-
B4, LG, FOLIO, COMPUTER	26 (26)	26 (26)	22 (22)	26 (26)	-
A3, LD	22 (22)	22 (22)	22 (22)	22 (22)	-
305 x 457mm, 320 x 450mm (SRA3)	-	22 (22)	-	-	-

* "-" means "Not acceptable".
* When originals are manually placed for single-sided, continuous copying.
* Plain paper is selected for the paper type.
* When the Reversing Automatic Document Feeder is used, the copying speeds of the equipment is only possible under the following conditions:
  • Original: A4 or LT (single-sided)

- Mode: APS and Automatic density not selected, Plain paper mode
- Reproduction ratio: 100%

* The values in ( ) can be realized in the color mode.

[3-2] Thick 1/Thick 2/Thick 3

- Thick 1: 106 g/m^2 to 163 g/m^2 (- 90 lb. Index)
- Thick 2: 164 g/m^2 to 209 g/m^2 (- 110 lb. Index)
- Thick 3: 210 g/m^2 to 256 g/m^2 (- 140 lb. Index)

e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	17.5 (17.5)	17.5 (17.5)	8.5 (8.5)	17.5 (17.5)	-
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	13 (13)	13 (13)	8.5 (8.5)	13 (13)	-
B4, LG, FOLIO, COMPUTER	10.5 (10.5)	10.5 (10.5)	8.5 (8.5)	10.5 (10.5)	-
A3, LD	8.5 (8.5)	8.5 (8.5)	8.5 (8.5)	8.5 (8.5)	-
305 x 457mm, 320 x 450mm (SRA3)	-	8 (8)	-	-	-

* "-" means "Not acceptable".
* When originals are manually placed for single-sided, continuous copying.
* The values in ( ) can be realized in the color mode.

[3-3] Thick 4

- Thick 4: 257 g/m^2 to 280 g/m^2 (- 150 lb. Index)

e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	-	17.5 (17.5)	8.5 (8.5)	-	-
B5, A5-R, ST-R					-
A4-R, B5-R, LT-R	-	13 (13)	8.5 (8.5)	-	-
B4, LG, FOLIO, COMPUTER	-	10.5 (10.5)	8.5 (8.5)	-	-
A3, LD	-	8.5 (8.5)	8.5 (8.5)	-	-
305 x 457mm, 320 x 450mm (SRA3)	-	8 (8)	-	-	-

* "-" means "Not acceptable".
* When originals are manually placed for single-sided, continuous copying.
* The values in ( ) can be realized in the color mode.

[3-4] OHP film

e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C

Paper supply / Paper size	Drawer	Bypass feed		PFP	LCF (A4/LT only)
		Size specified	Size not specified		
A4, LT	-	14.5 (14.5)	-	-	-

* "-" means "Not acceptable".
* When originals are manually placed for single-sided, continuous copying.
* The values in ( ) can be realized in the color mode.

[4] System copy speed

Copy mode		Sec.		
		e-STUDIO2020C	e-STUDIO2330C	e-STUDIO2820C
Single-sided originals ↓ Single-sided copies	1 set	33.00 (34.74)	26.29 (34.30)	26.29 (28.21)
	3 sets	94.90 (96.62)	70.79 (85.61)	70.79 (76.33)
	5 sets	154.07 (155.74)	113.13 (137.06)	113.13 (114.89)
Single-sided originals ↓ Double-sided copies	1 set	38.42 (40.16)	31.60 (36.61)	31.60 (33.83)
	3 sets	97.93 (99.20)	78.27 (91.91)	78.27 (76.09)
	5 sets	156.45 (158.33)	116.33 (142.09)	116.33 (118.64)
Double-sided originals ↓ Double-sided copies	1 set	70.50 (72.75)	61.71 (67.18)	61.71 (64.43)
	3 sets	190.42 (192.66)	146.44 (170.49)	146.44 (149.43)
	5 sets	308.62 (311.20)	231.28 (273.28)	231.28 (234.05)
Double-sided originals ↓ Single-sided copies	1 set	65.89 (67.05)	55.11 (64.19)	55.11 (58.50)
	3 sets	183.56 (185.29)	140.11 (162.75)	140.11 (142.58)
	5 sets	302.32 (303.56)	224.86 (266.15)	224.86 (228.09)

Copy mode		Sec.		
		e-STUDIO2830C	e-STUDIO3520C	e-STUDIO3530C
Single-sided originals ↓ Single-sided copies	1 set	22.33 (28.21)	22.33 (24.10)	18.03 (24.10)
	3 sets	58.69 (76.33)	58.69 (60.34)	46.92 (60.34)
	5 sets	93.13 (114.89)	93.13 (94.41)	73.46 (94.41)
Single-sided originals ↓ Double-sided copies	1 set	30.60 (33.83)	30.60 (31.00)	30.95 (31.00)
	3 sets	66.21 (76.09)	66.21 (68.06)	61.03 (68.06)
	5 sets	102.90 (118.64)	102.90 (104.72)	83.51 (104.72)
Double-sided originals ↓ Double-sided copies	1 set	61.02 (64.43)	61.02 (64.45)	58.17 (64.45)
	3 sets	134.24 (149.43)	134.24 (137.46)	116.96 (137.46)
	5 sets	207.54 (234.05)	207.54 (210.85)	175.09 (210.85)
Double-sided originals ↓ Single-sided copies	1 set	55.12 (58.50)	55.12 (58.02)	53.89 (58.02)
	3 sets	123.25 (142.58)	123.25 (126.84)	106.97 (126.84)
	5 sets	191.18 (228.09)	191.18 (194.06)	159.83 (194.06)

Copy mode		Sec.
		e-STUDIO4520C
Single-sided originals ↓ Single-sided copies	1 set	18.03 (19.35)
	3 sets	46.92 (47.82)
	5 sets	73.46 (74.35)
Single-sided originals ↓ Double-sided copies	1 set	30.95 (26.39)
	3 sets	61.03 (55.61)
	5 sets	83.51 (84.97)
Double-sided originals ↓ Double-sided copies	1 set	58.17 (60.50)
	3 sets	116.96 (118.88)
	5 sets	175.09 (177.28)
Double-sided originals ↓ Single-sided copies	1 set	53.89 (56.41)
	3 sets	106.97 (109.42)
	5 sets	159.83 (162.32)

* Shows the period of time from when the [START] button is pressed until the message “Ready” is displayed. (10 sheets of A4/LT size original are set on the RADF and one of the copy modes above is selected.)
* Setting: when in the Text/Photo mode with Automatic density and APS/AMS set to OFF, or when in the sort mode with paper fed from the 1st drawer.
* The Saddle Stitch Finisher and hole punch unit not installed.
* The values in ( ) are the speeds of when in the color mode.

2.1.3 Print

Supported Page Description Language (Printer Driver)		PCL6, PostScript 3 emulation, XPS
Supported Page Description Language (RIP)		PCL6, PostScript 3 emulation, XPS, PCL5e, PCL5c, PDF (emulation)
Supported Client OS		Windows 2000 / XP / Vista / 7 / Server 2003 / Server 2008 Mac OS X (Ver. 10.2 or higher) Solaris (SUN) / HP-UX / AIX (IBM) / Linux / SCO
Resolution	Black	600 x 600 dpi, 8bit
	Color	600 x 600 dpi, 8bit
Eliminated portion	Black / Color	Leading edges: 4.2 mm + 2.8 mm/-1.2 mm, Trailing edges: 4.2 mm + 1.2 mm/-2.8 mm, Side edges: 4.2 ± 2.0 mm
Interface	Standard	Ethernet (100BASE-TX/10BASE-T)
	Optional	WLAN (IEEE 802.11b/g), Bluetooth (HCRP and BIP)

2.1.4 Scan

Scanning speed	Color / Black	45 sheets/min. (600 x 600 dpi) 53 sheets/min. (400 x 400 dpi) 57 sheets/min. (300 x 300 dpi)
Resolution		100, 150, 300, 400 and 600 dpi
Scan mode		Black and White, Gray scale, Color and ACS (Auto color Selection)
File formats		JPEG, Multi/Single page TIFF, Multi/Single page PDF, Slim PDF, Multi/Single page XPS

* When scanning single-sided A4/LT landscape originals using RADF

2.1.5 e-Filing

Number of Boxes	Public Box	1
	User Box	200
Number of Folder		100 folders per box
Number of Document		400 documents per box/folder
Number of Page		200 pages per document
Capacity of HDD	e-Filing	13 GB

* When scanning single-sided A4/LT landscape originals using RADF

2.1.6 Internet Fax

[1] Internet FAX transmission

Resolution	TX Resolution < dots/mm >	Standard (8 x 3.85), Fine (8 x 7.7), U-Fine (16 x 15.4)* * If U-Fine is selected in TX resolution, data is converted to Fine resolution in RX.
Scanning	Original Document Size	A3, B4, A4, A4-R, A5, B5, B5-R, A5-R, LT, LT-R, LG, LD, ST, ST-R, Computer, FOLIO
	Speed	0.7 sec. (per page/A4) Max. 50 spm (ITU-T No.1, A4, 8 x 3.85,Text mode)
	Gray scale	256 levels (Error Diffusion)
Address book	Address Book	1000 stations
	Group	Max. 200 stations
Transmission Features	Broadcast transmission	Max. 400 destinations/job. (Fax number and E-mail address are available to registered in same job.)
	Message size limitation	Max. 100MB
	Message division	Page by page

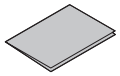
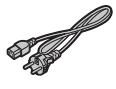
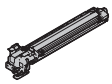
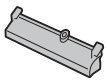
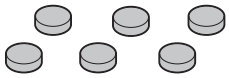
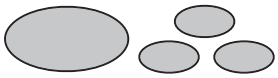
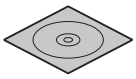
[2] Internet FAX receiving

Format of receive attachment	TIFF-FX (Profile S, F, J)

2.1.7 Network Fax

Compatibility		Super G3, G3 (ITU-T.30) Internet Fax (Simple mode) (ITU-T.37)
TX Resolution	PSTN	Standard: 200 x 100 dpi, Fine: 200 x 200 dpi, Super Fine: 200 x 400 dpi, Ultra Fine: 400 x 400 dpi
	Internet Fax	200 dpi x 200 dpi
Original Document Size		A3, A4, A5, B4, B5, FOLIO, LD, LG, LT, ST, COMPUTER
Mail Box	User defined	Max. 300 boxes
Routed document format	Send to e-Filing	MMR
	Send to File (SMB)	Single TIFF, Multi-TIFF, Single PDF, Multi PDF
	Send to FTP	Single TIFF, Multi-TIFF, Single PDF, Multi PDF
	Send to E-mail	Single TIFF, Multi-TIFF, Single PDF, Multi PDF
	Send to I-Fax	TIFF-S
	Send to PSTN-FAX	MMR

2.2 Accessories

Unpacking/Setup instruction		1 set
Operator’s manual		1 set (except for ASU)
Operator's manual pocket		1 pc.
Power cable		1 pc.
Warranty sheet		1 pc. (for NAD)
Setup report		1 set (for NAD, MJD and CND)
PM sticker		1 pc. (for MJD)
Process unit (Y, M, C, K)		1 pc. each
Control panel stopper		1 pc.
Sub tray		1 pc. (for NAD)
Rubber plug		6 pcs.
Blind seal (small / large)		1 pc. /3 pcs.
CD-ROM		2 pcs. (except for ASU)
Developer material (Y, M, C, K)		1 pc. each (for CND)
Approval sheet		1 set (for CND)
Screw		1 pc.
Gasket		1 pc.
Gasket screw		1 pc.

* Machine version

NAD: North America, Brazil
MJD: Europe
AUD: Australia
ASD: Asia, Hong Kong, Latin America
TWD: Taiwan
SAD: Saudi Arabia

ASU: Saudi Arabia, Asia
CND: China
KRD: Korea
ARD: Argentina
JPD: Japan

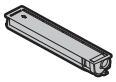
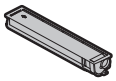
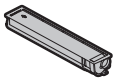
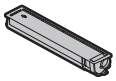
2.3 Options

Original Cover	KA-3511PC/PC-C
Reversing Automatic Document Feeder (RADF)	MR-3018
Large Capacity Feeder (LCF)	KD-1024LT/A4/C
Paper Feed Pedestal (PFP)	KD-1023/C
Drawer Module	MY-1032/C
Finisher	MJ-1101
Saddle Stitch Finisher	MJ-1030/C
Hanging Finisher	MJ-1031/C
Hole Punch Unit	MJ-6101N/E/F/S/E-C (for MJ-1101) MJ-6004N/E/F/S (for MJ-1030)
Staple Cartridge	STAPLE-2400 (for MJ-1101) STAPLE-2000 (for MJ-1030/1031) STAPLE-600 (for saddle stitcher of MJ-1030)
Bridge Kit	KN-4520
Work Table	KK-3511
EFI Printer Board	GA-1211
FAX Unit	GD-1250NA/AU/AS/EU/C/TW
2nd Line for Fax Unit	GD-1260NA/AU/EU/C/TW
Wireless LAN Module	GN-1050/C
Bluetooth Module	GN-2010
Antenna	GN-3010
Data Overwrite Enabler	GP-1070
Meta Scan Enabler	GS-1010
External Interface Enabler	GS-1020
IPSec Enabler	GP-1080
Harness Kit for Coin Controller	GQ-1110
e-BRIDGE ID Gate (HID)	KP-2004
e-BRIDGE ID Gate (MIFARE)	KP-2005
Imaging Acceleration Board	GE-1170
Damp Heater Kit	MF-3500CU/CE
Desk	MH-1700

Notes:

- The bridge kit (KN-4520) is necessary for installation of the finisher (MJ-1101/1030/1031).
- The finisher (MJ-1101) is necessary for installation of the hole punch unit (MJ-6101N/E/F/S/E-C).
- The finisher (MJ-1030) is necessary for installation of the hole punch unit (MJ-6004N/E/F/S).
- The antenna (GN-3010) is necessary to enable the wireless LAN module (GN-1050/C) and the bluetooth module (GN-2010).

2.4 Supplies

Drum 	OD-FC35
Developer material (K) 	D-FC28K
Developer material (Y) 	D-FC28Y
Developer material (M) 	D-FC28M
Developer material (C) 	D-FC28C
Toner cartridge (K) 	PS-ZTFC28K (for North America, Central and South America) PS-ZTFC28EK (for Europe) PS-ZTFC28DK (for Australia and Asia) PS-ZTFC28CK (for China)
Toner cartridge (Y) 	PS-ZTFC28Y (for North America, Central and South America) PS-ZTFC28EY (for Europe) PS-ZTFC28DY (for Australia and Asia) PS-ZTFC28CY (for China)
Toner cartridge (M) 	PS-ZTFC28M (for North America, Central and South America) PS-ZTFC28EM (for Europe) PS-ZTFC28DM (for Australia and Asia) PS-ZTFC28CM (for China)
Toner cartridge (C) 	PS-ZTFC28C (for North America, Central and South America) PS-ZTFC28EC (for Europe) PS-ZTFC28DC (for Australia and Asia) PS-ZTFC28CC (for China)
Waste toner box 	PS-TBFC28 (expect for Europe and China) PS-TBFC28E (for Europe) PS-TBFC28C (for China)

2.5 System List

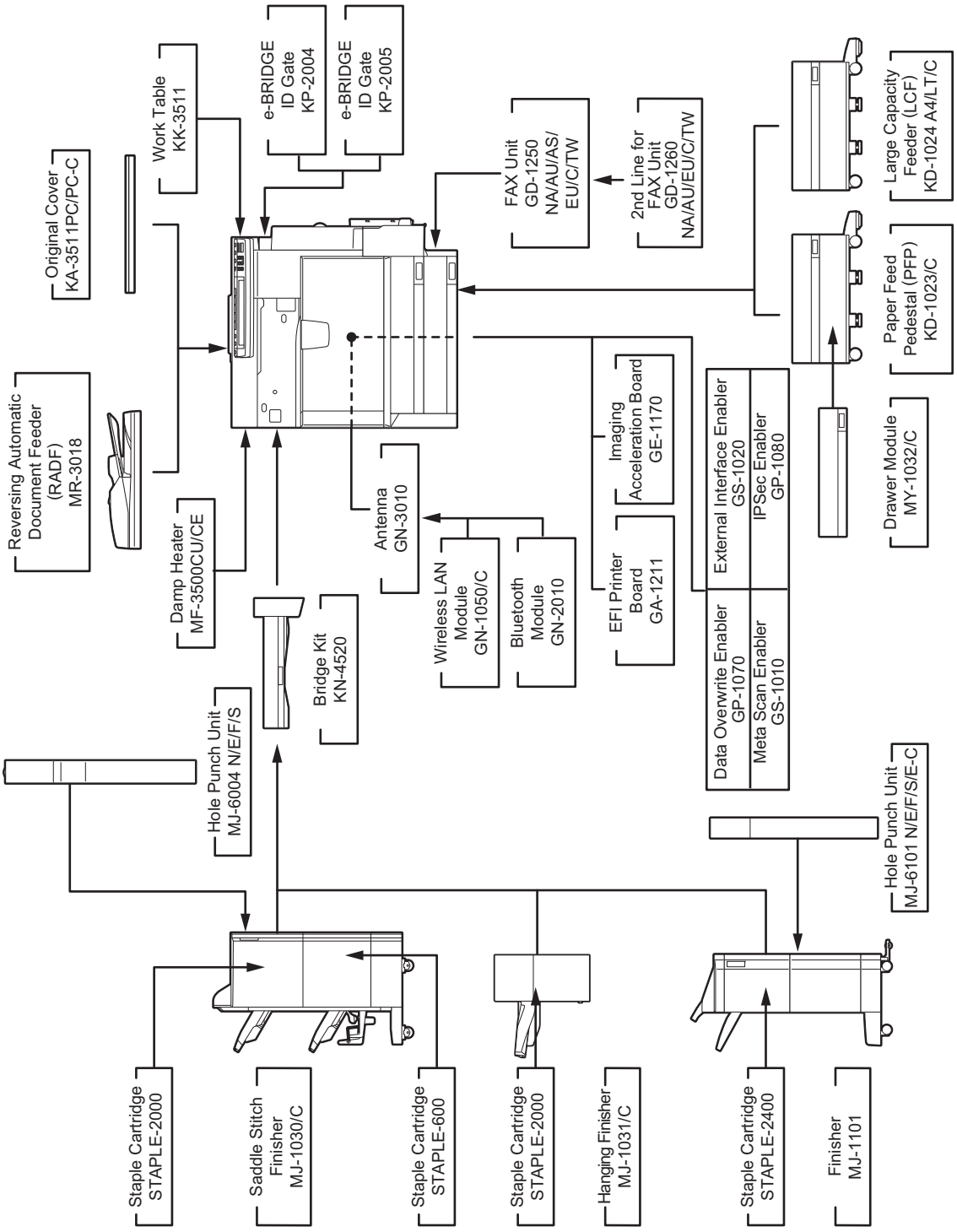


Fig. 2-1

3. OUTLINE OF THE MACHINE

3.1 Sectional View

3.1.1 Front side-1

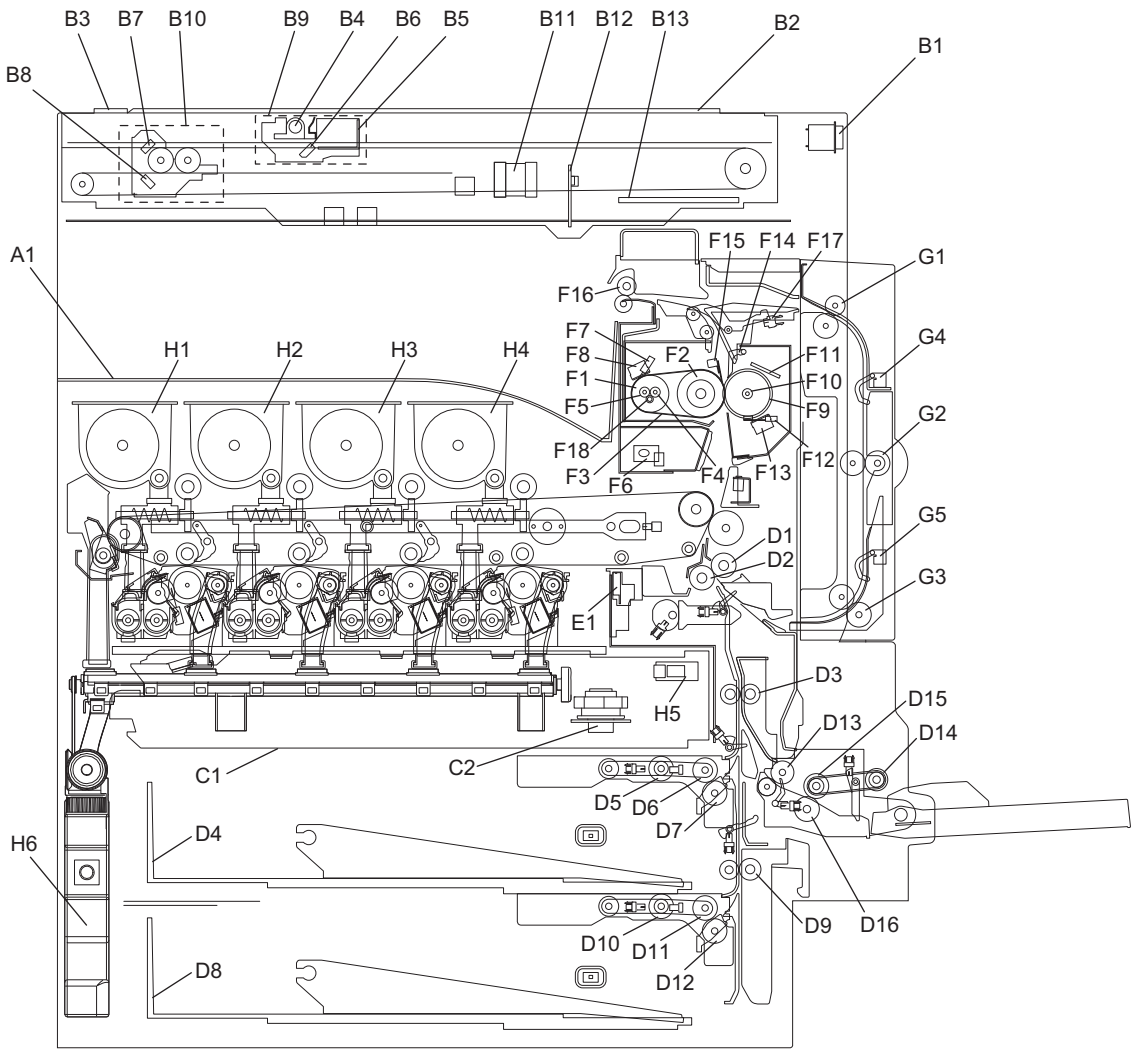


Fig. 3-1

A1	Inner tray	E1	Image quality sensor
B1	Main switch	F1	Heat roller
B2	Original glass	F2	Fuser roller
B3	RADF original glass	F3	Fuser belt
B4	Exposure lamp	F4	Center heater lamp
B5	Inverter board	F5	Side heater lamp
B6	Mirror-1	F6	Heat roller center/rear thermopile
B7	Mirror-2	F7	Heat roller front thermistor
B8	Mirror-3	F8	Heat roller center/rear thermostat
B9	Carriage-1	F9	Pressure roller
B10	Carriage-2	F10	Pressure roller lamp
B11	Lens	F11	Pressure roller center thermistor
B12	CCD driving PC board	F12	Pressure roller rear thermistor
B13	Scanning section control PC board	F13	Pressure roller thermostat
C1	Laser optical unit	F14	Separation finger
C2	Polygonal motor	F15	Separation plate
D1	Registration roller (rubber roller)	F16	Exit roller
D2	Registration roller (metal roller)	F17	Exit sensor
D3	Transport roller	F18	Sub heater lamp (e-STUDIO4520C only)
D4	1st drawer	G1	Upper transport roller
D5	1st drawer pickup roller	G2	Middle transport roller
D6	1st drawer feed roller	G3	Lower transport roller
D7	1st drawer separation roller	G4	ADU entrance sensor
D8	2nd drawer	G5	ADU exit sensor
D9	Transport roller	H1	Toner (Y)
D10	2nd drawer pickup roller	H2	Toner (M)
D11	2nd drawer feed roller	H3	Toner (C)
D12	2nd drawer separation roller	H4	Toner (K)
D13	Bypass transport roller	H5	Temperature/Humidity sensor
D14	Bypass pickup roller	H6	Waste toner box
D15	Bypass feed roller		
D16	Bypass separation roller		

3.1.2 Front side-2

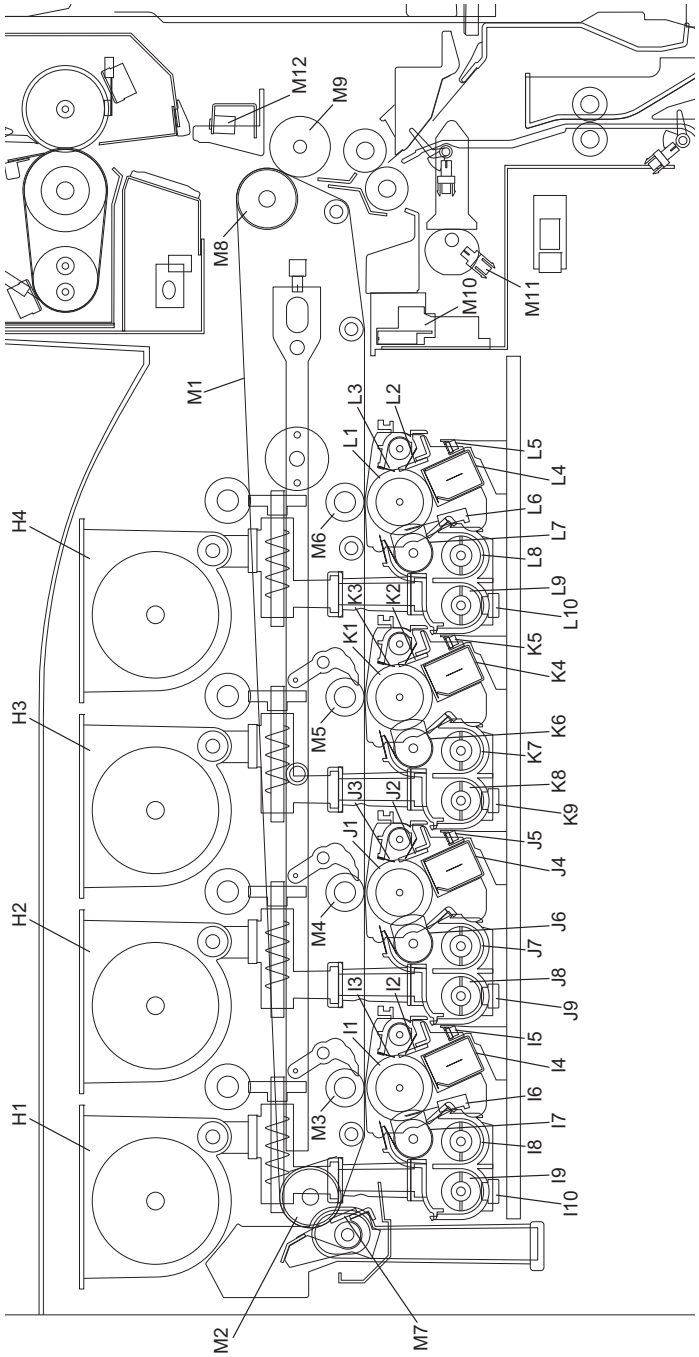


Fig. 3-2

I1	Drum (Y)	L1	Drum (K)
I2	Cleaning blade (Y)	L2	Cleaning blade (K)
I3	Recovery blade (Y)	L3	Recovery blade (K)
I4	Main charger unit (Y)	L4	Main charger unit (K)
I5	Discharge LED (Y)	L5	Discharge LED (K)
I6	Drum thermistor (Y)	L6	Drum thermistor (K)
I7	Developer sleeve (Y)	L7	Developer sleeve (K)
I8	Mixer-1 (Y)	L8	Mixer-1 (K)
I9	Mixer-2 (Y)	L9	Mixer-2 (K)
I10	Auto-toner sensor (Y)	L10	Auto-toner sensor (K)
J1	Drum (M)	M1	Transfer belt
J2	Cleaning blade (M)	M2	Transfer belt drive roller
J3	Recovery blade (M)	M3	1st transfer roller (Y)
J4	Main charger unit (M)	M4	1st transfer roller (M)
J5	Discharge LED (M)	M5	1st transfer roller (C)
J6	Developer sleeve (M)	M6	1st transfer roller (K)
J7	Mixer-1 (M)	M7	Transfer belt cleaning blade
J8	Mixer-2 (M)	M8	2nd transfer facing roller
J9	Auto-toner sensor (M)	M9	2nd transfer roller
K1	Drum (C)	M10	Image position aligning sensor (front / rear)
K2	Cleaning blade (C)	M11	2nd transfer roller position detection sensor
K3	Recovery blade (C)	M12	Paper clinging detection sensor
K4	Main charger unit (C)		
K5	Discharge LED (C)		
K6	Developer sleeve (C)		
K7	Mixer-1 (C)		
K8	Mixer-2 (C)		
K9	Auto-toner sensor (C)		

3.1.3 Rear side

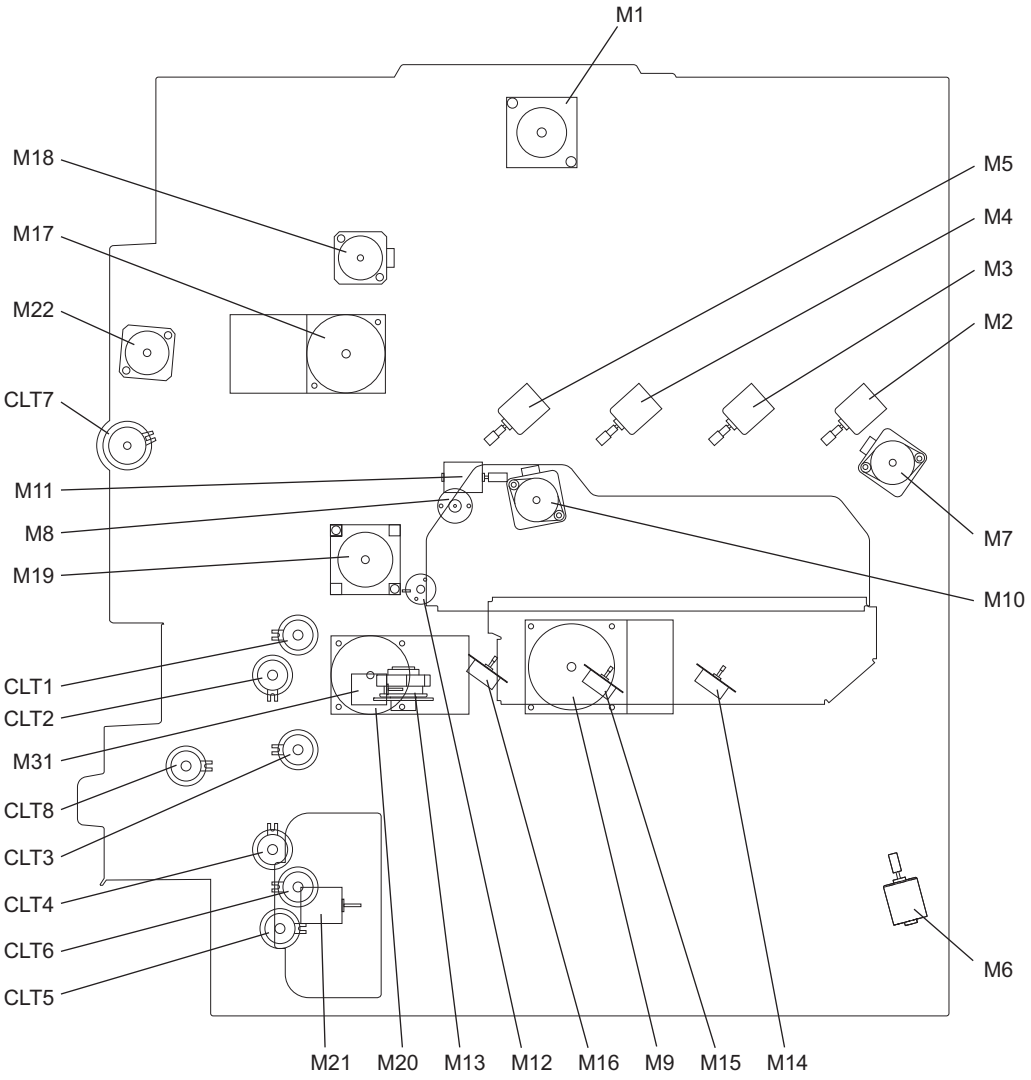


Fig. 3-3

M1	Scan motor	CLT1	1st drawer transport clutch (High speed)
M2	Toner motor-Y	CLT2	1st drawer transport clutch (Low speed)
M3	Toner motor-M	CLT3	1st drawer feed clutch
M4	Toner motor-C	CLT4	2nd drawer transport clutch (Low speed)
M5	Toner motor-K	CLT5	2nd drawer transport clutch (High speed)
M6	Waste toner paddle motor	CLT6	2nd drawer feed clutch
M7	Transfer belt motor	CLT7	ADU clutch
M8	1st transfer roller cam motor	CLT8	Bypass feed clutch
M9	Developer unit motor		
M10	Drum motor		
M11	Drum switching motor		
M12	Shutter motor		
M13	Polygonal motor		
M14	Mirror motor-M		
M15	Mirror motor-C		
M16	Mirror motor-K		
M17	Fuser motor		
M18	Exit motor		
M19	Registration motor		
M20	Feed/transport motor		
M21	Tray-up motor		
M22	ADU motor		
M31	Waste toner transport motor		

3.2 Electric Parts Layout

[A] Scanner unit, control panel

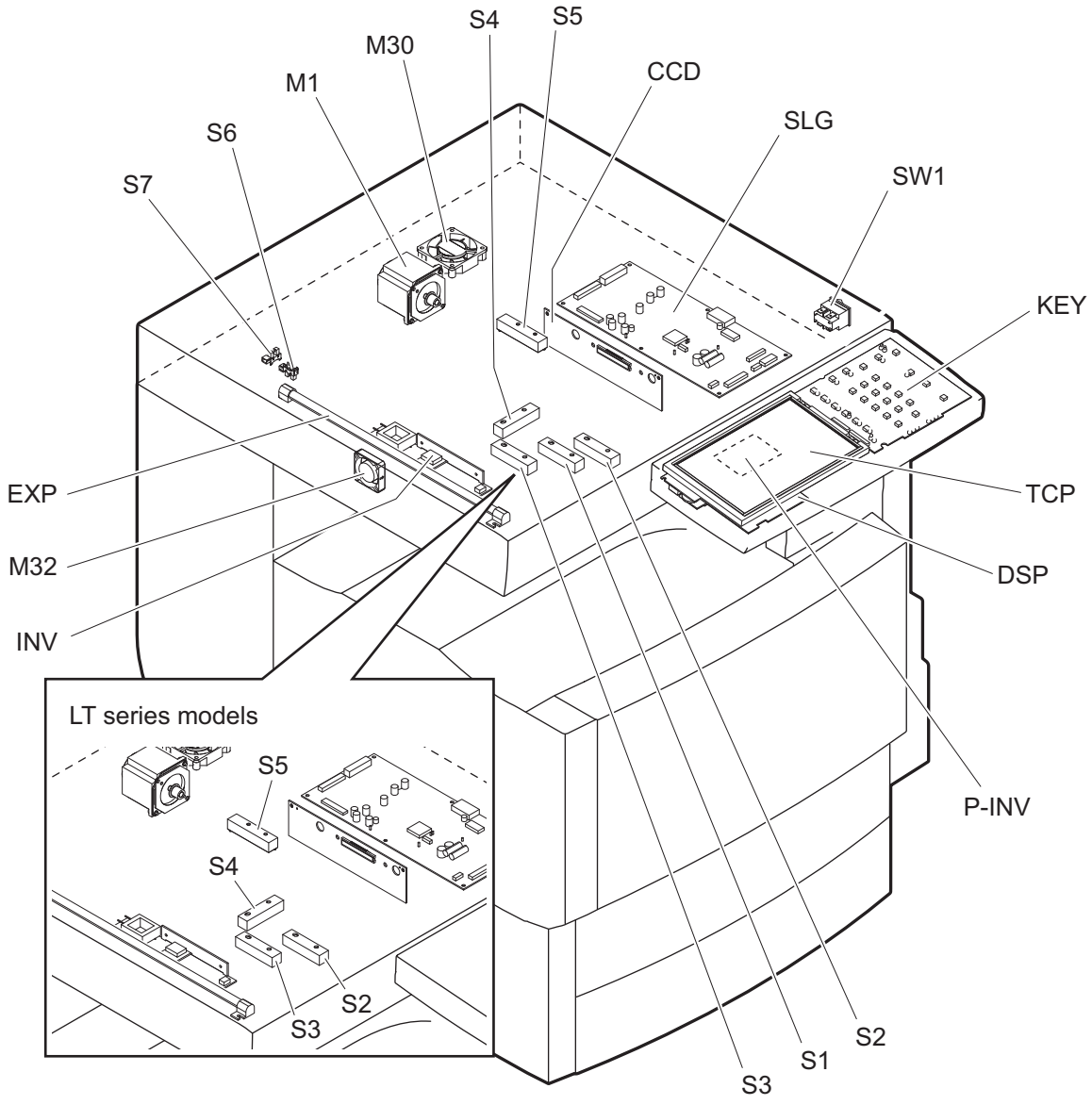


Fig. 3-4

[B] Toner cartridge, waste toner box

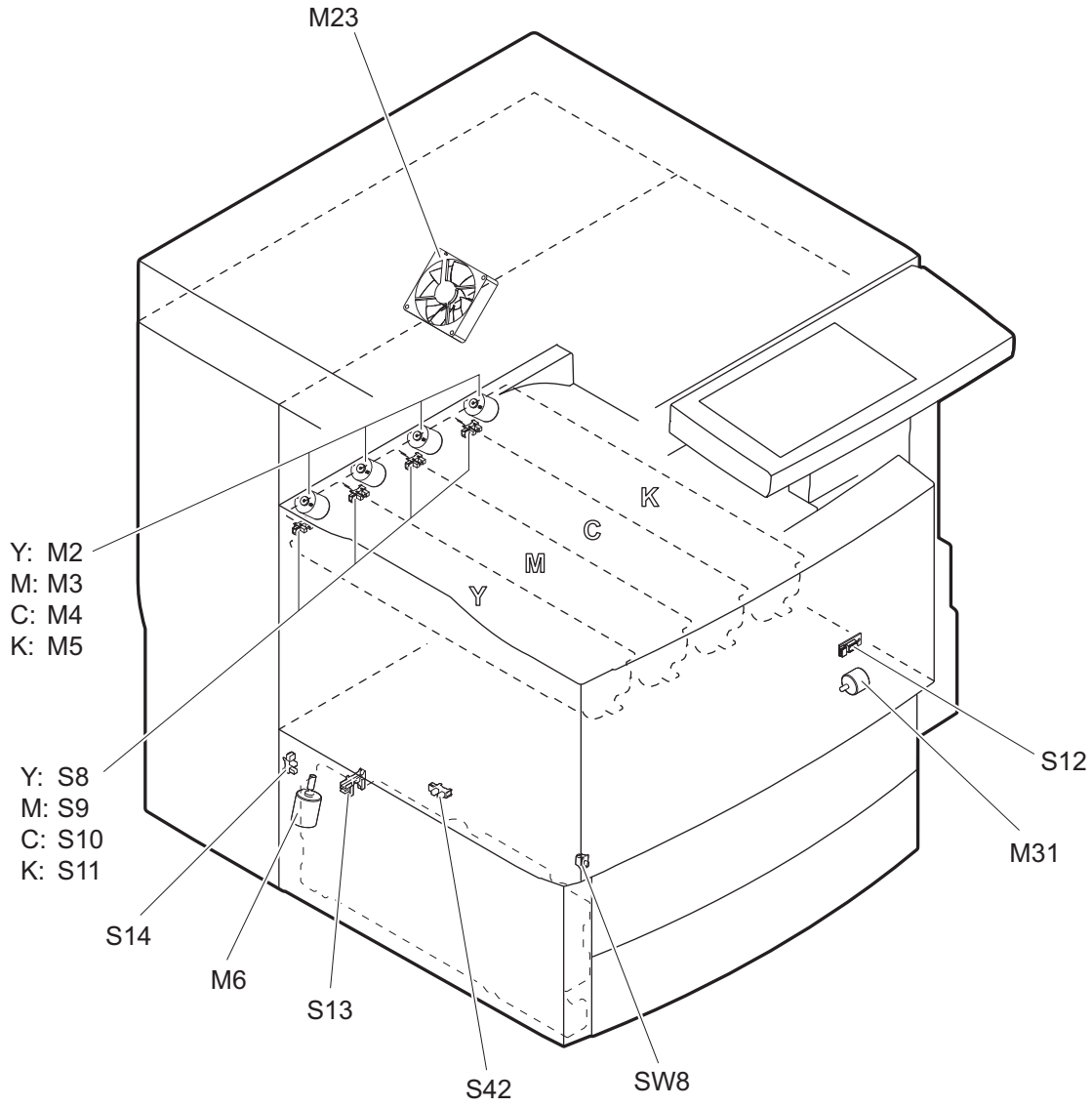


Fig. 3-5

[C] Transfer belt unit

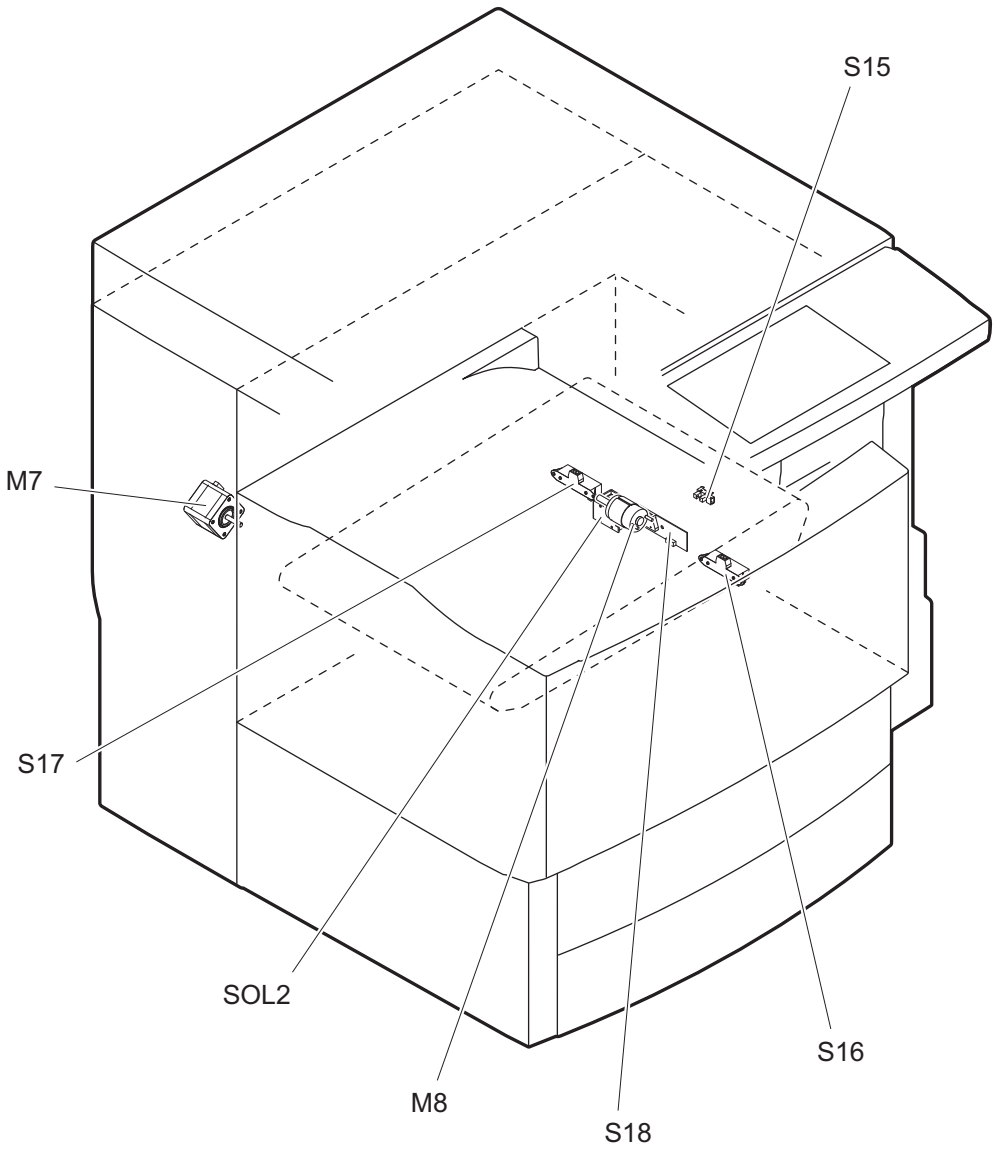


Fig. 3-6

[D] Developer unit

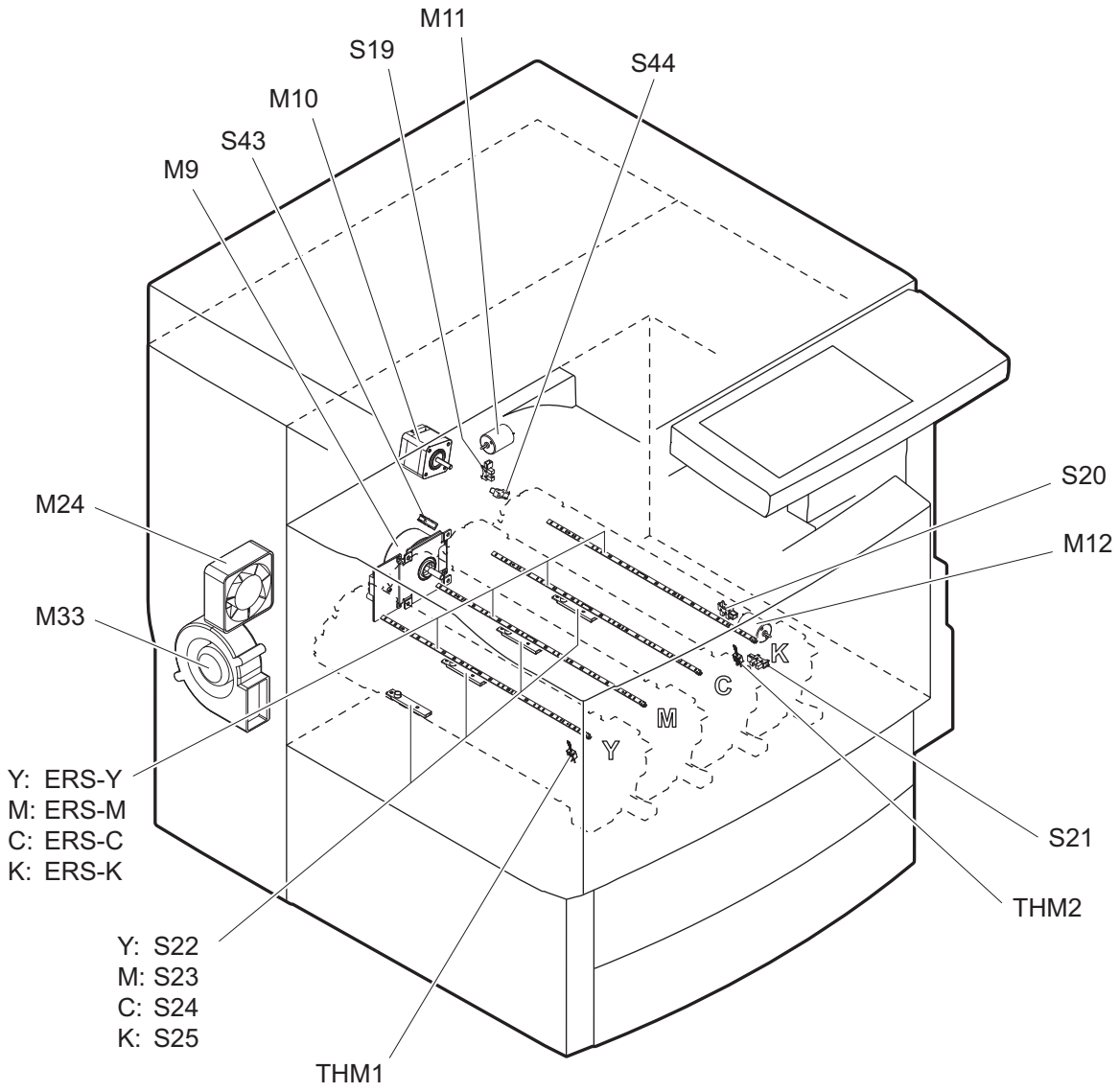


Fig. 3-7

[E] Laser unit

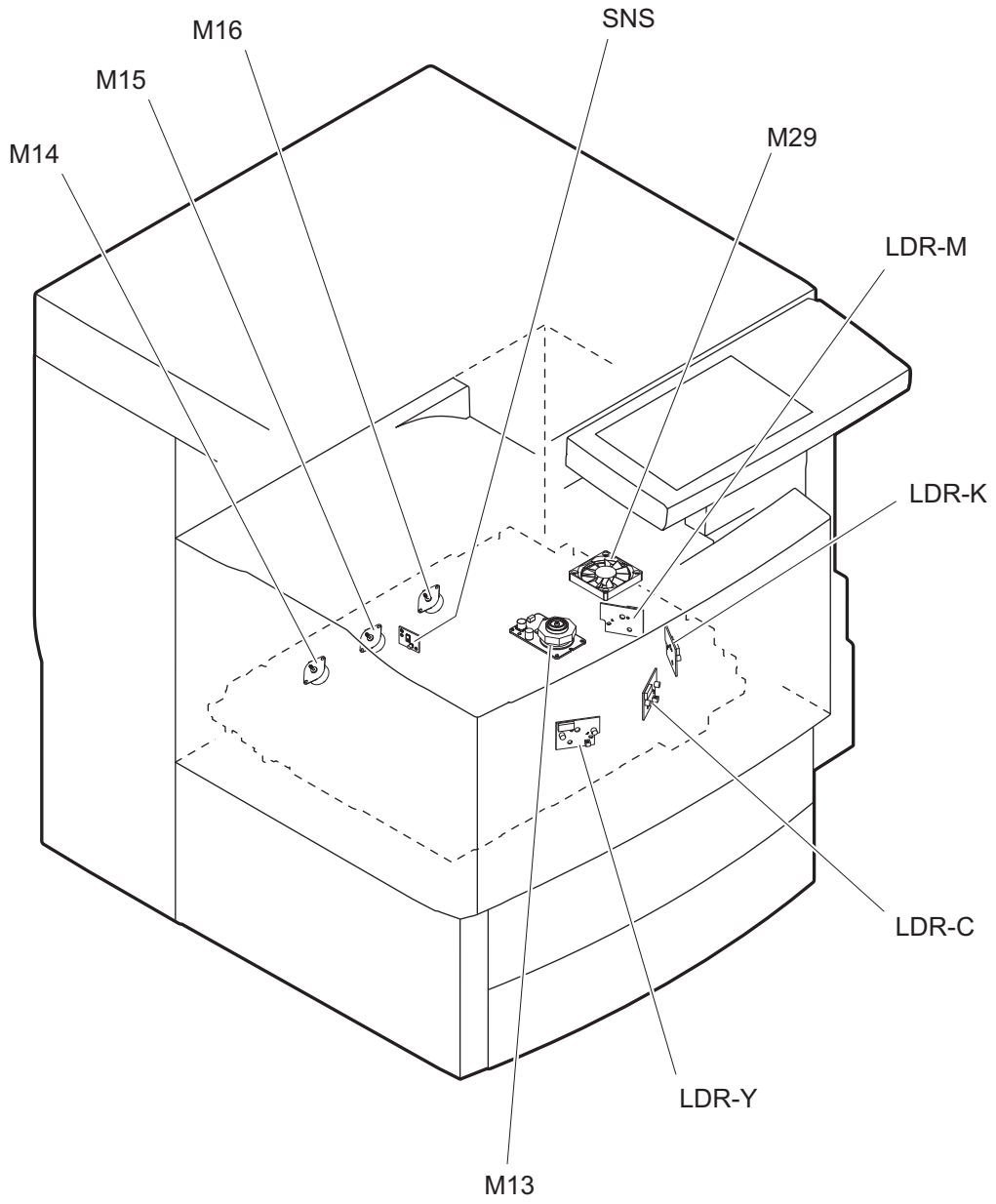


Fig. 3-8

[F] Fuser unit

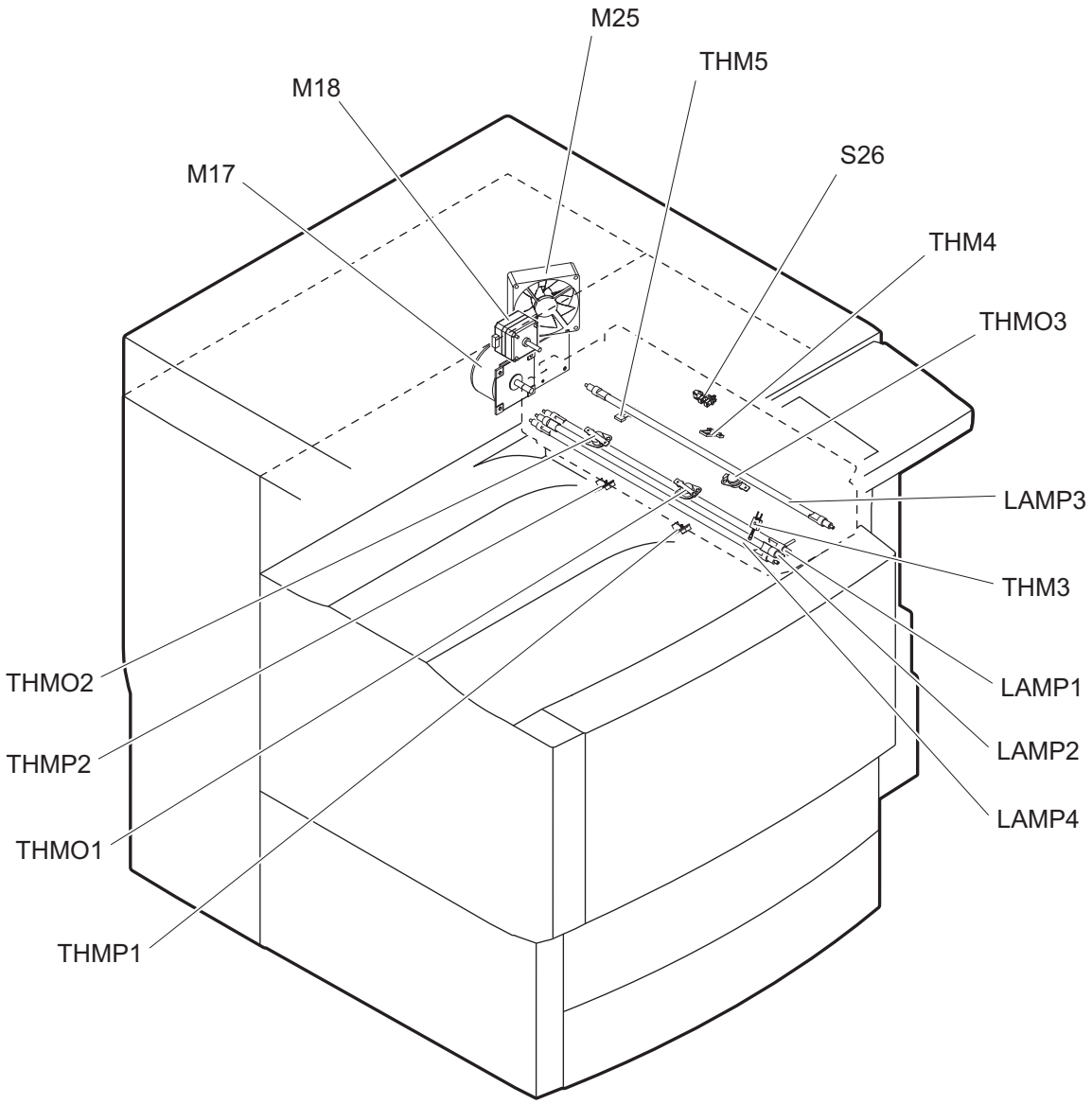


Fig. 3-9

[G] Transfer unit

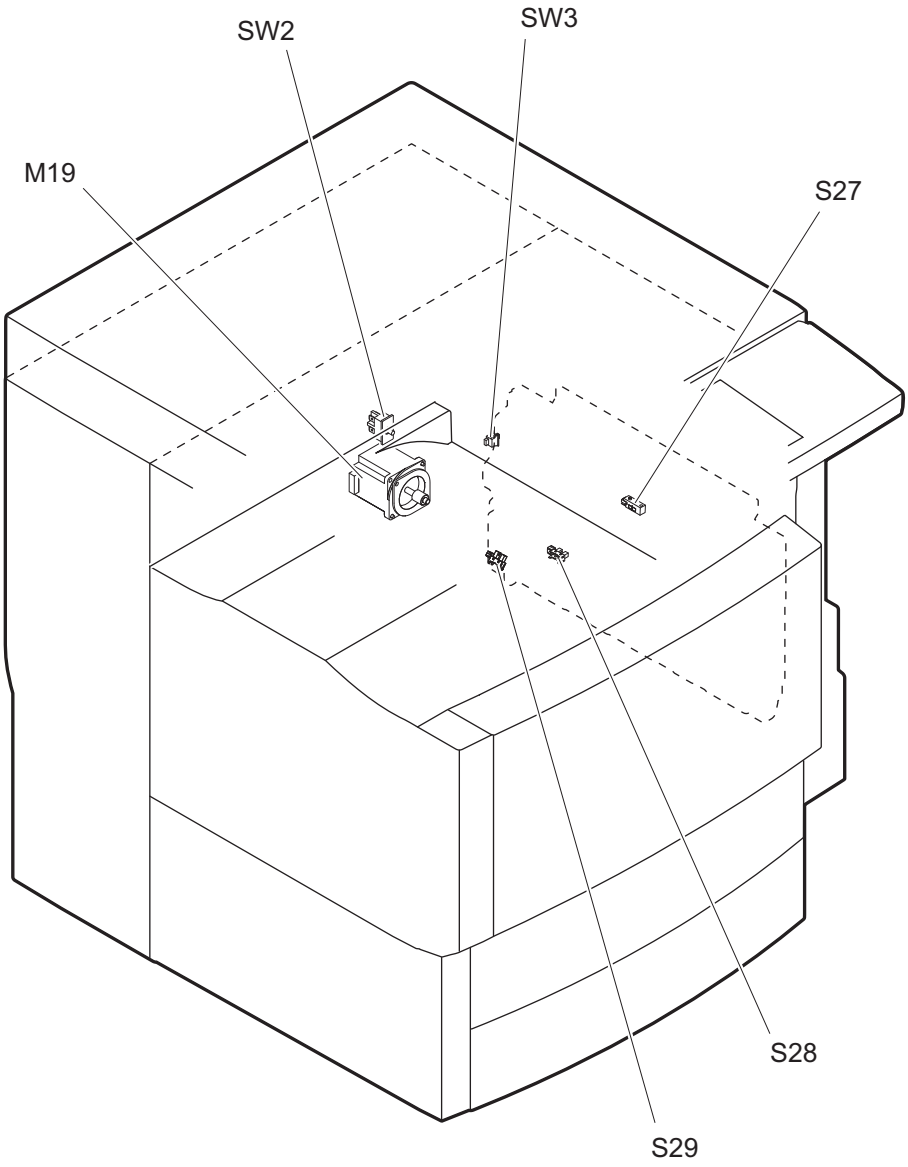


Fig. 3-10

[H] Paper feeding unit

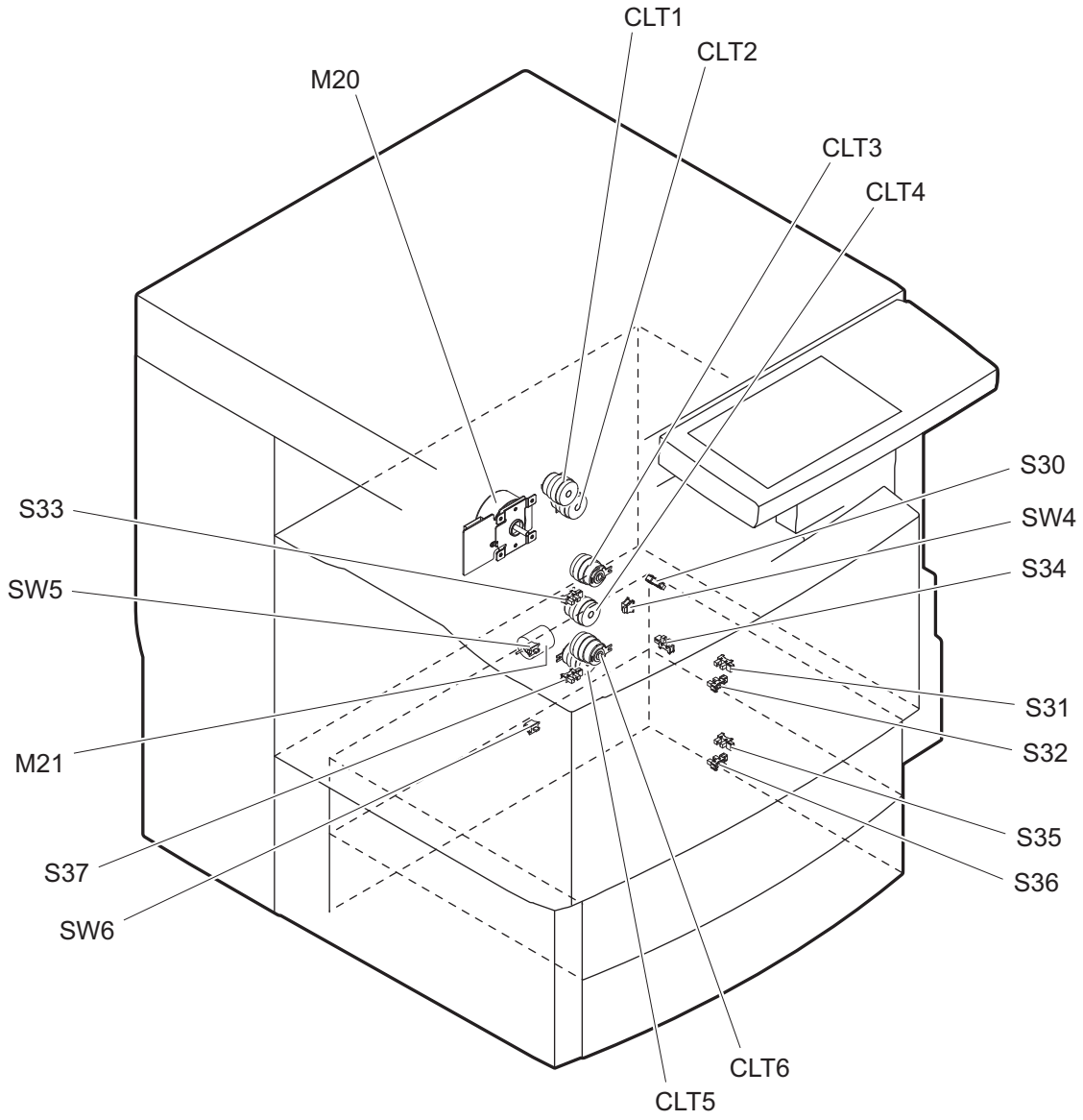


Fig. 3-11

[I] Automatic duplexing unit, bypass feed unit

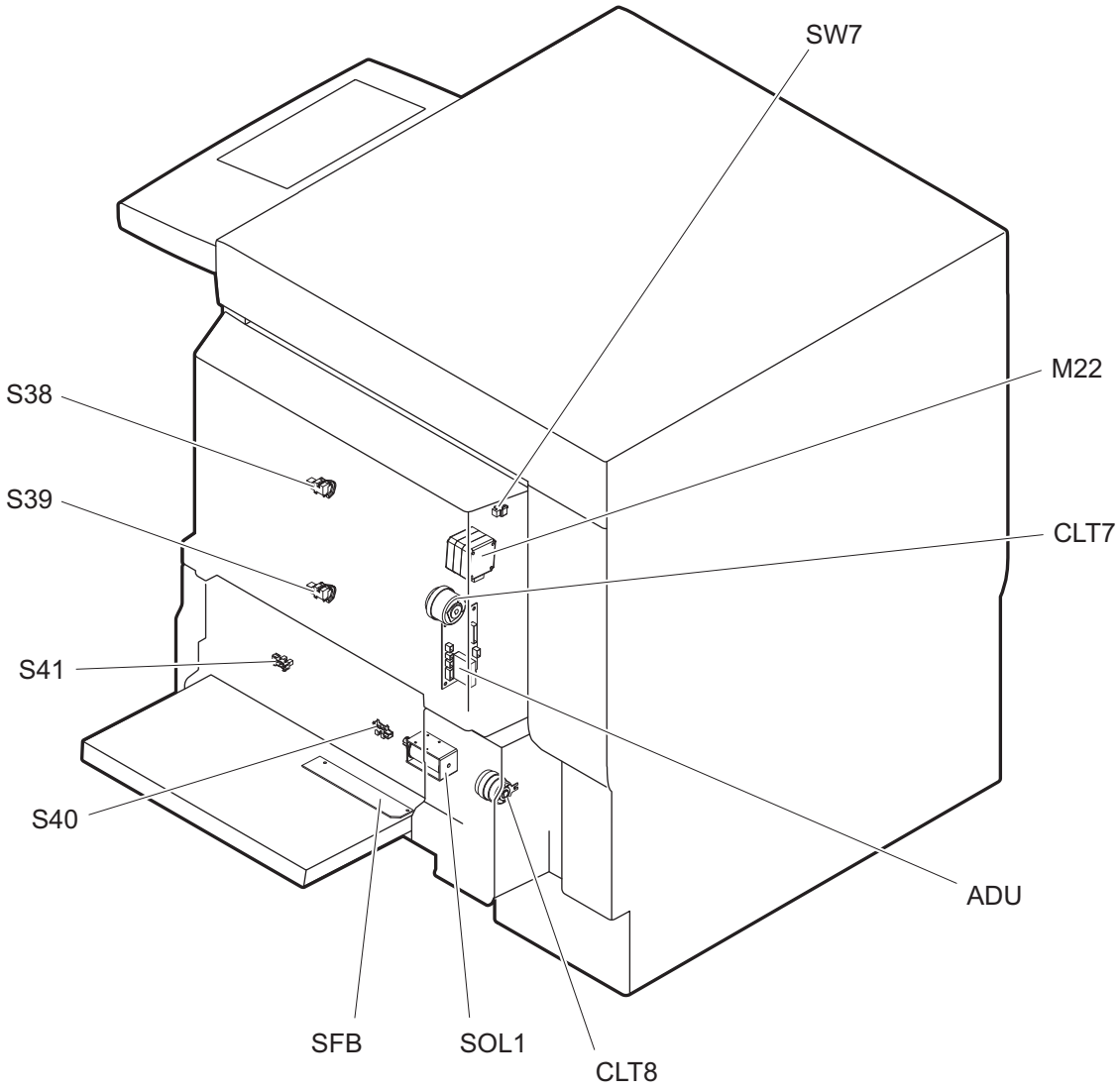


Fig. 3-12

[J] PC board, power supply

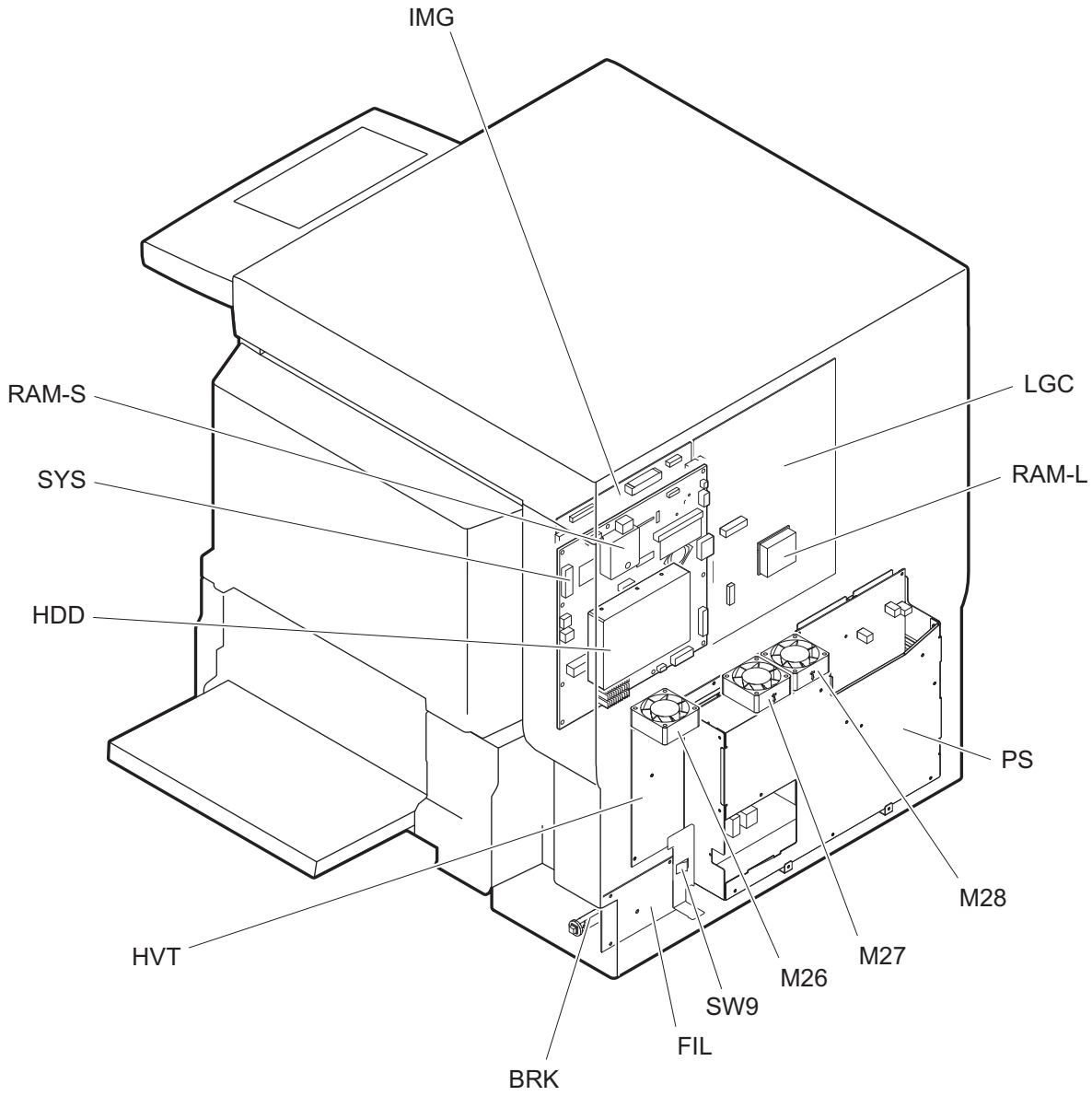


Fig. 3-13

[K] Damp heater

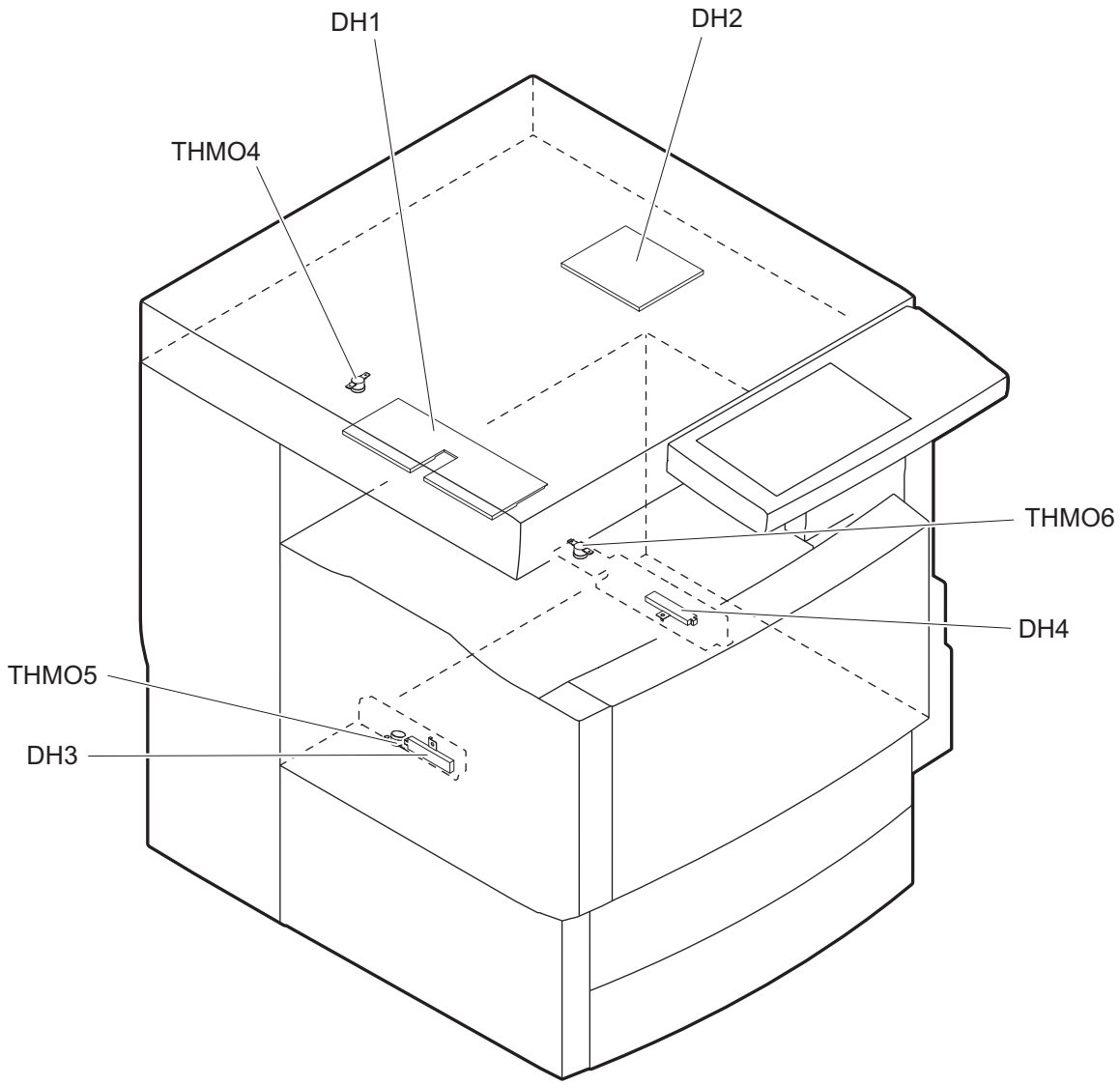


Fig. 3-14

3.3 Symbols and Functions of Various Components

The column “P-I” shows the page and item number in the parts list.

1. Motors

Symbol	Name	Function	Remarks	P-I
M1	SCAN-MOT Scan motor	Driving the carriages	Fig. 3-4	19-8
M2	TNR-MOT-Y Toner motor-Y	Transporting toner from the Y toner cartridge to the developer unit	Fig. 3-5	41-2
M3	TNR-MOT-M Toner motor-M	Transporting toner from the M toner cartridge to the developer unit	Fig. 3-5	41-2
M4	TNR-MOT-C Toner motor-C	Transporting toner from the C toner cartridge to the developer unit	Fig. 3-5	41-2
M5	TNR-MOT-K Toner motor-K	Transporting toner from the K toner cartridge to the developer unit	Fig. 3-5	41-2
M6	USD-TNR-MOT Waste toner paddle motor	Driving the paddle in the waste toner box (agitating the accumulated waste toner)	Fig. 3-5	4-18
M7	TBU-MOT Transfer belt motor	Driving the transfer belt	Fig. 3-6	15-13
M8	TR1-CAM-MOT 1st transfer roller cam motor	Driving the 1st transfer roller contact/ release movement	Fig. 3-6	32-19
M9	DEV-MOT Developer unit motor	Driving the developer	Fig. 3-7	15-2
M10	DRM-MOT Drum motor	Driving the drum	Fig. 3-7	16-2
M11	DRM-SW-MOT Drum switching motor	Transmitting/releasing the drive to the Y/M/C drums	Fig. 3-7	16-22
M12	SHUT-MOT Shutter motor	Driving the laser emission outlet (slit glass) protective shutter	Fig. 3-7	36-2
M13	POL-MOT Polygonal motor	Driving the polygonal mirror	Fig. 3-8	11-3
M14	MIR-MOT-M Mirror motor-M	Adjusting the irradiation angle of the M laser	Fig. 3-8	11-3
M15	MIR-MOT-C Mirror motor-C	Adjusting the irradiation angle of the C laser	Fig. 3-8	11-3
M16	MIR-MOT-K Mirror motor-K	Adjusting the irradiation angle of the K laser	Fig. 3-8	11-3
M17	FUS-MOT Fuser motor	Driving the fuser	Fig. 3-9	18-4
M18	EXIT-MOT Exit motor	Driving the exit roller	Fig. 3-9	18-22
M19	RGST-MOT Registration motor	Driving the registration roller	Fig. 3-10	17-16
M20	FEED/TRNS-MOT Feed/transport motor	• Driving the feed roller and pickup roller of each drawer or the bypass feed unit • Driving the transport rollers of the 1st and 2nd drawers	Fig. 3-11	17-12
M21	CST-TRY-MOT Tray-up motor	Lifting up the trays in the 1st and 2nd drawers	Fig. 3-11	4-9
M22	ADU-MOT ADU motor	Driving the automatic duplexing unit	Fig. 3-12	48-18

Symbol	Name	Function	Remarks	P-I
M23	INTRNL-FAN-MOT Internal cooling fan	Cooling down inside of the equipment (around the toner cartridge)	Fig. 3-5	7-35
M24	OZN-FAN-MOT Ozone exhaust fan	Suctioning ozone generated at charging	Fig. 3-7	7-26
M25	FUS/EXIT-FAN-MOT Fuser/exit section cooling fan	Cooling down the fuser and exit section	Fig. 3-9	18-19
M26	SYS-FAN-MOT SYS/HDD cooling fan	Cooling down the SYS board and hard disk	Fig. 3-13	10-103
M27	PS-FAN-MOT-1 Switching regulator cooling fan-1	Cooling down the switching regulator	Fig. 3-13	8-9
M28	PS-FAN-MOT-2 Switching regulator cooling fan-2	Cooling down the switching regulator	Fig. 3-13	8-9
M29	LSU-FAN-MOT Laser unit cooling fan	Cooling down the polygonal motor	Fig. 3-8	11-15
M30	SCAN-FAN-MOT Scanner unit cooling fan	Cooling down the scanner unit	Fig. 3-4	12-30
M31	UT-CARRY-MOT Waste toner transport motor	Driving the auger in the waste toner transport unit	Fig. 3-5	42-36
M32	FANFRONT Exposure lamp cooling fan	Cooling down the exposure lamp	Fig. 3-5	-
M33	EPU-FAN EPU cooling fan	Cooling down the EPU (e-STUDIO4520C only)	Fig. 3-7	7-29

2. Sensors and switches

Symbol	Name	Function	Remarks	P-I
S1-5	APS1-3, APS-C, APS-R Automatic original detection sensor	Detecting original size *S1: only for A4 series models	Fig. 3-4	12-12 12-13
S6	HOME-SNR Carriage home position sensor	Detecting the carriage home position	Fig. 3-4	12-17
S7	PLTN-SNR Platen sensor	Detecting the opening/closing status of the platen cover or RADF	Fig. 3-4	19-10
S8	TNR-SNR-Y Toner cartridge detection sensor-Y	Detecting the presence of the Y toner cartridge	Fig. 3-5	41-101
S9	TNR-SNR-M Toner cartridge detection sensor-M	Detecting the presence of the M toner cartridge	Fig. 3-5	41-101
S10	TNR-SNR-C Toner cartridge detection sensor-C	Detecting the presence of the C toner cartridge	Fig. 3-5	41-101
S11	TNR-SNR-K Toner cartridge detection sensor-K	Detecting the presence of the K toner cartridge	Fig. 3-5	41-101
S12	TEMP/HUMI-SNR Temperature/humidity sensor	Detecting the ambient temperature/ humidity of the equipment	Fig. 3-5	42-42
S13	USD-TNR-FLL-SNR Waste toner box full detection sensor	Detecting the full status of used toner in the waste toner box	Fig. 3-5	42-27
S14	USD-TNR-LCK-SNR Waste toner paddle motor lock detection sensor	Detecting the lock status of waste toner paddle motor	Fig. 3-5	42-108
S15	TR1-SNR 1st transfer roller status detection sensor	Detecting contact/release status of the 1st transfer roller for each color	Fig. 3-6	32-105

Symbol	Name	Function	Remarks	P-I
S16	IMG-POS-SNR-F Image position aligning sensor (Front)	Detecting the front side position of a toner image (test pattern) developed on the transfer belt	Fig. 3-6	27-4
S17	IMG-POS-SNR-R Image position aligning sensor (Rear)	Detecting the rear side position of a toner image (test pattern) developed on the transfer belt	Fig. 3-6	27-4
S18	TNR-LVL-SNR Image quality sensor	Detecting the density of a toner image (test pattern) developed on the transfer belt surface	Fig. 3-6	27-5
S19	DRM-SW-SNR Drum switching detection sensor	Detecting contact/release status of the drive to the Y/M/C drums	Fig. 3-7	16-20
S20	SHUT-SNR Shutter status detection sensor	Detecting the status of the laser emission outlet (slit glass) protective shutter	Fig. 3-7	36-101
S21	CH-CLN-SNR Needle electrode cleaner detection sensor	Detecting the cleaning operation for the needle electrode (Detecting that the needle electrode cleaner has reached the limit position) (only for K)	Fig. 3-7	36-101
S22	ATTNR-SNR-Y Auto-toner sensor-Y	Detecting the toner density in the Y developer unit	Fig. 3-7	38-31
S23	ATTNR-SNR-M Auto-toner sensor-M	Detecting the toner density in the M developer unit	Fig. 3-7	38-31
S24	ATTNR-SNR-C Auto-toner sensor-C	Detecting the toner density in the C developer unit	Fig. 3-7	38-31
S25	ATTNR-SNR-K Auto-toner sensor-K	Detecting the toner density in the K developer unit	Fig. 3-7	38-31
S26	EXIT-SNR Exit sensor	Detecting paper exit	Fig. 3-9	45-101
S27	CLNG-SNR Paper clinging detection sensor	Detecting whether the paper is clinging to the transfer belt or not	Fig. 3-10	13-108
S28	RGST-SNR Registration sensor	Detecting paper transport at the registration roller section	Fig. 3-10	25-102
S29	TR2-SNR 2nd transfer roller position detection sensor	Detecting the contact/release status of the 2nd transfer roller	Fig. 3-10	11-102
S30	CST1-FEED-SNR 1st drawer feed sensor	Detecting paper transport and paper jam at the paper feeding system of the 1st drawer	Fig. 3-11	25-102
S31	CST1-TRY-SNR 1st drawer tray-up sensor	Detecting the lifting status of the tray in the 1st drawer	Fig. 3-11	20-30
S32	CST1-EMP-SNR 1st drawer empty sensor	Detecting the presence of paper in the 1st drawer	Fig. 3-11	20-30
S33	CST1-NEMP-SNR 1st drawer paper stock sensor	Detecting the paper remaining in the 1st drawer	Fig. 3-11	20-30
S34	CST2-FEED-SNR 2nd drawer feed sensor	Detecting paper transport and paper jam at the paper feeding system of the 2nd drawer	Fig. 3-11	26-101
S35	CST2-TRY-SNR 2nd drawer tray-up sensor	Detecting the lifting status of the tray in the 2nd drawer	Fig. 3-11	20-30
S36	CST2-EMP-SNR 2nd drawer empty sensor	Detecting the presence of paper in the 2nd drawer	Fig. 3-11	20-30

Symbol	Name	Function	Remarks	P-I
S37	CST2-NEMP-SNR 2nd drawer paper stock sensor	Detecting the paper remaining in the 2nd drawer	Fig. 3-11	20-30
S38	ADU-U-SNR ADU entrance sensor	Detecting transported paper at the automatic duplexing unit entrance section	Fig. 3-12	49-3
S39	ADU-L-SNR ADU exit sensor	Detecting transported paper inside the automatic duplexing unit	Fig. 3-12	49-3
S40	SFB-SNR Bypass paper sensor	Detecting the presence of paper on the bypass feed unit	Fig. 3-12	24-5
S41	SFB-FEED-SNR Bypass feed sensor	Detecting transported paper fed from the bypass feed unit	Fig. 3-12	24-5
S42	TNTRLK Auger lock detection sensor	Detecting the auger operation in the waste toner transport unit	Fig. 3-5	4-109
S43	DRM-SNR Color drum phase sensor	Detecting the rotation phase of Y, M and C drums	Fig. 3-7	16-20
S44	DRM-SNR2 K drum phase sensor	Detecting the rotation phase of K drum	Fig. 3-7	16-20
SW1	MAIN-SW Main switch	Turning the power of the equipment ON/OFF	Fig. 3-4	12-28
SW2	COV-INTLCK-SW Cover interlock switch	Supplying or shutting off AC power to the switching regulator (voltage-generating circuit interlocked with these covers) according to the opening/closing status of the front cover or automatic duplexing unit (Cover open: Shut off)	Fig. 3-10	7-112
SW3	TR-COV-SW Transfer cover switch	Detecting the opening/closing status of the transfer cover	Fig. 3-10	6-106
SW4	SIDE-COV-SW Side cover switch	Detecting the opening/closing status of the side cover	Fig. 3-11	26-102
SW5	CST1-SW 1st drawer detection switch	Detecting the presence of the 1st drawer	Fig. 3-11	21-102
SW6	CST2-SW 2nd drawer detection switch	Detecting the presence of the 2nd drawer	Fig. 3-11	21-102
SW7	ADU-SET-SW ADU opening/closing switch	Detecting the opening/closing status of the automatic duplexing unit	Fig. 3-12	48-7
SW8	UTN-COVER Waste toner cover open/close detection switch	Detecting the opening/closing status of the waste toner cover	Fig. 3-5	48-26
SW9	DAMP-HEATER-SW Damp heater switch	Enabling the damp heater	Fig. 3-13	

3. Electromagnetic spring clutches

Symbol	Name	Function	Remarks	P-I
CLT1	CST1-TR-H-CLT 1st drawer transport clutch (High speed)	Driving the transport roller of the 1st drawer (High speed)	Fig. 3-11	17-11
CLT2	CST1-TR-L-CLT 1st drawer transport clutch (Low speed)	Driving the transport roller of the 1st drawer (Low speed)	Fig. 3-11	17-11

Symbol	Name	Function	Remarks	P-I
CLT3	CST1-FEED-CLT 1st drawer feed clutch	Driving the feed roller and pickup roller of the 1st drawer	Fig. 3-11	20-29
CLT4	CST2-TR-L-CLT 2nd drawer transport clutch (Low speed)	Driving the transport roller of the 2nd drawer (Low speed)	Fig. 3-11	21-23
CLT5	CST2-TR-H-CLT 2nd drawer transport clutch (High speed)	Driving the transport roller of the 2nd drawer (High speed)	Fig. 3-11	21-23
CLT6	CST2-FEED-CLT 2nd drawer feed clutch	Driving the feed roller and pickup roller of the 2nd drawer	Fig. 3-11	20-29
CLT7	ADU-CLT ADU clutch	Driving the transport roller of the automatic duplexing unit	Fig. 3-12	48-16
CLT8	SFB-FEED-CLT Bypass feed clutch	Driving the transport roller, feed roller and pickup roller of the bypass feed unit	Fig. 3-12	23-20

4. Solenoids

Symbol	Name	Function	Remarks	P-I
SOL1	SFB-SOL Bypass pickup solenoid	Driving the lifting movement of the bypass pickup roller	Fig. 3-12	24-11
SOL2	SNR-SHUT-SOL Sensor shutter solenoid	Driving the sensor shutter of the image position aligning sensor (front / rear) and image quality sensor	Fig. 3-6	27-6

5. PC boards

Symbol	Name	Function	Remarks	P-I
CCD	PWA-F-CCD CCD driving PC board (CCD board)	Scanning originals with CCD	Fig. 3-4	12-11
SLG	PWA-F-SLG Scanning section control PC board (SLG board)	Controlling the scanning section	Fig. 3-4	12-38
DSP	PWA-F-DSP Display PC board (DSP board)	Controlling the whole control panel	Fig. 3-4	3-24
KEY	PWA-F-KEY Key PC board (KEY board)	Controlling the key switches and LEDs	Fig. 3-4	3-25
LDR-Y	PWA-F-LDR-Y Laser driving PC board-Y (LDR-Y board)	Driving the Y laser diode	Fig. 3-8	11-3
LDR-M	PWA-F-LDR-M Laser driving PC board-M (LDR-M board)	Driving the M laser diode	Fig. 3-8	11-3
LDR-C	PWA-F-LDR-C Laser driving PC board-C (LDR-C board)	Driving the C laser diode	Fig. 3-8	11-3
LDR-K	PWA-F-LDR-K Laser driving PC board-K (LDR-K board)	Driving the K laser diode	Fig. 3-8	11-3

Symbol	Name	Function	Remarks	P-I
SNS	PWA-F-SNS H-sync detection PC board (SNS board)	Detecting the laser beam position	Fig. 3-8	11-3
ADU	PWA-F-ADU ADU control PC board (ADU board)	Controlling the automatic duplexing unit	Fig. 3-12	48-30
SFB	PWA-F-SFB Paper width detection PC board (SFB board)	Detecting the width of paper on the bypass tray	Fig. 3-12	22-13
SYS	PWA-F-SYS System control PC board (SYS board)	Controlling the whole system and image processing	Fig. 3-13	9-17
LGC	PWA-F-LGC Logic PC board (LGC board)	Controlling the print engine section	Fig. 3-13	9-16
IMG	PWA-F-IMG Image processing PC board (IMG board)	Controlling the image processing	Fig. 3-13	9-8
FIL	PWA-F-FIL Filter PC board (FIL board)	• Filtering out the AC power noise • Power supplying to each damp heater	Fig. 3-13	8-2
RAM-S	PWA-F-SRAM-S SRAM board <for SYS board>	Storing the setting or adjustment value, etc. used for the control by the system control PC board	Fig. 3-13	9-18
RAM-L	PWA-F-SRAM-L SRAM board <for LGC board>	Storing the setting or adjustment value, etc. used for the control by the logic PC board	Fig. 3-13	9-14

6. Lamps and heaters

Symbol	Name	Function	Remarks	P-I
EXP	LP-EXPO Exposure lamp	Exposing originals	Fig. 3-4	29-6
ERS-Y	LP-ERS-Y Discharge LED-Y	Eliminating residual charge on the Y drum surface	Fig. 3-7	36-19
ERS-M	LP-ERS-M Discharge LED-M	Eliminating residual charge on the M drum surface	Fig. 3-7	36-19
ERS-C	LP-ERS-C Discharge LED-C	Eliminating residual charge on the C drum surface	Fig. 3-7	36-19
ERS-K	LP-ERS-K Discharge LED-K	Eliminating residual charge on the K drum surface	Fig. 3-7	36-19
LAMP1	LP-HTR-C Center heater lamp	Heating the center section of the fuser roller	Fig. 3-9	43-27
LAMP2	LP-HTR-S Side heater lamp	Heating the section of the both sides of the fuser roller	Fig. 3-9	43-28
LAMP3	LP-PR Pressure roller lamp	Heating the pressure roller	Fig. 3-9	44-35
LAMP4	LAMP-TRIPLE Sub heater lamp	Sub heating of the fuser roller (e-STUDIO4520C only)	Fig. 3-9	43-26
DH1	SCN-DH-L Scanner damp heater (Left)	Preventing condensation of the mirrors of the carriage	Fig. 3-14	12-22
DH2	SCN-DH-R Scanner damp heater (Right)	Preventing condensation of the lens	Fig. 3-14	12-32

Symbol	Name	Function	Remarks	P-I
DH3	DRM-DH-L Drum damp heater (Left)	Preventing condensation of the drum	Fig. 3-14	47-103
DH4	DRM-DH-R Drum damp heater (Right)	Preventing condensation of the drum	Fig. 3-14	36-26

7. Thermistors, thermopiles, and thermostats

Symbol	Name	Function	Remarks	P-I
THM1	THMS-DRM-Y Drum thermistor-Y	Detecting the surface temperature of the drum for Y	Fig. 3-7	38-33
THM2	THMS-DRM-K Drum thermistor-K	Detecting the surface temperature of the drum for K	Fig. 3-7	38-33
THM3	THMS-FBLT-F Fuser belt front thermistor	Detecting the surface temperature of the front end of the fuser belt	Fig. 3-9	43-21
THM4	THMS-PR-C Pressure roller center thermistor	Detecting the surface temperature of the center of the pressure roller	Fig. 3-9	44-14
THM5	THMS-PR-R Pressure roller rear thermistor	Detecting the surface temperature of the rear end of the pressure roller	Fig. 3-9	44-14
THMP1	THMP-FBLT-C Fuser belt center thermopile	Detecting the surface temperature of the center of the fuser belt	Fig. 3-9	46-4
THMP2	THMP-FBLT-R Fuser belt rear thermopile	Detecting the surface temperature of the rear end of the fuser belt	Fig. 3-9	46-4
THMO1	THERMO-FBLT-C Fuser belt center thermostat	Preventing overheating of the center portion of the fuser belt	Fig. 3-9	43-20
THMO2	THERMO-FBLT-S Fuser belt rear thermostat	Preventing overheating of the rear portion of the fuser belt	Fig. 3-9	43-19
THMO3	THERMO-PR Pressure roller thermostat	Preventing overheating of the pressure roller in the fuser unit	Fig. 3-9	44-13
THMO4	THERMO-SCN-DH Scanner damp heater thermostat	Controlling the temperature of the scanner damp heater	Fig. 3-14	12-22
THMO5	THERMO-DRM-DH-L Drum damp heater thermostat (Left)	Controlling the temperature of the drum damp heater	Fig. 3-14	47-11
THMO6	THERMO-DRM-DH-R Drum damp heater thermostat (Right)	Controlling the temperature of the drum damp heater	Fig. 3-14	36-27

8. Transformer

Symbol	Name	Function	Remarks	P-I
HVT	PS-HVT High-voltage transformer	Generating high-voltage and supplying it to the following sections • Main charger needle electrode • Main charger grid • Developer bias • Transfer bias	Fig. 3-13	8-8

9. Others

Symbol	Name	Function	Remarks	P-I
INV	INV Lamp inverter board	Controlling the exposure lamp	Fig. 3-4	29-7
TCP	TCP Touch panel	Displaying and entering various kinds of information	Fig. 3-4	3-22
P-INV	P-INV Panel inverter board	Controlling the LCD backlight	Fig. 3-4	3-26
HDD	HDD Hard disk	Saving program data and image data	Fig. 3-13	9-19
PS	PS-ACC Switching regulator	Generating DC voltage and supplying it to each section of the equipment	Fig. 3-13	8-9
BRK	BRK Breaker	Preventing overcurrent to the equipment	Fig. 3-13	8-106

3.4 System Block Diagram

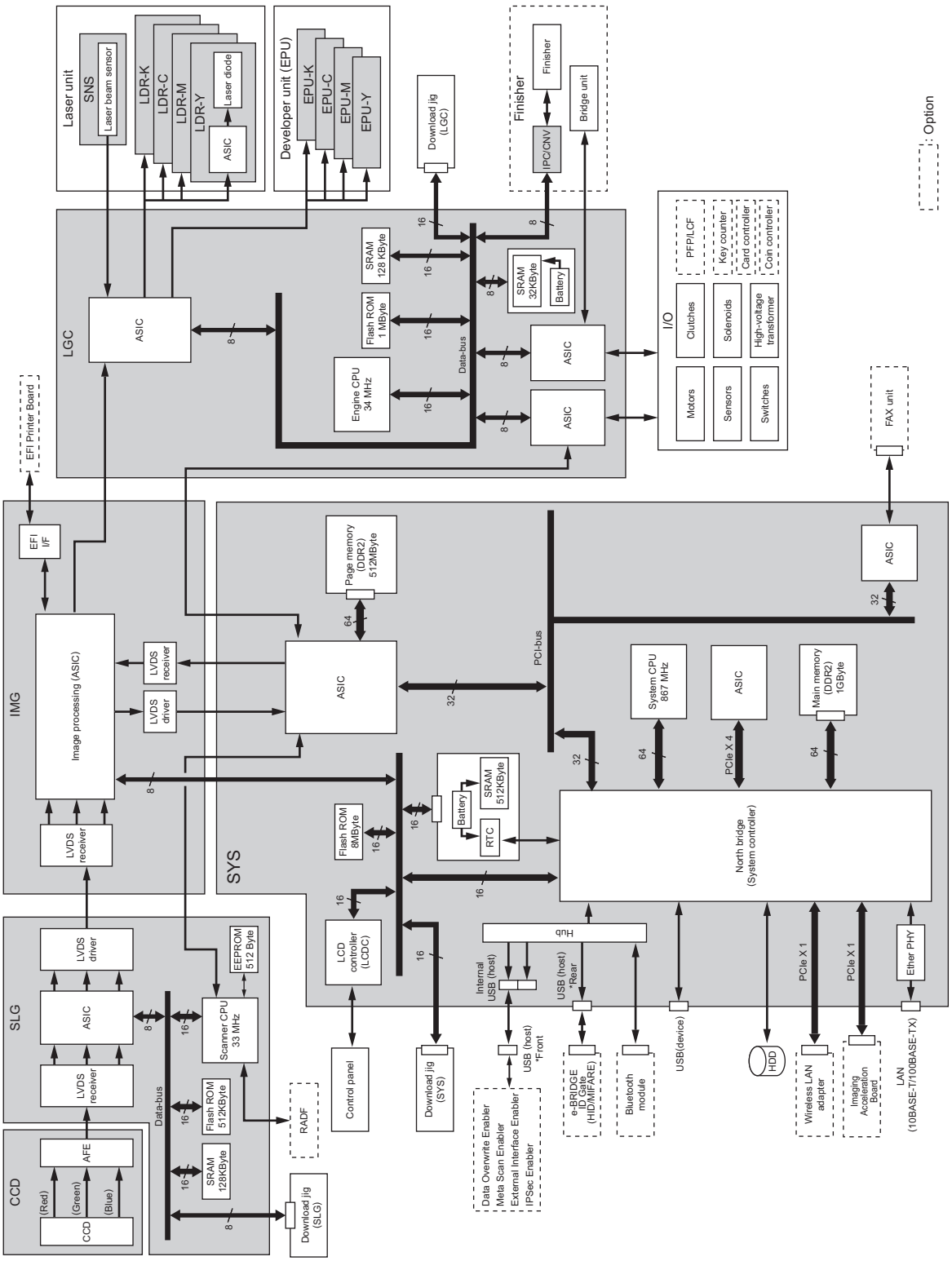


Fig. 3-15

3.5 Disassembly and Replacement of Covers

3.5.1 Front cover

(1) Open the front cover.
(2) Raise 2 hinge pins on the right and left, and then pull them out.
(3) Take off the front cover.

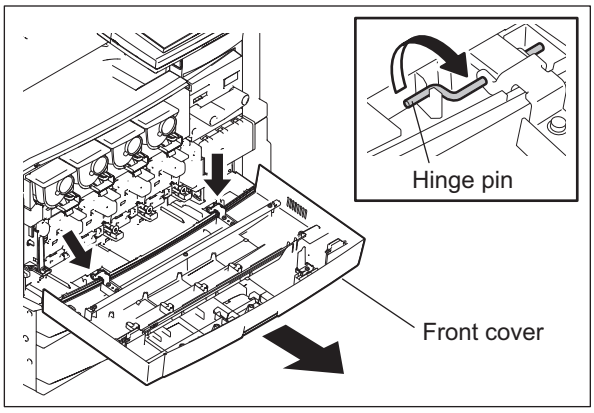


Fig. 3-16

3.5.2 Inner tray

(1) Open the front cover.
(2) Remove 2 screws and take off the inner tray.

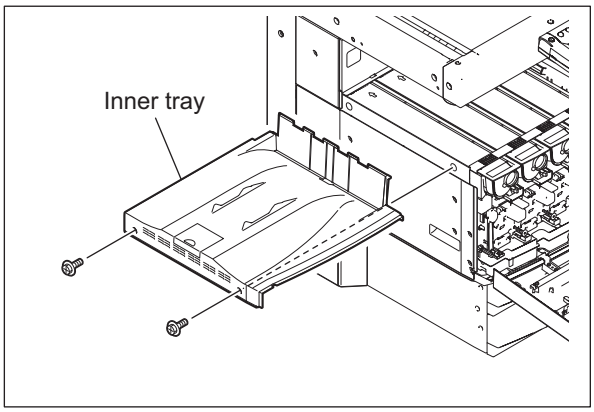


Fig. 3-17

3.5.3 Tray back cover

(1) Take off the ozone filter-2.
📖 P.13-36 "13.5.26 Ozone filter-2"
(2) Take off the inner tray.
📖 P.3-27 "3.5.2 Inner tray"
(3) Remove 1 screw and take off the tray back cover.

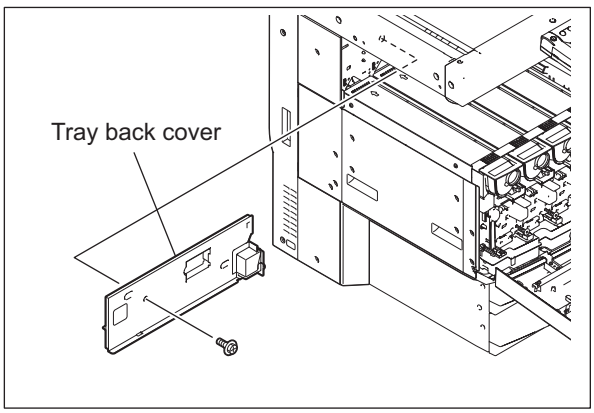


Fig. 3-18

3.5.4 Front upper cover

(1) Remove 2 screws and take off the front upper cover.

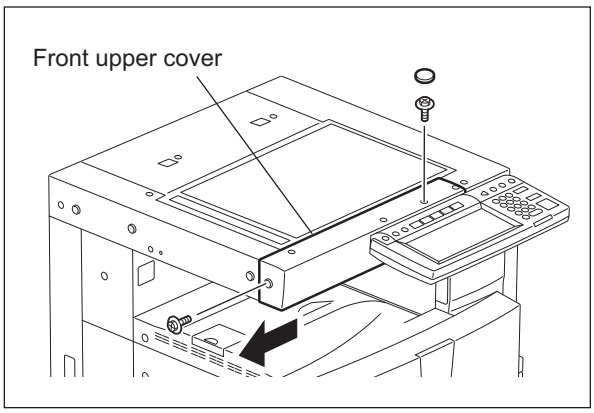


Fig. 3-19

3.5.5 Front right cover

(1) Open the front cover and ADU.
(2) Remove 2 screws and take off the TBU lifting lever.

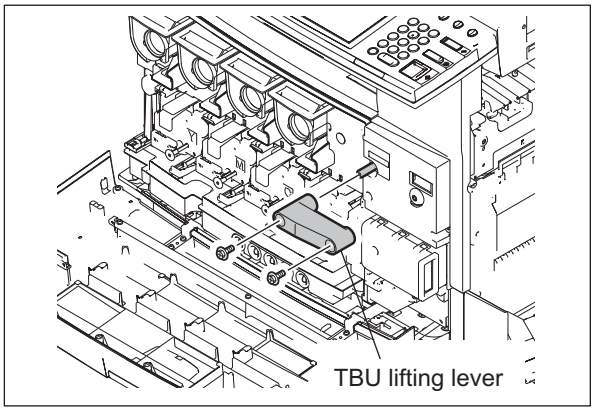


Fig. 3-20

(3) Release 2 latches and take off the front right cover.

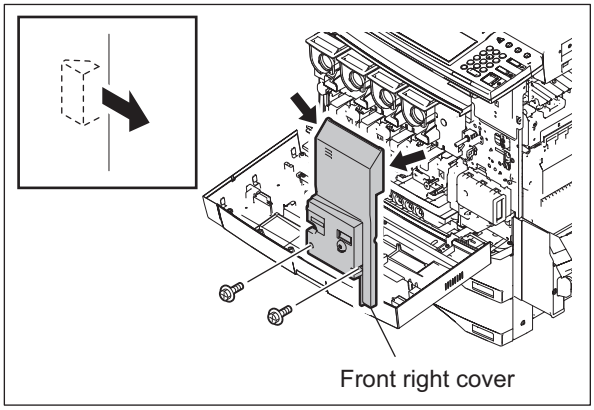


Fig. 3-21

3.5.6 Left upper cover

(1) Remove 3 screws and take off the left upper cover.

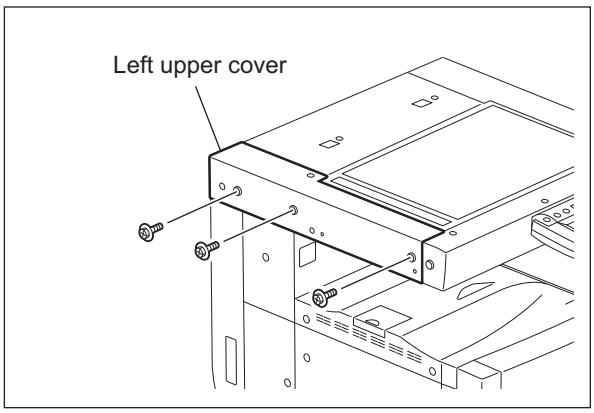


Fig. 3-22

3.5.7 Left cover

(1) Remove 7 screws and take off the left cover.

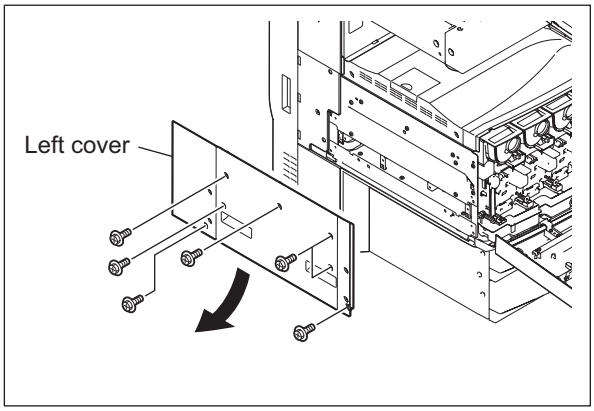


Fig. 3-23

3.5.8 Left lower cover

(1) Open the waste toner cover.
(2) Remove 6 screws and take off the left lower cover.

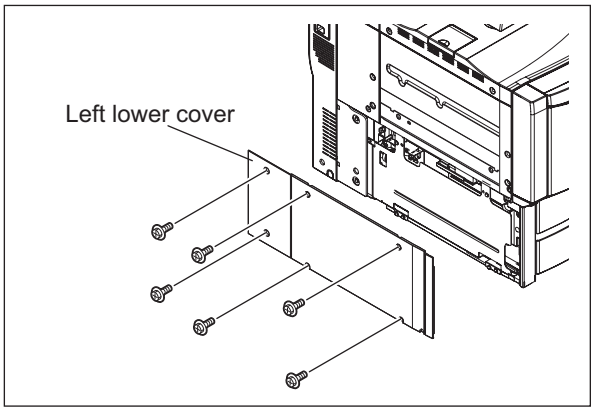


Fig. 3-24

3.5.9 Left rear cover

(1) Take off the ozone filter-1.
🕮 P.13-33 "13.5.21 Ozone filter-1"
(2) Take off the left cover.
🕮 P.3-29 "3.5.7 Left cover"
(3) Take off the left lower cover.
🕮 P.3-29 "3.5.8 Left lower cover"
(4) Remove 5 screws and take off the left rear cover.

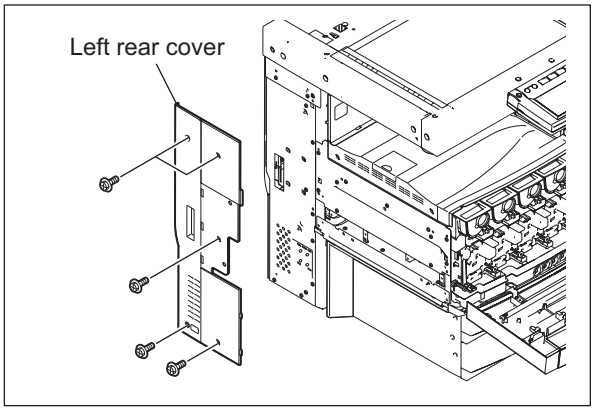


Fig. 3-25

3.5.10 Right upper cover

(1) Remove 4 screws and take off the right upper cover.

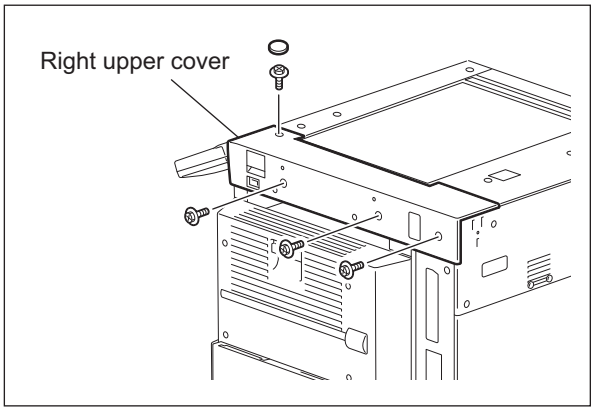


Fig. 3-26

3.5.11 Right rear cover

(1) Remove 2 screws and take off the right rear cover.

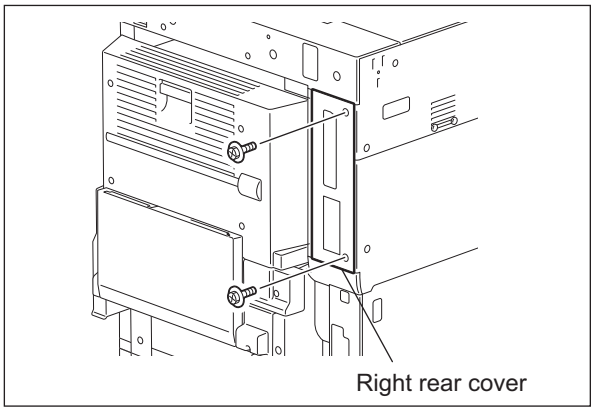


Fig. 3-27

3.5.12 Right rear hinge cover

(1) Open the ADU.
(2) Remove 2 screws and take off the right rear hinge cover.

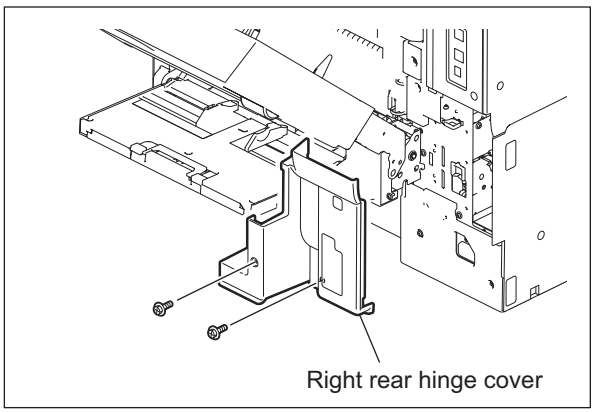


Fig. 3-28

3.5.13 Right lower cover

(1) Take off the right rear hinge cover.
P.3-31 "3.5.12 Right rear hinge cover"
(2) Remove 2 screws and take off the right lower cover.

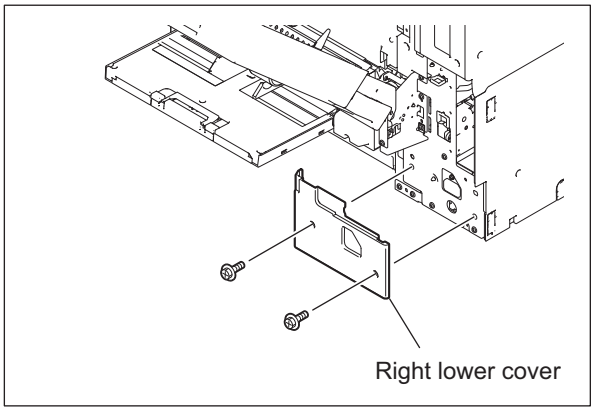


Fig. 3-29

3.5.14 Right front hinge cover

(1) Pull out the upper and lower drawers.
(2) Remove 2 screws and take off the right front hinge cover.

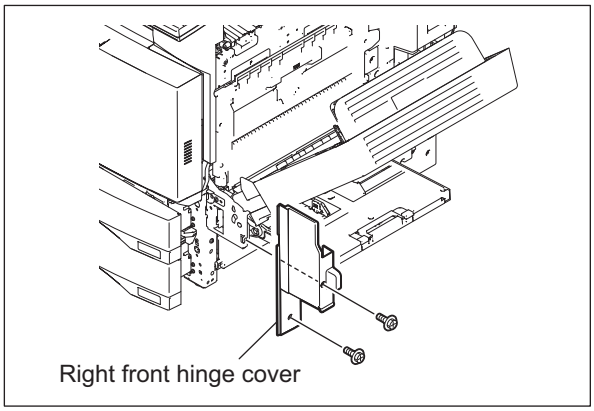


Fig. 3-30

3.5.15 Bypass rear cover

(1) Remove 1 screw and take off the bypass rear cover.

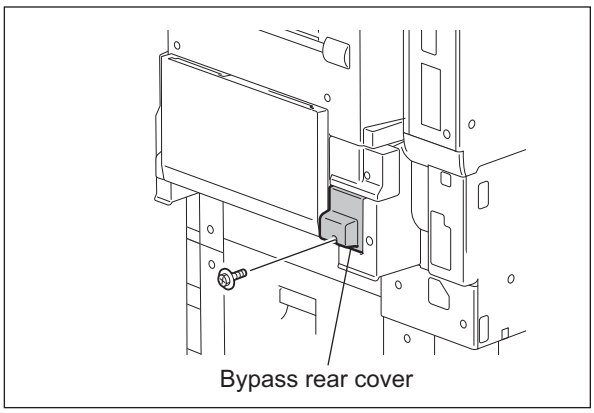


Fig. 3-31

3.5.16 Right inner cover

(1) Open the ADU and 2nd transfer unit.
(2) Remove 3 screws and take off the right inner cover.

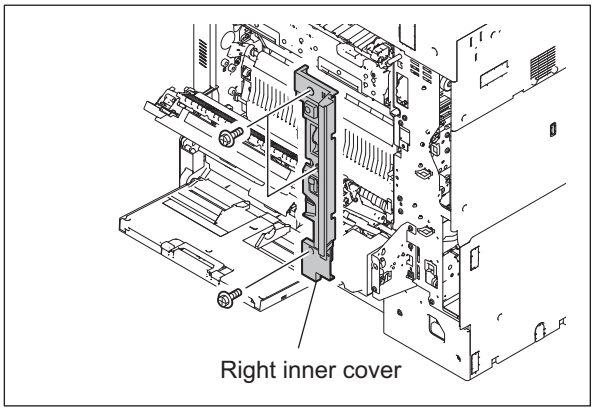


Fig. 3-32

3.5.17 Upper rear cover

(1) Take off the RADF or the platen cover.
(2) Take off the left upper cover.
📖 P.3-29 "3.5.6 Left upper cover"
(3) Take off the right upper cover.
📖 P.3-30 "3.5.10 Right upper cover"
(4) Remove 2 screws and take off the upper rear cover.

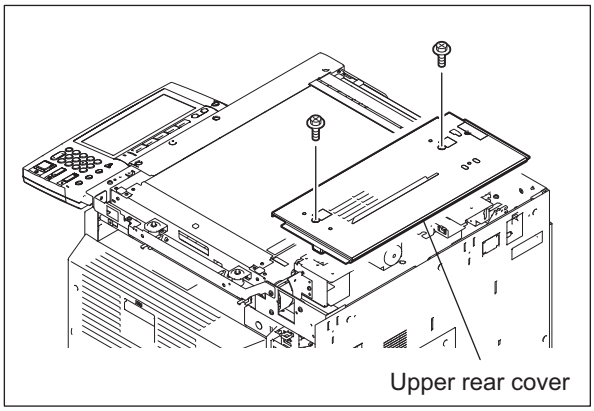


Fig. 3-33

3.5.18 Rear cover-1

(1) Remove 2 screws and take off the rear cover-1.

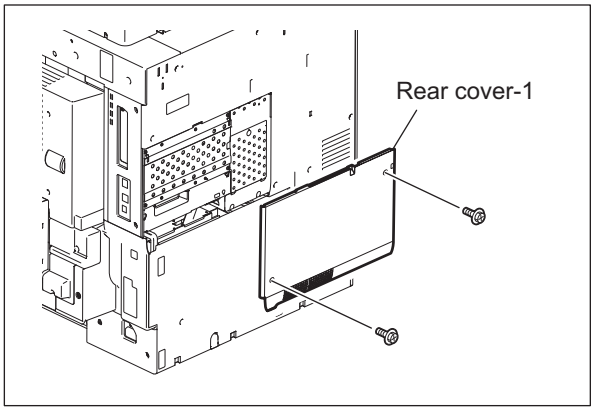


Fig. 3-34

3.5.19 Rear cover-2

(1) Take off the rear cover-1.
📖 P.3-33 "3.5.18 Rear cover-1"
(2) Remove 8 screws and take off the rear cover-2.

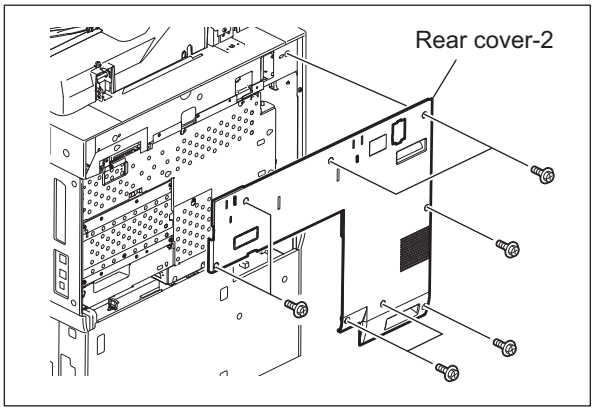


Fig. 3-35

3.5.20 Rear cover-3

(1) Take off the rear cover-2.
📖 P.3-33 "3.5.19 Rear cover-2"
(2) Remove 3 screws and take off the rear cover-3.

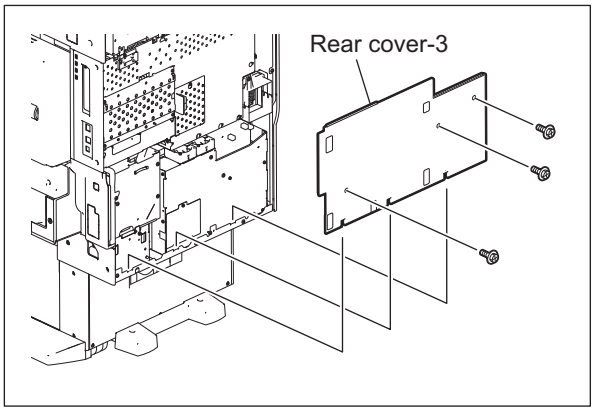


Fig. 3-36

3.5.21 Waste toner cover

(1) Open the waste toner cover.
(2) Take off the waste toner cover.

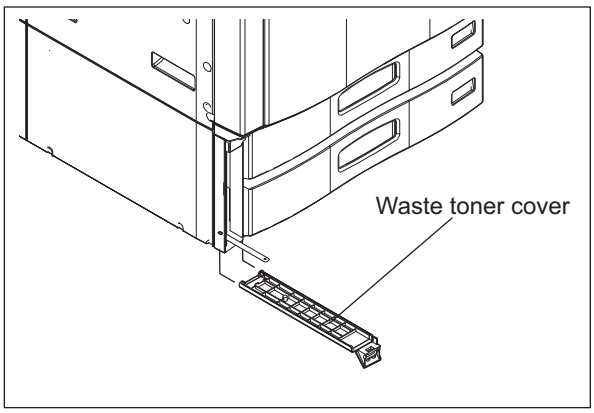


Fig. 3-37

4. COPY PROCESS

4.1 General Description

4.1.1 Expression of Colors

A variety of colors can be expressed by mixing the three primary colors: Yellow, magenta and cyan. Red can be created by mixing yellow and magenta; blue can be created by mixing magenta and cyan; green is created by mixing cyan and yellow; and mixing all the three primary colors allows you to obtain black.

This equipment has accomplished to improve reproducibility by adding black toner to the mixture of the above three colors at proper ratio.

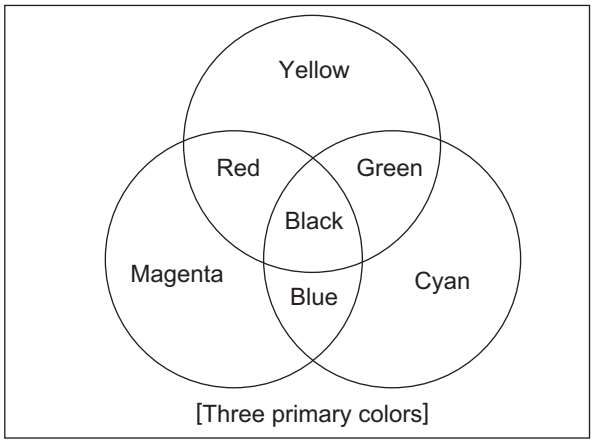


Fig. 4-1

4.1.2 4-Step Copy Process

In this equipment, 4 color process units (EPU), which include a drum, a developer unit and a main charger, for yellow, magenta, cyan and black are placed in parallel. Colors are developed in the order of Yellow (Y) → Magenta (M) → Cyan (C) → Black (K). An image with the 4 developed colors is transferred on the transfer belt by layering the colors one by one (1st transfer). Then the image is formed on a sheet by being transferred from the transfer belt by the 2nd transfer roller (2nd transfer).

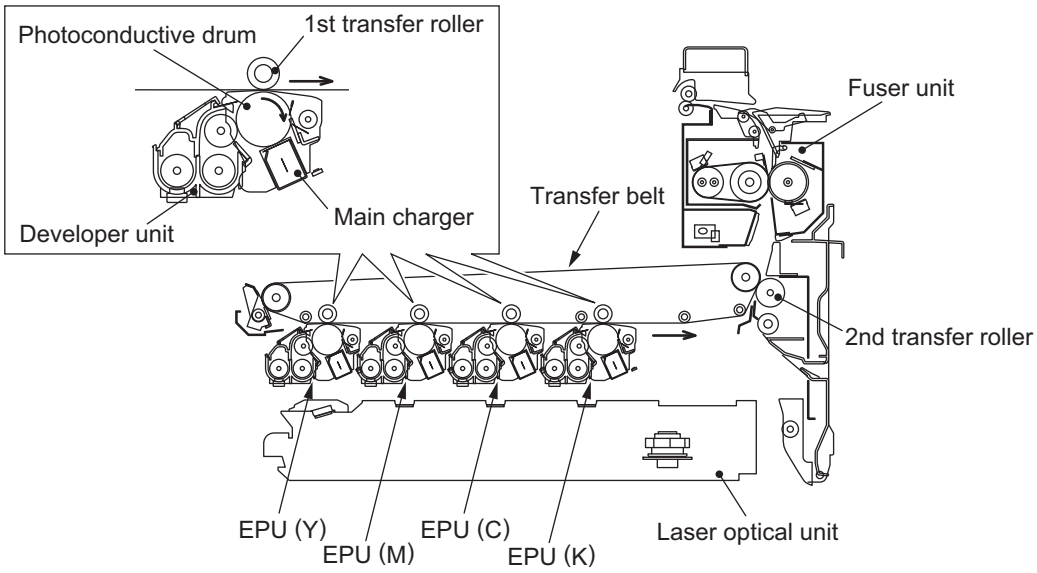


Fig. 4-2

4.2 Description of Operation

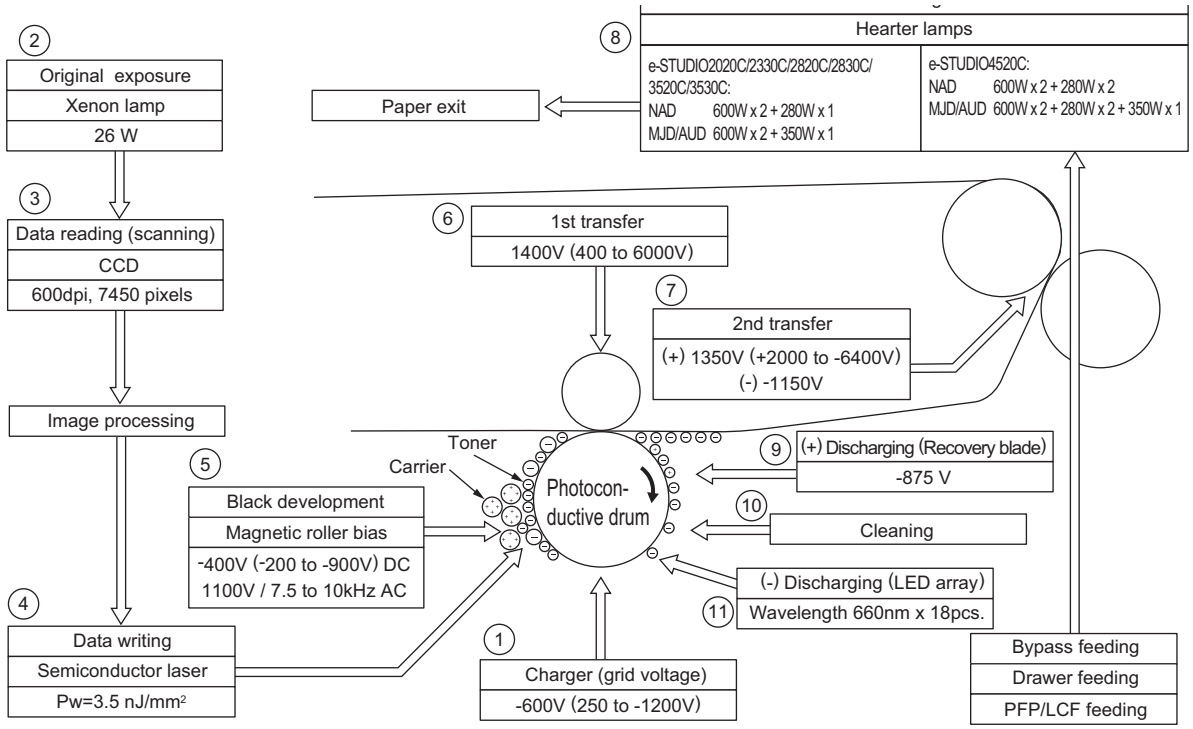


Fig. 4-3

(1) Charging: Places a negative charge on the surface of the photoconductive drum.

↓

(2) Original exposure: Converts images on the original into optical signals.

↓

(3) Data reading: The optical image signals are read into CCD and converted into electrical signals.

↓

(4) Data writing: The electrical image signals are changed to light signals (by laser emission) which expose the surface of the photoconductive drum.

↓

(5) Development: Negatively-charged toner is made to adhere to the photoconductive drum, producing a visible image.

↓

(6) 1st transfer: Transfers the visible image (toner) on photoconductive drum to the transfer belt.

↓

(7) 2nd transfer: Transfers the visible image (toner) on the transfer belt to paper.

↓

(8) Fusing: Fuses the toner image to the paper by applying heat and pressure.

↓

(9) (+) Discharging: The conductive recovery blade eliminates the (+) charges on the photoconductive drum applied during the transfer stage.

↓

(10) Blade cleaning: While scraping off the residual toner from the drum by the blade.

↓

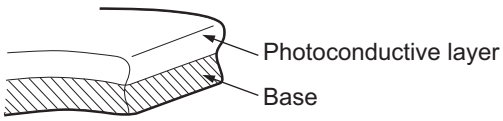
(11) (–) Discharging: Eliminates the residual (–) charge from the surface of the photoconductive drum.

4.3 Functions

[A] Photoconductive drum

The photoconductive drum consists of two layers.
The outer layer is a photoconductive layer made of an organic photoconductive carrier (OPC), and the inner layer is an aluminum conductive base in a cylindrical form.
The photoconductive carrier has a special property: when it is exposed to light, the electrical resistance it possesses increases or decreases with the strength of the light.
Example:

- Strong incident light→Decreases resistance (works as a conductor.)
- Weak incident light→Increases resistance (works as an insulator.)

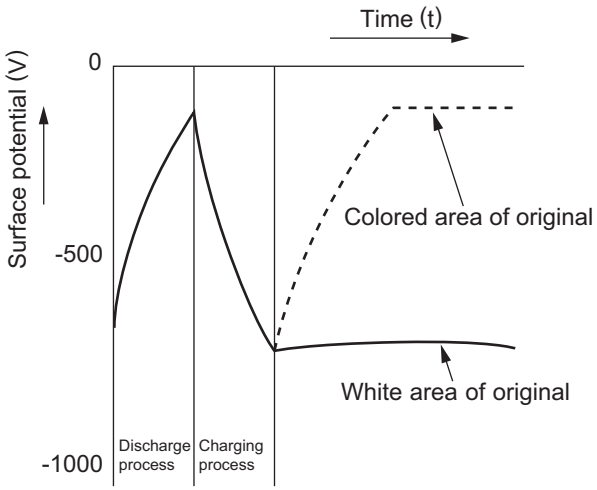


Structure of the photoconductive drum
(Example of OPC)

Fig. 4-4

[A-1] Formation of electrostatic latent images

In the processes of charging, data reading, data writing, and discharging described below, the areas on the drum corresponding to colored areas on the original are deprived of negative charge, while the areas on the drum corresponding to white areas retain the negative charge. Thus it forms a negative charge image on the drum surface.
As this negative charge image on the drum is not visible to the human eye, it is called an “electrostatic latent image.”



Electric potential of the photoconductive drum

Fig. 4-5

[B] Charging

Charging is a process to apply charge evenly to the drum surface.
The needle electrode produces negative corona discharge, which is controlled by the grid so that the drum surface is evenly charged with negative potential.
The surface potential on the drum is determined by the grid potential and is controlled to a fixed value by the grid control circuit.

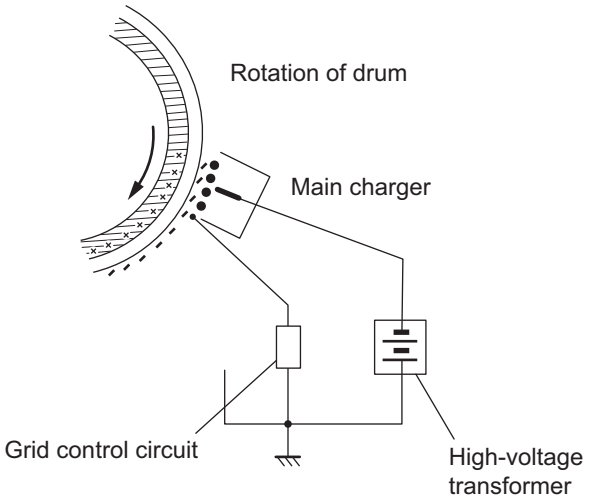


Fig. 4-6

[C] Data reading (scanning)

Data reading is a process of illuminating the original with light and converting the reflected light into electrical signals.
The light reflected from the original is directed to the Charge Coupled Device (CCD) and this optical image information is converted to electrical signals (image signals), which are then transmitted to the image processing section via the scanning section control PC board.
The CCD for color processing has RGB filters provided over its surface, which allow the CCD to read the light amount in the respective ranges of wavelength. The image data corresponding to the respective RGB colors is then transmitted to the image processing section.

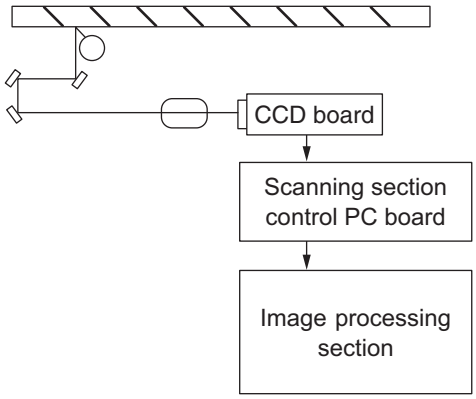


Fig. 4-7

(Example)

CCD light receiving amount	Value of image signals to be output
Light	255
	Difference between "light " and "dark" is divided into 256 steps.
Dark	0

Fig. 4-8

[D] Data writing

Data writing is a process of converting the image signals transmitted from the image processing section into light signals and exposing the drum surface with the light signal.
Namely, the image signals transmitted from the image processing section are converted into optical signals (laser emission) by the semiconductor laser element, which are then used to expose the drum surface, thus forming an electrostatic latent image there.

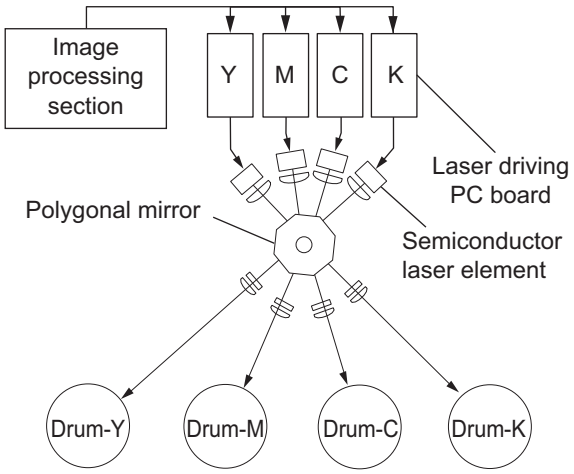


Fig. 4-9

[E] Development

Development is a process of making the electrostatic latent images visible to the eye (visible image). Developer material is supplied to the photoconductive drum surface by means of a magnetic roller, allowing the toner in the developer material to adhere to the areas on the drum surface where the potential is lower than the developer bias which is applied to the magnetic roller (reverse development).

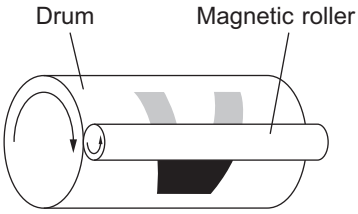


Fig. 4-10

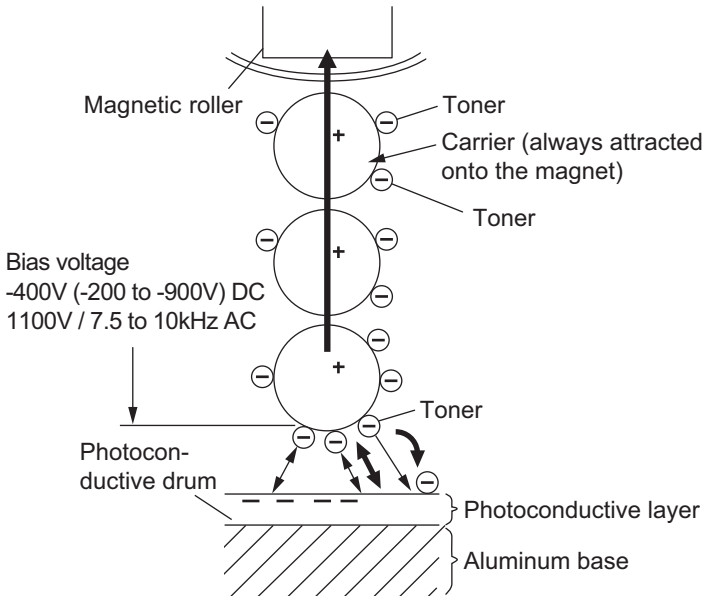


Fig. 4-11

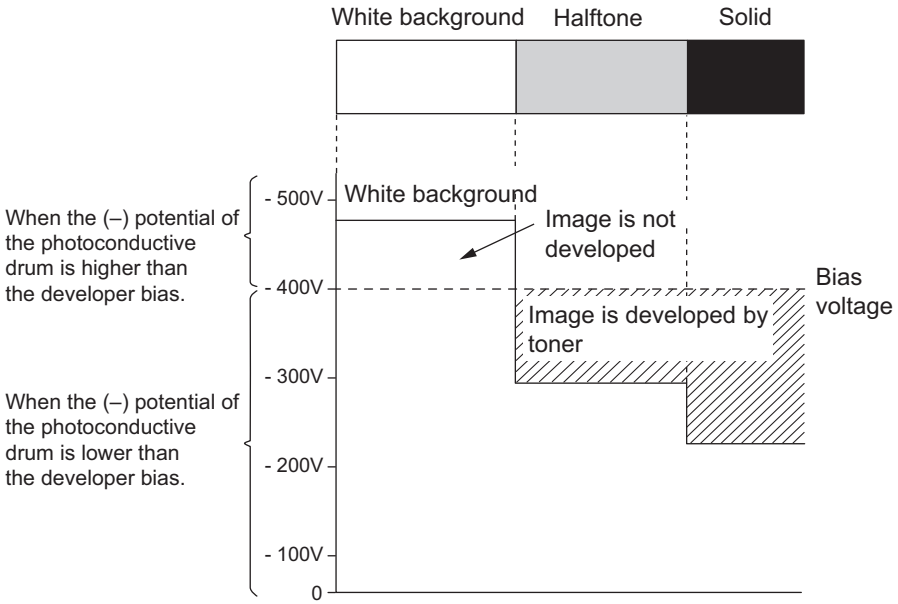


Fig. 4-12

[E-1] About developer material

The developer material is comprised of a mixture of toner and carrier. The toner is charged to a negative polarity and the carrier to a positive polarity, due to the friction with each other caused by mixing.

Toner: Mainly consists of resin and coloring.

Carrier: Consists of ferrite, and over its surface resin coating to provide consistent frictional electrification.

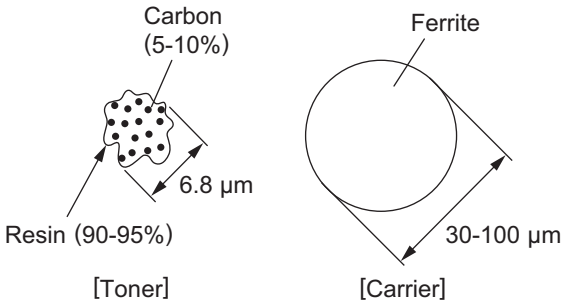


Fig. 4-13

Note:

If the developer material is used for a long period of time (beyond its normal life span), toner will become caked onto the carrier.

↓

The performance of the carrier is lowered.

Result:

1. Image density is lowered.
2. Toner scattering occurs.
3. Background fogging occurs.

Solution: Replace the developer material.

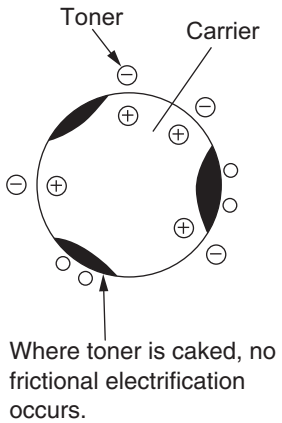


Fig. 4-14

[E-2] Magnetic roller

- Magnetic brush development technique

Inside magnetic rollers, the south and north poles are arranged as shown in the figure below. The developer material forms a brush-like fluff which contacts the photoconductive drum surface.

↓

This is caused by the lines of magnetic force between the south and north poles.

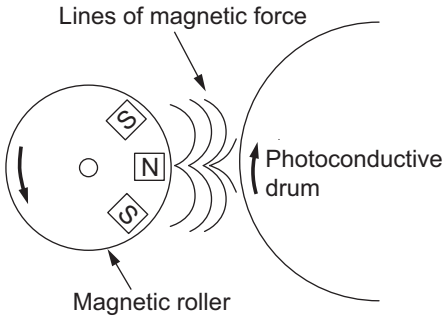


Fig. 4-15

[F] 1st transfer

1st transfer is a process of transcribing the toner image (visible image) formed on the photoconductive drum to the transfer belt. A positive bias is applied to the 1st transfer roller, causing the transfer belt to be positively charged. This in turn helps to form an electric field E between the transfer belt (positive) and the photoconductive layer of the photoconductive drum (grounded), thus making the toner image transferred to the transfer belt. In the copy process of this equipment, images are transferred in the order of Y→M→C→K on the transfer belt.

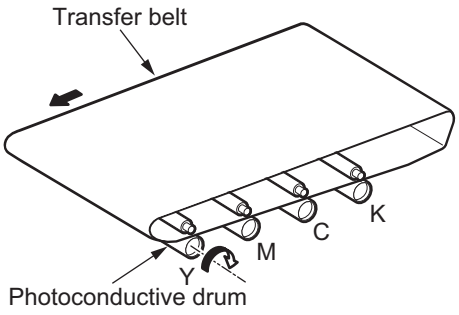


Fig. 4-16

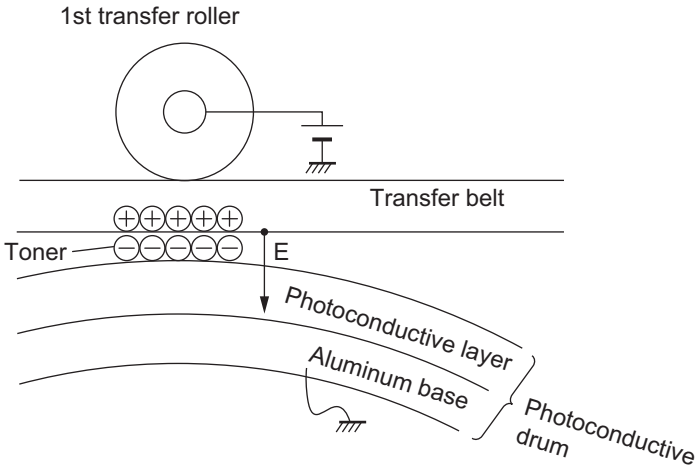


Fig. 4-17

[G] 2nd transfer

An electric field is formed between the 2nd transfer roller and the 2nd transfer facing roller, which generates a paper polarization and thus the toner is transferred from the belt to the paper.
When the negative bias is applied to the 2nd transfer facing roller, the 2nd transfer roller is charged (positive), and thus the toner is transferred from the belt to paper.

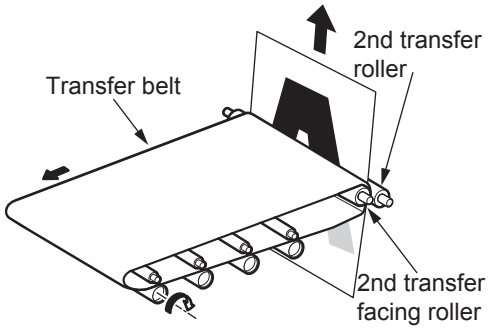


Fig. 4-18

[H] Fusing process

Fusing is a process of melting the toner on the paper and fixing it firmly onto the paper.
Method:
The softening point of the toner (main component: resin) is 105-120°C.

↓

(Heat) Toner is melted by the fuser belt.

+

(Pressure) The fuser belt is pressed against the pressure roller by the springs to increase adherence of the melted toner to the paper.

↓

The paper is subjected to the heat and pressure when passing through the fuser belt and the pressure roller.

↓

(Fusing) The toner on the paper is fused to it.

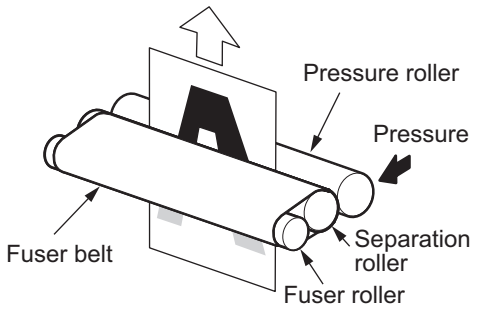


Fig. 4-19

[I] (+) Discharging process

Eliminating the (+) charge on the photoconductive drum applied during the transfer stage.

[I-1] Elimination of transfer charge

With this OPC photoconductive drum, (+) charge on their surface cannot be eliminated optically. Therefore, (–) voltage is applied to the conductive recovery blade, which is pressed against the drum, to eliminate the (+) charge applied at the transfer process.

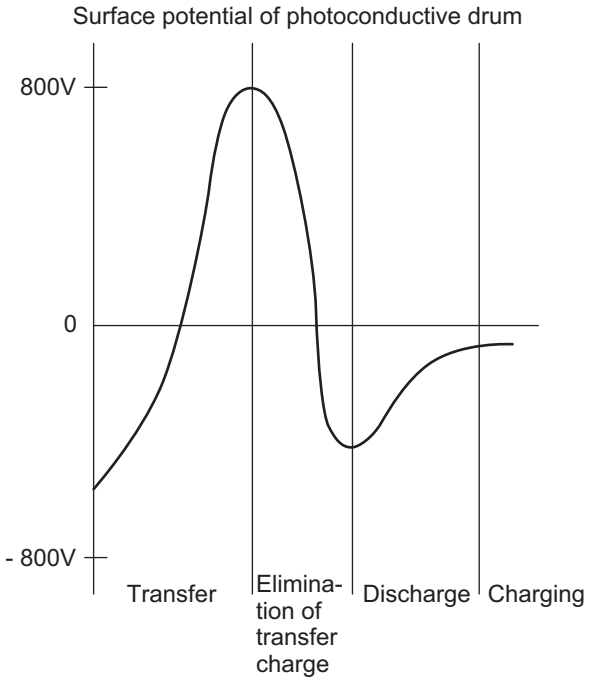


Fig. 4-20

[J] Cleaning

The edge of the cleaning blade is pressed against the photoconductive drum surface to scrape off residual toner. The toner removed is then caught by the conductive recovery blade in order to prevent the toner from scattering to outside of the cleaner.

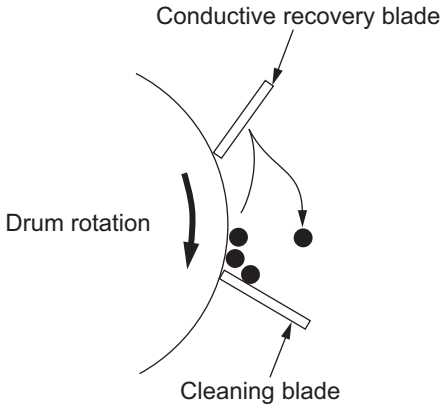


Fig. 4-21

[K] (–) Discharging process

Discharging is a process of eliminating the (–) charge remaining on the photoconductive drum before the next charging process.
If the charge remaining on the photoconductive drum is not eliminated, the following phenomenon would occur:

(–) charge remaining on the photoconductive drum surface causes uneven application of the charge for the next copying.
↓
The next copy obtains a double image. (The preceding image remains.)

To prevent this:
The entire surface of the photoconductive drum is flooded with light by the discharge LED array.
↓
The photoconductive drum becomes electrically conductive.
↓
All of the (–) charge remaining on the photoconductive drum is conducted away to ground (However, (+) charge is eliminated by the conductive blade as mentioned in 9)).
↓
Preparation for the next copying process is completed.

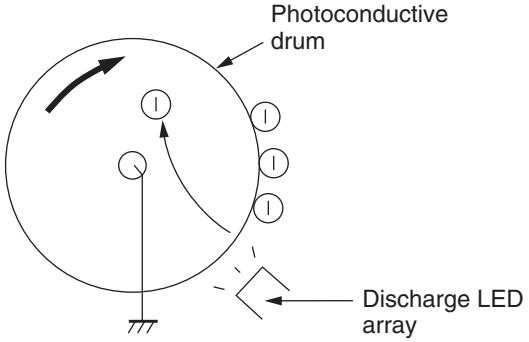


Fig. 4-22

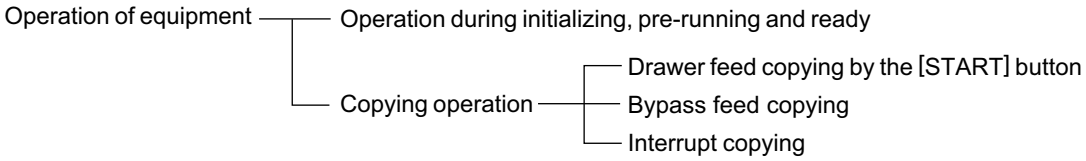
4.4 Comparison with e-STUDIO2500C/3500C/3510C

Process		e-STUDIO2500C/3500C/3510C	e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C	e-STUDIO4520C
1. Photoconductive drum	Drum	OD-FC35 (OPC drum)	←	
	Sensitivity	Highly sensitized drum (ø30)	←	
2. Charging		Scorotron type -300 to -1200 V (grid voltage) (adjusting by image quality control)	←	
3. Data writing	Light source	Semiconductor laser	←	
	Light amount	3.5 nJ/mm^2	←	
4. Image control		Image quality control by detecting toner adhesion amount	←	
5. Development	Magnetic roller	One magnetic roller	←	
	Auto-toner detection	Magnetic bridge-circuit method	←	
	Toner supply	Toner cartridge replacing method	←	
	Toner-empty detection	Density detection method	←	
	Toner	NAD T-FC35-K, T-FC35-Y T-FC35-M, T-FC35-C MJD T-FC35E-K, T-FC35E-Y T-FC35E-M, T-FC35E-C CND T-FC35C-K, T-FC35C-Y T-FC35C-M, T-FC35C-C Others T-FC35D-K, T-FC35D-Y T-FC35D-M, T-FC35D-C (K: Black, Y: Yellow, M: Magenta, C: Cyan)	NAD T-FC28-K, T-FC28-Y T-FC28-M, T-FC28-C MJD T-FC28E-K, T-FC28E-Y T-FC28E-M, T-FC28E-C CND T-FC28C-K, T-FC28C-Y T-FC28C-M, T-FC28C-C Others T-FC28D-K, T-FC28D-Y T-FC28D-M, T-FC28D-C (K: Black, Y: Yellow, M: Magenta, C: Cyan)	
	Developer material	D-FC35K (black) D-FC35Y (yellow) D-FC35M (magenta) D-FC35C (cyan)	D-FC28-K (black) D-FC28-Y (yellow) D-FC28-M (magenta) D-FC28-C (cyan)	
	Developer bias	DC -200 to -900V (adjusting by image quality control) AC 1100 V / 7.5 to 10 kHz	←	
6. Transfer	1st transfer	Transfer belt method	←	
	2nd transfer:	Transfer roller method	←	
7. Separation		Self-separation by transfer belt and 2nd transfer roller	←	
8. Photoconductive drum cleaning	Method	Blade cleaning	←	
	Recovered toner	Non-reusable	←	
	Transfer charge removal	Discharging by the conductive recovery blade	←	
9. Transfer belt cleaning		Blade cleaning	←	
10.Discharge		LED array (red)	←	

Process		e-STUDIO2500C/3500C/3510C	e-STUDIO2020C/ 2330C/2820C/ 2830C/3520C/ 3530C	e-STUDIO4520C
11.Fusing	Method	Belt fusing system	←	
		Fuser roller: Aluminium roller (ø30) (Heater lamp: 600 W x 2)	Fuser roller: Aluminium roller (ø30) (Heater lamp: 600 W x 2)	Fuser roller: Aluminium roller (ø30) (Heater lamp: 600 W x 2, 280 W x 1)
		Fuser belt: PFA tube belt (ø60)	←	
		Fuser roller: Sponge roller (ø38)	←	
		Pressure roller: Silicon rubber roller, (Surface-PFA tube)(ø40) (Heater lamp: 300 W x 1)	Pressure roller: Silicon rubber roller, (Surface-PFA tube)(ø40) (Heater lamp: 280 W x 1 (100 V series) 350 W x 1 (200 V series)	
	Cleaning	None	←	
	Heater temperature	ON/OFF control and power control by thermistor	←	
	Heater	Heater lamp	←	

5. GENERAL OPERATION

5.1 Overview of Operation



5.2 Description of Operation

5.2.1 Warming-up

1. Initialization
   → Power ON
   → Heater lamps (LAMP1,2,3) ON
   → Set number “1”, reproduction ratio “100%” and “Wait Warming Up” are displayed.
   → Fan motors ON
   → Initialization of laser optical system
   - The polygonal motor (M13) rotates at high speed.
   → Initialization of feeding system
   - Each drawer tray goes up.
   → Pre-running operation is stopped after five seconds.
   → Drum phasing
   - Drum motor (M10) is turned ON.
   - Transfer belt motor (M7) is turned ON.
   → Cleaning of transfer belt
   - (Performs color registration control.)*1
   - (Performs image quality control.)*1
   → Initialization of scanning system
   - The carriage moves to the home position.
   - The carriage moves to the peak detection position.
   - The exposure lamp (EXP) is turned ON.
   - Peak detection (white color is detected by the shading correction plate)
   - The exposure lamp (EXP) is turned OFF.
   - Pre-scanning <forward/backward> moves by 420 mm <A3 (landscape)>.
   → The polygonal motor (M13) rotates at low speed.
   → “READY (WARMING UP)” is displayed.

2. Pre-running operation
   Pre-running operation is started when the temperature of the fuser belt surface reaches a certain level.
   → Fuser motor (M17) is turned ON.
   - Fuser roller rotation.

3. When the temperature of the fuser belt surface becomes sufficient for fusing,
   → “READY” is displayed.

*1: Image quality control and color registration control should be performed only at change of environment or periodical performing timing.

5.2.2 Ready (ready for copying)

→ Buttons on the control panel enabled
→ When no button is pressed for a certain period of time,
- Set number “1” and reproduction ratio “100%” are displayed. Equipment returns to the normal ready state.

5.2.3 Drawer feed copying (1st drawer paper feeding)

1. Press the [START] button ON
   → "READY" changes to "COPYING"
   → Exposure lamp (EXP) turned ON
   → Scan motor (M1) turned ON→ Carriages-1 and -2 move forward
   → The polygonal motor (M13) rotates at high speed.
   → Drum motor (M10), transport motor (M20), transfer belt motor (M7), developer unit motor (M9), fuser motor (M17) and exit motor (M18) turned ON
   - Drum, transfer belt, fuser unit, developer unit and exit roller are driven

2. Drawer paper feeding
   → Fans rotated at high speed and 1st drawer feed clutch (CLT3) turned ON
   - Pickup roller, feed roller, separation roller and transport roller start to rotate
   → Paper reaches the 1st drawer feed sensor (S30)
   - 1st drawer feed sensor (S30) is turned ON
   → Paper reaches the registration roller
   - Registration sensor (S28) is turned ON and aligning is performed
   → 1st drawer feed clutch (CLT1) is turned OFF after a certain period of time

3. A certain period of time passed after the carriage operation
   → Registration motor (M19) is turned ON after a certain period of time→Paper is transported to the transfer area
   → Copy counter operates

4. Completion of scanning
   → Exposure lamp (EXP) turned OFF
   → Scan motor (M1) turned OFF
   →Registration motor (M19) turned OFF (after the trailing edge of the paper passed the registration roller)
   → "READY (PRINTING)" is displayed

5. Printing operation
   1) Color printing operation
   → Drum switching motor (M11) turned ON
   - The drum switching detection sensor (S19) checks whether the equipment is in the color or black printing status, and if it is in the black printing status, the motor (M11) is turned ON to switch the status to color printing.
   → Drum motor (M10), transfer belt motor (M7), discharge LED-Y, -M, -C, -K (ERS) and cleaning blade bias turned ON
   → Main charger bias turned ON
   → 1st transfer roller cam motor (M8) turned ON
   - Contact the 1st transfer rollers (Y, M and C) to the transfer belt
   → YMCK developer bias (DC) and developer unit motor (M9) turned ON
   → Registration motor (M19) turned ON
   - Contact the 2nd transfer roller to the transfer belt
   → 2nd transfer bias turned ON
   → YMC and K developer bias (AC) turned ON
   → Laser emission (yellow image)
   → 1st transfer bias (Y) turned ON
   - 1st transfer of yellow image (Yellow image is transferred to the transfer belt)
   → 1st transfer bias (Y) turned OFF
   → Laser emission (magenta image)
   → 1st transfer bias (M) turned ON
   - 1st transfer of magenta image (Magenta image is transferred to the transfer belt)
   → 1st transfer bias (M) turned OFF
   → Laser emission (cyan image)
   → 1st transfer bias (C) turned ON
   - 1st transfer of cyan image (Cyan image is transferred to the transfer belt)

→ 1st transfer bias (C) turned OFF
→ Laser emission (black image)
→ 1st transfer bias (K) turned ON
- 1st transfer of black image (Black image is transferred to the transfer belt)
→ 1st transfer bias (K) turned OFF
→ 1st transfer roller cam motor (M8) turned OFF
- Release the 1st transfer rollers (Y, M and C) from the transfer belt
→ 2nd transfer of YMCK image (YMCK image on the transfer belt is transferred to the paper)
→ Main charger turned OFF
→ Developer unit motor (M9) and developer bias (YMC and K) turned OFF
→ Registration motor (M19) turned ON
- Release the 2nd transfer roller from the transfer belt
→ 2nd transfer bias turned OFF
→ Drum phasing
→ Drum motor (M10), transfer belt motor (M7), discharge LED-Y, -M, -C, -K (ERS) and cleaning blade bias turned OFF

2) Black printing operation

→ Drum switching motor (M11) turned ON
- The drum switching detection sensor (S19) checks whether the equipment is in the color or black printing status, and if it is in the color printing status, the motor (M11) is turned ON to switch the status to black printing.

→ Drum motor (M10), transfer belt motor (M7), discharge LED-K (ERS) and cleaning blade bias turned ON
→ Main charger bias turned ON
→ K developer bias (DC) and developer unit motor (M9) turned ON
→ Registration motor (M19) turned ON
- Contact the 2nd transfer roller to the transfer belt
→ 2nd transfer bias turned ON
→ K developer bias (AC) turned ON
→ Laser emission (black image)
→ 1st transfer bias (K) turned ON
- 1st transfer of black image (Black image is transferred to the transfer belt)
→ 1st transfer bias (K) turned OFF
→ 2nd transfer of K image (K image on the transfer belt is transferred to the paper)
→ Main charger turned OFF
→ Developer unit motor (M9) and developer bias (K) turned OFF
→ Registration motor (M19) turned ON
- Release the 2nd transfer roller from the transfer belt
→ 2nd transfer bias turned OFF
→ Drum phasing
→ Drum motor (M10), transfer belt motor (M7), discharge LED-K (ERS) and cleaning blade bias turned OFF

6. Paper exiting
→ The exit sensor (S26) detects the trailing edge of the paper
→ Toner recovery auger, discharge LED (ERS) and cleaning blade bias turned OFF
→ Drum motor (M10), transfer belt motor (M7), transport motor (M20), developer unit motor (M9), fuser motor (M17) and exit motor (M18) turned OFF
→ The polygonal motor (M4) rotates at low speed.
→ Drum, fuser unit and developer unit are stopped
- Fans return to rotate at the normal rotation speed
→ “READY” is displayed and the equipment enters into ready mode

Timing chart for copying (A4/LT size, 1 sheet from 1st drawer)

1. Color copy (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C)

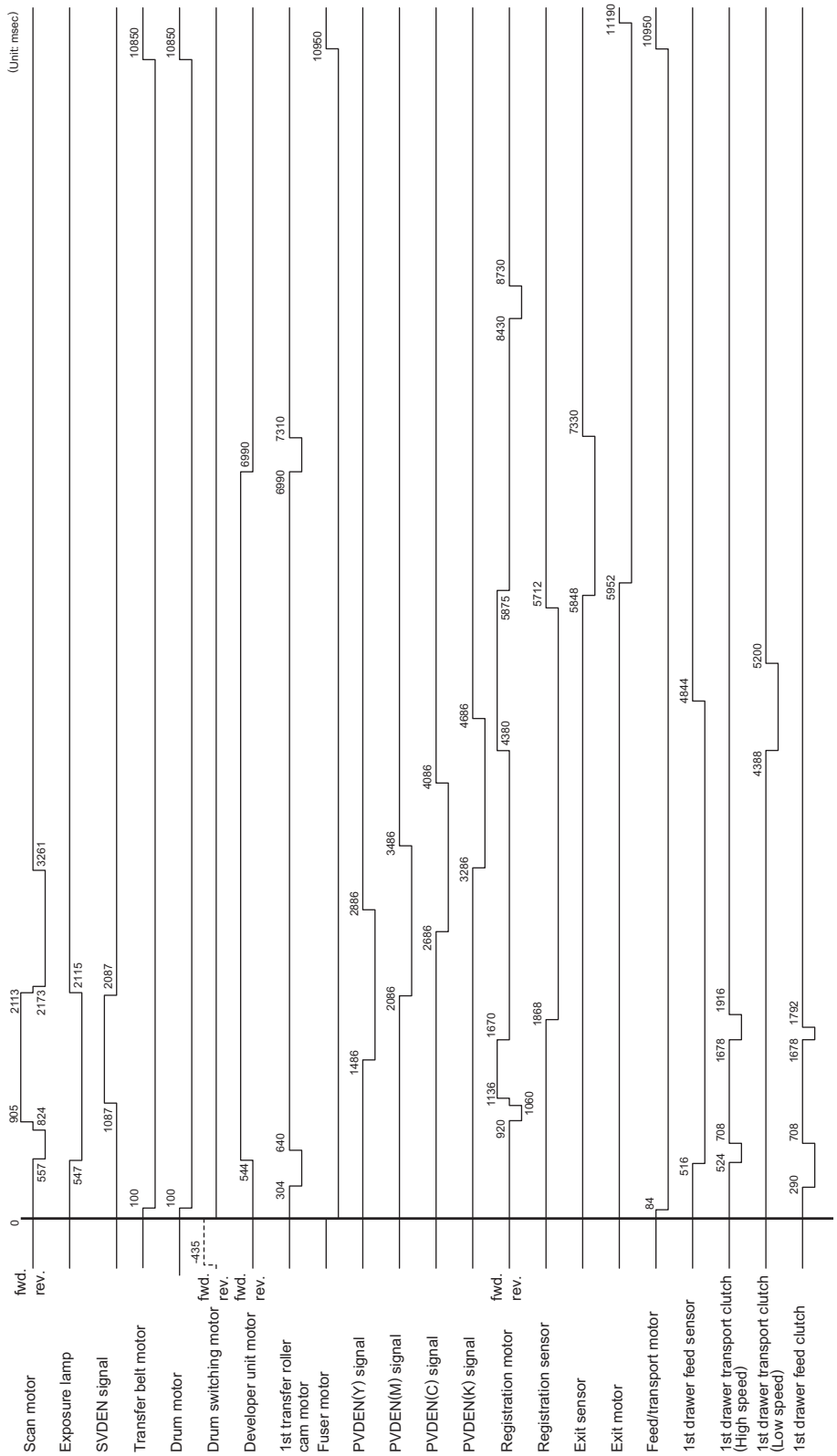


Fig. 5-1

2. Color copy (e-STUDIO4520C)

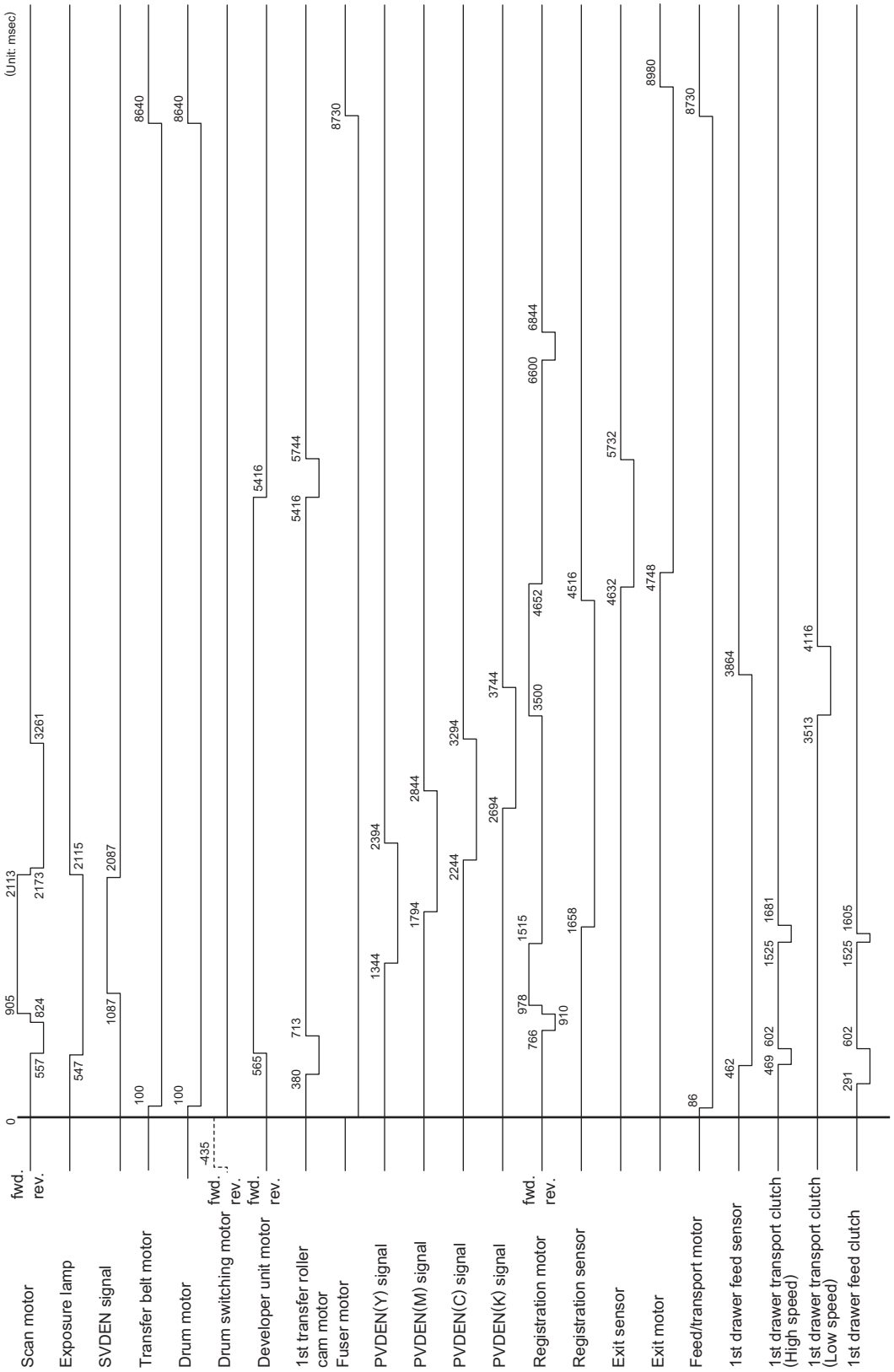


Fig. 5-2

3. Black copy (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C)

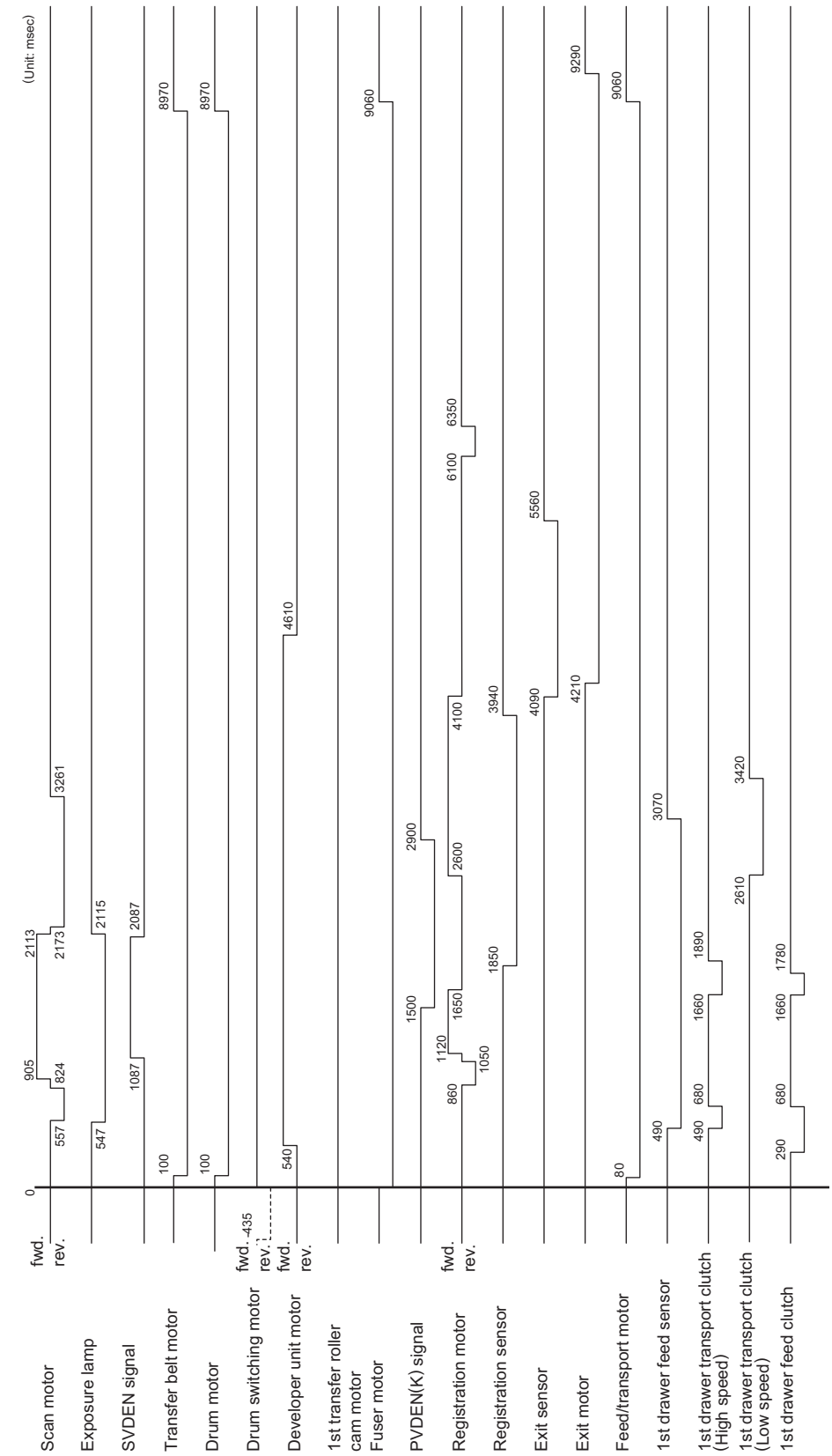


Fig. 5-3

4. Black copy (e-STUDIO4520C)

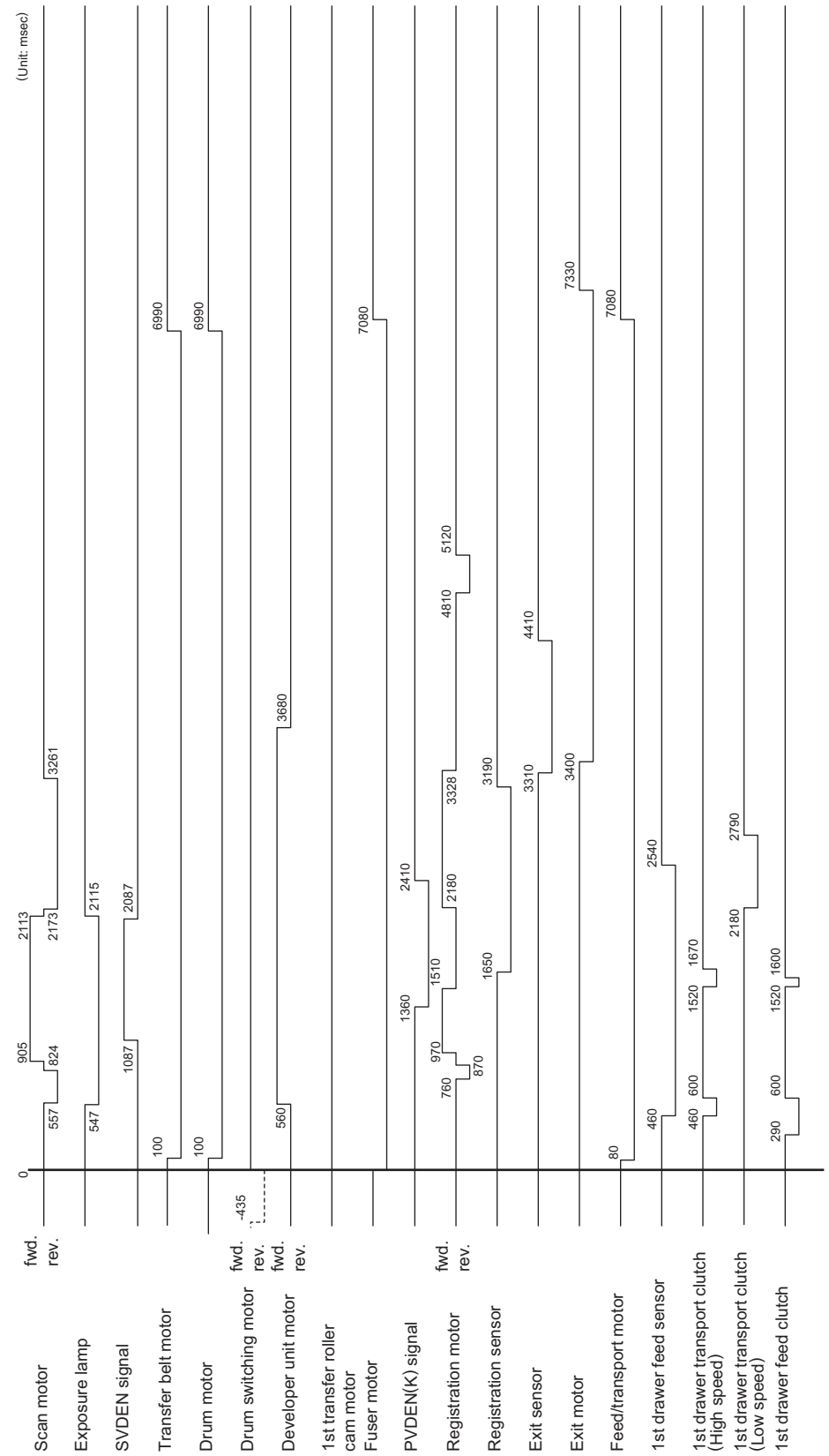


Fig. 5-4

5.2.4 Bypass feed copying

1. Insert a paper into the bypass tray.
   → Bypass paper sensor (S40) is turned ON.
   - "Ready for bypass feeding" is displayed.
   → Carriages move to the home position.

2. Press the [START] button ON
   → "Ready for bypass feeding" changes to "COPYING".
   → Exposure lamp (EXP) ON
   → Scan motor (M1) ON→Carriages-1 and -2 move forward.
   → Drum motor (M10), transfer belt motor (M7), transport motor (M20), developer unit motor (M9), fuser motor (M17) and exit motor (M18) turned ON
   - The drum, transfer belt, fuser unit, developer unit and exit roller are driven.

3. Bypass feeding
   → Fans rotate at high speed.
   → Bypass feed clutch (CLT8) turned ON.
   - The bypass pickup roller is lowered.
   → Bypass pickup solenoid (SOL1) turned ON.
   - The bypass pickup roller, feed roller and separation roller start to rotate.
   → Aligning operation
   → Paper reaches the registration roller.
   → After a certain period of time, the bypass feed clutch (CLT8) turned OFF.

4. Hereafter, operations (3) through (6) of "5.2.3Drawer feed copying (1st drawer paper feeding)" are repeated.

5.2.5 Interruption copying

1. Press the [INTERRUPT] button
   → LED "INTERRUPT" is turned ON.
   → Copying operation in progress is temporarily stopped, and the carriages-1 and -2 return to appropriate positions.
   → "Job interrupted job 1 saved" is displayed.
   → Automatic density and reproduction ratio 100% are set. Set number remains the same.

2. Select the desired copy condition

3. After interruption copying is finished:
   → "Press interrupt to resume job 1" is displayed.
   → LED "INTERRUPT" is turned OFF by pressing the [INTERRUPT] button, and the equipment returns to the status before the interruption.
   → "Ready to resume job 1" is displayed.

4. Press the [START] button
   The copying operation before the interruption is resumed.

5.3 Detection of Abnormality

When something abnormal has occurred in the equipment, symbols corresponding to the type of abnormality are displayed.

5.3.1 Types of abnormality

1. Abnormality cleared without turning OFF the door switch
   (A) Add paper
   (B) Paper misfeed in bypass

2. Abnormality not cleared without turning OFF the door switch
   (C) Misfeed in equipment
   (D) No toner in the cartridge
   (E) EPU not installed properly
   (F) Waste toner box replacement

3. Abnormality not cleared without turning OFF the main power switch
   (G) Call for service

5.3.2 Description of abnormality

[A] Add paper

[In case of the equipment drawer or PFP drawer] (When drawer is not installed)

Drawer not detected

↓

Drawer is not installed:
Drawer is installed but there is no paper in it:

↓

No paper

↓

A signal sent to the control circuit

↓

Drawer area of the control panel blinks
(When the drawer is selected)

↓

[START] button is disabled.

[In case of the equipment, PFP or LCF drawers] (When drawer is installed)
Based on the combination of the tray-up motor (M10) movement and the status of tray-up sensor and empty sensor, CPU detects the presence of paper.

- When the power is turned ON or LCF drawer is inserted (When the power is turned ON or equipment/PFP drawers are inserted).
  LCF performs initialization.

  ↓

  Detects the presence of paper
  Tray-up motor ON - The tray goes up

  ↓

  At this time, the tray-up sensor and LCF empty sensor are OFF.

  → When the tray-up sensor is not turned ON in a fixed period of time it means that the tray is in abnormal condition
  "Add paper" is displayed regardless of presence/absence of paper.

  → Cleared by turning the power ON/OFF

  → Tray-up sensor is turned ON in a fixed period of time
  - The tray-up motor stops.

  At this time, if the empty sensor is ON: It is judged that there is paper.

  OFF: It is judged that there is no paper.

  ↓

  Drawer area of the control panel blinks.
  (When the drawer is selected)

- When the paper in the drawer gets short during copying,

  → The tray-up sensor turned OFF

  → The tray-up motor turned ON - Tray goes up

  → Tray-up sensor turned ON

  → Tray-up motor stopped

- Empty sensor turned OFF during the copying in spite of the tray-up sensor is ON

  ↓

  It is judged that there is no paper.

  ↓

  Drawer area of the control panel blinks.
  (When the drawer is selected)

  ↓

  The copying operation is stopped.

[B] Paper misfeed in bypass

- During bypass feeding
  Bypass feed clutch (CLT8) is turned ON

  ↓

  Registration sensor (S28) is turned ON
  * Registration sensor (S28) is not turned ON in a fixed period of time (E120)

    ↓

    Bypass misfeeding

    ↓

    Bypass misfeed symbol is displayed

    ↓

    The copying operation is disabled.

    ↓

    Solution: The bypass sensor (S40) is turned OFF by removing the paper from the bypass tray.

[C] Misfeed in equipment

- Exit sensor (S26) detects jamming of the leading edge of paper

  ↓

  Registration motor (M19) turned ON

  ↓ Approx. 1.6 sec.

  Exit sensor (S26) turned ON
  If the exit sensor (S26) is not turned ON after approx. 1.6 seconds,

  ↓

  Paper jam (E010) → The copying operation is stopped.

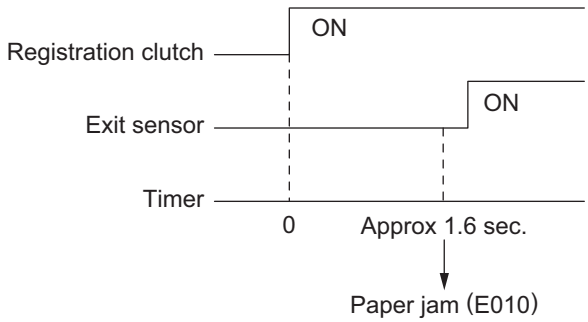


Fig. 5-5

- Exit sensor (S26) detects jamming of the trailing edge of paper

  Registration motor (M19) turned OFF

  ↓ Approx. 1.7 sec.

  Exit sensor (S26) turned OFF
  If the exit sensor (S26) is not turned OFF after approx. 1.7 seconds,

  ↓

  Paper jam (E020) → The copying operation is stopped.

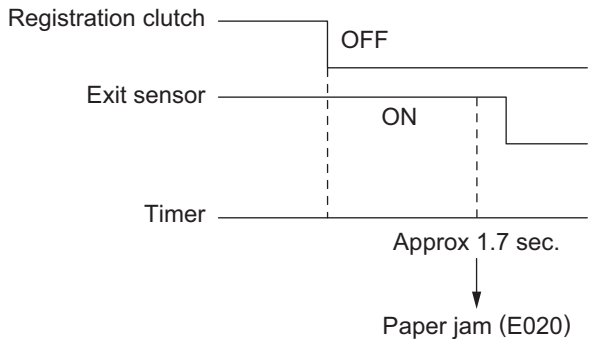


Fig. 5-6

- Immediately after the power ON

  ↓

  Any of all sensors on paper transport path detects paper (ON)

  ↓

  Paper jam (E030)

- Front cover is opened during copying

  ↓

  Paper jam (E410)

- Registration sensor (S28) detects jamming of the leading edge of paper:
  The registration sensor (S28) is not turned ON in a fixed period of time after the leading edge of paper passed the transport roller.

  ↓

  Paper jam (E120, E200, E210, E300, E330 and E3C0)

- During paper feeding from ADU:
  The registration sensor (S28) is not turned ON in a fixed period of time after the ADU clutch (CLT7) is turned ON.

  ↓

  Paper jam (E110)

- During paper transporting from ADU:
  ADU entrance/exit sensors (S38/S39) do not detect the paper at the fixed timing

  ↓

  Paper jam (E510 and E520)

- During paper feeding from the equipment or PFP:
  The registration sensor (S28) is not turned ON in a fixed period of time after the feed clutch is turned ON.

  ↓

  Paper jam (E220, E310, E320, E340 to E360, E3D0 and E3E0: Error code defers depending on the paper source.)

[D] No toner in the cartridge

Toner density becomes low

↓

Auto-toner sensor (S22/S23/S24/S25) detects the absence of the toner

↓

Control circuit → “Install new ** toner cartridge” is displayed: the copying operation disabled

Solution: Open the front cover and replace the toner cartridge with new one.
Toner is supplied → copying operation enabled

[E] EPU not installed properly

Disconnection of the connectors of the EPU

↓

“Latch the developer unit” is displayed.

Solution: Install the EPU and close the front cover.

[F] Waste toner box replacement

- Waste toner box is full of used toner

  ↓

  Waste toner box full detection sensor (S13) ON

  ↓

  “Dispose of used toner” is displayed

- Waste toner box full detection sensor (S13) is turned ON during printing

  ↓

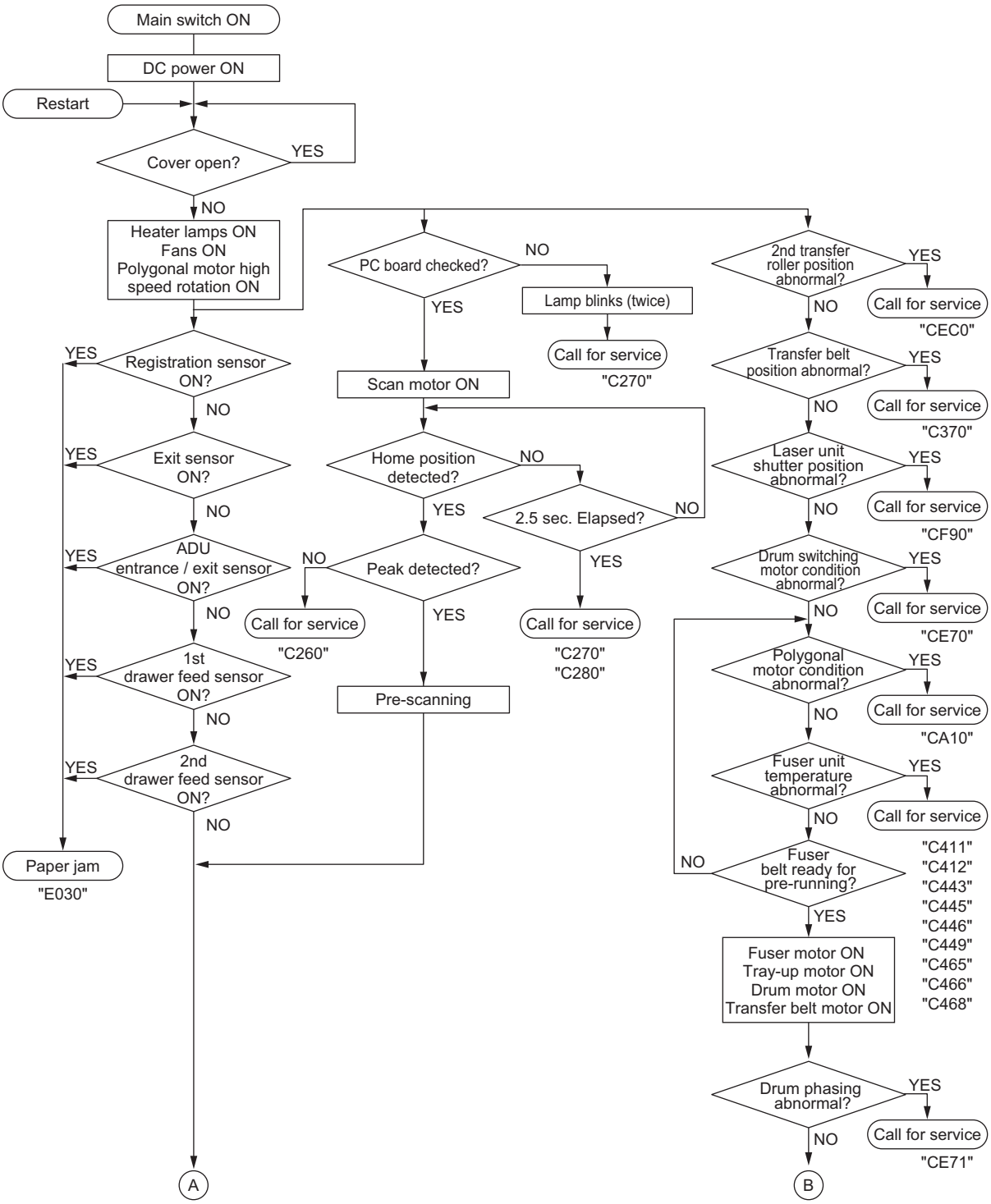
  Printing is stopped after the paper being printed is exited
  Solution: Replace the waste toner box with new one and close the waste toner cover.

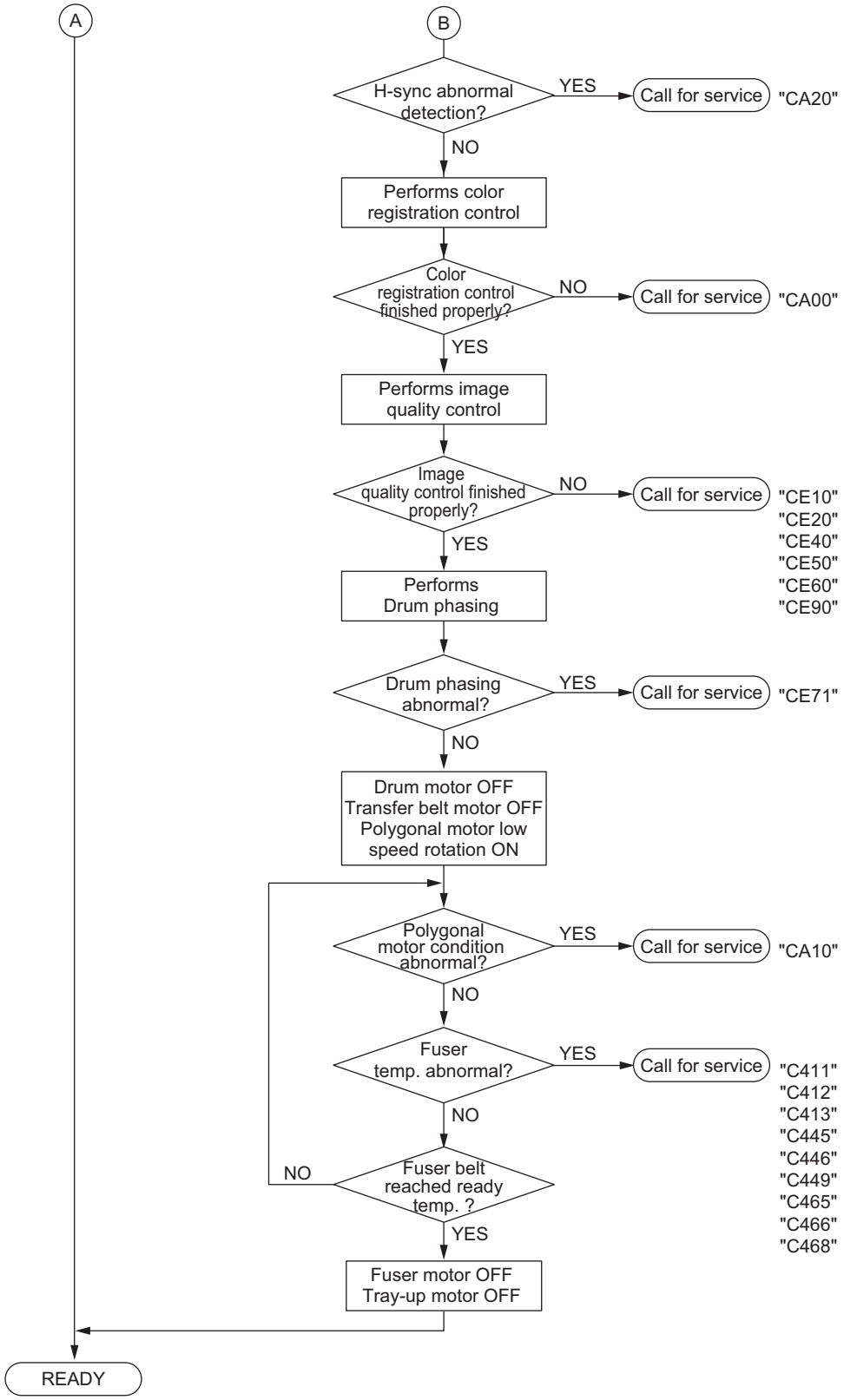
[G] Call for service

Check the error code displayed on the control panel when “Call for service” appears, and handle the abnormality in reference to the error code table.
📖 P.26-2 "26.2 Error Code List"

5.4 Flow Chart

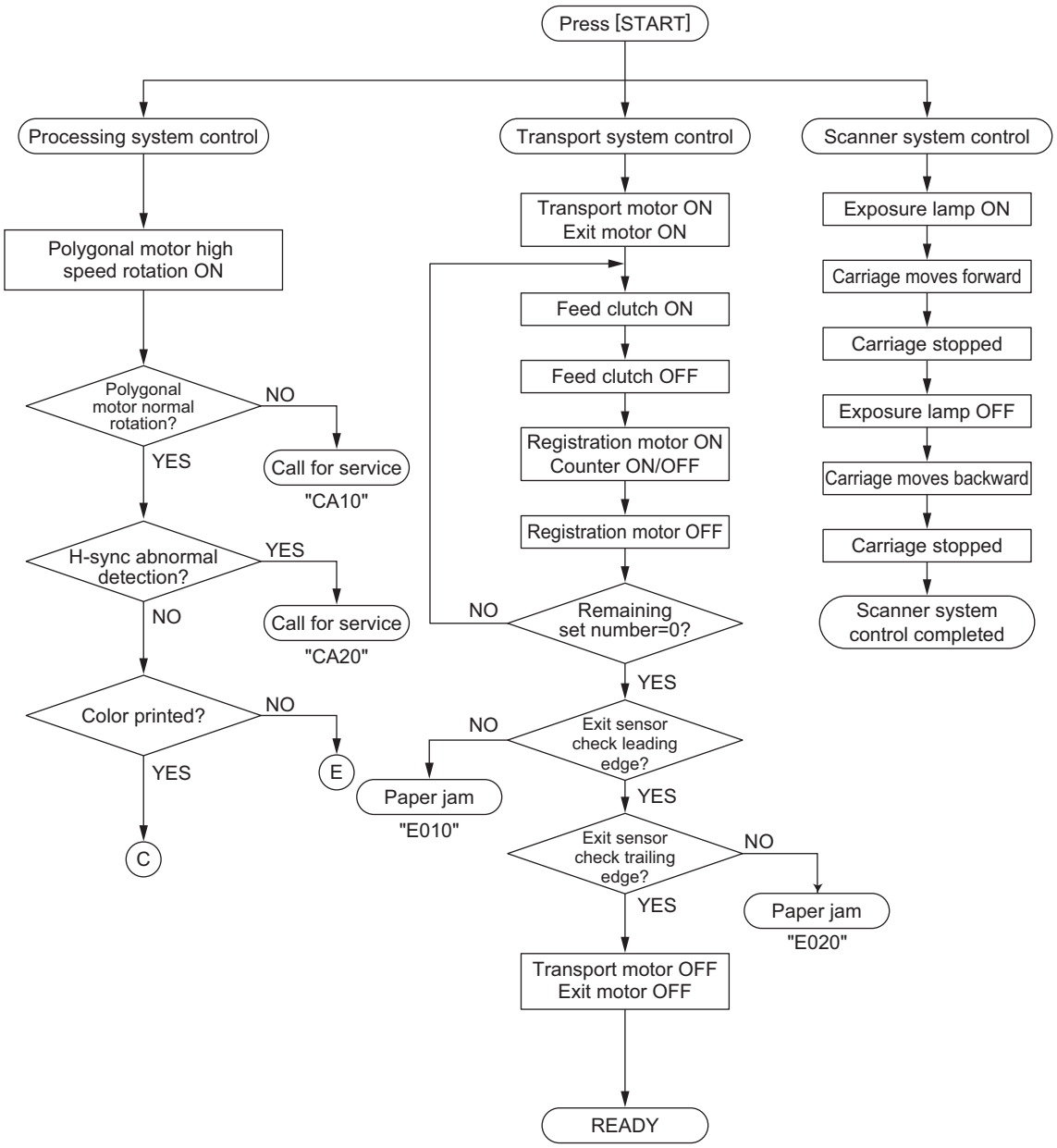
5.4.1 Power ON to ready

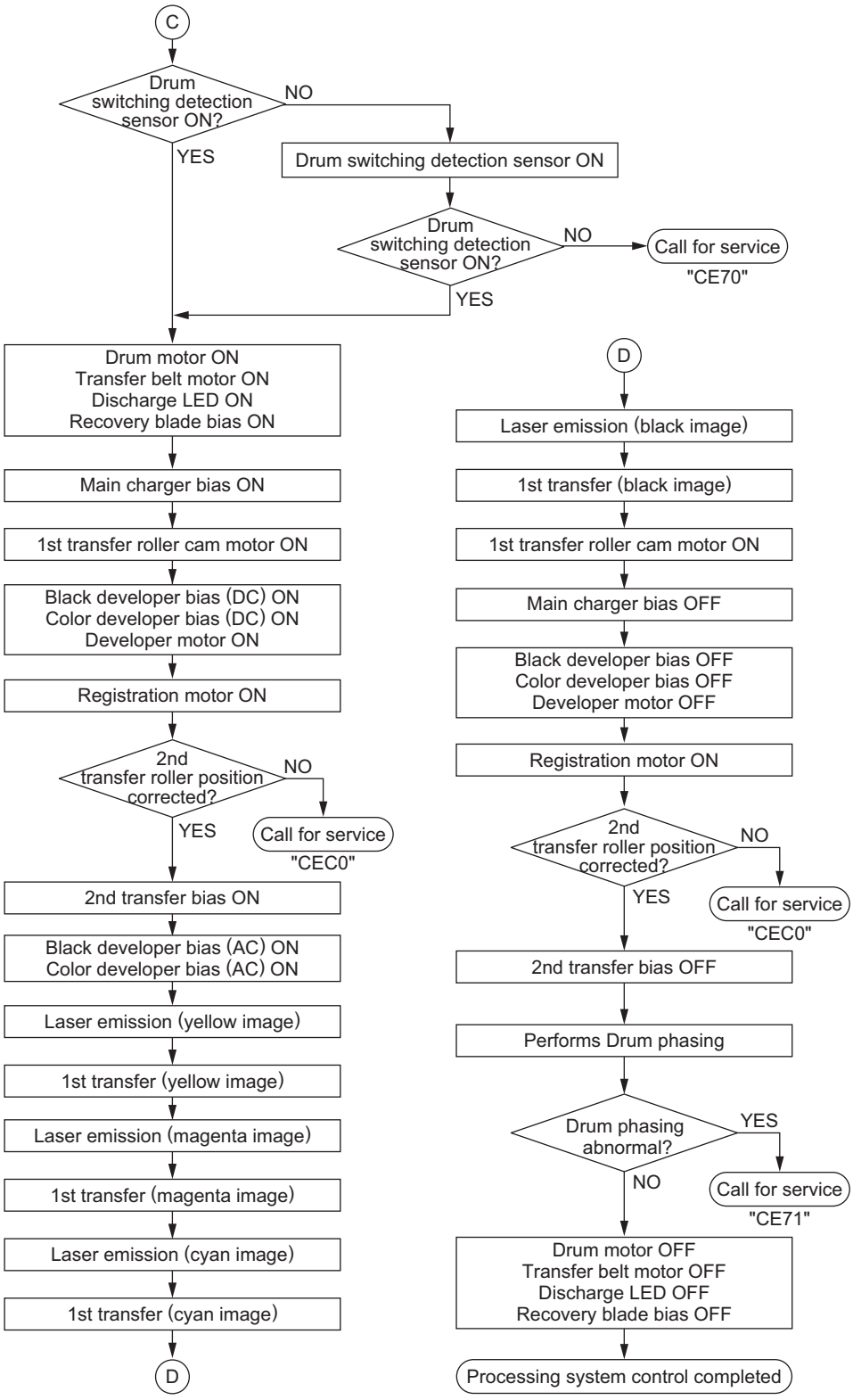




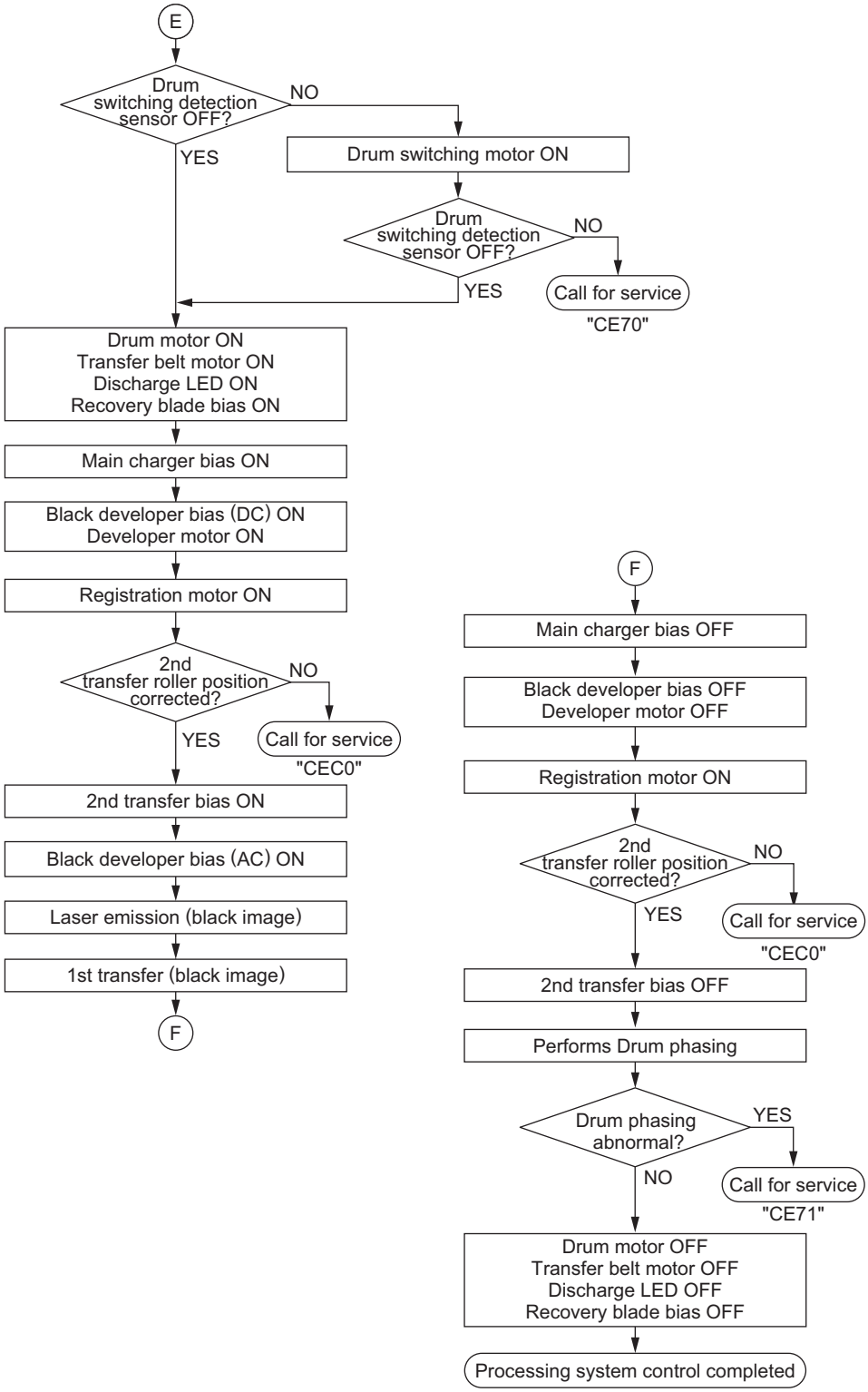
5

5.4.2 Automatic feed copying





5



6. CONTROL PANEL

6.1 General Description

The control panel consists of button switches and touch-panel switches to operate the equipment and select various modes, and LEDs and an LCD to display the state of the equipment or the messages. When the operator's attention is required, graphic symbols light or blink with messages explaining the condition of the equipment in the LCD panel. When paper jams and "Call for service" occur, error codes are also displayed to notify users of the problem.
A color LCD is used in this equipment so that visibility and operability are improved.
The [ON/OFF] button is placed on the control panel of this equipment. Use this button instead of the main power switch to turn ON/OFF the power.
Press the [ON/OFF] button for 1 second or more to turn ON/OFF the power of the equipment.
Also, the [ON/OFF] button can be used in the following manner for example: press the [ON/OFF] button while holding down the [0] and [5] buttons simultaneously to activate the Adjustment Mode (05).

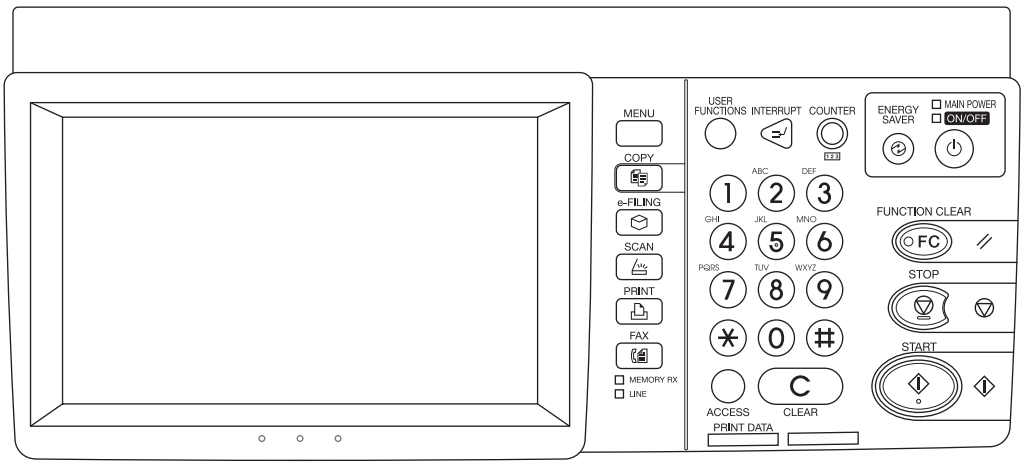


Fig. 6-1

6.2 Items Shown on the Display Panel

6.2.1 Display

1. Basic display
   Displays buttons and messages.

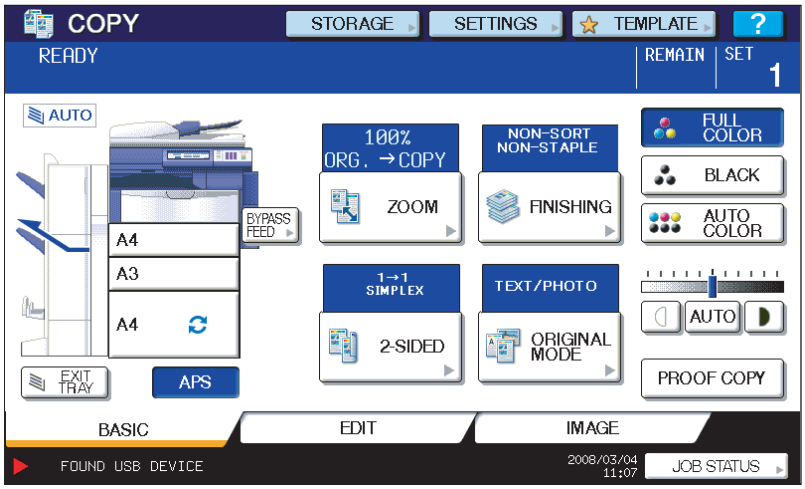


Fig. 6-2

2. Paper jam / service call display
   Displays error code, paper jam position and paper jam release guidance, etc.

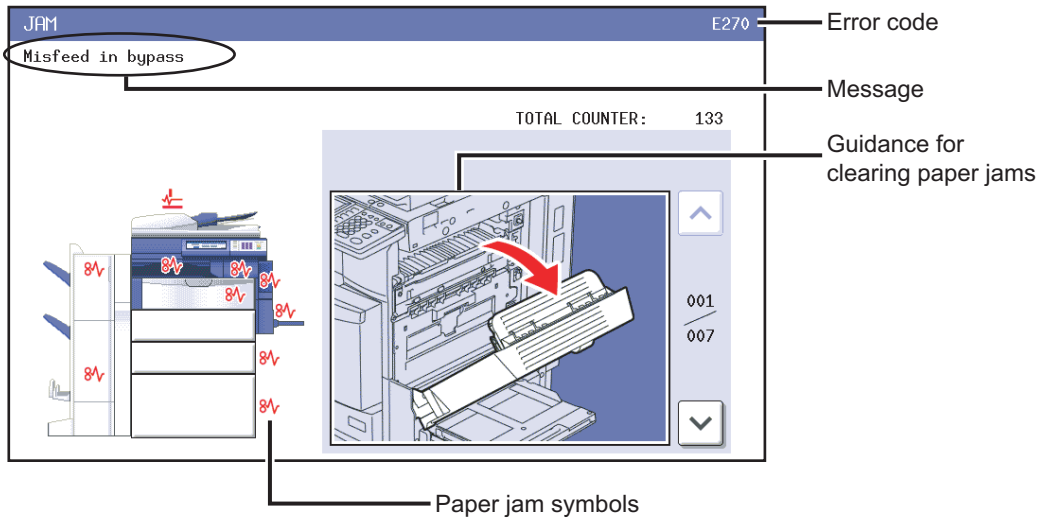


Fig. 6-3

6.2.2 Message

No.	Message	State of equipment	Note
1	-	Power is OFF (at Sleep Mode)	Press the [START] button or function button to clear
2	Saving energy - press START button	At Energy Saving Mode	Press the [START] button to clear
3	Wait Warming Up	Scanner warming up • Displayed until the equipment becomes ready to start scanning	Auto Start can be set
4	Wait Warming Up Auto Start	Scanner warming up • Displayed when Auto Start is set	Press the [STOP] button to clear the Auto Start.
5	WAIT	Displayed when performing the controlling function to keep the equipment at the best condition	
6	Wait adding toner	Supplying toner • Equipment becomes the toner supply state	Recovers when the toner supply has finished
7	Performing Auto Calibration	Displayed at image quality control	Recovers when the image quality control has finished
8	READY	Ready for copying • Waiting for the operation	
9	READY Press START button to copy	Copying job interrupted	Press the [START] button to resume copying or press [MEMORY CLEAR] button to delete the job
10	READY (WARMING UP)	Scanner warming up • Ready to scan the original	
11	READY (PRINTING)	Printing out the data • Scanning is enabled	
12	READY (ADDING TONER)	Supplying toner • Scanning is enabled	
13	READY (INNER TRAY FULL)	Inner tray in the equipment is full • Scanning is enabled	- When the bridge unit is installed - Resumes printing by removing paper from the tray
14	READY (CHECK STAPLER)	No staples in finisher • Scanning is enabled	Cleared by supplying staples
15	READY (CHECK STAPLER)	Stapling jam occurred in finisher	
16	READY (CHECK SADDLE STITCH STAPLER)	No staples in saddle stitcher • Scanning is enabled	Cleared by supplying staples
17	READY (ADD PAPER) Press JOB STATUS button	No paper in drawer • Scanning is enabled	Cleared by supplying papers
18	READY (FINISHER FULL)	Finisher is full of paper • Scanning is enabled	Resumes printing by removing paper from the finisher
19	READY (HOLE PUNCH DUST BIN IS FULL)	Punching dust box is full • Scanning is enabled	Resumes printing by removing punching dust from the dust box
20	READY (SADDLE STITCH TRAY FULL)	Saddle stitcher tray is full of paper • Scanning is enabled	
21	READY (CHANGE DRAWER TO CORRECT PAPER SIZE)	Incorrect paper size setting	
22	READY (Performing Auto Calibration)	Displayed during image quality control adjustment • Scanning is enable.	
23	Ready for bypass feeding	Paper is set on the bypass tray	
24	COPYING	At the copying state	

No.	Message	State of equipment	Note
25	Auto Start	Auto Start is set during printing	Cleared by pressing [FUNCTION CLEAR] button
26	Close Large Capacity Feeder	LCF drawer is not installed when feeding from LCF is set	Cleared by installing LCF drawer
27	Close Large Capacity Feeder Door	LCF cover is open when feeding from LCF is set	Cleared by closing the cover
28	Place Doc. Feeder in the down position	RADF is open when original is placed on RADF	Cleared by closing RADF
29	Place originals in the document feeder	Displayed when the conditions are set and [START] button is pressed with no original placed	Cleared by setting the original
30	Change direction of original	Displayed when the direction of original placed is different from the setting	
31	Place last %d originals in doc. feeder entrance tray	Paper jam occurred during copying (RADF scanning)	
32	Cannot copy this original	Displayed when the original which is not allowed to be copied is placed	Not printed out
33	Add paper	Displayed when the paper in selected drawer is running out	
34	Cannot duplex this size	Displayed when the paper size which is not specified for duplex copying is set	
35	Cannot use this media type	Displayed when the paper size which is not specified for the functions such as stapling or hole punching is set	
36	Copy size: A4/LT only	Displayed when the paper size which is not specified for “Book-type duplex copying” or “Dual-page” is set	
37	Copy size: A4/LT and A4-R/LT-R	Displayed when the paper size which is not specified for “Rotate Sort”	
38	CHANGE DRAWER TO CORRECT PAPER SIZE	Displayed when the selected paper size is not in the drawer	
39	Change drawer to correct media type	Displayed when the selected media type is not in the drawer	
40	Select a paper size for bypass feeding	Displayed when paper size needs to be specified for bypass feeding such as duplex copying	
41	Place the blank sheets in bypass tray and select the paper size	Displayed when no paper is in the selected feeder at Cover Copying Mode	
42	Place the blank sheets in the same direction as the originals	Displayed when the direction of cover page is different from that of other pages at Cover Copying Mode	
43	Place the same size blank sheets as the originals	Displayed when the paper size of cover page is different from that of other pages at Cover Copying Mode	
44	Place insertion sheets in the bypass tray and select the paper size	Displayed when no insertion sheet is in the selected drawer at Sheet Insertion Mode	
45	Select the same size insert1 sheets as the originals	Displayed when the size of insertion sheet (sheet 1) is different from that of other pages at Sheet Insertion Mode	
46	Select the same size insert2 sheets as the originals	Displayed when the size of insertion sheet (sheet 2) is different from that of other pages at Sheet Insertion Mode	

No.	Message	State of equipment	Note
47	Set insert1 sheets in the same direction as the originals	Displayed when the direction of insertion sheet (sheet 1) is different from that of other pages at Sheet Insertion Mode	
48	Set insert2 sheets in the same direction as the originals	Displayed when the direction of insertion sheet (sheet 2) is different from that of other pages at Sheet Insertion Mode	
49	Set transparency film in A4/ LT direction	Displayed when the selected paper size is other than A4/LT at OHP mode	
50	CHECK PAPER IN LARGE CAPACITY FEEDER	Papers in LCF are set incorrectly	
51	CANNOT PUNCH THIS SIZE PAPER	Displayed when the selected paper size is not specified for hole punching	
52	Remove paper from the finisher	Displayed when the paper sizes are mixed at Staple Sorting Mode	
53	Cannot staple this size	Displayed when the paper size is not specified for stapling at Staple Sorting Mode	
54	Remove paper from the saddle stitch unit	Finisher is full of papers	
55	Examine stapler	Trouble in the stapler unit in finisher	
56	Check staple cartridge	No stapler in finisher section	
57	Check staple cartridge in the saddle stitch unit	No stapler in saddle stitch unit	
58	Job interrupted job 1 saved	Interrupt copying is accepted	
59	Ready to resume job 1	Interrupt copying is cancelled (finished)	
60	Cannot use AMS mode	Displayed when reproduction ratio is set to be over 200% at AMS Mode on RADF	Set the reproduction ratio 200% or below manually
61	More than 200% is not available	Displayed when reproduction ratio is set manually to be over 200% on RADF	Set the reproduction ratio 200% or below
62	Updated the template setting	Displayed when the template stored is recalled by pressing [TEMPLATE] button	
63	Enter Department Code	Displayed when a button is pressed while the department management setting is available	
64	Cannot copy BLACK mode Check DEPARTMENT COUNTER	Displayed when the number of printouts exceeds the limit number of department counter	
65	Cannot copy FULL COLOR mode Check DEPARTMENT COUNTER	Displayed when the number of printouts exceeds the limit number of department counter	
66	Cannot copy TWIN COLOR mode Check DEPARTMENT COUNTER	Displayed when the number of printouts exceeds the limit number of department counter	
67	Cannot copy Check DEPARTMENT COUNTER	Displayed when the number of printouts exceeds the limit number of department counter	
68	Not enough memory to store original(s) Will you print out stored originals?	Displayed when confirming the user to print out the data as much as stored at memory - full state	

No.	Message	State of equipment	Note
69	Not enough memory to store original(s) Will you send stored originals in?	Displayed when confirming the user to send the FAX data as much as stored at memory - full state	Displayed only in FAX Function
70	Not enough memory to store original(s) Will you save stored originals in?	Displayed when confirming the user to save the scanning data as much as stored at memory-full state	Displayed only in FAX Function
71	The number of originals exceeds the limits Will you copy stored originals?	Displayed when confirming the user to print out the data as much as stored at memory-full state	
72	The number of originals exceeds the limits. Will you send stored originals?	Displayed when confirming the user to send the FAX data as much as stored at memory-full state	Displayed only in FAX Function
73	The number of originals exceeds the limits. Will you save stored originals?	Displayed when confirming the user to save the scanning data as much as stored at memory-full state	Displayed only in Scanning Function
74	Install new Black toner cartridge	No black toner in the cartridge	Displayed when black toner is running out even if other toner still remain. Copying not enabled
75	Install new Yellow toner cartridge	No yellow toner in the cartridge	Black copying is available Other button functions are available
76	Install new Magenta toner cartridge	No magenta toner in the cartridge	Black copying is available Other button functions are available
77	Install new Cyan toner cartridge	No cyan toner in the cartridge	Black copying is available Other button functions are available
78	Install new Y and M toner cartridge	No yellow and magenta toner in the cartridges	Black copying is available Other button functions are available
79	Install new Y and C toner cartridge	No yellow and cyan toner in the cartridges	Black copying is available Other button functions are available
80	Install new M and C toner cartridge	No magenta and cyan toner in the cartridges	Black copying is available Other button functions are available
81	Install new color toner cartridge	Three colors of toner are running out in the cartridges	Black copying is available Other button functions are available
82	Time for periodic maintenance ****	PM cycle • Displayed at the time for maintenance • Copying is available	For the details, see the following page: 📖 P.19-3 "19.2.3 PM Display Contents"
83	READY (CHANGE DRAWER TO CORRECT MEDIA TYPE)	Displays when the printing is stopped because of media type mismatch	
84	PRESS [BASIC] and select normal paper size	Displays the warning that the copy is not enabled when any drawer but bypass feed is selected at Cover Sheet Mode or Sheet Insertion Mode.	
85	Misfeed in copier Press [HELP]	Paper jam in the equipment • Displayed when paper jam occurred in the equipment	Remove the paper in the equipment according to the messages displayed on the panel.
86	Call for service	Displayed when motor, sensor, switch, etc. do not work properly	Turn OFF the main power switch and solve the problem, then turn ON the power.
87	Please try again after a while	Displayed when the Department Code can no be keyed in immediately after power-ON.	Leave it for a while and key in the code again
88	Set standard size	Displayed when the paper size which is not acceptable is set (depends on the setting)	Reset the paper size

No.	Message	State of equipment	Note
89	Time for Slit glass and Main charger cleaning	Appears when the time for main charger cleaning comes (at every output of approx. 10,000 sheets)	If the message is not cleared after the cleaning, check if there is any detection error, breakage or poor connection of the needle electrode cleaner detection sensor.
90	Readjust from IQC-Adjustment	Appears when performing image quality control is required	Perform “Automatic initialization of image quality control (05-396)”

6.3 Relation between the Equipment State and Operator's Operation

	During READY status	During warming-up	Auto job start reserved	Scanning original/ Scanning original and printing out the copy
Press [ENERGY SAVER] button	Switches to energy saving mode	Display not changed	Display not changed	Display not changed
Press [INTERRUPT] button	Switches to interrupt mode	Display not changed	Display not changed	Display not changed (LED blinking)
Press [FUNCTION CLEAR] button after setting the copy mode	Copy mode is cleared after the copy mode is set	Copy mode is cleared after the copy mode is set	Auto job start cancelled	Display not changed
Press [STOP] button	Display not changed	Display not changed	Auto job start cancelled	Scanning or printing out stops, and "READY Press START to copy" and "MEMORY CLEAR" are displayed
Press [CLEAR] button after setting the copy mode	Number of printouts changes to 1 while the setting remains unchanged after the copy mode is set	Number of printouts changes to 1 while the setting remains unchanged after the copy mode is set	Display not changed	Display not changed
Press [CLEAR] button after keying in numbers (digital keys)	Number keyed in changes to 1 after being entered	Number keyed in changes to 1 after being entered	Display not changed	Display not changed
Press [FAX] button	Displays FAX screen	Display not changed	Display not changed	Display not changed
Press [COPY] button	Display not changed	Display not changed	Display not changed	Display not changed
Press [SCAN] button	Displays SCAN screen	Display not changed	Display not changed	Display not changed
Press [USER FUNCTIONS] button	Displays USER FUNCTIONS screen	Display not changed	Display not changed	Display not changed
Press [START] button with the original set on RADF	Displays "COPYING"	"Wait Warming Up Auto Start" is displayed	Display not changed	Display not changed

	Printing out the copy	During paper jam	When interrupting	When displaying HELP screen	During energy saving mode
Press [ENERGY SAVER] button	Display not changed	Display not changed	Display not changed	Switches to energy saving mode	Energy saving mode is cleared and displays BASIC screen
Press [INTERRUPT] button	Display not changed (LED blinking)	Display not changed	Returns to the status before interrupting	Switches to interrupting mode	Display not changed
Press [FUNCTION CLEAR] button after setting the copy mode	Copy mode is cleared after the copy mode is set	Display not changed	Copy mode is cleared after the copy mode is set	Displays BASIC screen after the copy mode is set and then cancelled	Display not changed
Press [STOP] button	Printing out stops, and “READY Press START to copy” and “MEMORY CLEAR” are displayed	Display not changed	Display not changed	Display not changed	Display not changed
Press [CLEAR] button after setting the copy mode	Number of printouts changes to 1 while the setting remains unchanged after the copy mode is set	Display not changed	Number of printouts changes to 1 while the setting remains unchanged after the copy mode is set	Number of printouts changes to 1 while the setting remains unchanged after the copy mode is set	Display not changed
Press [CLEAR] button after keying in numbers (digital keys)	Number keyed in changes to 1 after being entered	Display not changed	Number keyed in changes to 1 after being entered	Number keyed in changes to 1 after being entered	Display not changed
Press [FAX] button	Displays FAX screen	Display not changed	Display not changed	Displays FAX screen	Displays FAX screen
Press [COPY] button	Display not changed	Display not changed	Display not changed	Display not changed	Displays COPY screen
Press [SCAN] button	Displays SCAN screen	Display not changed	Display not changed	Displays SCAN screen	Displays SCAN screen
Press [USER FUNCTIONS] button	Displays USER FUNCTIONS screen	Display not changed	Display not changed	Displays USER FUNCTIONS screen	Display not changed
Press [START] button with the original set on RADF	Displays “COPYING” and RADF starts feeding	Display not changed	Displays “COPYING” and RADF starts feeding	Displays “COPYING” and RADF starts feeding	Energy saving mode is cleared and displays BASIC screen

6.4 Description of Operation

6.4.1 Dot matrix LCD circuit

1. Structure

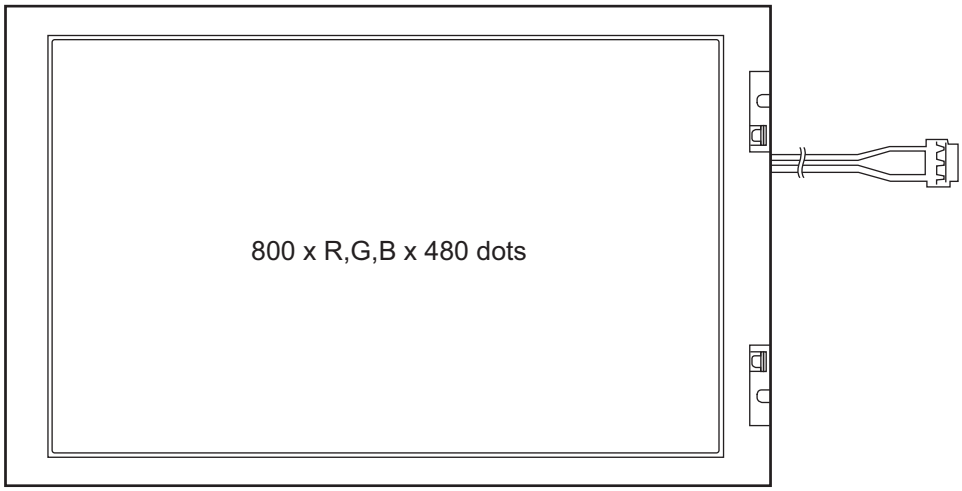


Fig. 6-4

The DSP-LCD-450 is an TFT type LCD with (800 x R, G, B) x 480-dot display capacity. It consists of a driver LSI, frame, printed circuit board, and straight type CCFL backlight.

* TFT: Thin Film Transistor
* CCFL: Cold Cathode Fluorescent Lamp

2. Block diagram

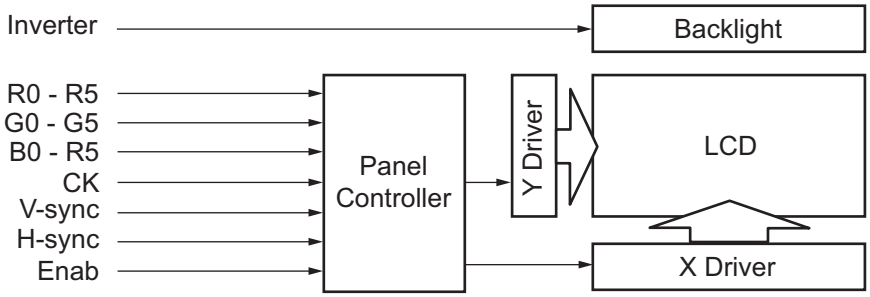


Fig. 6-5

3. System diagram

Signals flowing between the control panel and the SYS board are indicated in the chart below. When the panel processing CPU detects that the control panel is operated, the operational contents are transmitted to the SYS board through the serial data. Data from the SYS board (the equipment's status or messages) are received by the LCD controller and then displayed on the LCD through an LVDS transceiver. LEDs and buzzer sounds are switched ON or OFF with signals output from the panel processing CPU, based on serial data transmitted from the SYS board.

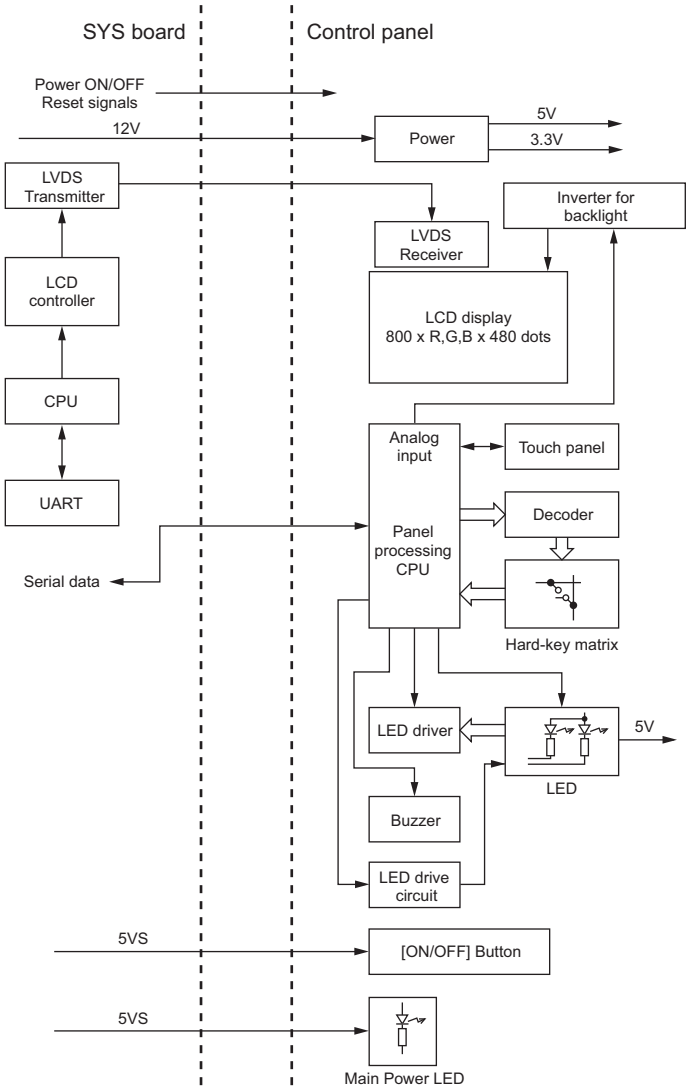


Fig. 6-6

4. Data Transmission

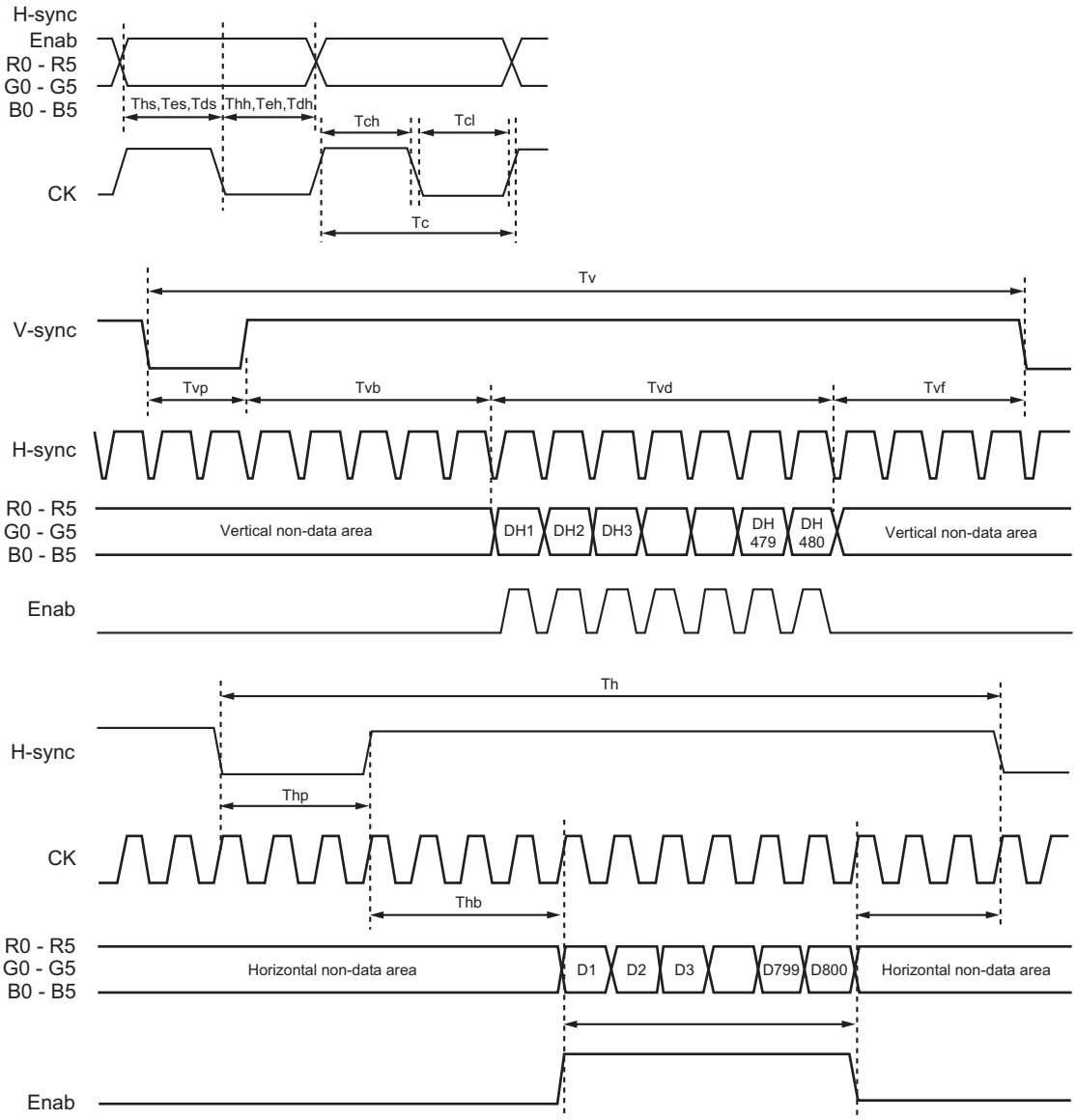


Fig. 6-7

6.4.2 LED display circuit

Method of LED display
Example: Displaying “COPY”

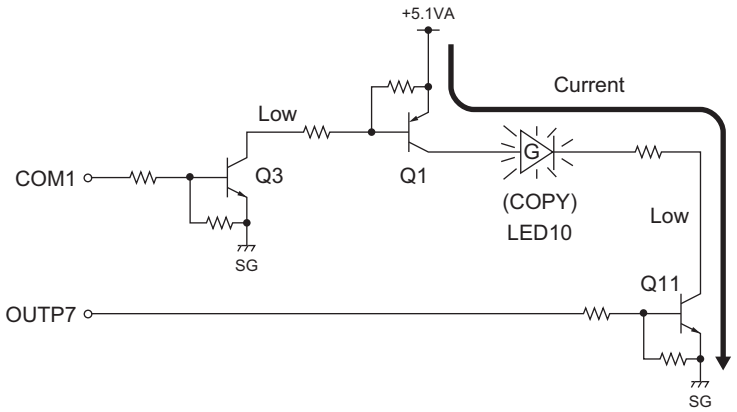


Fig. 6-8

The transistors (Q3 and Q1) are turned ON when the COM1 signal becomes Low level.
Also, when OUTP7 signal changes to Low level, the current flows from +5.1VA via the transistor (Q1) to the LED10 (COPY) to turned ON the LED10.

Conditions to turn ON the LED
1. The transistor (Q1) connected to the LED anode is ON.
2. The transistor (Q11) connected to the LED cathode side is ON.

The LED is turned ON when 1) and 2) are satisfied.

6.5 Disassembly and Replacement

Note:
When taking off the control panel, check the position of the stopper; if the stopper is at the position “b”, remove the stopper or move it to the position “a”.

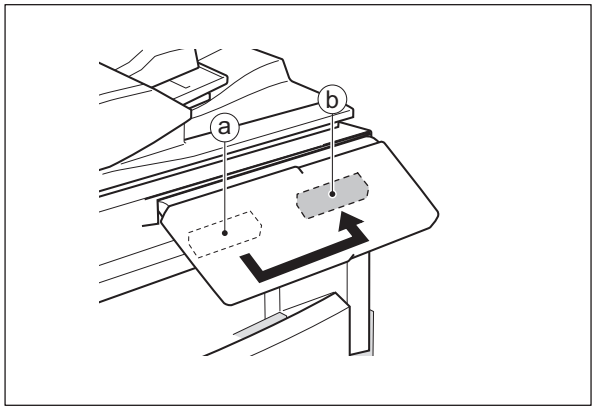


Fig. 6-9

6.5.1 Stopper

(1) Slide the stopper and pull it out.

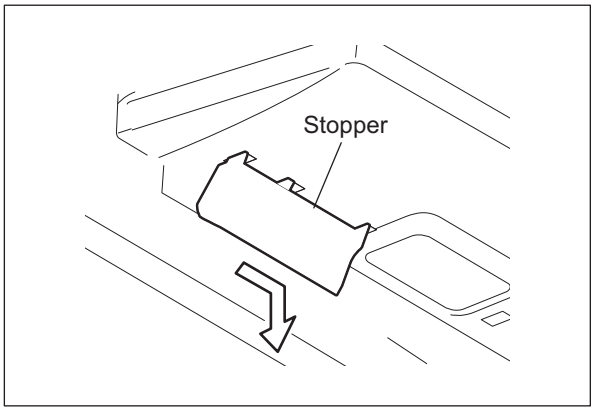


Fig. 6-10

6.5.2 Control panel unit

(1) Take off the right upper cover.
🕮 P.3-30 "3.5.10 Right upper cover"
(2) Release the harness from 5 harness clamps.

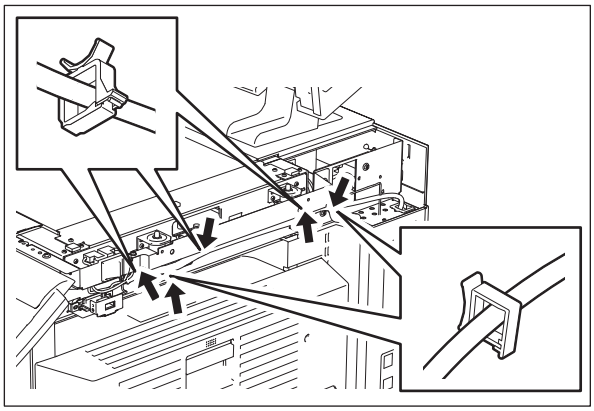


Fig. 6-11

(3) Lower the control panel and remove 2 screws.
(4) Take off the control panel unit while sliding it.

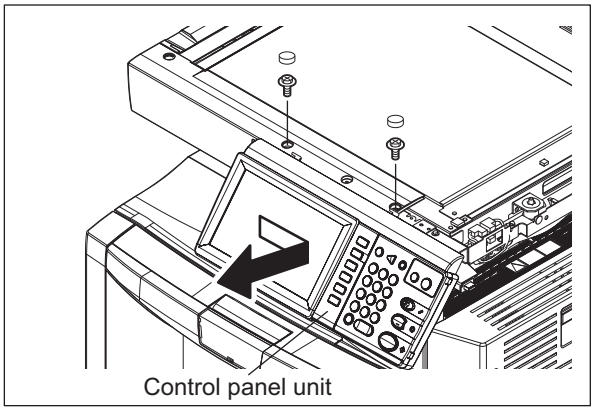


Fig. 6-12

(5) Remove 3 screws and take off the cover.

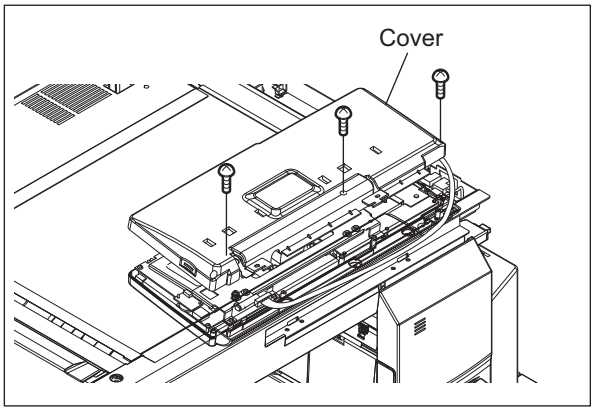


Fig. 6-13

(6) Remove 1 screw and disconnect 1 connector, and then take off the control panel unit.

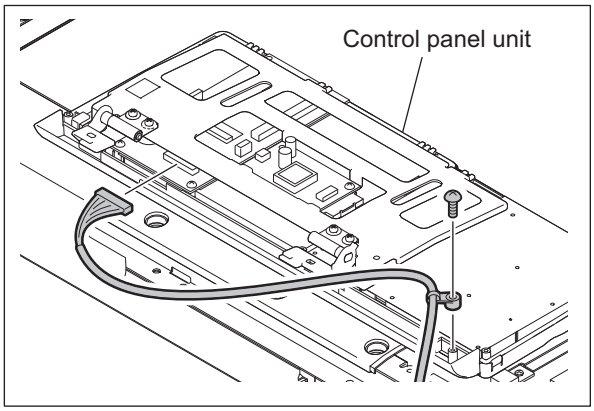


Fig. 6-14

6.5.3 Panel inverter board (P-INV)

(1) Take off the control panel unit.
📖 P.6-14 "6.5.2 Control panel unit"
(2) Remove 2 screws and disconnect 2 connectors, and then take off the panel inverter board.

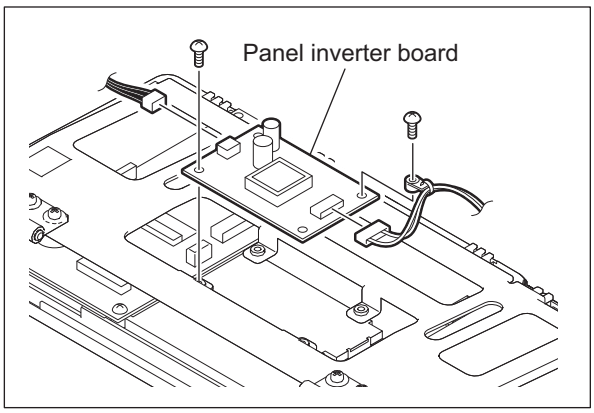


Fig. 6-15

6.5.4 DSP board

(1) Take off the control panel unit.
📖 P.6-14 "6.5.2 Control panel unit"
(2) Disconnect 1 connector.

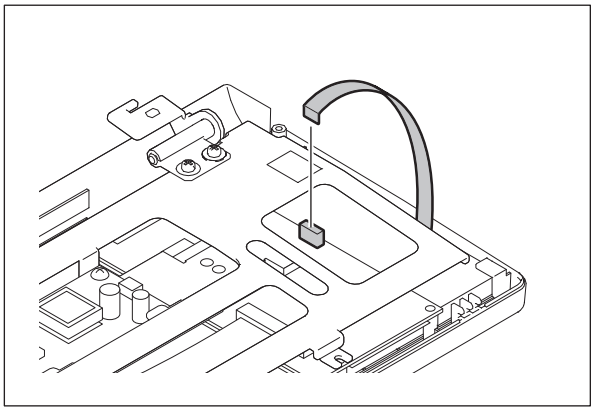


Fig. 6-16

(3) Remove 1 screw of the inverter board and disconnect 2 connectors.

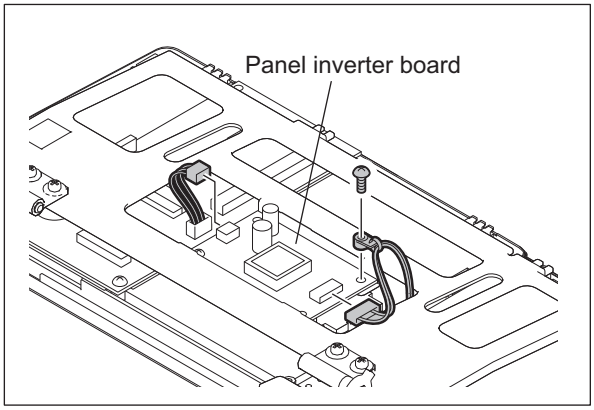


Fig. 6-17

(4) Remove 4 screws and disconnect 1 connector, and then take off the hinge bracket.

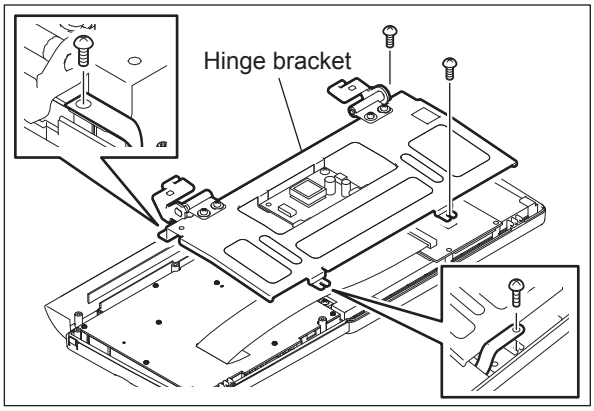


Fig. 6-18

(5) Disconnect 2 connectors.
(6) Remove 3 screws and take off the DSP board and the sheet.

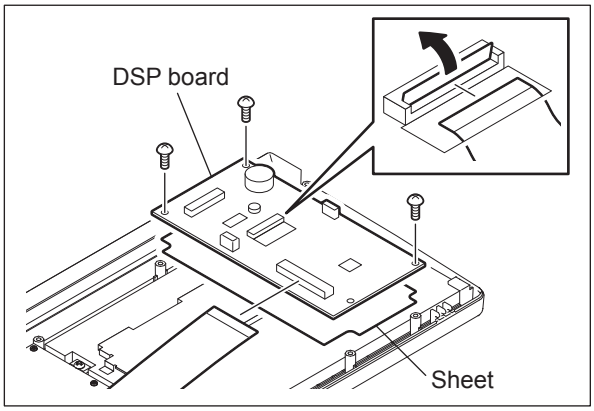


Fig. 6-19

Note:
When installing the DSP board, be sure that flat cable is not caught between the DSP board and the sheet.

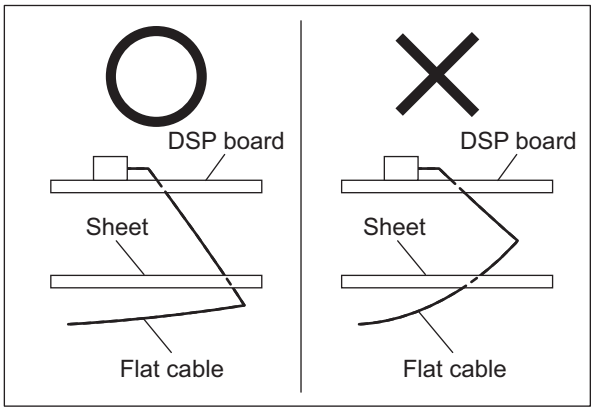


Fig. 6-20

6.5.5 KEY board

(1) Take off the control panel unit.
📖 P.6-14 "6.5.2 Control panel unit"
(2) Disconnect 1 connector.

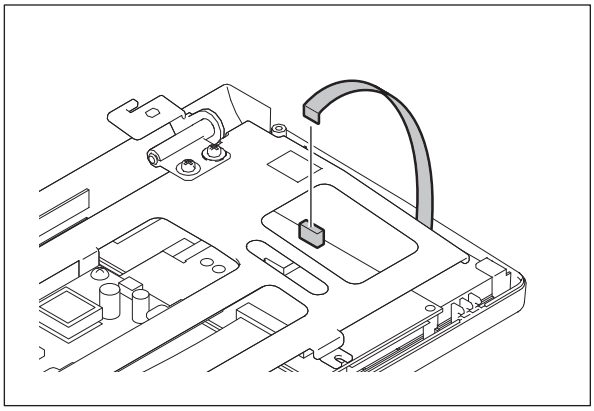


Fig. 6-21

(3) Remove 1 screw of the inverter board and disconnect 2 connectors.

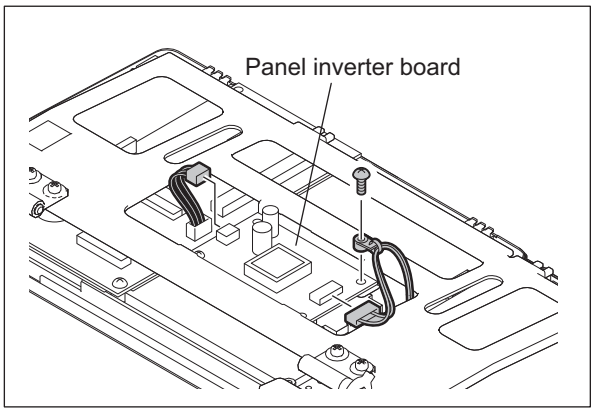


Fig. 6-22

(4) Remove 4 screws and take off the hinge bracket.

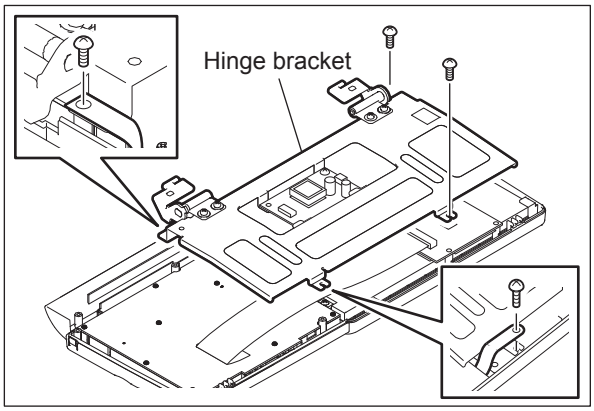


Fig. 6-23

(5) Disconnect 1 connector and remove 12 screws. Take off the KEY board.

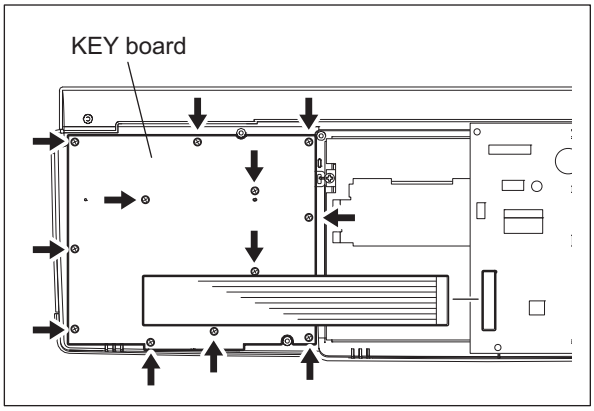


Fig. 6-24

6.5.6 LCD

(1) Take off the control panel unit.
📖 P.6-14 "6.5.2 Control panel unit"
(2) Remove the DSP board.
📖 P.6-16 "6.5.4 DSP board"
(3) Remove 2 screws and take off the LCD.

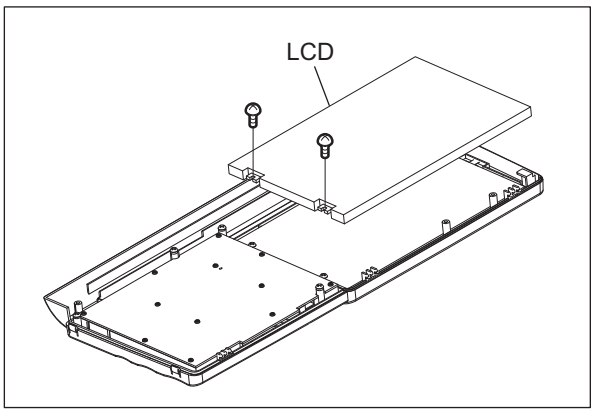


Fig. 6-25

6.5.7 Control panel cover

(1) Release the 4 latches, and take off the control panel cover.

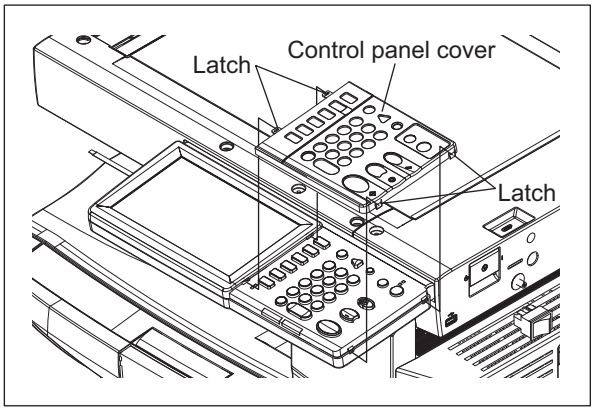


Fig. 6-26

7. SCANNER

7.1 General Description

In the scanning section of this equipment, the surface of an original is irradiated with a direct light and the reflected light is led through mirrors, a lens and a slit to CCD where optical-to-electrical conversion is performed, converting the optical image data into an electrical (analog) signal. This analog signal is changed to a digital signal, which then undertakes various corrective processes necessary for image formation. After that, arithmetic operation is performed on the digital signal, which is then transmitted to the data writing section.
In this equipment, a reduction-type CCD for color processing is used. What this CCD differs from black-and-white CCDs is that its devices are arranged in 3 lines and covered with color filters (Red, Green, and Blue). These lines are composed with 3-line color devices and black-and-white device with no filter.

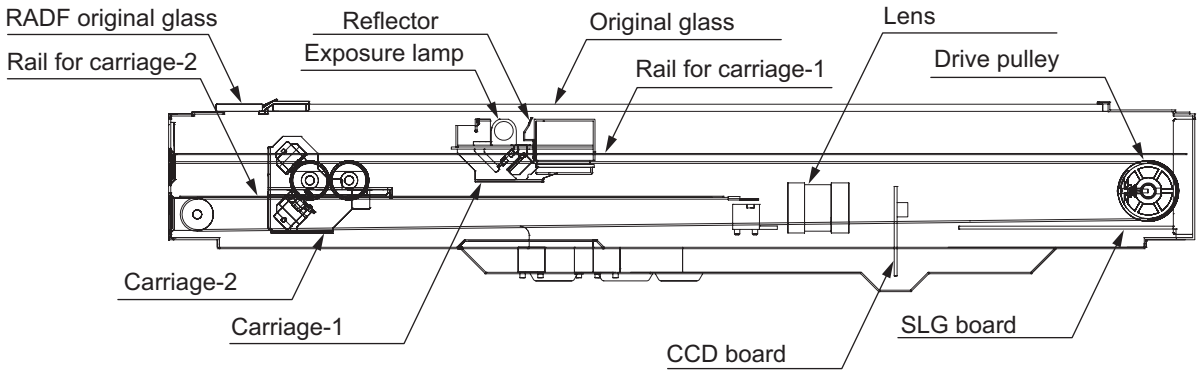


Fig. 7-1

7.2 Construction

Scanner		
Original glass	Original glass	
	RADF original glass	
Carriage-1	Exposure lamp (EXP)	Xenon lamp (26 W)
	Inverter board (INV)	
	Reflector	
	Mirror-1	
Carriage-2	Mirror-2	
	Mirror-3	
Lens unit		
CCD driving PC board (CCD)		
Automatic original detection sensor (S1-5)		
Driving section	Scan motor (M1)	• 2-phase stepping motor • Wire drive • Driving the carriage-1 and carriage-2
Other	Scanning section control PC board (SLG)	
	Carriage home position sensor (S6)	
	Platen sensor (S7)	
	Main switch (SW1)	
	Rubber damper	
	Scanner unit cooling fan (M30)	
	Exposure lamp cooling fan (M32)	

7.3 Functions

The following shows the construction and purpose of the scanning system:

1. Original glass
   This is a glass for placing original. The light from the exposure lamp (EXP) is irradiated to the original through this glass.
   The ADF original glass is used when original is read with the Automatic Document Feeder. Original is transported on the ADF original glass by the Automatic Document Feeder, and the transported original is read under the ADF original glass by the carriage. Do not use such solvents as alcohol when cleaning the surface of the ADF original glass, because it is coated so as not to be scratched by originals.

2. Carriage-1
   Carriage-1 consists of the exposure lamp (EXP), Inverter board (INV), reflector, mirror-1, etc. It is driven by the scan motor (M1) and scans an original on the glass.

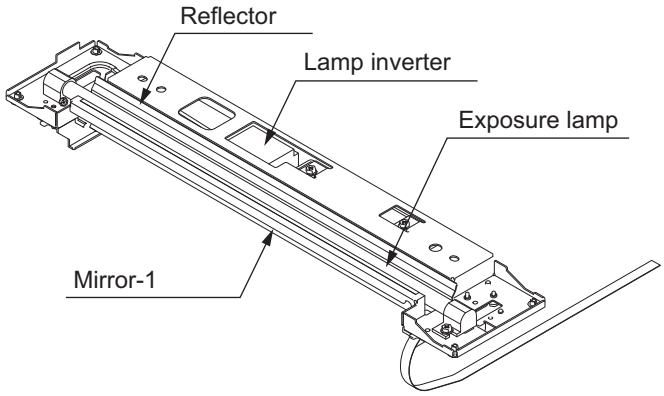


Fig. 7-2

- Exposure lamp (EXP)
  This lamp is the light source to irradiate the original on the glass. (One 26 W xenon lamp)
- Inverter board (INV)
  Controls lighting of the exposure lamp (EXP).
- Reflector
  This is a plate to efficiently direct the light from the exposure lamp (EXP) to the surface of the original on the glass.
- Mirror-1
  This mirror directs the light reflected from the original to the mirror-2 described later.

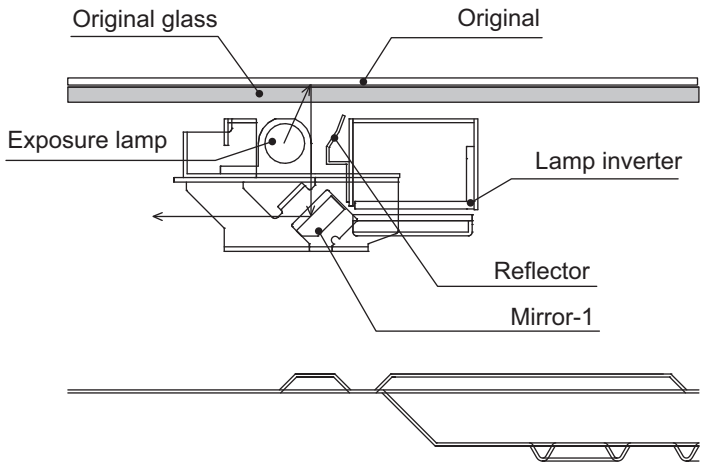


Fig. 7-3

3. Carriage-2
   Carriage-2 mainly consists of the mirror-2, mirror-3, etc. and directs the reflected light from the mirror-1 through the mirrors-2 and -3 to the lens.
   This carriage is driven by the same scan motor (M1) as that for the carriage-1 at half the scanning speed of the carriage-1 (The scanning distance is also half that of the carriage-1).

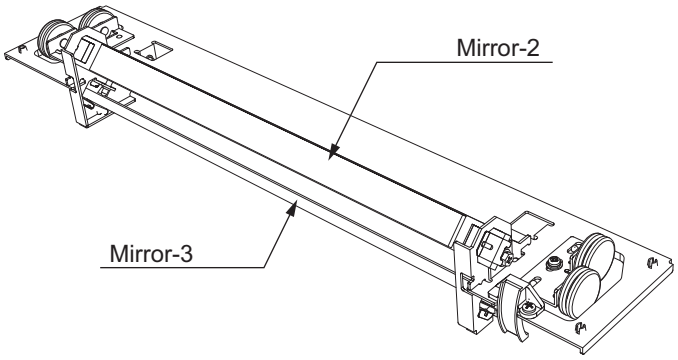


Fig. 7-4

4. Lens unit
   The light reflected from the mirror-3 is led to the CCD placed at the focal point of the lens which is fixed in a position.

5. CCD driving PC board (CCD)
   Processes such as signal amplification, signal integration and A/D conversion are applied on the electrical signal which was converted by CCD.

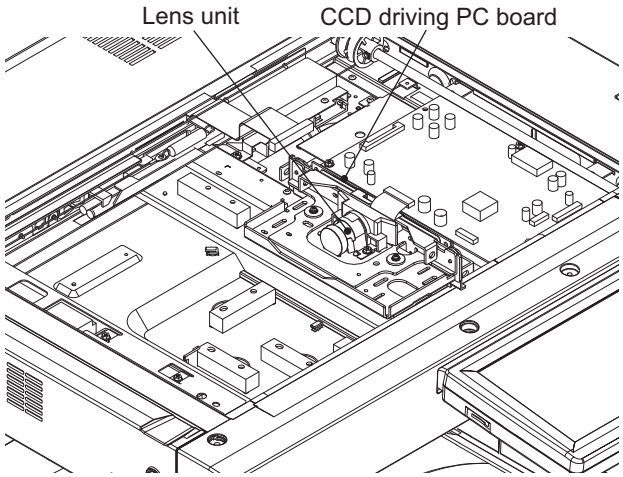


Fig. 7-5

6. Scanning section control PC board (SLG)
   This is a board to perform the image correction, such as the shading correction and 3-line correction, and control the scan motor (M1).

7. Automatic original detection sensor (S1-5)
   The size of an original placed on the glass is instantly detected using the automatic original detection sensors (S1-5) fixed on the base frame without moving the carriage-1.

7.4 Description of Operation

7.4.1 Scanning operation

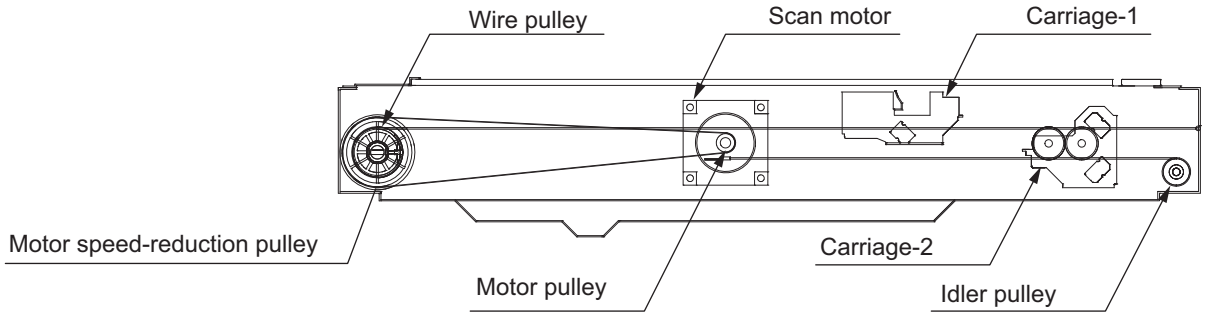


Fig. 7-6

- Scanning of an original placed on the original glass
  This motor drives the carriages-1 and -2 through the timing belt and carriage wire. First, the scan motor drives the carriages-1 and -2 to their respective home positions. The home positions are detected when the carriage-1 passes the home position sensor (S6). When the [START] button is pressed, the both carriages start to move and scan the original on the glass.

- Scanning of an original placed on the RADF
  The carriage-1 stays at the shading position during shading correction, and at the scanning position during scanning operation.

- Carriage speed
  The Carriage speed of the original placed on the original glass in the color mode is the same as that in the black mode.

7.4.2 Initialization at power-ON

The carriage moves to its home position and performs the peak detection.
Then it moves to the carriage waiting position and waits.

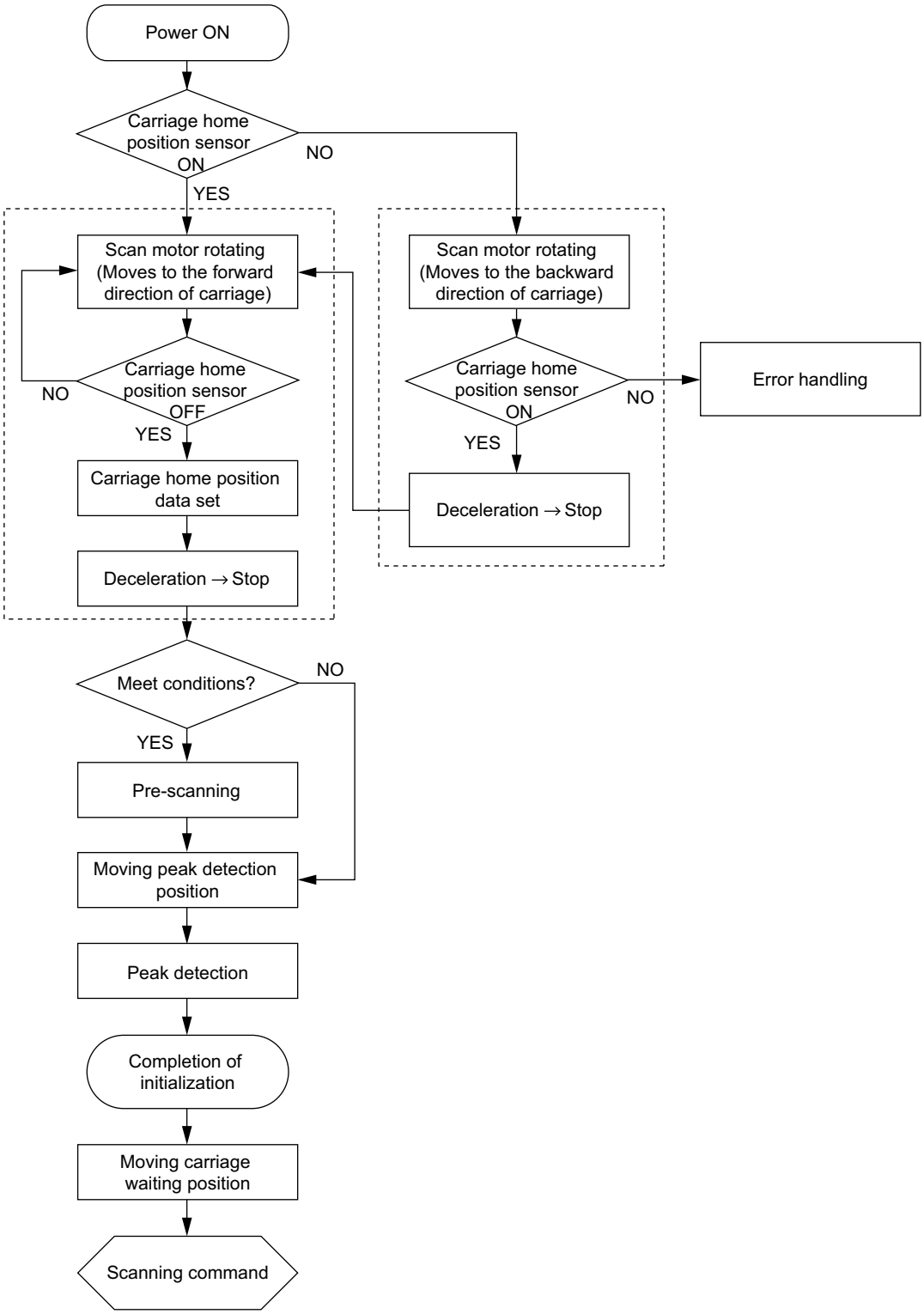


Fig. 7-7

7.5 Electric Circuit Description

7.5.1 Scan motor control circuit

The scan motor is a stepping motor driven by the control signal output from the scanner CPU on the SLG board and drives carriage-1 and -2.
The scan motor is driven by the pulse signal (SCNM-A, SCNM-AB, SCNM-B, SCNM-BB) output from the motor driver. These pulse signals are formed based on the reference clock (MOTCLK) and output only when the enable signal (MOTEN) is a high level. Also, the rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.

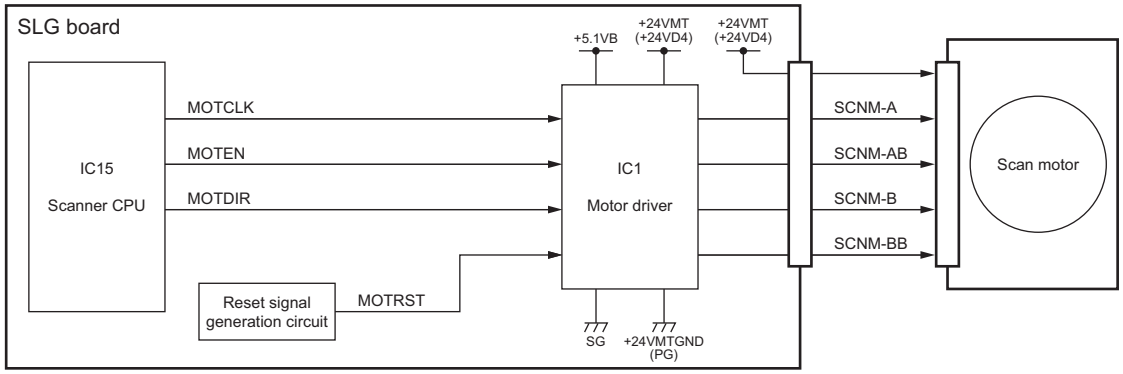


Fig. 7-8

Control signal

Signal	Function	Status	
		High level	Low level
MOTCLK	Reference clock	---	---
MOTEN	Enable signal	ON	OFF
MOTDIR	Rotation direction signal	CCW	CW
MOTRST	Reset signal	Normal operation	Reset

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis
* High level: Forcibly turning OFF the excitation drive output (Non-excitation state)
* Low level: Normal operation state (Excitation state)

7.5.2 Exposure Lamp Control Circuit

[1] General description

Control circuit for the exposure lamp consists of the following two blocks:

1. Lighting device for the exposure lamp (Inverter board)
   Turns ON/OFF the exposure lamp.

2. CCD board
   This circuit converts the reflected light amount from the original surface and the shading correction plate to electrical signals. The exposure amount is controlled in two ways:
   - White reference formation - reads the reflected light amount from the white shading correction plate
   - Black reference formation - reads the light amount at the regulation position with the exposure lamp lights OFF

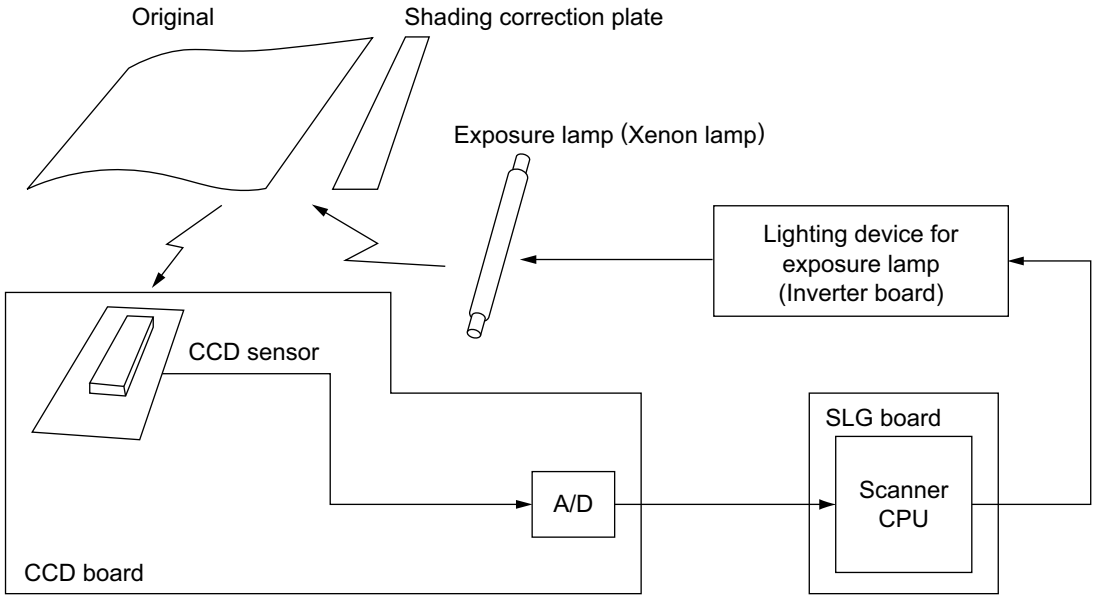


Fig. 7-9

[2] Exposure lamp

External electrode type xenon fluorescent lamp is used as an exposure lamp in this equipment.

1. Structure
   Fluorescer is applied on the inside surface of the lamp pipe (except a part to be an opening) which is filled with the xenon gas.
   A pair of the external electrodes covered by the film with the adhesive agent is attached over the pipe.

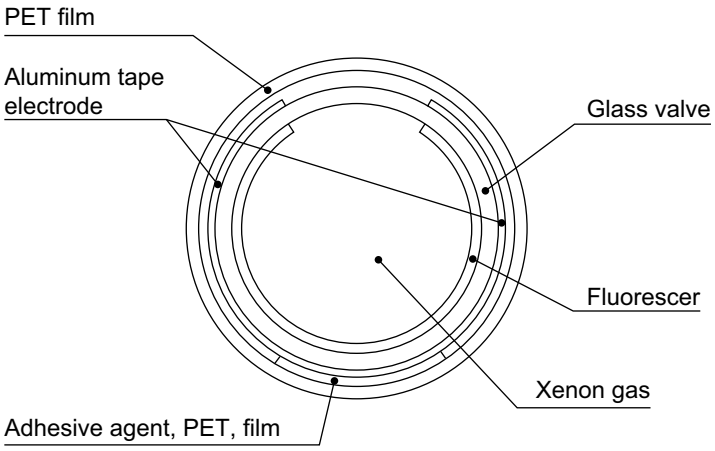
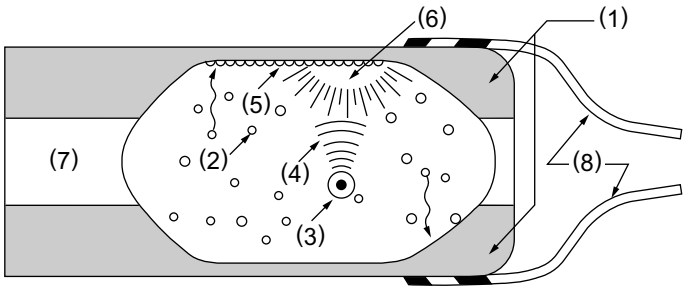


Fig. 7-10

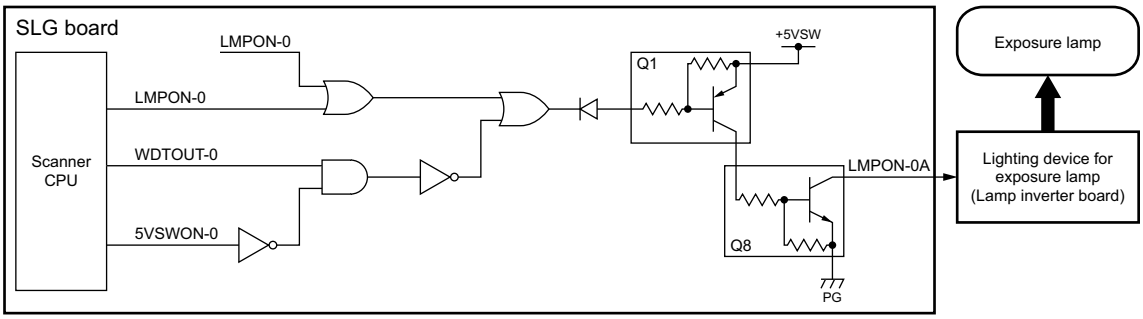
2. Behavior inside the lamp
   The electron inside the pipe is led to the electric field by applying voltage to the pair of the external electrodes, and discharge is started. Electrons then flow and clash with the xenon atoms inside the pipe to excite them, and generate ultraviolet rays. These ultraviolet rays excite the fluorescent substance to generate visible light.



(1) Electrode (2) Electron (3) Xenon atom
(4) Ultraviolet lay (5) Fluorescer
(6) Visible light (irradiated from the opening to outside the pipe)
(7) Opening (8) Harness

Fig. 7-11

[3] Exposure lamp control circuit



Control signal

Signal	Function
LMPON-0	Exposure lamp ON signal
WDTOUT-0	Watchdog timer signal
5VSOW-0	+5 VSW ON signal
LMPEN-0	Exposure lamp enable signal

Condition

LAMPON-0	WDTOUT-0	5VSOW-0	LMPEN-0	+5VSW	Q8	Exposure lamp	State of equipment
L	H	L	L	ON	ON	ON	Normal operation
H	H	L	L	ON	OFF	OFF	
---	L	---	---	OFF	OFF		Scanner CPU overdriving
---	H	H	---	OFF	OFF		Call for service
---	---	---	H	---	OFF		Abnormality detected (Check sum error)

7.5.3 General Description of CCD Control

[1] Opto-electronic conversion

A CCD (Charge-Coupled Device) is used to produce electrical signal corresponding to the reflected light amount from the original. CCD is a one-chip opto-electronic conversion device, comprised of several thousand light-receiving elements arranged in a line, each one of them is a few micron square. This equipment includes a CCD which has 7,450 light-receiving elements.
Each element of the light-receiving section consists of semiconductive layers P and N. When the light irradiates the element, light energy produces a (-) charge in the layer P; the amount of the charge produced is proportional to the energy and irradiating time. The charges produced in the light-receiving section are then sent to the transfer section where they are shifted by transfer clock from left to right as shown in the figure below, and are finally output from the CCD. At this time, to increase the transfer speed of the CCD, image signals in the even-number and odd-number elements are separated and output in parallel via two channels.

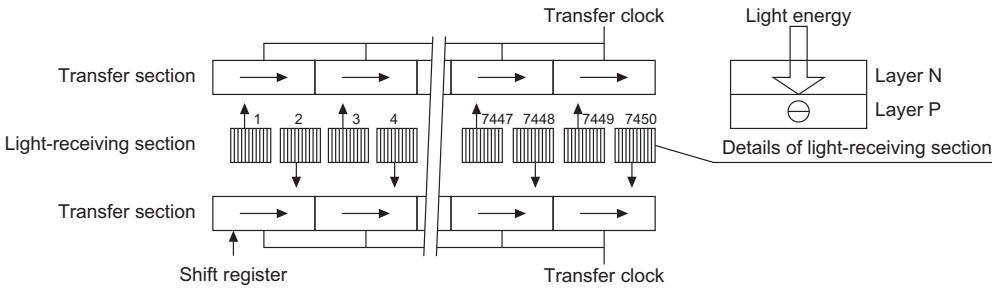


Fig. 7-12

[2] Shading correction

Signal voltages read by the CCD have the following characteristics:

1. Light source has a variation in its light distribution.

2. Since the light beam reflected from the original is converged using a lens, the light path is the shortest at the center of the CCD and the longest at ends. This causes difference in the amount of light reaching the CCD (i.e. the light amount is maximum at the CCD center, gradually decreases toward ends).

3. Each of the 7,450 elements varies in opto-electronic conversion efficiency.

These variations need to be corrected and these corrections are referred to as shading correction. Shading correction is performed by applying normalization process using the following formula on the black and white data obtained in advance to correct variance in lighting distribution and elements.

$$I = k \times \frac{(S-K)}{(W-K)}$$

k: Coefficient
S: Image data before correction
K: Black data (stored in "Black" memory)
W: White data (stored in "White" memory)

7.5.4 Automatic Original Size Detection Circuit

This circuit detects the size of original (standard sizes only) using the reflection type photosensors arranged on the base frame of the scanner unit.

[1] Principle of original size detection

Reflection type photosensors are placed on the base frame of the scanner unit as shown in the figure below. Each sensor consists of an infrared Light Emitting Diode (LED) on the light emitting side, and a phototransistor on the light receiving side.
When there is an original on the original glass, light beams from the LEDs are reflected by the original and led to the phototransistors. This means that the presence of the original is detected by the presence of reflection (when scanning black image).

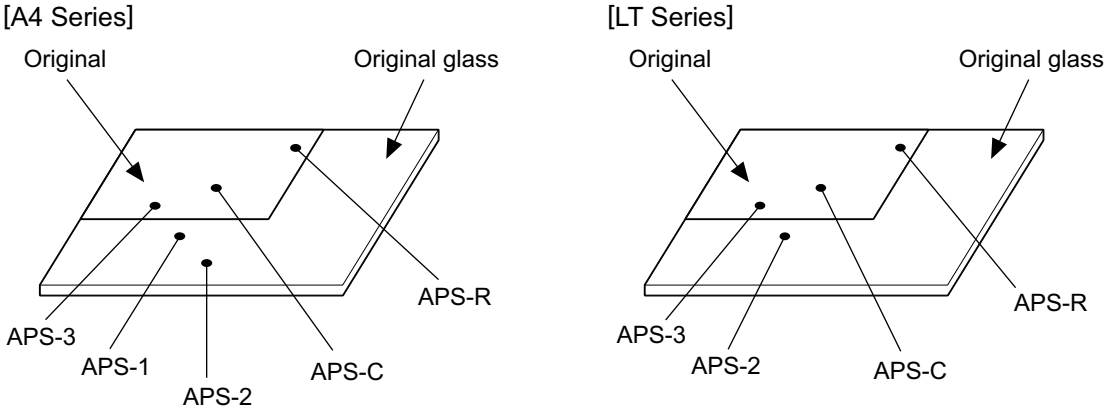


Fig. 7-13

[2] Process of detection of original size

1. When the equipment is in the original size detection mode, carriage-1 is set at its home position.

2. When the RADF or platen cover is opened, the sensors receive the light reflected from the original and if one of the matrix conditions shown in 4) for original sizes are met, the size of the original is instantly detected.

3. The output signal from each sensor is input to Scanner CPU on the SLG board to determine the size of the original.

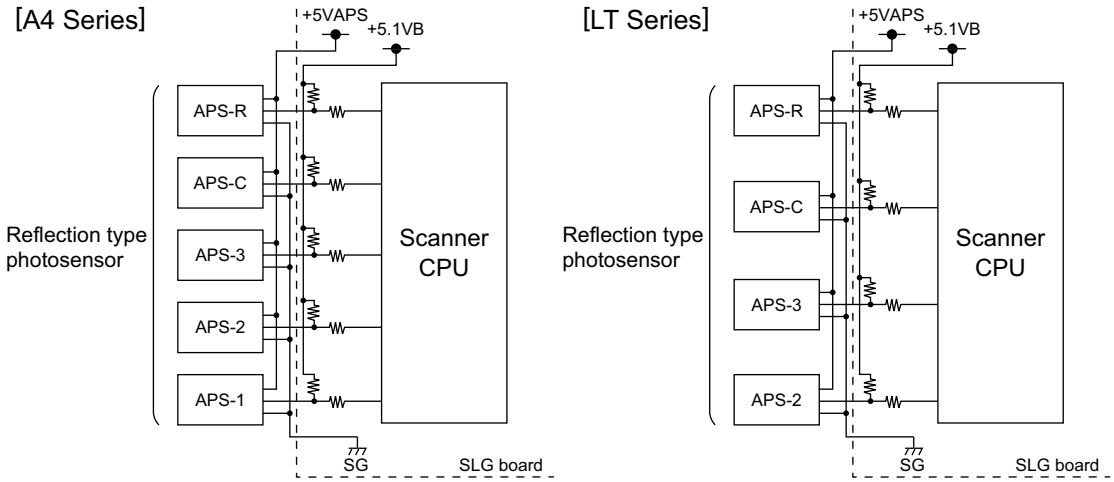


Fig. 7-14

Sensor detection points
[A4 Series]

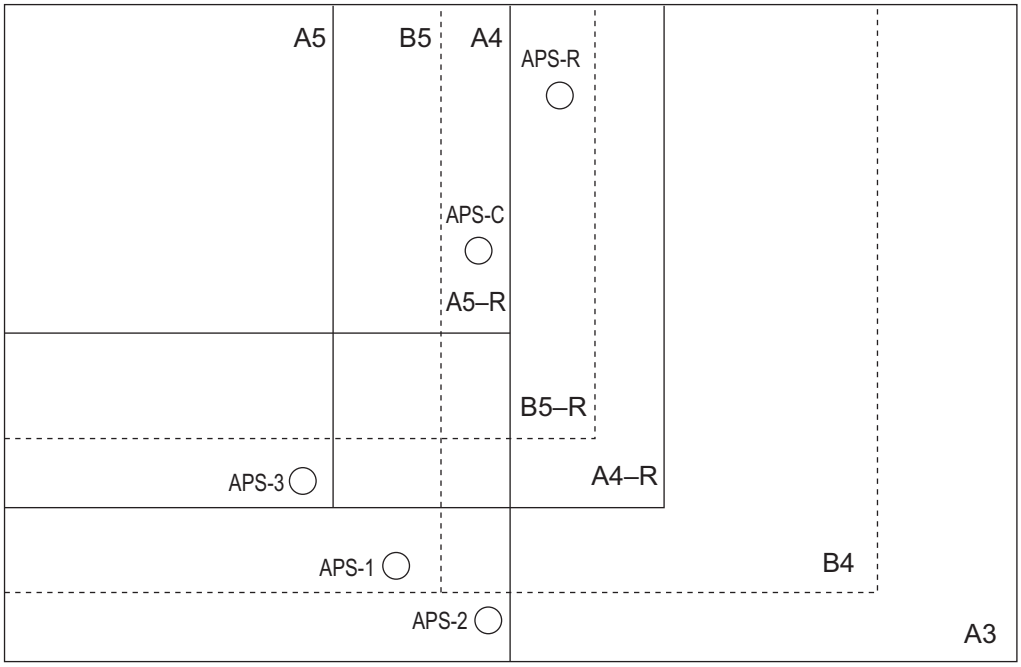


Fig. 7-15

[LT Series]

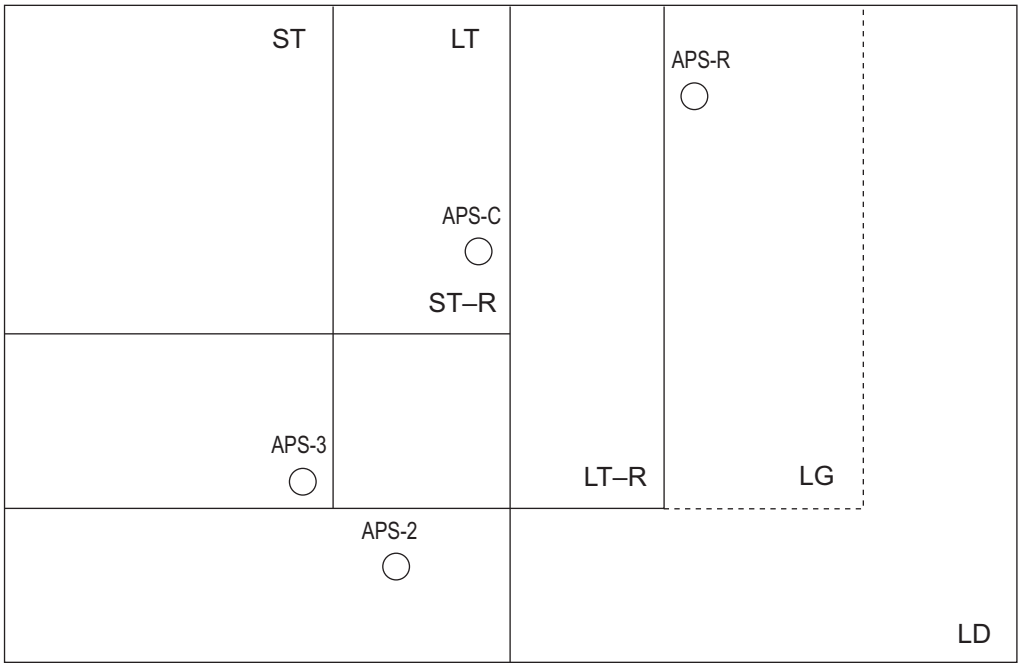


Fig. 7-16

4. Original size is determined by the combination of the signals output from each detection point. Combination charts for size determination of A4 series and LT series are as follows.

[A4 Series]

Size judgement	APS-C	APS-R	APS-1	APS-2	APS-3
A3	0	0	0	0	0
A4	0	1	0	0	0
B4	0	0	0	1	0
B5	1	1	0	1	0
A4-R	0	0	1	1	0
A5	1	1	1	1	0
B5-R	0	0	1	1	1
A5-R	0	1	1	1	1

[LT Series]

Size judgement	APS-C	APS-R	APS-2	APS-3
LD	0	0	0	0
LT	0	1	0	0
LG	0	0	1	0
LT-R	0	1	1	0
ST	1	1	1	0
ST-R	0	1	1	1

Code	Output signal	Original
1	H	Not available
0	L	Available

* When the platen sensor (S7) is OFF;
  - The followings are determined by output signals from the APS sensors.
    - Size (The combination of the signals satisfy any in the above chart)
      Size is displayed on the control panel and a specific paper or reproduction ratio is selected.
    - Size retention (The combination of the signals do not satisfy the above chart)
      The latest original size recognized (or no original state) until new paper size is recognized.
    - No original (Output from all the sensors are “1”.)
      Reproduction ratio and paper are not selected.
  - Size change is always observed and detected.
  - The carriage-1 stays at the standby position even if the reproduction ratio changes corresponding to the change of the original size.

* When the platen sensor (S7) is ON;
  The latest original size (or no original state) recognized right before the platen sensor (S7) is turned ON is retained regardless of the status the APS sensor output signals.

About reflection type photosensor

The reflection type photosensor is comprised of an infrared light emitting diode and a phototransistor. It uses pulse modulation to detect an original.

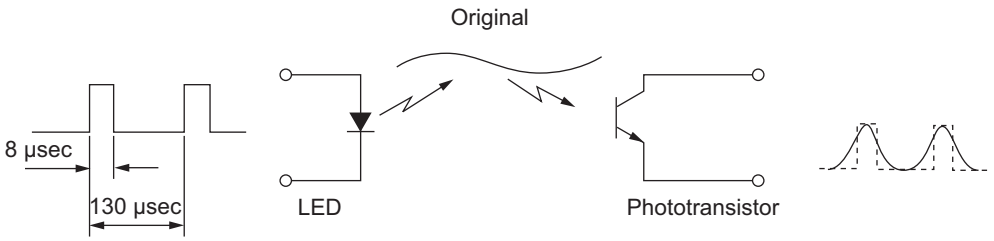


Fig. 7-17

The light emitting diode is driven by a pulse having a 130 µsec. cycle and an 8 µsec. ON time. When the phototransistor receives the same signal as this pulse, it is determined that there is an original. The pulse modulation is performed inside the reflection type phototransistor.

7.6 Disassembly and Replacement

7.6.1 Original glass

(1) Take off the right upper cover.
📖 P.3-30 "3.5.10 Right upper cover"
(2) Remove 2 screws and take off the fixing bracket.

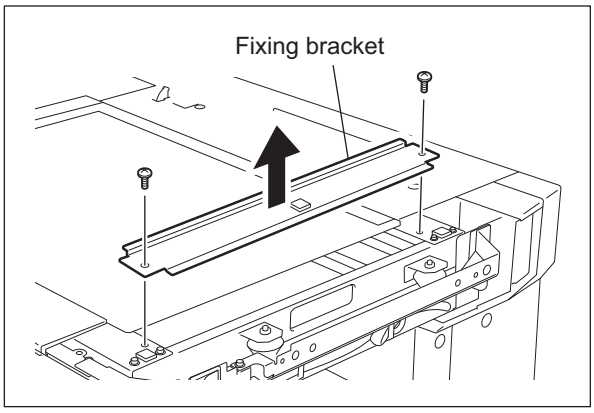


Fig. 7-18

(3) Take off the original glass.

Note:
When installing, fit 2 small protrusions of the original glass in the groove of the equipment and fix the original glass with the fixing bracket by pushing it to the left rear direction.

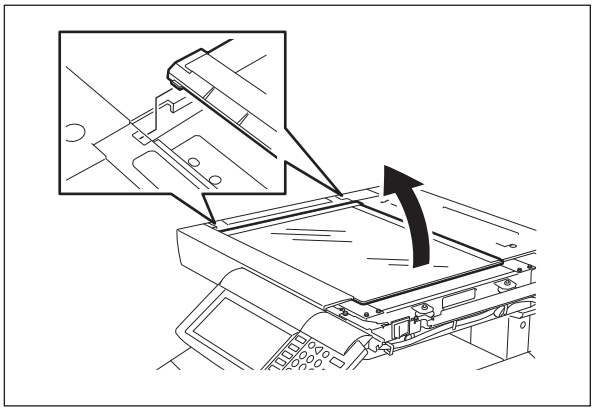


Fig. 7-19

7.6.2 Lens cover

(1) Take off the original glass.
📖 P.7-16 "7.6.1 Original glass"
(2) Remove 6 screws and disconnect 1 connector.
(3) Take off the lens cover.

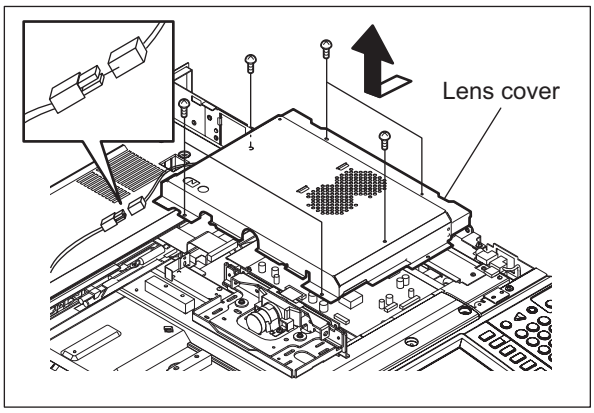


Fig. 7-20

7.6.3 Automatic original detection sensor (APS sensor)

[A] A4 series (APS-1, -2, -3, -C, -R)

(1) Take off the original glass.
🕮 P.7-16 "7.6.1 Original glass"
(2) Disconnect 1 connector and remove 1 screw for each APS sensor. Take off 5 APS sensors.

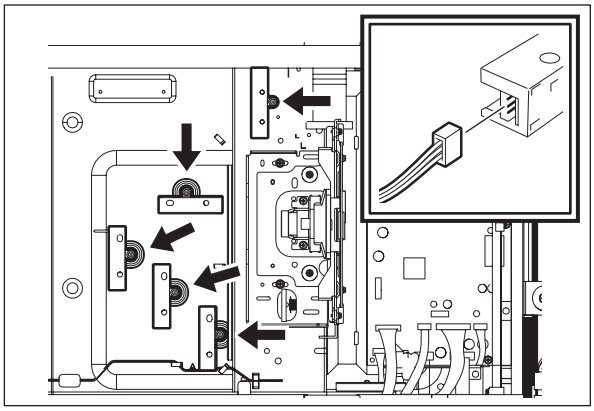


Fig. 7-21

[B] LT series (APS-1, -3, -C, -R)

(1) Take off the original glass.
🕮 P.7-16 "7.6.1 Original glass"
(2) Disconnect 1 connector and remove 1 screw for each APS sensor. Take off 4 APS sensors.

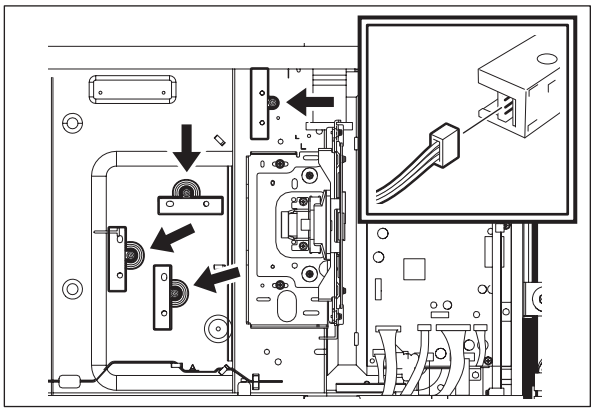


Fig. 7-22

7.6.4 Exposure lamp (EXP)

(1) Take off the original glass and front upper cover.
🕮 P.7-16 "7.6.1 Original glass"
🕮 P.3-28 "3.5.4 Front upper cover"
(2) Move the carriage-1 to the center position.

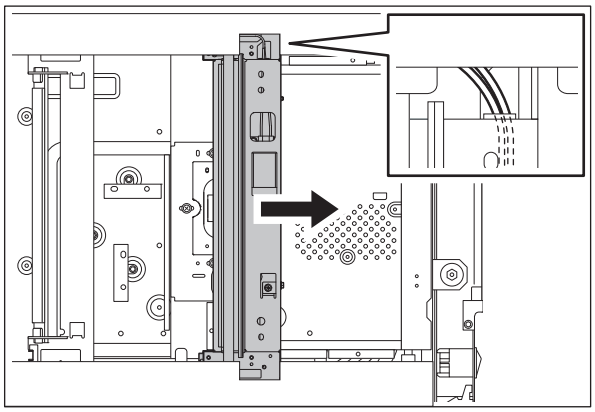


Fig. 7-23

Note:
Rotate the drive pulley to move the carriage.

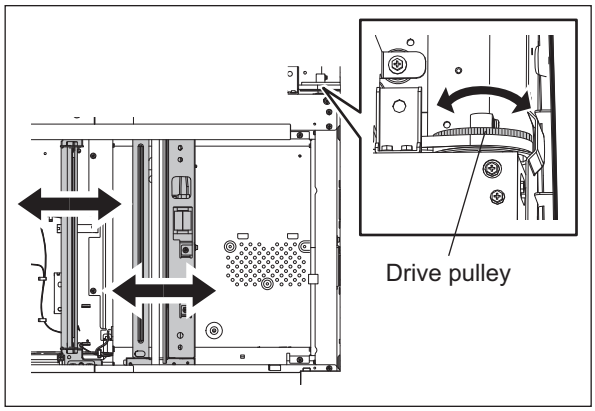


Fig. 7-24

(3) Disconnect the connector of the exposure lamp.

Note:
When disconnecting the connector, pay attention not to give load to the carriage frame.

(4) Release the harness from the harness clamp.

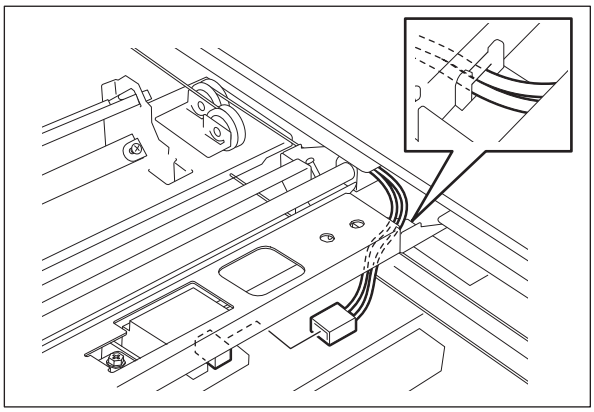


Fig. 7-25

(5) Move the carriage-1 to the position where the side of the frame is cut out.

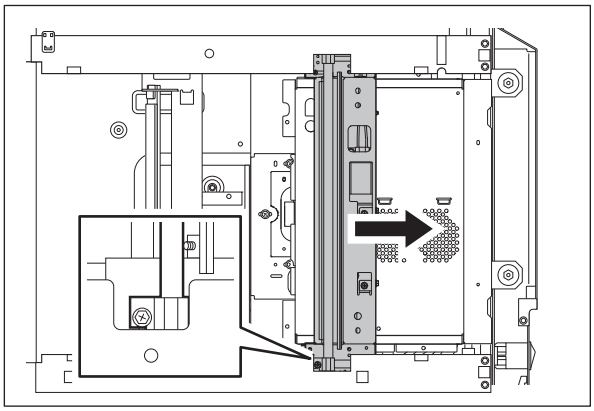


Fig. 7-26

(6) Remove 1 screw.
(7) Lift up the front side of the exposure lamp and take off by sliding it.

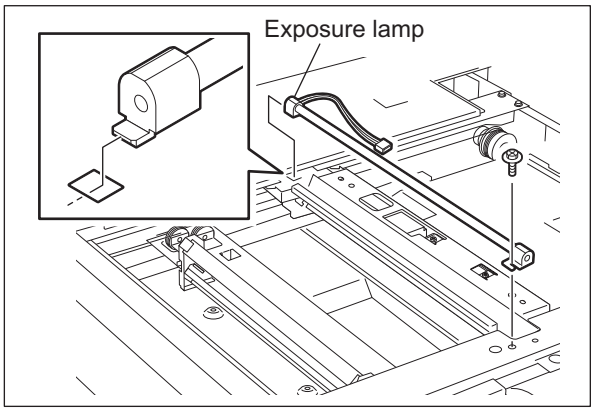


Fig. 7-27

7.6.5 Lens unit

[A] Lens unit

(1) Remove the lens cover.
P.7-16 "7.6.2 Lens cover"
(2) Disconnect 1 connector, remove 4 screws and take off the lens unit.

Notes:

1. When installing the lens unit, fix it while pushing it to the rear direction.
2. The lens unit must not be readjusted and some part of its components must not be replaced in the field since the unit is precisely adjusted. If any of the components is defective, replace the whole unit.

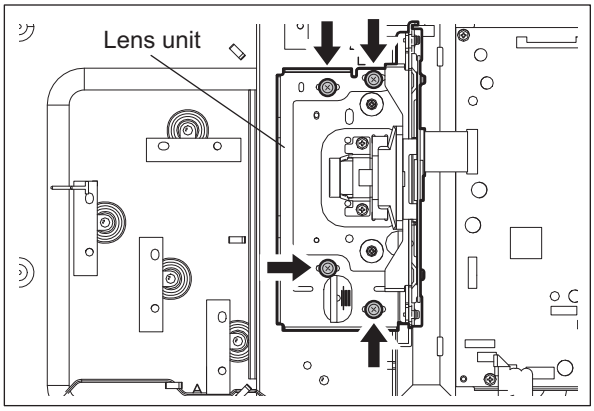


Fig. 7-28

3. Do not touch 8 screws shown with the arrows when replacing the lens unit.

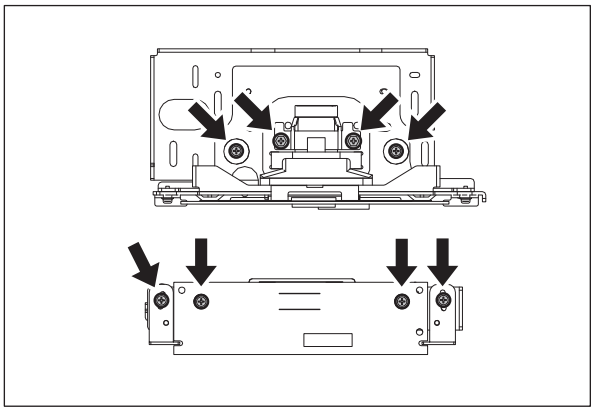


Fig. 7-29

4. Handle the unit with care. Do not touch the adjusted area and lens. (Hold the unit as the right figure.)

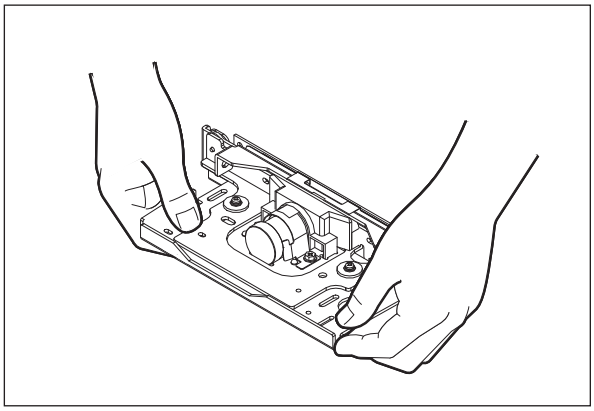


Fig. 7-30

[B] Installation of lens unit

(1) Attach the lens unit and fix it temporarily with 2 screws.
(2) Match the center scale of the plate in which the unit is to be installed and the rightmost scale of the adjusting hole on the lens unit plate.

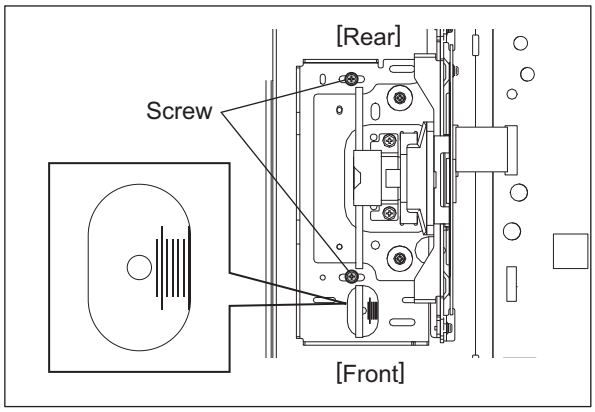


Fig. 7-31

(3) Tighten 4 screws securely to fix the lens unit while pushing it to the rear side.

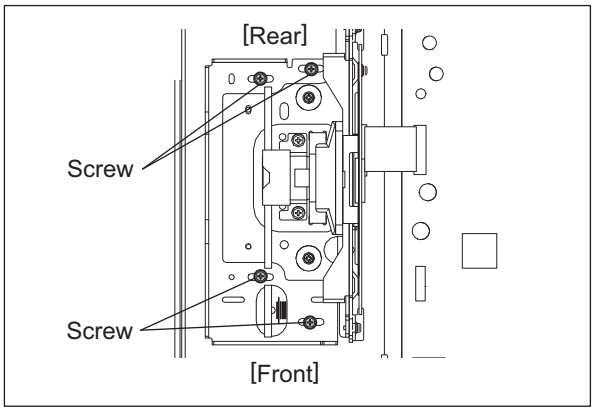


Fig. 7-32

7.6.6 Scan motor (M1)

(1) Take off the upper rear cover.
📖 P.3-32 "3.5.17 Upper rear cover"
(2) Take off the rear cover-2.
📖 P.3-33 "3.5.19 Rear cover-2"
(3) Disconnect 1 connector.

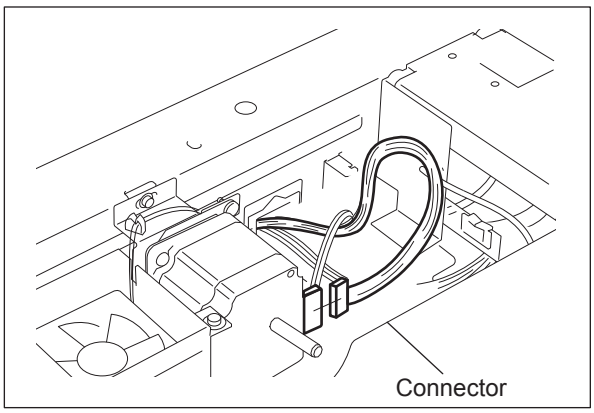


Fig. 7-33

(4) Release the harness from the harness clamp.
(5) Remove 3 screws and take off the scan motor with the whole bracket.

Note:
When installing the scan motor, be sure to perform the belt tension adjustment.
📖 P.7-31 "7.7.2 Belt tension adjustment of the Scan motor"

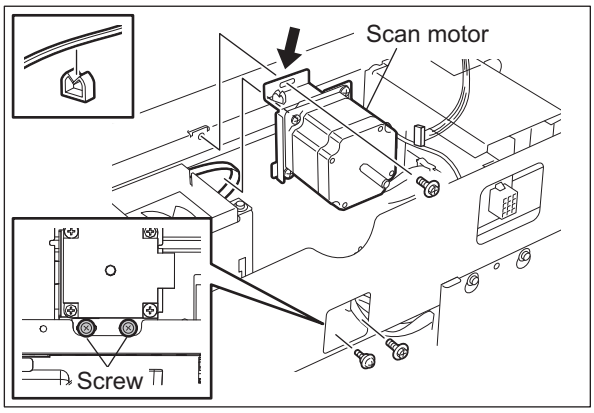


Fig. 7-34

7.6.7 Carriage-1

(1) Take off the original glass, upper rear cover and front upper cover.
🕮 P.7-16 "7.6.1 Original glass"
🕮 P.3-32 "3.5.17 Upper rear cover"
🕮 P.3-28 "3.5.4 Front upper cover"
(2) Move the carriage and position the holes of the carriage to the holes of the frame.
(3) Remove 2 screws and after moving carriage-1 to the position where the side of the frame is cut out, take off the bracket which fixes carriage-1 to the wire.

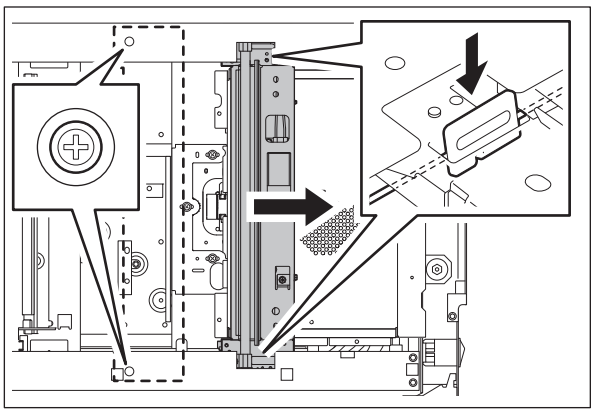


Fig. 7-35

Note:
Rotate the drive pulley to move the carriage.

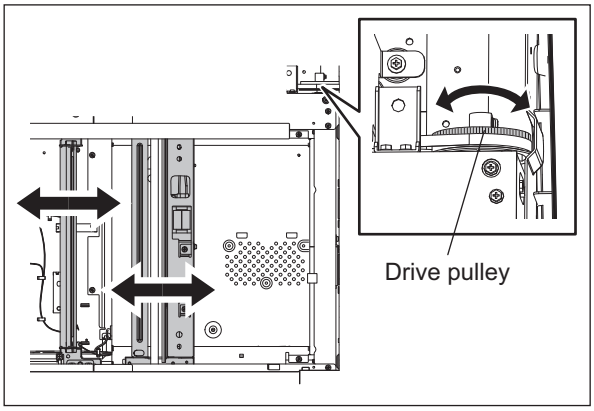


Fig. 7-36

(4) Remove the square seal fixing the lamp harness to the base. Disconnect the connector of the lamp harness from the SLG board.

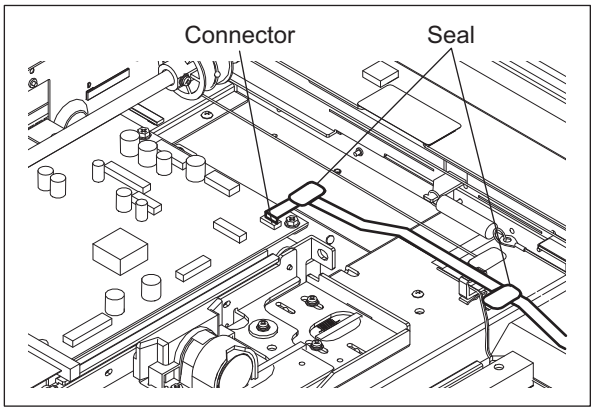


Fig. 7-37

Notes:

Be sure to install the lamp harness by following the procedure below.

1. Clean the seal adhering surface with alcohol.
2. Align the black line on the lamp harness with the position as shown in the figure, and fix it with a seal.

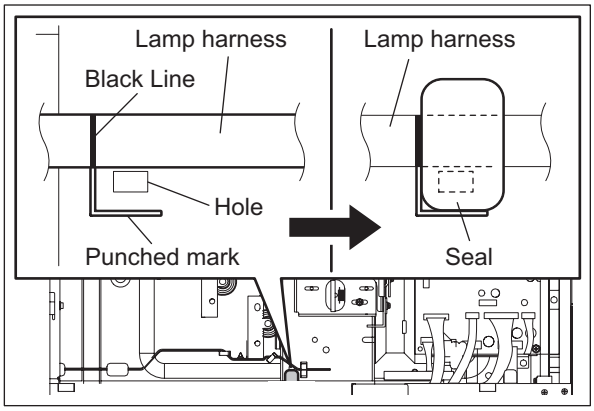


Fig. 7-38

3. Align the bent portion of the lamp harness with the position as shown in the figure, and fix it with a seal.
4. After the installation, move carriage-1 towards the left and confirm that there is no abnormality in the lamp harness, such as twisting.

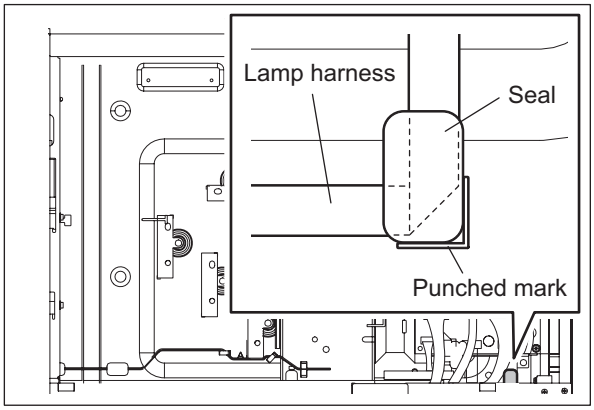


Fig. 7-39

(5) Rotate the carriage-1 in the direction shown in the figure at right, not to touch the mirror. Then take off the carriage-1.

Note:

When replacing the mirror-1, replace the carriage-1 together with mirror-1.
Mirror-1 should not be removed.

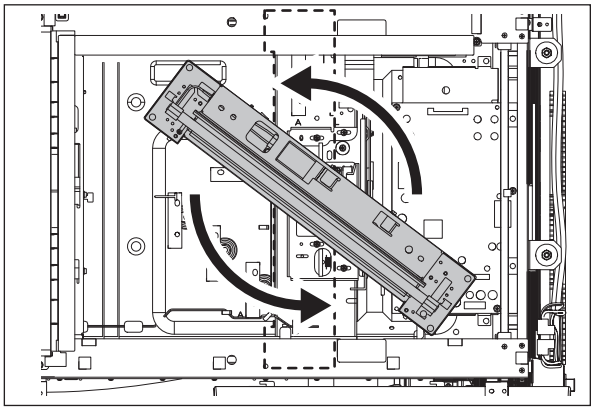


Fig. 7-40

Note:

When installing carriage-1, fix the bracket temporarily at the position (A). Then move it to the direction (B), push it to the end and fix securely.

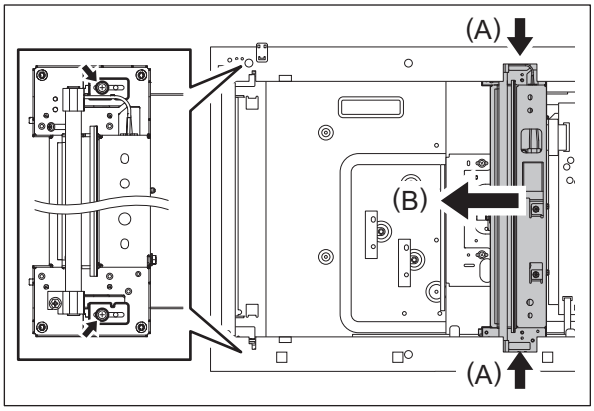


Fig. 7-41

7.6.8 Inverter board (INV)

(1) Take off the carriage-1.
📖 P.7-22 "7.6.7 Carriage-1"
(2) Disconnect 2 connectors.
(3) Remove 4 screws and take off the inverter cover and inverter board.

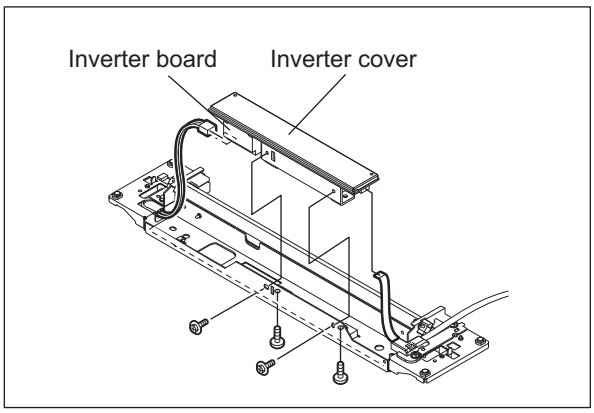


Fig. 7-42

(4) Remove 2 screws and take off the inverter board.

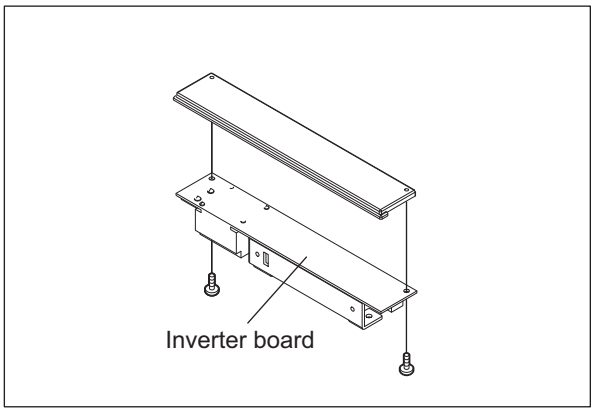


Fig. 7-43

7.6.9 Carriage wire / carriage-2

[A] Carriage wire / carriage-2

(1) Take off the carriage-1.
📖 P.7-22 "7.6.7 Carriage-1"
(2) Attach the wire holder jigs to the pulleys to prevent the wires from loosening.

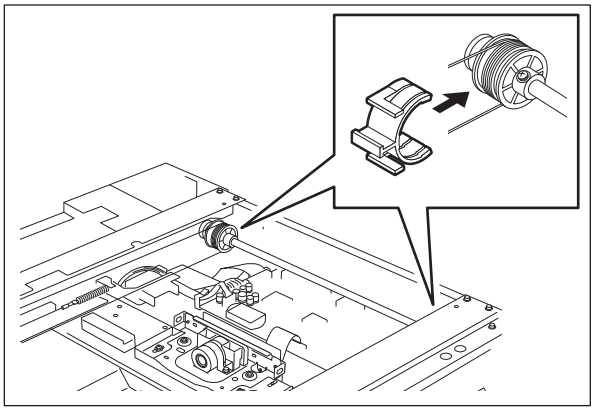


Fig. 7-44

Notes:
1. When the wire holder jig is attached, make sure that the wire is not shifted or loosened.
2. The wire should come out of the slot of the wire holder jig and be passed under the arm of it.

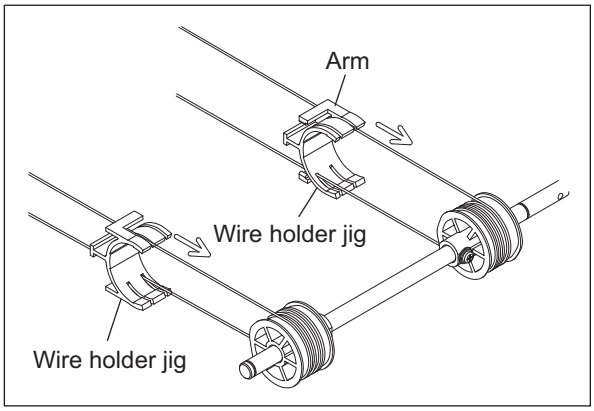


Fig. 7-45

(3) Detach the tension springs of the front and rear sides.
(4) Remove the carriage wires.

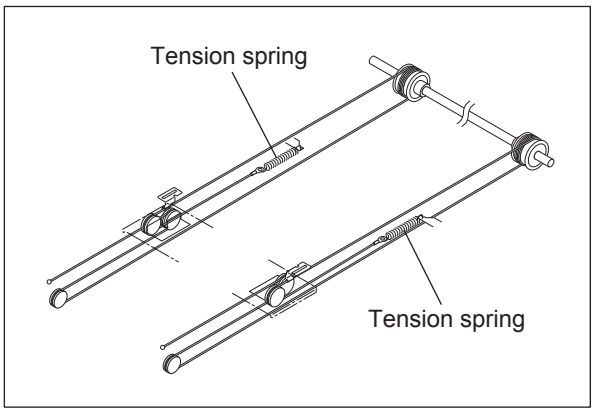


Fig. 7-46

(5) Rotate the carriage-2 in the direction where the inside of the frame is dented shown in the figure at right, not to touch the mirrors. Then take off the carriage-2.

Notes:

1. When replacing the mirrors-2 and -3, replace the carriage-2 together with mirrors-2 and -3. Mirrors-2 and -3 should not be removed.
2. When installing carriage-2, fix the bracket temporarily at the position (A). Then move it to the direction (B), push it to the end and fix securely.
(📖 P.7-24 "Fig. 7-41 ")

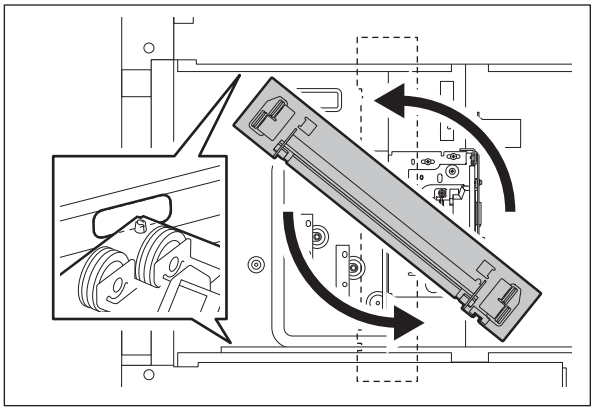


Fig. 7-47

[B] Installing carriage wires

(1) When replacing the carriage wires, refer illustrations below:

Note:

Adjustment of the carriage wire tension is not necessary since a certain tension is applied to the carriage wires by the tension springs. Make sure the tension applied to the wire is normal.

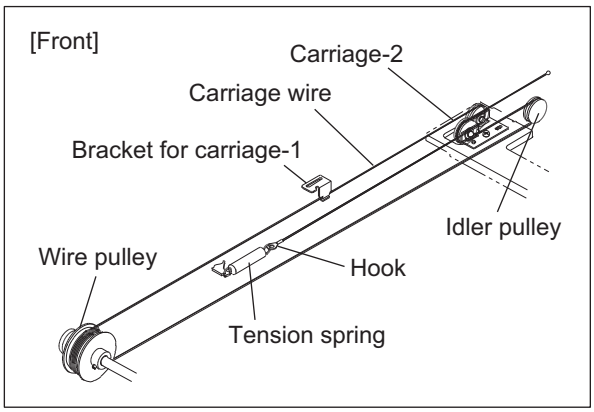


Fig. 7-48

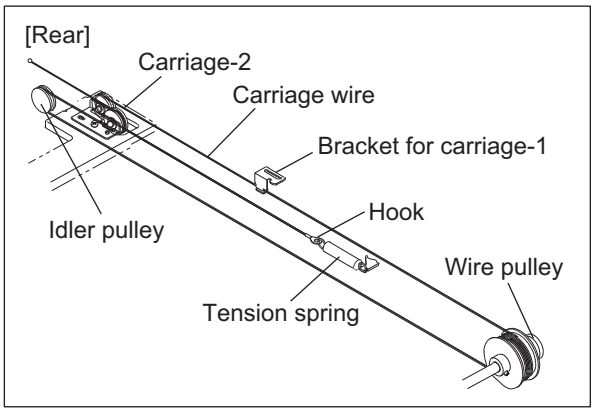


Fig. 7-49

[C] Winding the wires around the wire pulley

(1) Pull the Ø3 ball terminal located at the center of the wire into a hole on the wire pulley. One end of the wire with a hook attached comes to the outside.

(2) Wind the wires around the wire pulleys of the front and rear sides. The number of turns to be wound are as follows:
- 2 turns toward the opposite side of the boss
- 4 turns toward the boss side

Notes:
Pay attention to the followings when the wires are wound around the pulleys:
- Do not twist the wire.
- Wind the wires tightly so that they are in complete contact with the surface of the pulleys.
- Each turn should be pushed against the previously wound turn so that there is no space between them.

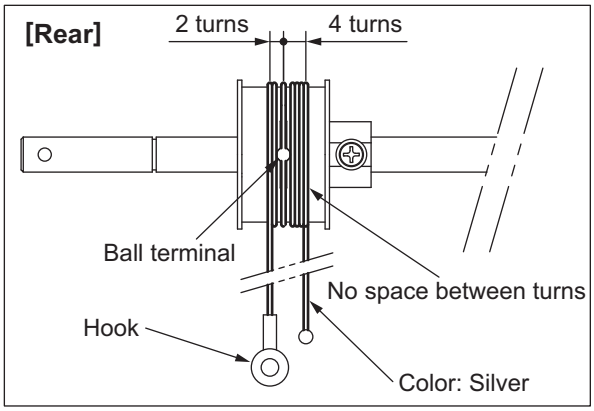


Fig. 7-50

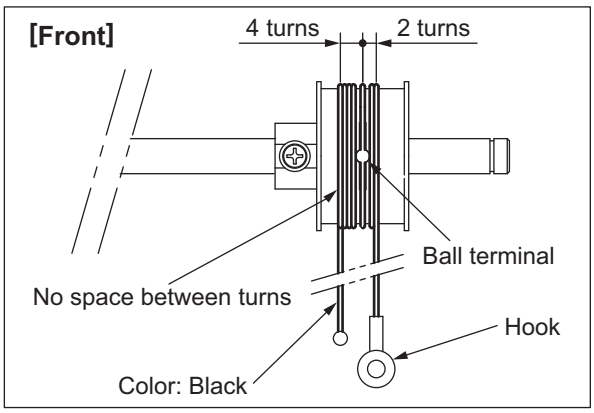


Fig. 7-51

(3) After winding the wires around the pulleys, attach the wire holder jigs not to loosen the wires.

Notes:
1. When the wire holder jig is attached, make sure that the wire is not shifted or loosened.
2. The wire should come out of the slot of the wire holder jig and be passed under the arm of it.

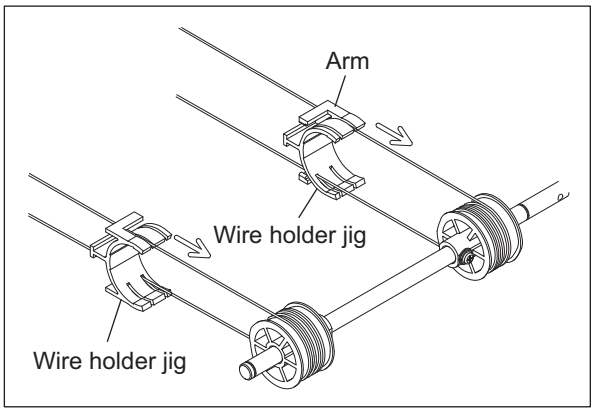


Fig. 7-52

7.6.10 Carriage home position sensor (S6)

(1) Take off the upper rear cover.
📖 P.3-32 "3.5.17 Upper rear cover"
(2) Remove the seal.
(3) Disconnect 1 connector. Release the latches and take off the carriage home position sensor.

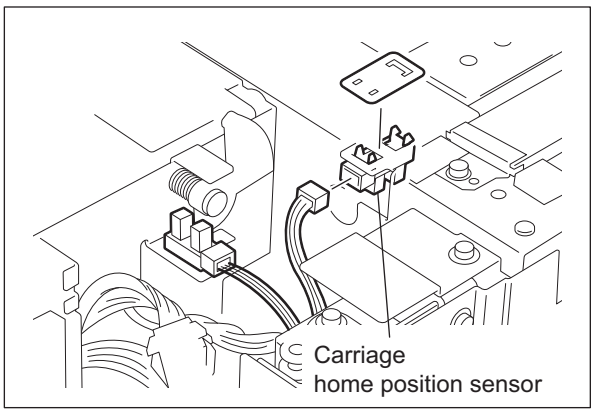


Fig. 7-53

7.6.11 Platen sensor (S7)

(1) Take off the RADF.
(2) Take off the upper rear cover.
📖 P.3-32 "3.5.17 Upper rear cover"
(3) Disconnect 1 connector. Release the latches and take off the carriage home position sensor.

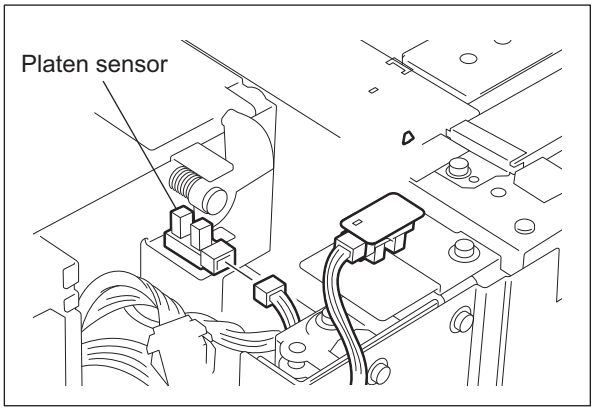


Fig. 7-54

7.6.12 SLG board (SLG)

(1) Take off the lens cover.
📖 P.7-16 "7.6.2 Lens cover"
(2) Disconnect 10 connectors, remove 4 screws and take off the SLG board.

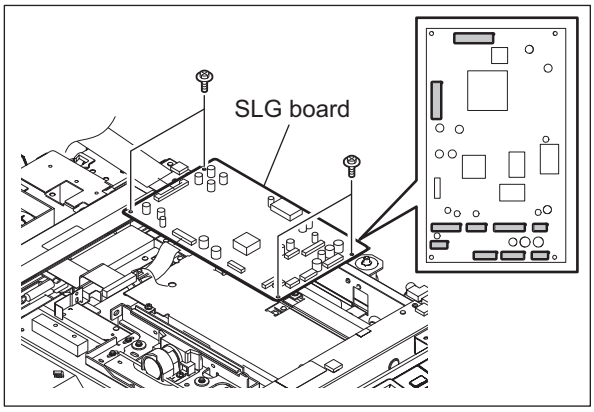


Fig. 7-55

7.6.13 Scanner unit cooling fan (M30)

(1) Take off the upper rear cover.
P.3-32 "3.5.17 Upper rear cover"
(2) Disconnect 1 connector. Remove 2 screws and take off the scanner unit cooling fan.

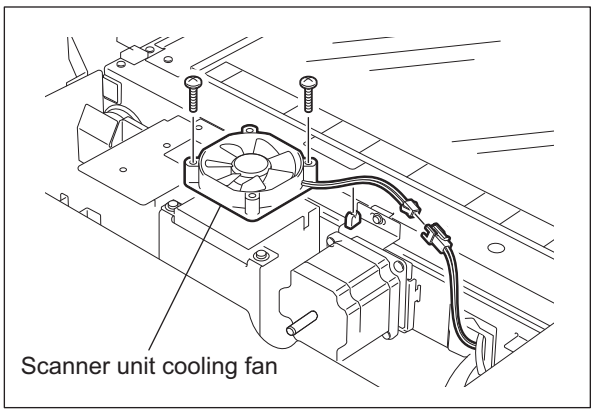


Fig. 7-56

7.6.14 Exposure lamp cooling fan (M32)

(1) Take off the original glass.
P.7-16 "7.6.1 Original glass"
(2) Move the carriage-1 to the right side.
(3) Remove 2 screws and disconnect 1 connector.
(4) Remove the exposure lamp cooling fan.

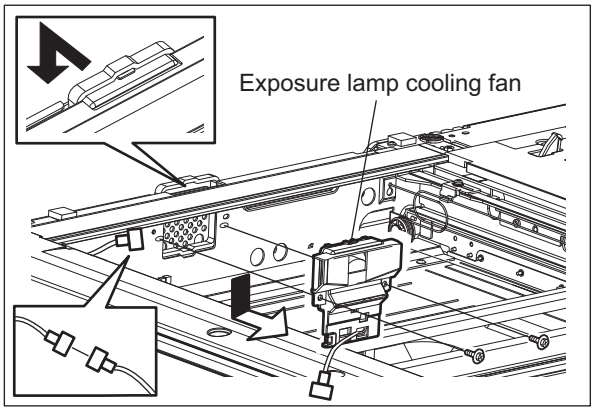


Fig. 7-57

Note:
Rotate the drive pulley to move the carriage.

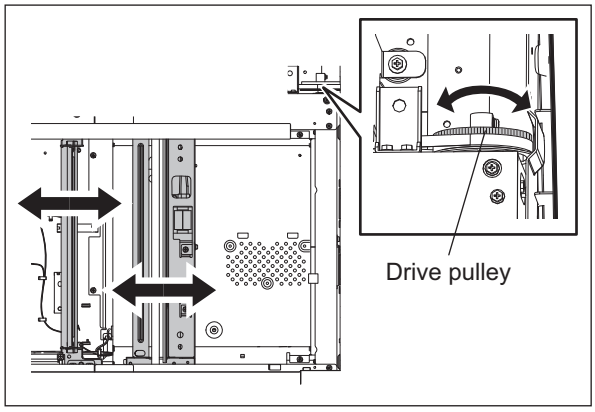


Fig. 7-58

7.7 Adjustment of the Scanner Section

7.7.1 Adjustment carriages-1 and -2 positions

(1) Move the carriage-2 toward the exit side.
(2) Loosen the screws fixing the front side pulley bracket, make the sections A and B of the carriage-2 touch with the inside of the exit side frame and screw them up.

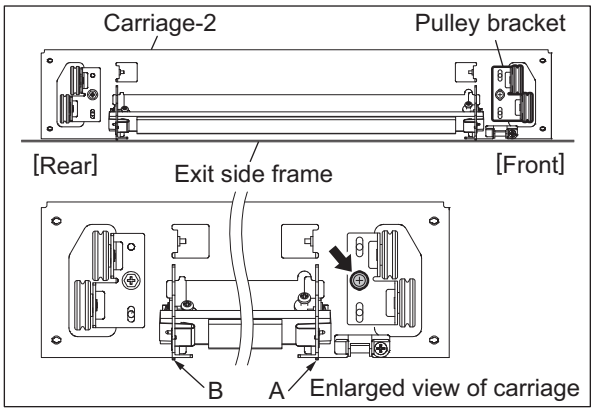


Fig. 7-59

(3) Put the carriage-1 on the rail, make the sections C and D of it touch with the inside of the exit frame and screw up the front/rear side of the bracket to fix it.

Note:
Make sure that the sections A and B of the carriage-2 touch with the exit side frame.

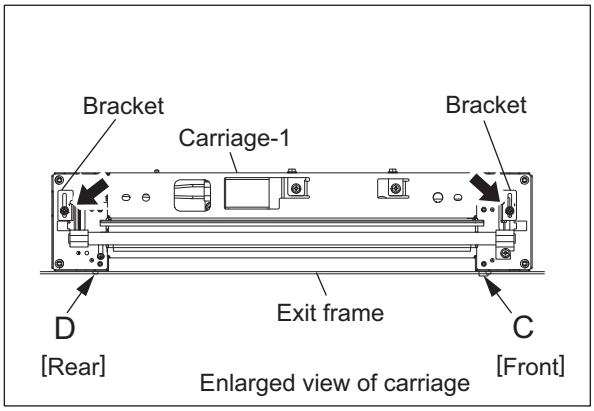


Fig. 7-60

7.7.2 Belt tension adjustment of the Scan motor

(1) Hook the belt tension jig to the motor bracket and the flame.
(2) Loosen screw-B and -C. (There is no need to loosen screw-A, since it is a shoulder screw.)
(3) The scan motor is pulled by the belt tension jig. Fix screw-B and then -C at the stopped position.
(4) Remove the belt tension jig.

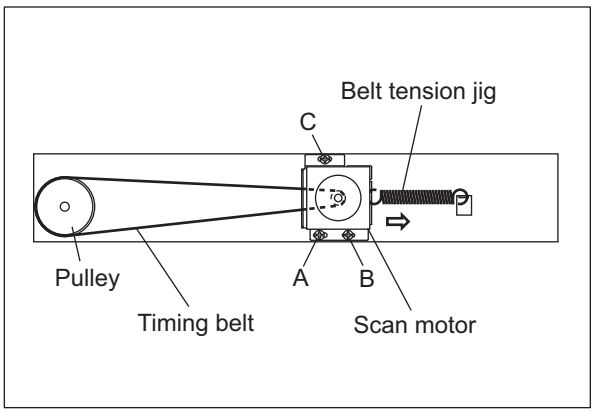


Fig. 7-61

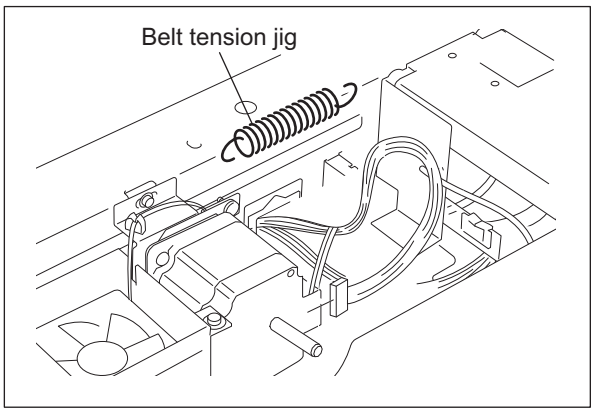


Fig. 7-62

8. IMAGE PROCESSING

8.1 General Description

The following diagram shows the process of this equipment from the input data to writing data on the photoconductive drum surface.
Image processing is performed on the IMG and SYS boards in this equipment.

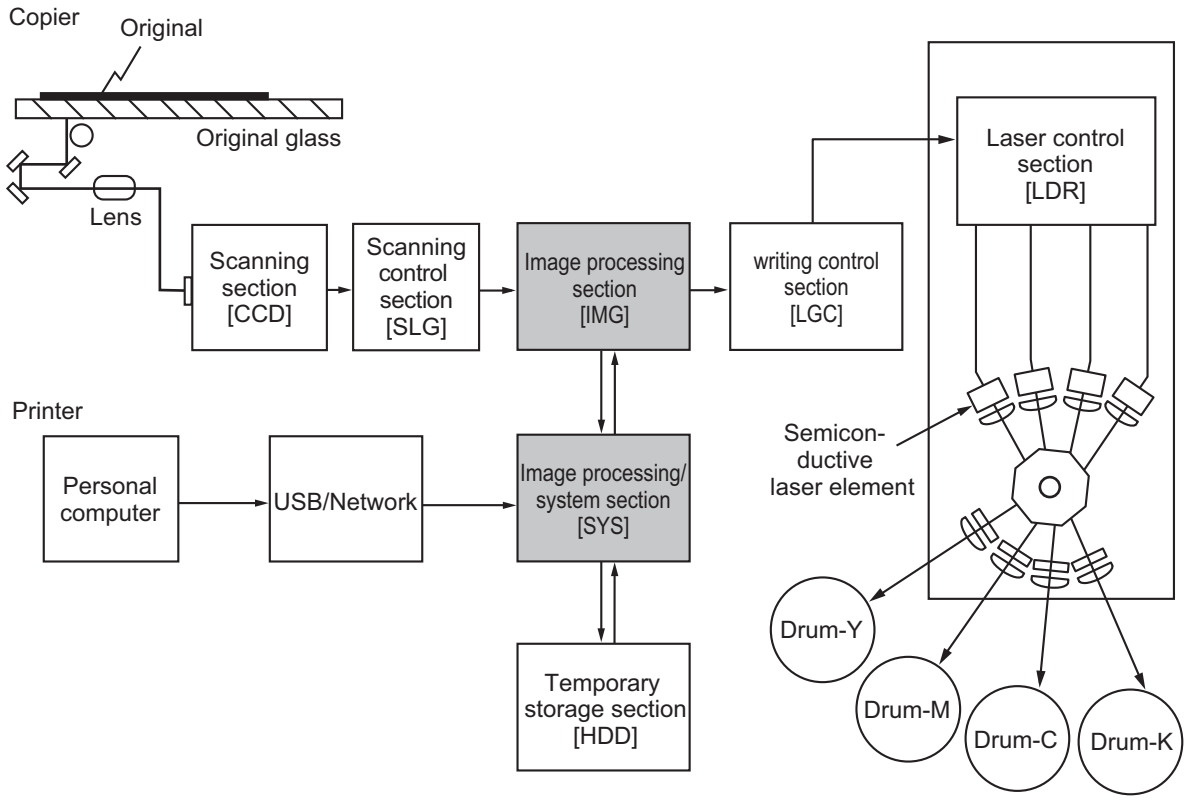


Fig. 8-1

The followings are the board used for image processing.

Board	Function
IMG board	ACS, color conversion, high quality image processing, image memory editing, rectangular area signal generation, editing processing, gamma correction, gradation processing, compression/expansion, black component generation, blank page detection, outside erase, smoothing processing, scanner high quality image processing and printer high quality image processing
SYS board	Black over print, pure black / pure gray, chroma adjustment, brightness adjustment and contrast adjustment

Image of an original placed on the original glass is scanned by the optical system. The CCD (Charge Coupled Device) reads the optical image signals and converts them into the electrical signals. The electrical signals are amplified and undergo analog-to-digital conversion, then are changed into digital signals. Shading correction (correction of variance in CCD elements and the light source) is performed and the digital signal is output as an image signal from the scanning control section.
The image processing section inputs the image signal from the scanning control section and applies various image processing on the signal, then transmits the output result to the writing control section.

8.2 Configuration

The following diagram shows the image processing section of this equipment.

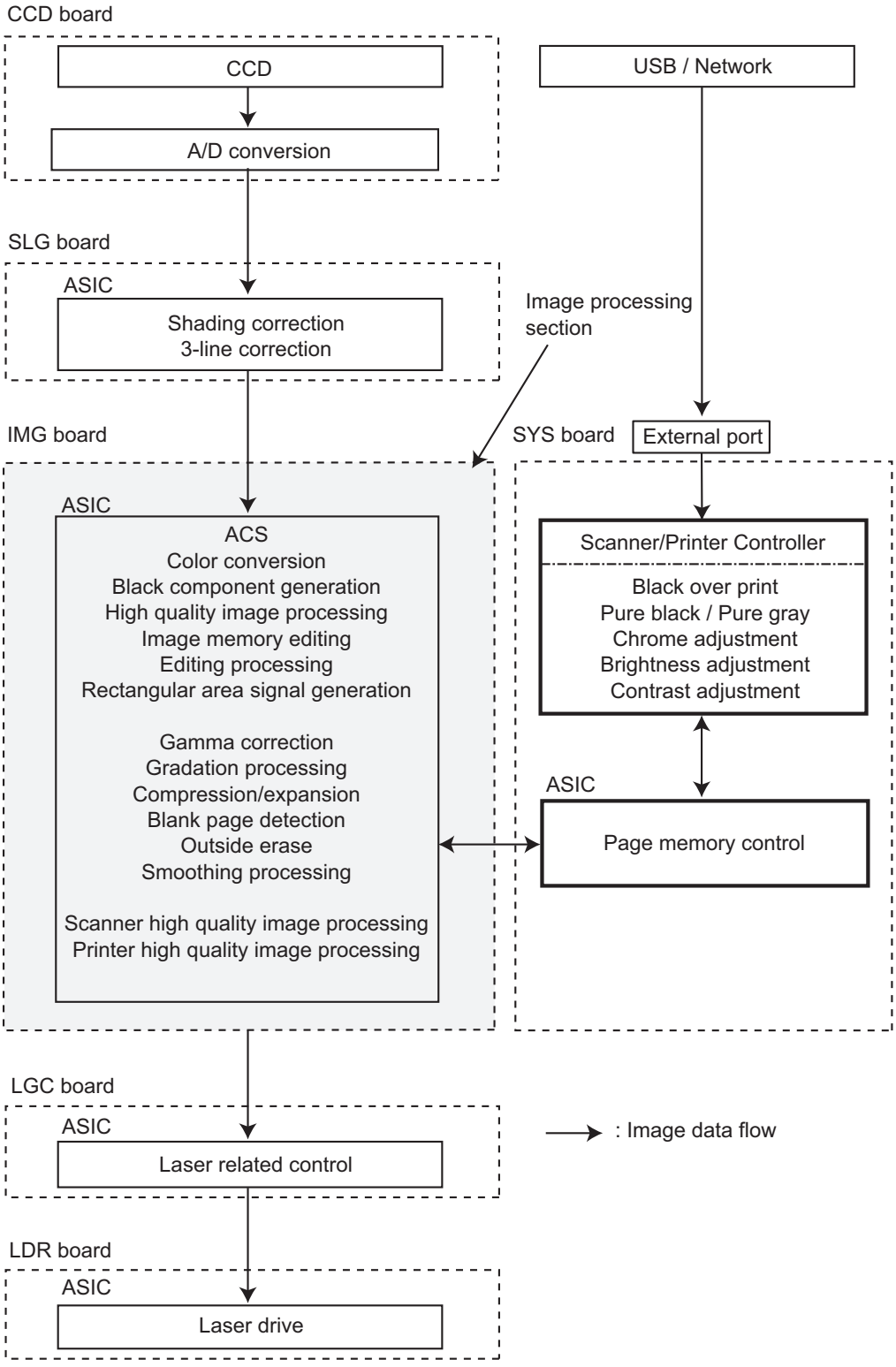


Fig. 8-2

8.3 Image Processing PC Board (IMG)

8.3.1 Features

1. Image processing functions realized on the IMG board are controlled by the CPU on the SYS board.

2. The image processing PC board realizes the following functions:
   - ACS
   - Color conversion (CMY image data processing)
   - Black component generation
   - High quality image processing
   - Image memory editing
   - Rectangular area signal generation
   - Editing processing
   - Gamma correction
   - Gradation processing
   - Compression/expansion
   - Blank page detection
   - Outside erase
   - Smoothing processing
   - Scanner high quality image processing
   - Printer high quality image processing

8.3.2 Functions of image processing circuit

1. ACS (Auto Color Selection)
   This function determines whether the original to be scanned is colored or monochrome, based on the analysis of the R, G and B signals output from the CCD.

2. Color conversion (CMY image data processing)
   When functioning the copier, the RGB image data is converted to CMY image data. (When functioning the scanner, it is converted to RGB image data.)
   The image data taken in by the scanner represents the intensities of reflection from the three primary colors of light (Red, Green and Blue). These RGB values are then color-converted to the respective amounts of toners corresponding to the three colors (Yellow, Magenta and Cyan) for printing (=CMY image data processing).

3. Black component generation
   K (Black) signal is generated from the CMY image data. Based on this K signal, the CMY image data is corrected to suppress hue on reproducing grays or to make the black look more real.

4. High quality image processing
   - Background processing function
     By using the background adjustment function while manually adjusting the image density, undesirable background of the original can be removed if any, and some necessary but disappeared background can be recovered. By using this function, it is possible to cut the background density down when copying originals which have a certain level of background density, such as newspapers.

<Example>

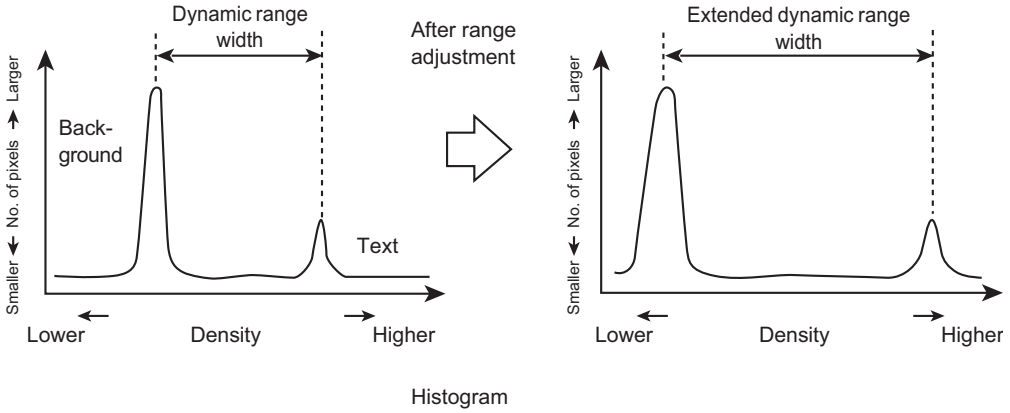


Fig. 8-3

- Image discrimination
  By determining the magnitude of density variation in a block (n x n dot), the target pixels are judged whether they are text or photograph. If they are determined to be text, they are further judged whether they are black or color text, using the differences in the levels of CMY signals.

- Filtering
  This function is enabled by low-pass filter processing and high-pass filter processing.

  Low-pass filter processing
  This processing removes image/electrical noise and decreases moire by performing averaging operation between the image signals of the targeted pixel and those of the neighboring pixels to enhance the reproducibility of original.

  <Example>
  Density of the targeted pixel position is X. Density of pixel positions at front and back of the targeted pixel are “a” and “b” respectively. X is converted to X’ through the low pass filtering.

  When the matrix is (3 x 1):

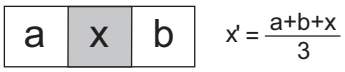


Fig. 8-4

The above averaging operation is performed for all the pixels to accomplish the high reproducibility of original.
(The following is the case that the low pass filtering is applied on the primary scanning pixel.)

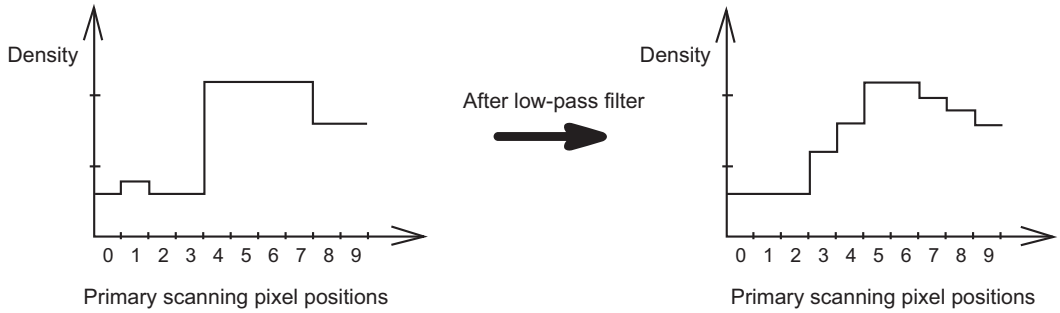


Fig. 8-5

High-pass filter processing

Character outline blurs when the original, such as text, with big difference in density among the pixels is optically scanned and output from the CCD. Characteristic of the lens and other factors cause this phenomenon. In this equipment, processing such as edge enhancement is applied between the targeted pixel and the neighboring pixels to eliminate this phenomenon and realize high reproducibility of original.

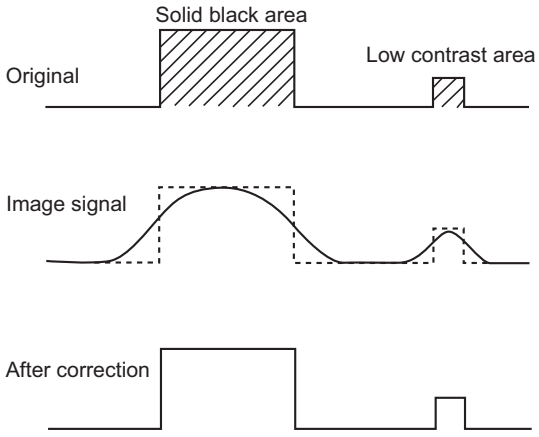


Fig. 8-6

5. Image memory editing
   This function performs editing such as enlargement/reduction, mirror imaging, etc., by using a line memory. Pixel data for one line in the primary scanning direction is stored in the line memory and the memory is renewed at each line.

   - Enlargement/Reduction
     Enlargement/Reduction is accomplished by using the line memory control function in the process of the image processing operation.

   - Mirror image
     This is accomplished by reading and outputting data from its end.

6. Rectangular area signal generation
   When a rectangular coordinate position is selected, the corresponding rectangular area signals are generated. Using these signals, various edit processing related to the area specification can be performed.

7. Editing processing
   This function performs trimming and masking.
   - Trimming
     Using rectangular area signals, the image signals inside the rectangular area are left and the other image signals are eliminated.
   - Masking
     Using rectangular area signals, the image data inside the rectangular area are erased.

8. Gamma correction
   This function corrects the input/output characteristics of the scanner/printer and adjusts the image signals so that the input/output characteristics would match with the copy mode.

9. Gradation processing
   In case of color copying, this function switches the type of gradation processing depending on the copy mode: A type which selects the printer characteristics giving the priority to resolution such as for text data, and another which selects the printer characteristics giving the priority to reproducibility of gradation such as for photographic images.
   In case of black copying, this function selects the gradation processing which reproduces the halftone image such as photograph more precisely. Also the gradation processing which makes text data clearer is selected in black copying mode.

10. Compression/expansion
    To lessen the data amount of the color image signals, this function effects the compression/ expansion on the data.

11. Blank page detection
    This function determines whether an original is blank or not with the pixel colors of its image data input by the scanner or the printer. If the original is determined as blank, it is printed out as a blank page.
12. Outside erase
    When a thick original such as a book is copied, a shade-like dark area appears around the copied image because the Platen Cover (optional) is not fully closed. This function erases this area and prints only the required image data.

13. Smoothing processing
    This function removes jaggy and smooths character outline of images and output them.

14. Scanner high quality image processing
    This function corrects the image signals scanned by the scanner and reproduces them in a higher image quality.

15. Printer high quality image processing
    This function reproduces the image signals output from the printer controller in a higher image quality.

8.4 System Control PC Board (SYS)

8.4.1 Features

1. Image processing functions realized on the SYS board are controlled by the CPU on the SYS board.
2. The image processing functions of the SYS board realizes the followings:
   - Black over print (PostScript)
   - Pure black / Pure gray (PostScript) / Pure gray (PCL6C)
   - Chroma adjustment (PCL6C)
   - Brightness adjustment (PCL6C)
   - Contrast adjustment (PostScript / PCL6C)

8.4.2 Functions of image processing circuit

On the SYS board, the following image processing functions are realized.

1. Black over print (PostScript)
   When black data of text or graphic object are formed on a certain background with no written data underneath them, the color of the paper comes out around the black data when “out-of-color registration” is occurring. To prevent this phenomenon, this process enables to keep the background color around the black data formed as a part of the text or the graphic object on the printer data.

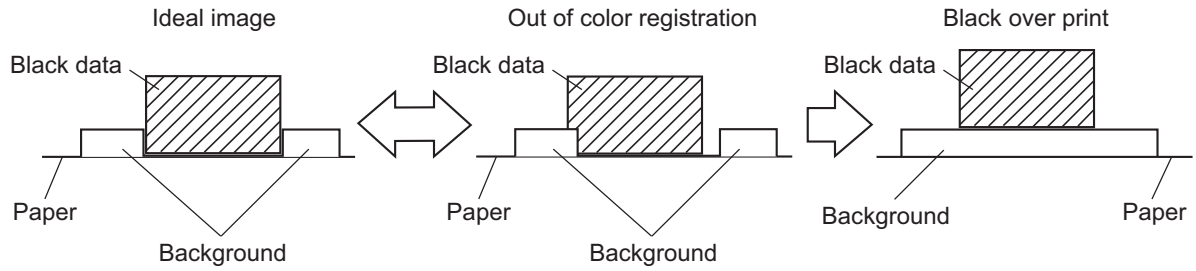


Fig. 8-7

2. Pure black / Pure gray (PostScript) / Pure gray (PCL6C)
   This function is to printout the text and graphics formed as black data with black toner only on the printer data, not using 4 color toner. The gray text/graphics are also printed out with black toner only.

3. Chroma adjustment (PCL6C)
   This function adjusts chromaticness of the printer data.

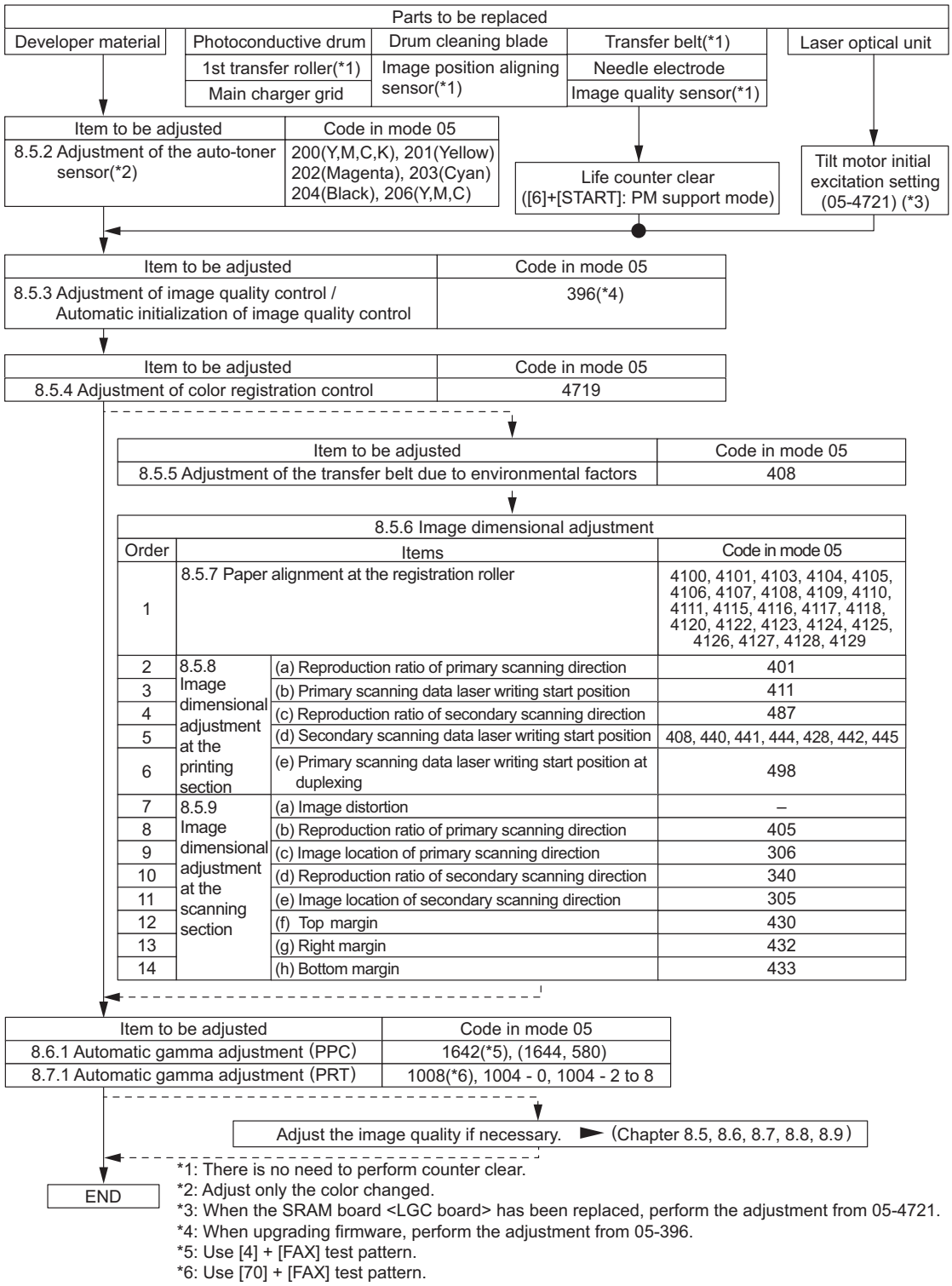
4. Brightness adjustment (PCL6C)
   This function adjusts brightness of the printer data.

5. Contrast adjustment (PostScript, PCL6C)
   The contrast adjustment is applied to the print data.

8.5 Image Related Adjustment

8.5.1 Adjustment Order

This chapter mainly explains the procedures for image related adjustment. When replacing components which have other specified instructions for adjustment, those specified instructions are to be obeyed in priority.
In the following diagram, the solid lines with arrow lead to essential adjustments, while the dotted lines lead to adjustments to be performed if necessary.



*1: There is no need to perform counter clear.
*2: Adjust only the color changed.
*3: When the SRAM board <LGC board> has been replaced, perform the adjustment from 05-4721.
*4: When upgrading firmware, perform the adjustment from 05-396.
*5: Use [4] + [FAX] test pattern.
*6: Use [70] + [FAX] test pattern.

Fig. 8-8

8.5.2 Adjustment of the Auto-Toner Sensor

When the developer material is replaced, adjust the auto-toner sensor in the following procedure.

(1) Install the cleaner and developer unit.

Note:
Do not install the toner cartridge.

(2) While pressing [0] and [5] simultaneously, turn the power ON. The following message will be displayed.

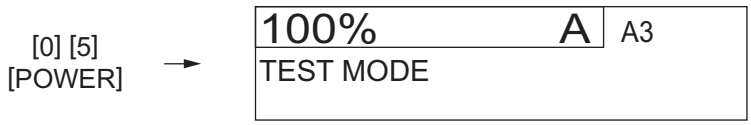


Fig. 8-9

(3) Key in a code and press the [START] button.

Code 200: All developer materials 201: Developer material Y 202: Developer material M
203: Developer material C 204: Developer material K 206: Developer material YMC

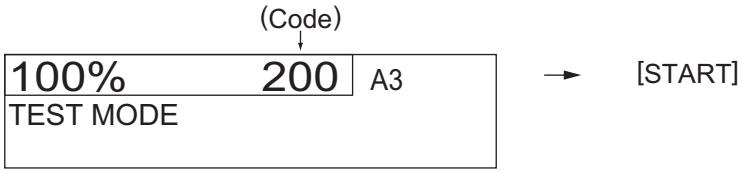


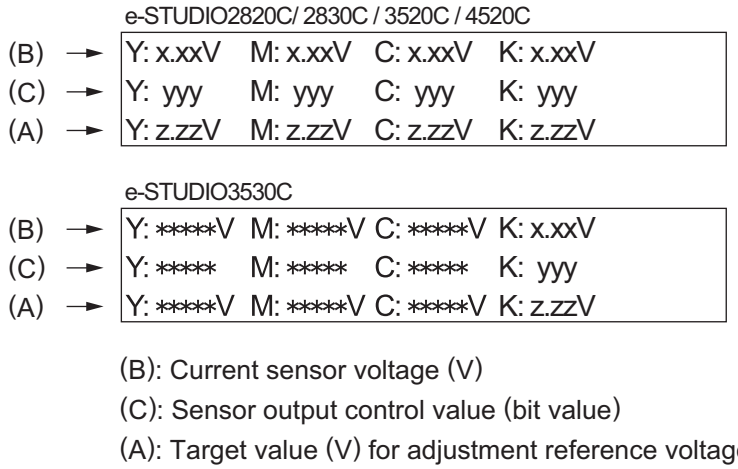
Fig. 8-10

(4) The message below will be displayed approx. 2 minutes later and the adjustment starts:
- During the adjustment, “Current sensor voltage (V)” shown in (B) automatically changes and gradually approaches to “Target value (V) for adjustment reference voltage” shown in (A).

(B): Current sensor voltage (V)
(C): Adjustment value, Humidity (%)
(A): Target value (V) for adjustment reference voltage

Fig. 8-11

(5) When the “Current sensor voltage (V)” in (B) is converged and the “Sensor output control value (bit value)” corresponding to the value for initial developer material is displayed in (C), the adjustment is completed.
- When the adjustment is completed, the [ENTER] button is displayed on the screen.



(B): Current sensor voltage (V)
(C): Sensor output control value (bit value)
(A): Target value (V) for adjustment reference voltage

Fig. 8-12

Note:
The values in (A), (B) and (C) vary with humidity.

(6) Press the [ENTER] button to store the adjustment result in the memory.

(7) Turn the power OFF.

(8) Install the toner cartridges.

8.5.3 Performing Image Quality Control (ICQ)

(1) When unpacking
Prior to image dimensional adjustment, perform the “Automatic initialization of image quality control (05-396)” procedure.

(2) When any of the following parts is replaced, be sure to perform the “Automatic initialization of image quality control (05-396)” procedure.

- Photoconductive drum
- Developer material
- Laser optical unit
- Transfer belt
- 1st transfer roller
- Drum cleaning blade
- Needle electrode
- Main charger grid
- Image position aligning sensor
- Image quality sensor

Note:
When performing “Automatic gamma adjustment” in addition, “Automatic initialization of image quality control (05-396)” should be done first.
If "Readjust from IQC-Adjustment" is displayed, perform "Automatic initialization of image quality control (05-396)."

(3) When performing “Automatic gamma adjustment” in cases no parts written above are replaced, do the “Forced performing of image quality closed-loop control (05-395)” procedure before “Automatic gamma adjustment”.

Code	Item to be adjusted	Contents
395	Forced performing of image quality closed-loop control	<Procedure> 1. While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment Mode 2. Key in [395] and press the [START] button. 3. “WAIT” is displayed. 4. When the adjustment finishes normally, the equipment returns to the initial state of Adjustment Mode. When an error occurs <When “Waste toner box replacement” is displayed> 📖 P.5-15 "[F] Waste toner box replacement" 1. Replace the waste toner box with a new one and close the waste toner cover. 2. Press and hold the [MAIN POWER] button for a few seconds to shut down the equipment. 3. Turn the power ON. 4. Release the waste toner box full status by the warming-up operation. 5. Check that “WAIT” is displayed. <When an adjustment error is displayed> 📖 P.5-14 "[D] No toner in the cartridge" 1. Press and hold the [ON/OFF] button for a few seconds to shut down the equipment in order to check the toner empty status. 2. Turn the power ON. 3. Check the toner supply operation in warming-up. When a message prompts you to replace the toner cartridge, open the front cover and replace the cartridge with a new one. 4. Check that “WAIT” is displayed. <Other abnormalities> Take the appropriate action described in Troubleshooting. 📖 P.26-1 "26. ERROR CODE AND TROUBLESHOOTING"

Code	Item to be adjusted	Contents
396	Automatic initialization of image quality control	<Procedure> 1. While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment Mode 2. Key in [396] and press the [START] button. 3. “WAIT” is displayed. 4. When the adjustment finishes normally, the equipment will return to initial state of the Adjustment Mode. When an error occurs <When “Waste toner box replacement” is displayed> 📖 P.5-15 "[F] Waste toner box replacement" 1. Replace the waste toner box with a new one and close the waste toner cover. 2. Press and hold the [MAIN POWER] button for a few seconds to shut down the equipment. 3. Turn the power ON. 4. Release the waste toner box full status by the warming-up operation. 5. Check that “WAIT” is displayed. <When an adjustment error is displayed> 📖 P.5-14 "[D] No toner in the cartridge" 1. Press and hold the [ON/OFF] button for a few seconds to shut down the equipment in order to check the toner empty status. 2. Turn the power ON. 3. Check the toner supply operation in warming-up. When a message prompts you to replace the toner cartridge, open the front cover and replace the cartridge with a new one. 4. Check that “WAIT” is displayed. <Other abnormalities> Take the appropriate action described in Troubleshooting. 📖 P.26-1 "26. ERROR CODE AND TROUBLESHOOTING"

8.5.4 Adjustment of Color Registration Control

After having finished the “Automatic initialization of image quality control (05-396)” procedure, perform the “Forced performing of color registration control adjustment (05-4719)” procedure.

Code	Item to be adjusted	Contents
4719	Forced performing of color registration control	<Procedure> 1. While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment mode 2. Key in [4719] and press the [START] button. 3. When the adjustment finishes normally, the equipment returns to the initial state of Adjustment Mode. When an error occurs <When “Waste toner box replacement” is displayed> 📖 P.5-15 "[F] Waste toner box replacement" 1. Replace the waste toner box with a new one and close the waste toner cover. 2. Press and hold the [MAIN POWER] button for a few seconds to shut down the equipment. 3. Turn the power ON. 4. Release the waste toner box full status by the warming-up operation. 5. Check that “WAIT” is displayed. <When an adjustment error is displayed> 📖 P.5-14 "[D] No toner in the cartridge" 1. Press and hold the [ON/OFF] button for a few seconds to shut down the equipment in order to check the toner empty status. 2. Turn the power ON. 3. Check the toner supply operation in warming-up. When a message prompts you to replace the toner cartridge, open the front cover and replace the cartridge with a new one. 4. Check that “WAIT” is displayed. <Other abnormalities> Take the appropriate action described in Troubleshooting. 📖 P.26-1 "26. ERROR CODE AND TROUBLESHOOTING"

8.5.5 Adjustment of the transfer belt due to environmental factors

The length of the transfer belt may vary depending on environments such as temperature or humidity. When the belt length varies, the leading position of an image also varies. Therefore, check image position in the secondary scanning direction after installation or parts replacement because there is difference between the environments of an installation site and a factory where the equipment was shipped. (Although image adjustment is already performed at the shipment from the factory, this adjustment must be performed again in the installation site.) If required, perform “Leading edge position adjustment / Common items (05-408)”.

📖 P.14-30 "14.7.1 Adjustment of the transfer belt due to environmental factors"

8.5.6 Image Dimensional Adjustment

There are several adjustment items in the image dimensional adjustment, as listed below. Prior to this image dimensional adjustment, perform the “Automatic initialization of image quality control (05-396)”. When adjusting these items, the following adjustment order should strictly be observed.

Item to be adjusted		Code in mode 05
1.Paper alignment at the registration roller		4100, 4101, 4103, 4104, 4105, 4106, 4107, 4108, 4109, 4110, 4111, 4115, 4116, 4117, 4118, 4120, 4122, 4123, 4124, 4125, 4126, 4127, 4128, 4129
2.Printer-related image dimensional adjustment	Reproduction ratio of primary scanning direction (Fine adjustment of polygonal motor rotation speed)	401
	Primary scanning data laser writing start position	411
	Reproduction ratio of secondary scanning direction (Fine adjustment of transfer belt motor rotation speed)	487
	Secondary scanning data laser writing start position	408, 440, 441, 444, 428, 442, 445
	Primary scanning data laser writing start position at duplexing	498
3.Scanner-related image dimensional adjustment	Image distortion	-
	Reproduction ratio of primary scanning direction	405
	Image location of primary scanning direction	306
	Reproduction ratio of secondary scanning direction	340
	Image location of secondary scanning direction	305
	Top margin	430
	Right margin	432
	Bottom margin	433

[Procedure to key in adjustment values]

In accordance with the procedure described below, make adjustment of each adjustment item so that the measured values obtained from test copies satisfy the specification. By pressing the [FAX] button, immediately after starting the Adjustment Mode (05), single-sided test copying can be performed (normal copy mode).

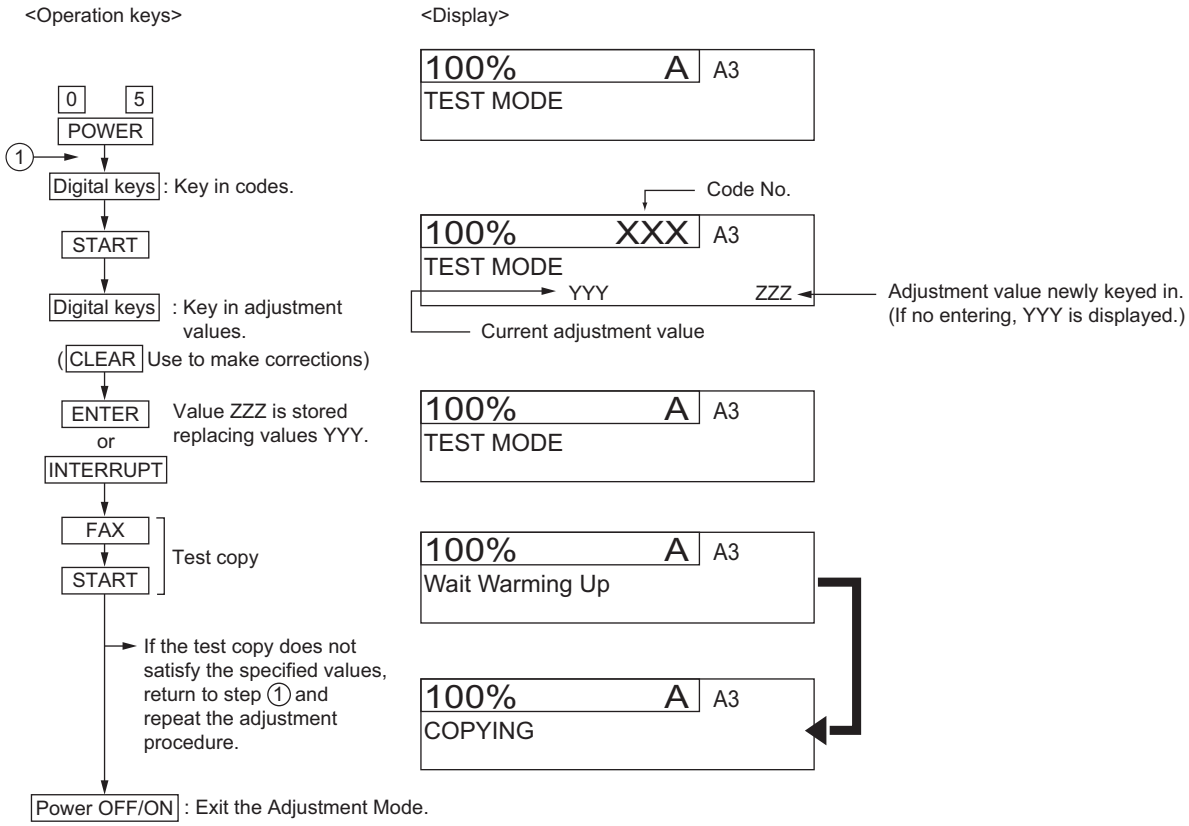


Fig. 8-13

8.5.7 Paper alignment at the registration roller

[A] Adjustment with touch panel

Paper alignment at the registration roller can be adjusted in the following procedure by performing the code 05-480.

1. Select the drawer.

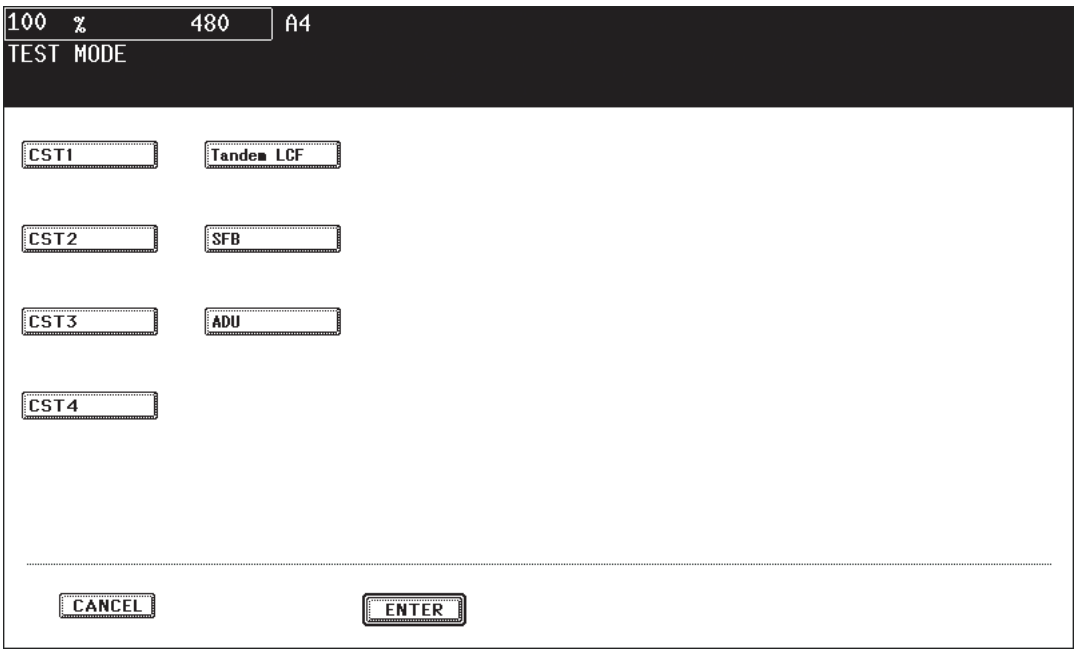


Fig. 8-14

2. Select the paper size.

Fig. 8-15

3. Select the media type.

Fig. 8-16

4. Select the copy speed.
   ("45ppm" for black copying in e-STUDIO4520C or "Other" for others)

Fig. 8-17

5. Key in the adjustment value.

Fig. 8-18

6. Press the [ENTER] button to finish the adjustment.
   * Press the [FUNCTION CLEAR] button to return to the previous menu.

[B] Adjustment by direct code entry

The aligning amount is adjusted by using the following codes in Adjustment Mode (05).

Drawer	Code	Sub code	Paper size (Select the paper size with the sub code.)	Paper type*
1st drawer (CST1)	4100	0,1,2,3,4	0: 330 mm or longer (13.0 inches or longer) 1: 220–329 mm (8.7–12.9 inches) 2: 205–219 mm (8.1–8.6 inches) 3: 160-204 mm (6.3–8.0 inches) 4: 159 mm or shorter (6.26 inches or shorter)	Plain paper
	4115	0,1,2,3,4		Thick paper 1/Thick paper 2/ Thick paper 3
	4122	0,1,2,3,4		Plain paper (e-STUDIO3530C/4520C, black only)
2nd drawer (CST2)	4101	0,1,2,3,4		Plain paper
	4116	0,1,2,3,4		Thick paper 1/Thick paper 2/ Thick paper 3
	4123	0,1,2,3,4		Plain paper (e-STUDIO3530C/4520C, black only)
3rd drawer (CST3)	4108	0,1,2,3,4		Plain paper
	4117	0,1,2,3,4		Thick paper 1/Thick paper 2/ Thick paper 3
	4124	0,1,2,3,4		Plain paper (e-STUDIO3530C/4520C, black only)
4th drawer (CST4)	4109	0,1,2,3,4		Plain paper
	4118	0,1,2,3,4		Thick paper 1/Thick paper 2/ Thick paper 3
	4125	0,1,2,3,4		Plain paper (e-STUDIO3530C/4520C, black only)
Bypass feed	4103	0,1,2,3,4		Plain paper
	4104	0,1,2,3,4		Thick paper 1
	4105	0,1,2,3,4		Thick paper 2
	4106	0,1,2,3,4		Thick paper 3/Thick paper 4
	4107	0,1,2,3,4		OHP
	4127	0,1,2,3,4		Plain paper (e-STUDIO3530C/4520C, black only)
	4128	0,1,2,3,4		Special paper 1
	4129	0,1,2,3,4		Special paper 2
LCF	4111		-	Plain paper
	4126		-	Plain paper (e-STUDIO3530C/ 4520C, black only)
ADU	4110	0,1,2,3,4	0: 330 mm or longer (13.0 inches or longer) 1: 220–329 mm (8.7–12.9 inches) 2: 205–219 mm (8.1–8.6 inches) 3: 160-204 mm (6.3–8.0 inches) 4: 159 mm or shorter (6.26 inches or shorter)	Plain paper
	4120	0,1,2,3,4		Thick paper 1

*Weight:

Plain paper: 64 to 105 g/m^2 (17 lb. Bond to 28 lb. Bond)

Thick paper 1: 106 to 163 g/m^2 (28 lb. Bond to 60 lb. Cover (90 lb. Index))

Thick paper 2: 164 to 209 g/m^2 (61 lb. Cover to 77.3 lb. Cover (115.7 lb. Index))

Thick paper 3: 210 to 256 g/m^2 (77.3 lb. Cover to 94.5 lb. Cover (141.4 lb. Index))

Thick paper 4: 257 to 280 g/m^2 (94.5 lb. Cover to 100 lb. Cover (150 lb. Index))

<Procedure>

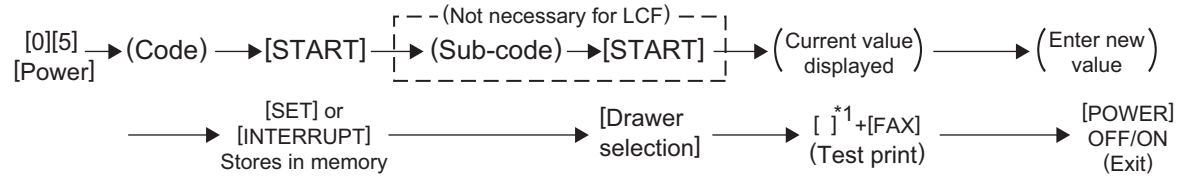


Fig. 8-19

(*1) 1: Single-sided grid pattern in Black Mode
3: Double-sided grid pattern in Black Mode
55: Grid pattern of thick paper 2 in Full Color Mode
56: Grid pattern of thick paper 3/thick paper 4 in Full Color Mode
57: Grid pattern of OHP film in Full Color Mode
58: Single-sided grid pattern of thick paper 2 in Black Mode
59: Single-sided grid pattern of thick paper 3/thick paper 4 in Black Mode
60: Single-sided grid pattern of OHP film in Black Mode
98: Single-sided grid pattern in K(4)* Mode

K(4)*: System in which the test pattern is printed only in the black mode, though the four color developers (Y, M, C, K) are contacted to the transfer belt.

Note:
If the aligning amount is too large, abnormal noise (paper-folding noise) or actual paper folding may occur during paper feeding. If the aligning amount is too small, on the other hand, a skew, an image dislocation in feeding direction or a paper exit jam (E010) may occur. Pay attention to the above and select the appropriate value.

8.5.8 Image dimensional adjustment at the printing section

The printer related adjustment is performed by using the printed out grid pattern.

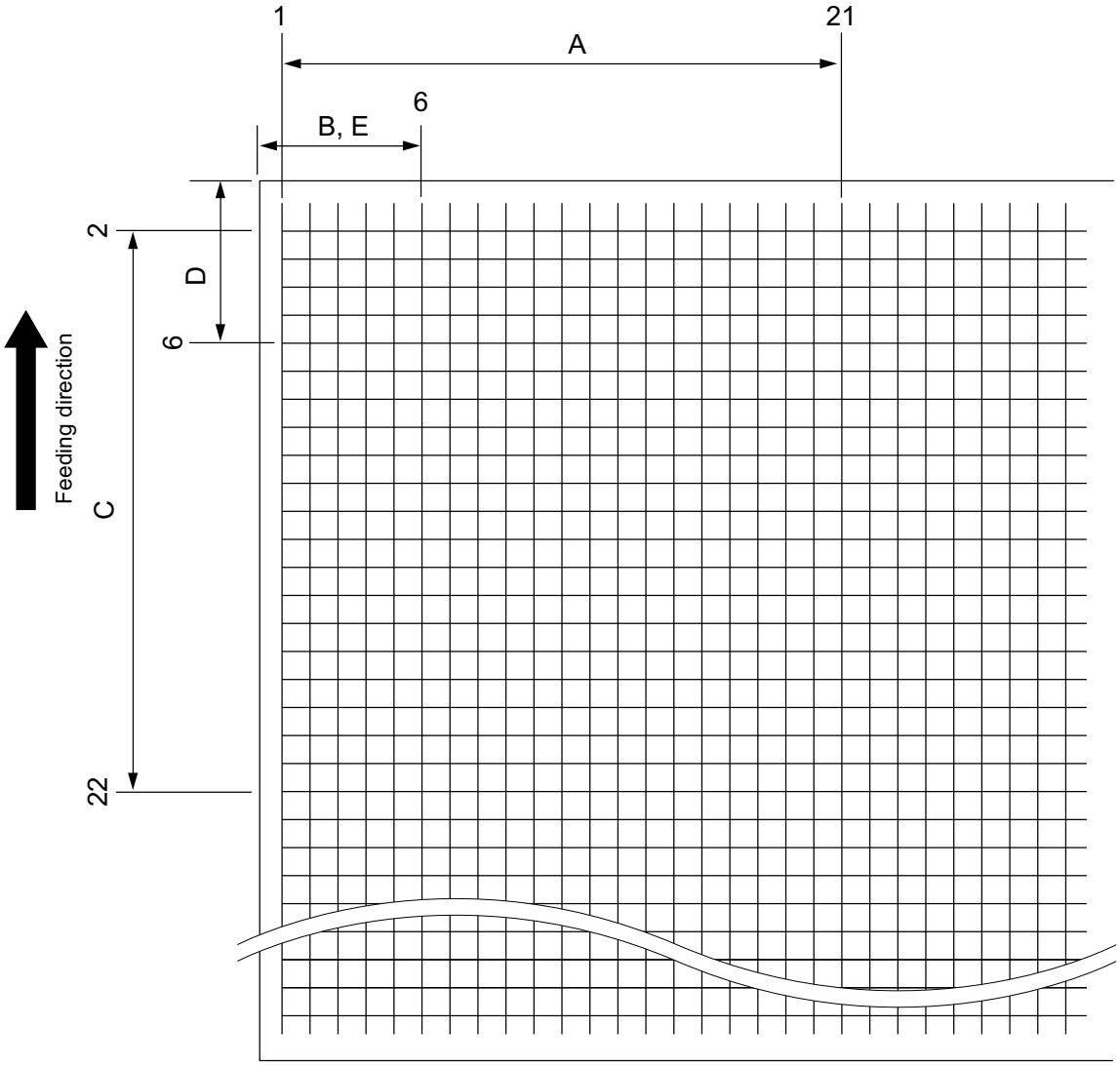


Fig. 8-20

	Adjustment Tolerance	Detail of adjustment
A	200 ± 0.5mm	Refer to “[A] Reproduction ratio of primary scanning direction (Fine adjustment of polygonal motor rotation speed (Printer))”
B	52 ± 0.5mm	Refer to “[B] Primary scanning data laser writing start position (Printer)”
C	200 ± 0.5mm	Refer to “[C] Reproduction ratio of secondary scanning direction (Fine adjustment of transfer belt motor rotation speed (Printer))”
D	52 ± 0.5mm	Refer to “[D] Secondary scanning data laser writing start position”
E	52 ± 0.5mm	Refer to “[E] Primary scanning data laser writing start position at duplexing”

[A] Reproduction ratio of primary scanning direction (Fine adjustment of polygonal motor rotation speed (Printer))

(1) While pressing [0] and [5] simultaneously, turn the power ON.→ (Adjustment Mode)
(2) Press [98] → [FAX]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from the 2nd drawer.)
(3) Measure the distance A from the 1st line to the 21st line of the grid pattern.
(4) Check if the distance A is within 200±0.5 mm.
(5) If not, use the following procedure to change values and measure the distance A again.
<Procedure>
(Adjustment Mode) → (Key in the code [401]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
→ "100% A" is displayed.
→ Press [98] → [FAX] → (A grid pattern is printed out.)
* The larger the adjustment value is, the longer the distance A becomes (approx. 0.08 mm/step).

[B] Primary scanning data laser writing start position (Printer)

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Press [98] → [FAX]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from the 2nd drawer.)
(3) Measure the distance B from the left edge of the paper to the 6th line of the grid pattern.
(4) Check if the distance B is within 52±0.5 mm.
(5) If not, use the following procedure to change values and measure the distance B again.
<Procedure>
(Adjustment Mode) → (Key in the code [411]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
→ "100% A" is displayed
→ Press [98] → [FAX] → (A grid pattern is printed out.))
* The larger the adjustment value is, the longer the distance B becomes (approx. 0.04 mm/step).
(6) After the adjustment for the code 411 is completed, apply the same adjustment value for the code 410.

(Adjustment Mode) → (Key in the code [410]) → [START]
→ (Key in the same value in the step 5 above)
→ Press [ENTER] or [INTERRUPT] (Stored in memory).

Note:
Make sure the first line of the grid pattern is printed out since the line is occasionally vanished.

[C] Reproduction ratio of secondary scanning direction (Fine adjustment of transfer belt motor rotation speed)

Code	Sub code	Function	Remarks
487	0	PRT	When the value increases, the reproduction ratio in the secondary scanning direction becomes larger. (Approx. 0.1 mm/1steps)
	1	FAX	
	2	PPC	
	3	PRT	
	4	FAX	
	5	PPC	
	6	PRT	
	7	FAX	
	8	PPC	

If the sub code "0" of 05-487 is adjusted, the adjustment values of sub codes 1 to 8 are also changed automatically, being operated with the adjusted value, according to the proper parameter. Basically, adjusting only the sub code "0" completes all the adjustment of PRT, PPC and FAX.

[C-1] Confirmation of 05-487-0

1. While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
2. Press [98] → [FAX]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from the 2nd drawer.)
3. Measure the distance C from the 2nd line at the leading edge of the paper to the 22nd line of the grid pattern.
   * Normally, the 1st line of the grid pattern is not printed.
4. Check if the distance C is within 200±0.5 mm.
5. If not, perform the procedure in "[C-2] Adjustment of 05-487-0" to change the values and measure the distance C again.
6. Perform the color registration (4719) after the adjustment.

[C-2] Adjustment of 05-487-0

(Adjustment Mode) → (Key in the code [487]) → [START] → (Key in the sub-code [0])
→ [START] → (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)

* When the value is not within the recommended values, the trailing edge area of the image may be out of position for the paper length or the density at the trailing edge area of the image may become lower. Perform the adjustment confirming the image.
  → "100% A" is displayed
  → Press [98] → [FAX] → (A grid pattern is printed out.)
* The larger the adjustment value is, the longer the distance C becomes (approx. 0.1 mm/ step).
  → (Key in the code [4719]) → [START] → (Enforced color registration)

Notes:

1. The grid pattern outputted by pressing [0][5] → [98] → [FAX] is the one of PRT (05-487-0). Even though the sub codes "1" to "8" are adjusted, the result cannot be confirmed in the grid pattern outputted by pressing [0][5] → [98] → [FAX].
2. When "05-487-0" is performed, a proper value is automatically calculated for the size of an image in each function mode (copy/printer/Fax) or at each speed (normal speed/reduced speed/high speed). The speed of the transfer belt motor is also adjusted. Therefore, use the above default value other than the sub code "0," unless otherwise required.

[D] Secondary scanning data laser writing start position

Performing the code 05-408 covers this adjustment for all paper sources.
The adjustment for each paper source is also available.

For all paper sources

Code	Paper size	Acceptable value	Remarks
408	A3/LD	0 to 200	Performs the adjustment for all paper sources.

For each paper source

Order for adjustment	Paper source	Code	Paper size	Acceptable value	Remarks
1	1st drawer	440	A4/LT	0 to 100	
2	2nd drawer	441	A3/LD	0 to 100	
3	3rd drawer	444	A4/LT	0 to 100	
4	4th drawer	428	A4/LT	0 to 100	
5	Bypass feed	442	A4/LT	0 to 100	
6	Duplexing	445	A3/LD	0 to 100	Paper fed from the 2nd drawer

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Press [98] ([3] for duplexing) → [FAX]. (A grid pattern with 10 mm squares is printed out.)
(3) Measure the distance D from the leading edge of the paper to the 6th line of the grid pattern.
    * Normally, the 1st line of the grid pattern is not printed.
    * At the duplexing, measure it on the top side of the grid pattern.
(4) Check if the distance D is within 52±0.5 mm.
(5) If not, use the following procedure to change values and measure the distance D again.
    <Procedure>
    (Adjustment Mode) → (Key in the code shown above) → [START]
    → (Key in an acceptable value shown above)
    → [ENTER] or [INTERRUPT] (Stored in memory)
    → "100% A" is displayed
    → Press [98] ([3] for duplexing)
    → [FAX] → (A grid pattern is printed out.)
    * The larger the adjustment value is, the longer the distance D becomes (approx. 0.10 mm/step).

8

[E] Primary scanning data laser writing start position at duplexing

Note:
Make sure the first line of the grid pattern is printed out since the line is occasionally vanished.

[E-1] Adjustment for long-sized paper

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Press [3] → [FAX]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from the 2nd drawer.)
(3) Check the grid pattern on the test print and measure the distance E from the left edge of the paper to the 6th line of the grid pattern.
(4) Check if the distance E is within 52±0.5 mm.
(5) If not, use the following procedure to change values and measure the distance E again.
<Procedure>
(Adjustment Mode) → (Key in the code [498]) → [START] → [0] → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
→ "100% A" is displayed.
→ Press [3] → [FAX] → (A grid pattern is printed out.)
* The larger the adjustment value is, the longer the distance E becomes (approx. 0.04 mm/step).

[E-2] Adjustment for short-sized paper

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Press [3] → [FAX]. (A grid pattern with 10 mm squares is printed out. Use A4/LT from the 1st drawer.)
(3) Check the grid pattern on the test print and measure the distance E from the left edge of the paper to the 6th line of the grid pattern.
(4) Check if the distance E is within 52±0.5 mm.
(5) If not, use the following procedure to change values and measure the distance E again.
<Procedure>
(Adjustment Mode) → (Key in the code [498]) → [START] → [1] → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
→ "100% A" is displayed
→ Press [3] → [FAX] → (A grid pattern is printed out.)
* The larger the adjustment value is, the longer the distance E becomes (approx. 0.04 mm/step).

<Adjustment procedure summarization for A to E>

[0] [5] [Power ON] → [98] ([3](05-445, 498) for duplexing) → [FAX]

A:	05-401 (2nd drawer, A3/LD)	→ 200±0.5 mm (0.08 mm/step)
B:	05-411 (2nd drawer, A3/LD)	→ 52±0.5 mm (0.04 mm/step) → Key in the same value for 05-410.
C:	05-487-0 (2nd drawer, A3/LD)	→ 200±0.5 mm (0.1 mm/step)
D:	05-408 (2nd drawer, A3/LD) 05-440 (1st drawer, A4/LT) 05-441 (2nd drawer, A3/LD) 05-444 (3rd drawer, A4/LT) 05-428 (4th drawer, A4/LT) 05-442 (Bypass feed, A4/LT) 05-445 (Duplexing, A3/LD)	→ 52±0.5 mm (0.15 mm/step)
E:	05-498-0 (2nd drawer, A3/LD), 05-498-1 (1st drawer, A4/LT)	→ 52±0.5 mm (0.04 mm/step)

8.5.9 Image dimensional adjustment at the scanning section

[A] Image distortion

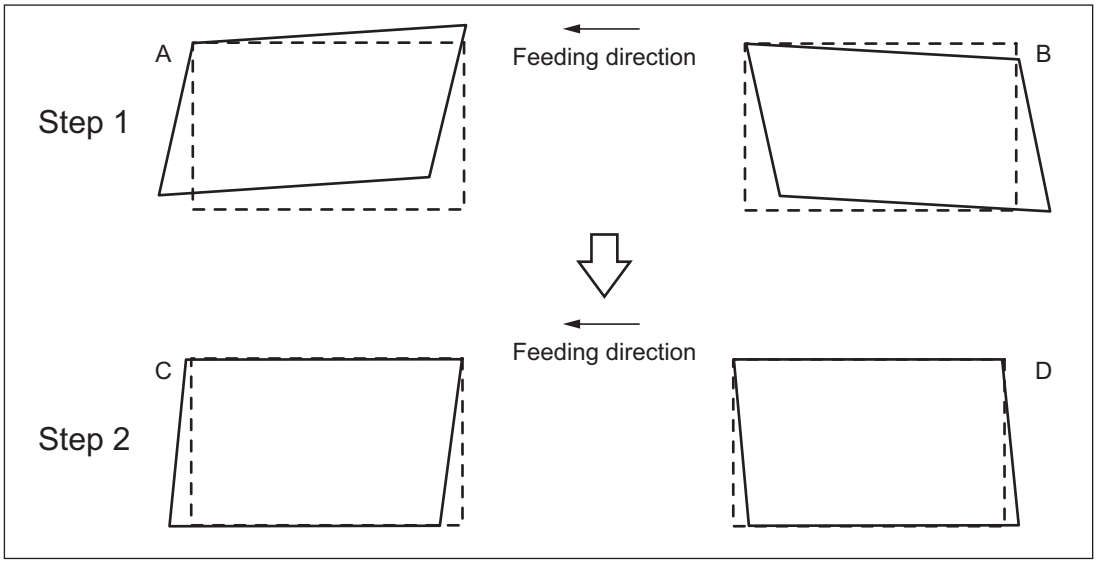


Fig. 8-21

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Press [FAX] to make a copy of any image on a sheet of A3/LD paper.

(3) Key in [308] and press the [START] button to move the carriage to the adjustment position.

(4) Make an adjustment in the order of step 1 and 2.

Step 1

In case of A:
Tighten the mirror-3 adjustment screw (CW).
In case of B:
Loosen the mirror-3 adjustment screw (CCW).

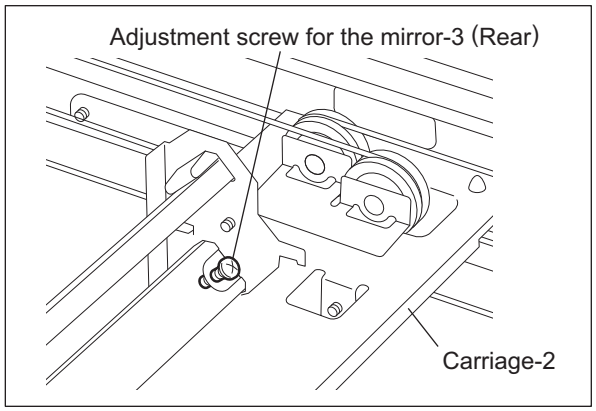


Fig. 8-22

Step 2

In case of C:
Tighten the mirror-1 adjustment screw (CW).
In case of D:
Loosen the mirror-1 adjustment screw (CCW).

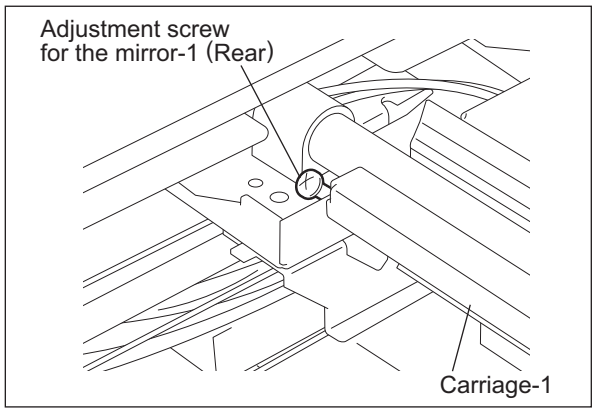


Fig. 8-23

(5) Apply the screw locking agents to the adjustment screws. (2 areas)
- Recommended screw lock agent
  Manufacturer: Three Bond
  Product name: 1401E

The following adjustments (b) to (e) should be performed with Test Chart No. TCC-1.
📖 P.8-34 " Adjustments and Checks using Test Chart No. TCC-1"

[B] Reproduction ratio adjustment of primary scanning direction

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Place Test Chart No. TCC-1 on the original glass (with the arrow positioned at the left rear side).
(3) Press [FAX] → [START] to make a copy at the mode of A4/LT, 100%, Full color and Text/Photo.
(4) Measure the distance A between M1 and M2 on the copy with a ruler.
(5) Check if the distance A is within 200±0.5 mm.
(6) If not, use the following procedure to change values and repeat step 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [405]) → [START]
→ (Key in a value (acceptable values: 0 to 255) with digital keys)
→ [ENTER] or [INTERRUPT] (Stored in memory)
* The larger the adjustment value is, the longer the distance A becomes (approx. 0.1 mm/step).

[C] Image location of primary scanning direction

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Place Test Chart No. TCC-1 on the original glass (with the arrow positioned at the left rear side).
(3) Press [FAX] → [START] to make a copy at the mode of A4/LT, 100%, Full color and Text/Photo.
(4) Measure the distance B from the left paper edge to the 5 mm line of left grid pattern on the copy with a ruler.
(5) Check if the distance B is within 5±0.5 mm.
(6) If not, use the following procedure to change values and repeat step 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in code [306]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
* The larger the adjustment value is, the longer the distance B becomes (approx. 0.04 mm/step).

[D] Reproduction ratio of secondary scanning direction

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Place Test Chart No. TCC-1 on the original glass (with the arrow positioned at the left rear side).
(3) Press [FAX] → [START] to make a copy at the mode of A4/LT, 100%, Full color and Text/Photo.
(4) Measure the distance C between M3 and M4 on the copy with a ruler.
(5) Check if the distance C is within 150±0.5 mm.
(6) If not, use the following procedure to change values and repeat step 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [340]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
* The larger the adjustment value is, the longer the distance C becomes (approx. 0.02 mm/step).

[E] Image location of secondary scanning direction

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Place Test Chart No. TCC-1 on the original glass (with the arrow positioned at the left rear side).
(3) Press [FAX] → [START] to make a copy at the mode of A4/LT, 100%, Full color and Text/Photo.
(4) Measure the distance D from the top paper edge to the 10 mm line of top grid pattern on the copy with a ruler.
(5) Check if the distance D is within 10±0.5 mm.
(6) If not, use the following procedure to change values and repeat step 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [305]) → [START]
→ (Key in a value (acceptable values: 68 to 188))
→ [ENTER] or [INTERRUPT] (Stored in memory)
    * The larger the adjustment value is, the longer the distance D becomes (approx. 0.08 mm/step).

[F] Top margin

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Open the platen cover or RADF.
(3) Press [FAX] → [START] to make a copy at the mode of A3/LD, 100%, Full color, Text/Photo and 2nd drawer.
(4) Measure the blank area E at the leading edge of the copied image.
(5) Check if the blank area E is within the range.

Function	Black	Color
Copy	3±2.0 mm	5-1.0 mm, 5+2.0 mm (4.0 to 7.0 mm)

(6) If not, use the following procedure to change values and repeat the steps 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [430]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory)
→ ("100% A" is displayed.)
* The larger the adjustment value is, the wider the blank area becomes (approx. 0.04 mm/step).

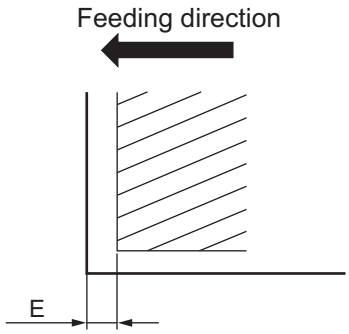


Fig. 8-24

Note:
Paper jams tend to occur in equipment in which thin paper such as 64g/m^2 (17lb. Bond) paper is used or a large amount of high density images such as pictures are output. For this equipment, we recommend that you adjust the top margin "in the plus direction" in order to prevent paper jamming.

Range of top margin adjustment (e.g.)

Function	Black	Color
Copy	3.0 - 5.0 mm	5.0 - 7.0 mm

[G] Right margin

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Open the platen cover or RADF.
(3) Press [FAX] → [START] to make a copy at the mode of A3/LD, 100%, Full color, Text/Photo and 2nd drawer.
(4) Measure the blank area F at the right side of the copied image.
(5) Check if the blank area F is within the range.

Function	Black	Color
Copy	2±2.0 mm	2±2.0 mm

(6) If not, use the following procedure to change values and repeat the steps 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [432]) → [START]
→ (Key in a value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (Stored in memory).
→ ("100% A" is displayed.)
* The larger the adjustment value is, the wider the blank area at the right side becomes (approx. 0.04 mm/step).

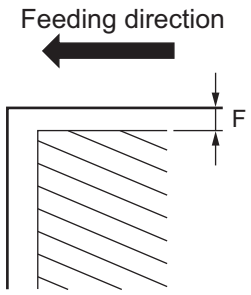


Fig. 8-25

[H] Bottom margin

(1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
(2) Open platen cover or RADF.
(3) Press the [FAX] → [START] to make a copy at the mode of A3/LD, 100%, Full color, Text/Photo and 2nd drawer.
(4) Measure the blank area G at the trailing edge of the copied image.
(5) Check if the blank area G is within the range.

Function	Black	Color
Copy	3±2.0 mm	3±2.0 mm

(6) If not, use the following procedure to change values and repeat the steps 3. to 5. above.
<Procedure>
(Adjustment Mode) → (Key in the code [433]) → [START]
→ (Key in value (acceptable values: 0 to 255))
→ [ENTER] or [INTERRUPT] (stored in memory)
→ ("100% A" is displayed.)
* The larger the adjustment value is, the wider the blank area at the trailing edge becomes (approx. 0.04 mm/step).

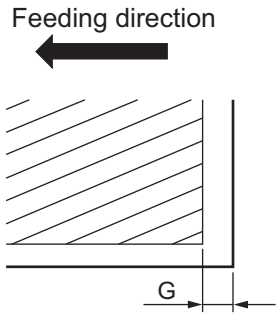


Fig. 8-26

Adjustments and Checks using Test Chart No. TCC-1

Following items can be checked with the Test Chart No. TCC-1.

1. Points to be measured in the chart

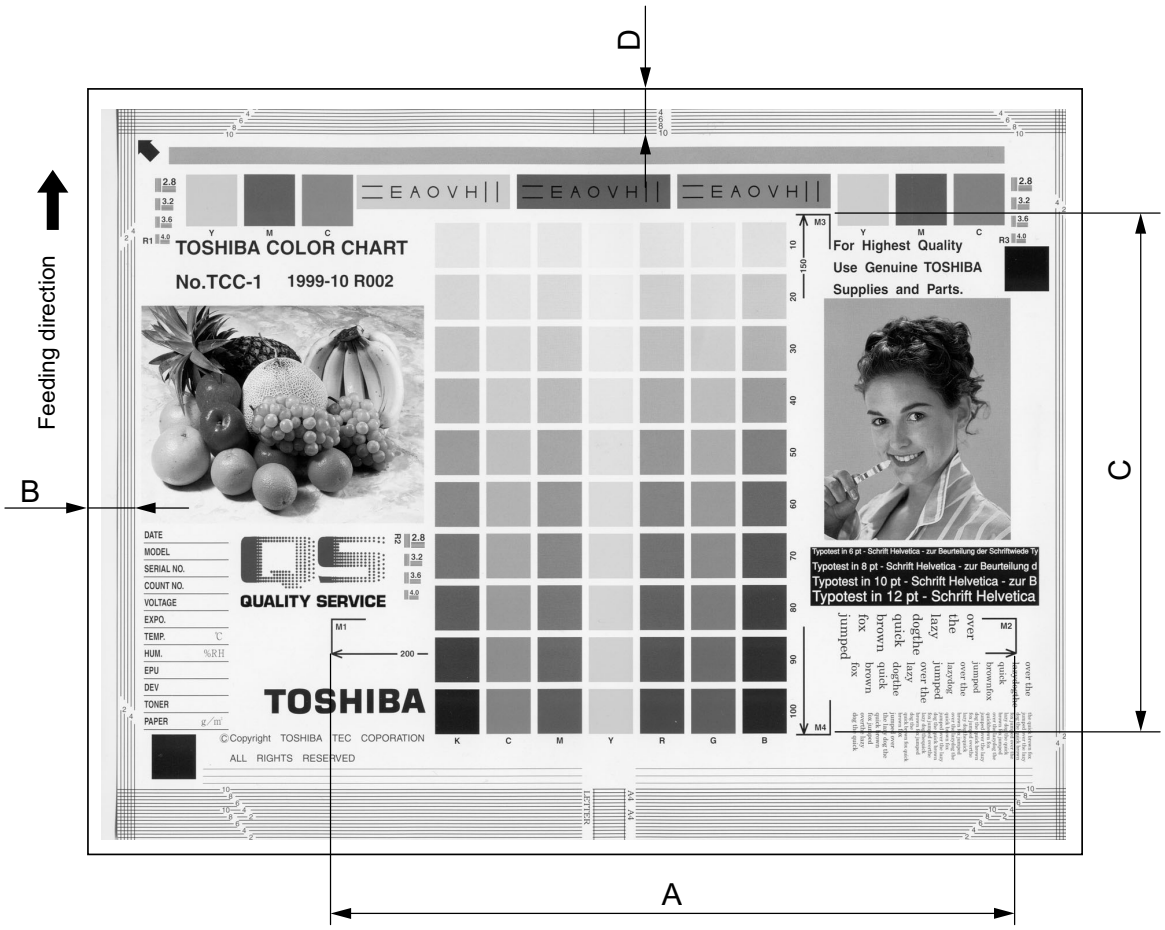


Fig. 8-27

<Adjustment order>

[0] [5] [Power ON] → (Chart TCC-1) → [FAX] → [START] (A3/LD, 100%, Full color and Text/Photo)

A: 05-405 → 200±0.5 mm (0.1 mm/step)

B: 05-306 → 5±0.5 mm (0.04 mm/step)

C: 05-340 → 150±0.5 mm (0.02 mm/step)

D: 05-305 → 10±0.5 mm (0.08 mm/step)

2. Checking areas of the chart and their descriptions

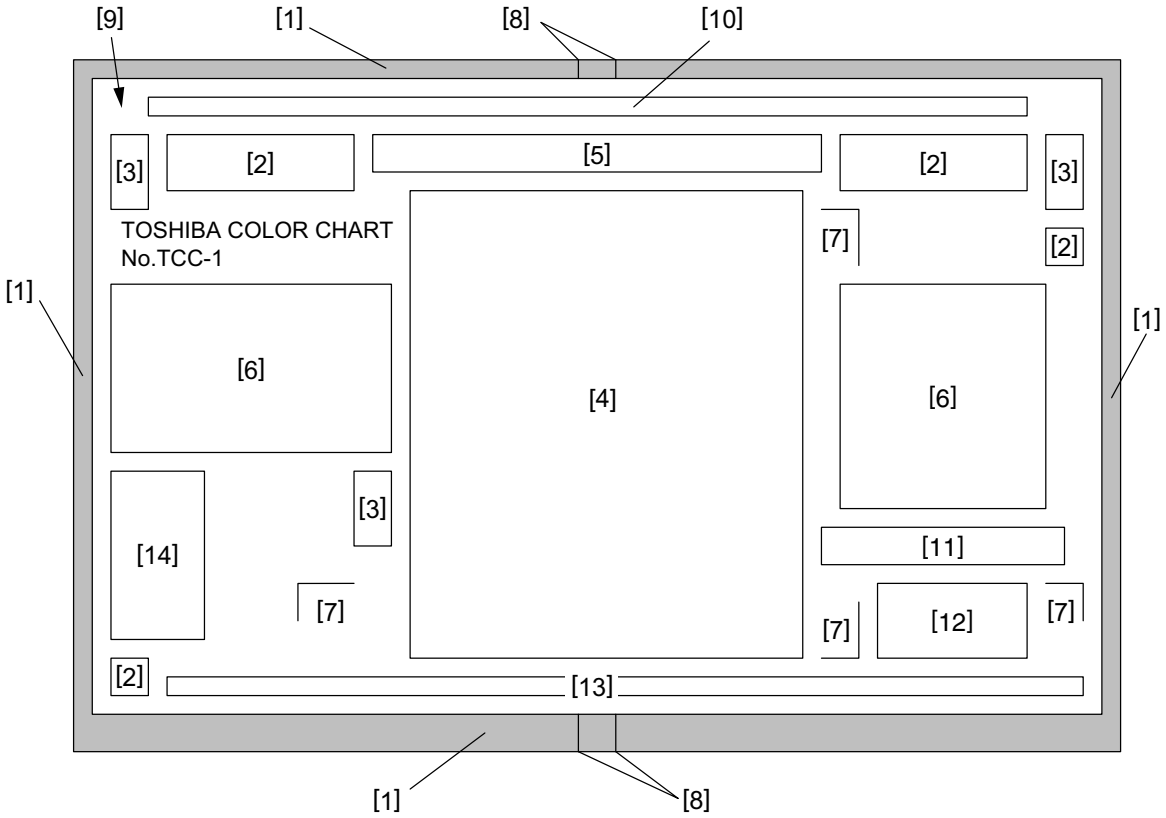


Fig. 8-28

[1]	Grid patterns	: For adjusting margin (void) and scanner section
[2]	YMCK patches	: For checking uniformity
[3]	Resolution patterns	: For checking resolution
[4]	Gradation pattern	: Gradation pattern of seven colors (Y, M, C, R, G, B and K) Coverage: 10-100% For adjusting the halftone reproduction and gray balance
[5]	Color registration pattern	: For checking color registration
[6]	Pictures	: For checking color reproduction and moire
[7]	Magnification lines	: For checking the magnification error of primary and secondary scanning directions
[8]	Center lines	: Center lines for A4/LT sizes
[9]	Arrow	: A mark for placing the chart properly onto the original glass (place it to the left rear corner of the original glass.)
[10]	Halftone band	: For checking uniformity
[11]	White text on the black solid	: For checking the reproduction of white text on black solid
[12]	Text	: For checking reproduction of text
[13]	Thin lines	: For checking reproduction of the thin lines (line width: 100µm)
[14]	Note area	: For recording the date, conditions, etc.

8.6 Image Quality Adjustment (Copying Function)

8.6.1 Automatic gamma adjustment

When the reproduction of gradation is not appropriate, the gradation reproducibility of all colors Y, M, C and K can be corrected by performing this automatic gamma adjustment. In case the gradation reproduction of the image checked is not satisfactory, make this adjustment as described below at parts replacement.

(1) When unpacking or any of the following parts has been replaced, be sure to make this adjustment:
- Photoconductive drum
- Developer material
- Laser optical unit
- Transfer belt
- 1st transfer roller
- Drum cleaning blade
- Needle electrode
- Main charger grid
- Image position aligning sensor
- Image quality sensor
- SRAM board (LGC board, SYS board)

(2) When any of the following parts are replaced or adjusted, make a copy and check the image to determine if adjustment is necessary:
- 2nd transfer roller

Notes:
1. Be sure that this adjustment be made after performing the image adjustment in 📖 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)" and 📖 P.8-15 "8.5.6 Image Dimensional Adjustment".
2. Normally, only the adjustment of color/black integrated pattern is needed. When the adjustment of 📖 P.8-46 "8.6.11 Beam level conversion setting" is made, color pattern and black pattern need to be adjusted individually.

<Adjustment Mode (05)>

Code	Item to be adjusted	Contents
1642 (1643) (580)	Automatic gamma adjustment	When the reproduction of gradation is not appropriate, the gradation reproducibility of all colors Y, M, C and K can be corrected by performing this automatic gamma adjustment. The result will be applied to all paper sizes.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment Mode
(2) Select the A4/LT drawer. Key in the pattern number and press the [FAX] button to output a “Patch chart for gamma adjustment”.

Pattern No.	Pattern No.	Remark	Paper type
4	Color/black integrated	When performing code 05-1642	All paper types
200	Color/black integrated	When performing code 05-1644-0	Plain paper
204	Color/black integrated	When performing code 05-1644-2	Recycled paper
206	Color/black integrated	When performing code 05-1644-3	Thick paper1
208	Color/black integrated	When performing code 05-1644-4	Thick paper2
210	Color/black integrated	When performing code 05-1644-5	Thick paper3
212	Color/black integrated	When performing code 05-1644-6	Thick paper4
214	Color/black integrated	When performing code 05-1644-7	Special paper 1
216	Color/black integrated	When performing code 05-1644-8	Special paper 2

(3) Place the patch chart for adjustment printed in step (2) face down on the original glass. Place the chart aligning its side with 2 black squares against the original scale.
(4) Key in a code and press the [START] button.
→ The scanner reads the chart automatically and performs automatic gamma adjustment calculation (approx.30 sec.).

(5) When the adjustment has finished normally, “ENTER” is shown. Press the [ENTER] button to have the adjustment results reflected.
(To cancel the reflection of adjustment results, press the [CANCEL] button.)
In the case of an abnormal ending, “ADJUSTMENT ERROR” is shown.
Press the [CANCEL] button to clear the error display. When it is cleared, the control panel display will return to the ready state. Then, check if the patch chart on the original glass is placed in the wrong direction or if it is placed inclined on the original glass, and then repeat step (3) and afterward.

8.6.2 Density adjustment

The center density and the density variation controlled by density adjustment keys can be adjusted as follows.

<Adjustment Mode (05)>

Color mode	Original mode					Item to be adjusted	Remarks
	Text/ Photo*	Text*	Printed Image*	Photo	Map		
mono Color	1585	1586	1587	1588	1589	center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)

* If this setting has been changed, the density levels of the “IMAGE SMOOTHING” or “Photo” in the black mode may be affected.

<Adjustment Mode (05)>

Color mode	Original mode			Item to be adjusted	Remarks
	Text/ Photo	Text	User custom		
Black	503	504	931	Manual density mode center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)
	508	510	937	Manual density mode dark step value	The larger the value is, the darker the dark side becomes. Acceptable values: 0 to 255 (Default: 20)
	505	507	934	Manual density mode light step value	The larger the value is, the lighter the light side becomes. Acceptable values: 0 to 255 (Default: 20)
	514	515	940	Automatic density mode	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustments according to the following procedure.

Note:
Be sure that this adjustment is made after performing 📖 P.8-36 "8.6.1 Automatic gamma adjustment".

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in an adjustment value.
(To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value. → The equipment goes back to the ready state.
(5) Press the [FAX] button and then press the [START] button to make a test copy.
(6) If the desired image quality has not been attained, repeat step (2) to (5).

8.6.3 Color balance adjustment

The color balance is adjusted by adjusting the density of each color at the Full Color Mode. The adjustment is performed by selecting its density area from the following: low density, medium density and high density.

<Adjustment Mode (05)>

Color	Original mode						Item to be adjusted	Remarks
	Text/ Photo	Text	Printed Image	Photo	Map	user custom		
Yellow	1779-0	1780-0	1781-0	1782-0	1783-0	7980-0	Low density	The larger the value is, the darker the color to be adjusted becomes. Acceptable values: 0 to 255 (Default: 128)
	1779-1	1780-1	1781-1	1782-1	1783-1	7980-1	Medium density	
	1779-2	1780-2	1781-2	1782-2	1783-2	7980-2	High density	
Magenta	1784-0	1785-0	1786-0	1787-0	1788-0	7981-0	Low density	
	1784-1	1785-1	1786-1	1787-1	1788-1	7981-1	Medium density	
	1784-2	1785-2	1786-2	1787-2	1788-2	7981-2	High density	
Cyan	1789-0	1790-0	1791-0	1792-0	1793-0	7982-0	Low density	
	1789-1	1790-1	1791-1	1792-1	1793-1	7982-1	Medium density	
	1789-2	1790-2	1791-2	1792-2	1793-2	7982-2	High density	
Black	1794-0	1795-0	1796-0	1797-0	1798-0	7983-0	Low density	
	1794-1	1795-1	1796-1	1797-1	1798-1	7983-1	Medium density	
	1794-2	1795-2	1796-2	1797-2	1798-2	7983-2	High density	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustments according to the following procedure.

Notes:

- Be sure that this adjustment is made after performing 📖 P.8-36 "8.6.1 Automatic gamma adjustment".
- Changing the adjustment setting influences the adjacent density area slightly.
  E.g.: When the value of the medium density is larger, the adjacent areas in the low density and high density range will become slightly darker.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the code of the mode to be adjusted (color and original mode) and press the [START] button.
(3) Select the density area to be adjusted with digital keys (0, 1 or 2), and press the [START] button.
  0: Low density
  1: Medium density
  2: High density
(4) Key in an adjustment value. (To correct the value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value in memory.
  → The equipment goes back to the ready state.
(6) For resetting the value, repeat step (2) to (5).
(7) Press the [FAX] button and then press the [START] button to make a test copy.
(8) If the desired image quality has not been attained, repeat step (2) to (7).

<Range of the density area (low density, medium density, high density)>

The color from 10 to 30 (low density), from 40 to 70 (medium density) and from 80 to 100 (high density) in No. TCC-1 chart can be used as a guide for the range of the density area influenced by the change of the adjustment value (low density, medium density, high density).

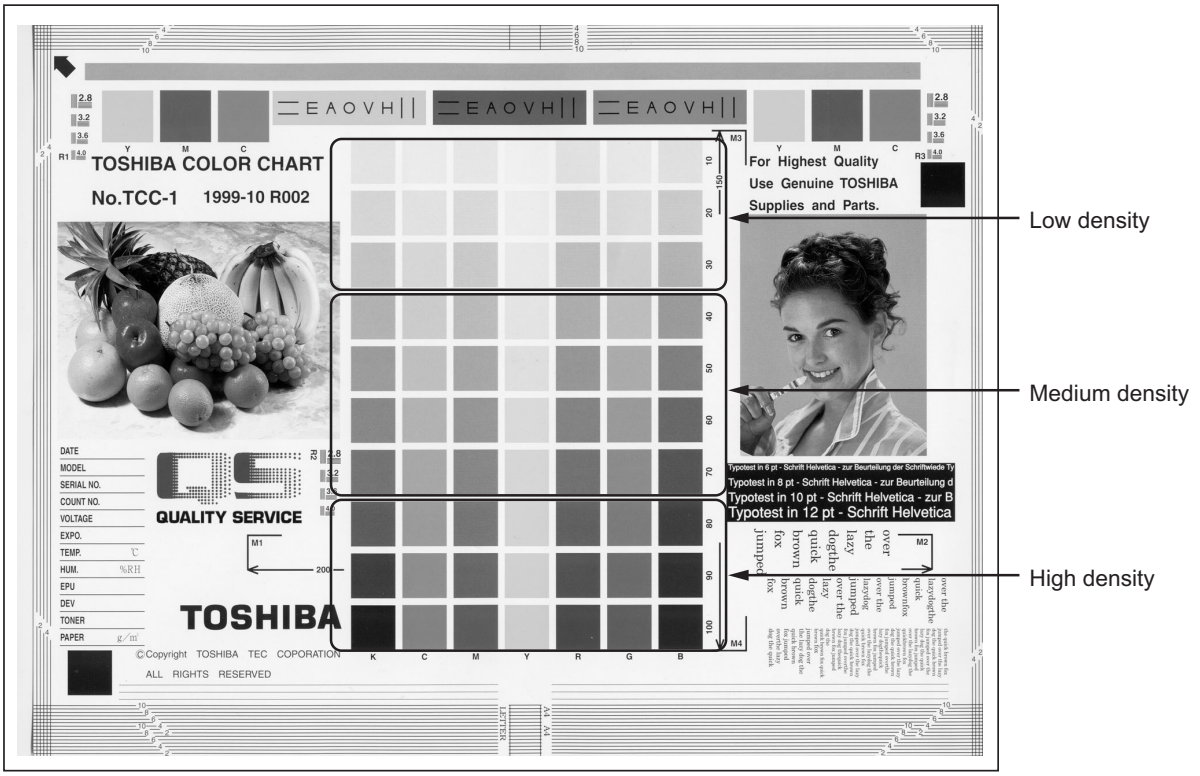


Fig. 8-29

8.6.4 Gamma balance adjustment

The density adjustment at the Black Mode is performed by selecting its density area from the following: low density, medium density and high density.

<Adjustment Mode (05)>

Color mode	Original mode								Item to be adjusted	Remarks
	Text/ Photo	Text	Photo	Gray scale	ACS/ Black/ Text/ Photo	ACS/ Black/ Text	ACS/ Black/ Photo	User custo m		
Black	590-0	591-0	592-0	7956-0	7957-0	7958-0	7959-0	949-0	Low density	The larger the value is, the density of the item to be adjusted becomes darker. Acceptable values: 0 to 255 (Default: 128)
	590-1	591-1	592-1	7956-1	7957-1	7958-1	7959-1	949-1	Medium density	
	590-2	591-2	592-2	7956-2	7957-2	7958-2	7959-2	949-2	High density	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustments according to the following procedure.

Note:
Be sure that this adjustment is made after performing 📖 P.8-36 "8.6.1 Automatic gamma adjustment".

<Procedure>
The procedure is the same as that of 📖 P.8-39 "8.6.3 Color balance adjustment".

8.6.5 Background adjustment

The density of the background can be adjusted as follows.

<Adjustment Mode (05)>

Color mode	Original mode							Item to be adjusted	Remarks
	Text/ Photo	Text	Printed Image	Photo	Map	user custo m	Gray scale		
Full Color	1688	1689	1690	1691	1692	7762	---	Automatic density mode	The larger the value is, the lighter the background becomes. Acceptable values: 0 to 255 (Default: 128)
	1698	1699	1700	1701	1702	7763	---	Manual density mode	
Mono Color	7754	7755	7756	7757	7758	---	---	Automatic density mode	
Twin color mode	7759	7760	7761	---	---	---	---	Manual density mode	
ACS black	7676	7677	---	---	---	---	---	Automatic density mode	
	7678	7679	---	---	---	---	---	Manual density mode	
black	7033	7034	7043	---	---	7279	7044	Automatic density mode	
	7041	7042	7048	---	---	7280	7049	Manual density mode	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustment using the following procedure.

<Procedure>

The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.6 Judgment threshold for ACS (common for copy and scan)

Judgment levels for automatically identifying whether an original is color or black are adjusted. This adjustment is for judgment levels when “Auto Color” is selected as a color mode. The same adjustment value is simultaneously applied to all cases of originals on the original glass for copier functions and network scanning functions, and those placed on the RADF.

<Adjustment Mode (05)>

Code	Item to be adjusted	Contents
1675	Judgment threshold for ACS	The larger the value is, the more an original tends to be judged as black in the Auto Color mode. The smaller the value is, the more it tends to be judged as color. Acceptable values: 0 to 255 (Default: 70)

Make a test copy and compare the image obtained with the current settings; if necessary and make adjustment.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.7 Sharpness adjustment

If you want to make copy images look softer or sharper, perform the following adjustment. The adjustment can be made for each of the color modes and original modes independently.

<Adjustment Mode (05)>

Code	Color mode	Original mode	Contents
1737	Full Color	Text/Photo*	• The larger the value is, the sharper the image becomes; while the smaller the value is, the softer the image becomes. • The smaller the value is, the less moire tends to appear. • Acceptable values: 0 to 255 (Default: 128)
1738		Text*	
1739		Printed Image*	
1740		Photo	
1741		Map	
7795		User custom	
604	Black	Text/Photo	
605		Text	
606		Photo	
922		User custom	
7809		Gray scale	
1757	Auto Color	Text/Photo	
7807		Text	
7808		Photo	

* Any change in these settings affects the settings of “IMAGE SMOOTHING” and “Photo” in the black mode, and “Text/Photo”, “Text” and “Printed Image” in the twin color mode.

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustment.

Note:
You have to make adjustment by balancing between moire and sharpness.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.8 Setting range correction

The values of the background peak/text peak in the range correction at the Black Mode can be switched to “varied” or “fixed” in the following codes.
If they are fixed, the range correction is performed with standard values.
The values of the background peak affects the reproduction of the background density, and the values of the text peak affects that of the text density.

<Adjustment Mode (05)>

Original mode								Item to be adjusted	Remarks
	Text/ Photo	Text	Printed Image	Photo	Map	User Custom	Gray Scale		
Full color	7767	7768	7769	7770	7771	7777	---	Automatic density mode	0: Background peak / fixed 1: Background peak / varied
	7772	7773	7774	7775	7776	7778	---	Manual density mode	
ACS black mode	7667	7668	---	---	---	---	---	Automatic density mode	
	7669	7670	---	---	---	---	---	Manual density mode	
Black	7283	7284	---	---	---	7236	7295	Automatic density mode	
	7286	7287	---	---	---	7237	7296	Manual density mode	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustment.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.9 Adjustment of smudged/faint text

The smudge/faint text at a Black Mode can be set at the following codes.

<Adjustment Mode (05)>

Color mode	Original mode			Item to be adjusted	Remarks
	Text/ Photo	Text	User custom		
Black	648	649	925	Adjustment of smudged/ faint text	When the value decreases, the faint text is improved. When the value increases, the smudged text is improved. Acceptable values: 0 to 4 (Default: 2)
ACS monochrome	7102	7103	---		

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustment.

Note:
Remember the image specifications and life span of the replacing parts may not meet the standard when the setting value is changed from the default value.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.10 Color Adjustment of Marker

The color of the one touch adjustment “MARKER” can be adjusted so that any marker colors already on the original can be distinguished.

<Adjustment Mode (05)>

Code	Item to be adjusted	Relation between the adjustment value and the color (Acceptable values: 0 to 6)		
		0 to 2	3 (Default)	4 to 6
1769-0	Yellow	The smaller the value is, the more reddish the color becomes.	Yellow	The larger the value is, the more greenish the color becomes.
1769-1	Magenta	The smaller the value is, the more bluish the color becomes.	Magenta	The larger the value is, the more reddish the color becomes.
1769-2	Cyan	The smaller the value is, the more greenish the color becomes.	Cyan	The larger the value is, the more bluish the color becomes.
1769-3	Red	The smaller the value is, the closer to Magenta the color becomes.	Red	The larger the value is, the more yellowish the color becomes.
1769-4	Green	The smaller the value is, the more yellowish the color becomes.	Green	The larger the value is, the closer to Cyan the color becomes.
1769-5	Blue	The smaller the value is, the closer to Cyan the color becomes.	Blue	The larger the value is, the closer to Magenta the color becomes.

Note:
The color may not always be reproduced precisely due to the characteristics of the fluorescent ink.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in a sub-code and press the [START] button.
(4) Key in an adjustment value.
(To correct a value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value. → The equipment goes back to the ready state.
(6) Turn the power OFF and back ON in the normal mode. Then make a copy in the one touch adjustment “MARKER” mode.
(7) If the desired image quality has not been attained, repeat step (1) to (6).

8.6.11 Beam level conversion setting

The beam level for 4 divided smoothing is set at the Black Mode. This adjustment enables to adjust the dot size.

<Adjustment Mode (05)>

Code	Item to be adjusted	Remarks
667-0	Beam level 0/4	The smaller the value is, the smaller the beam width becomes. Therefore, the smaller dot is reproduced accordingly. Acceptable values: 0 to 255 (Default: Level 0/4: 0, Level 1/4: 63, Level 2/4: 127, Level 3/4: 191, Level 4/4: 255)
667-1	Beam level 1/4	
667-2	Beam level 2/4	
667-3	Beam level 3/4	
667-4	Beam level 4/4	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustments according to the following procedure.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in a sub-code and press the [START] button.
(4) Key in an adjustment value.
(To correct a value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value. → The equipment goes back to the ready state.
(6) Press the [FAX] button and then press the [START] button to make a test copy.
(7) If the desired image quality has not been attained, repeat step (2) to (6).

Notes:

1. When this adjustment was performed, perform “Automatic gamma adjustment (black) (05-580)” as well because the density reproduction level in the black mode will vary. In addition to performing the code 05-580, perform the code 05-1642 or 05-1644 individually because the result of this adjustment will not be reflected to the color & black integrated pattern.
2. When this adjustment is performed, setting “1” in 08-595 makes the result of 08-595 impossible to be reflected on User Calibration.
3. The setting value must increase as the beam level number (0 to 4) becomes higher. Do not increase this order when setting the values.
4. Usually, beam level 4 / 4 is most effective on black mode.

8.6.12 Maximum toner density adjustment to paper type

The maximum toner amount adhering to the paper can be controlled.

<Adjustment Mode (05)>

Code	Paper type	Remarks
1612	Plain paper	The smaller the value is, the toner amount adhered decreases of the high density area (ex. prevention of fusing offsetting, etc.). Acceptable values: 0 to 255 (Default: Plain paper: 255, Thick paper 1: 255, Thick paper 2: 255, Thick paper 3: 255, OHP film: 240, special paper 1: 255, special paper 2: 255, Recycled paper: 255, Thick paper 4: 255)
1613	Thick paper 1	
1614	Thick paper 2	
1615	Thick paper 3	
1616	OHP film	
1617	Special paper 1	
1618	Special paper 2	
1619	Recycled paper	
1620	Thick paper 4	

Note:
The larger the value is, the more frequently fusing offsetting occurs.

<Procedure>
The procedure is the same as that of P.8-38 "8.6.2 Density adjustment".

8.6.13 Maximum text density adjustment

The maximum text density of each color at Full Color Mode can be adjusted as follows.

<Adjustment Mode (05)>

Color	Code	Item to be adjusted	Remarks
Yellow	1630	Maximum text density	The larger the value is, the darker the maximum text density of each color to be adjusted becomes. Acceptable values: 0 to 10 (Default: 5)
Magenta	1631		
Cyan	1632		
Black	1633		

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustments according to the following procedure.

Note:
Be sure that this adjustment is made after performing P.8-36 "8.6.1 Automatic gamma adjustment".

<Procedure>
The procedure is the same as that of P.8-38 "8.6.2 Density adjustment".

8.6.14 Text/Photo reproduction level adjustment

Text/Photo reproduction level at the Full color mode, Auto color mode and Gray scale mode can be adjusted.
Text/Photo reproduction level adjustment can be switched to “Photo oriented 1”, “Photo oriented 2”, “Text oriented 1” or “Text oriented 2” in the following codes.

<Adjustment Mode (05)>

Mode	Mode	Item to be adjusted	Contents
Text/Photo	User custom		
1725	7841	Text/Photo reproduction level adjustment	0: Default 1: Photo oriented 2 (The printed image reproduction level higher than that of the Photo oriented 1) 2: Photo oriented 1 (The printed image reproduction level higher than that of the Default) 3: Equivalent to the Default 4: Text oriented 1 (The text reproduction level higher than that of the Default) 5: Text oriented 2 (The text reproduction level higher than that of the Text oriented 1)

Notes:

- The text reproduction level is lower when the mode is switched from the default value to the Photo oriented 1 or Photo oriented 2. (The text reproduction level in Photo oriented 2 is lower than that in Photo oriented 1.)
- Changing the setting value from default value to the Text oriented 1 or Text oriented 2 causes image noise in the printed photo image with few lines per inch. (Photo oriented 2 causes more image noise than Photo oriented 1.)

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.15 Black reproduction switching at the Twin color copy mode

Black reproduction can be switched at the Twin color (Black/Red) copy mode.

<Adjustment Mode (05)>

Mode	Code	Item to be adjusted	Remarks
Twin color copy mode (Black/Red)	1761	Black reproduction switching	0: Default 1: Black reproduction oriented

Note:

The boundary between Red and Black may not be smooth when the setting value is “1”.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.16 Black header density level adjustment

The density level of headers in the black mode is adjusted.

<Adjustment Mode (05)>

Mode	Code	Original mode	Remarks
Full Color/ ACS Color	7811	Text/Photo *	The larger the value is, the darker the headers become. However, the density level differs depending on the modes. Acceptable values: 0 to 8 (Default: 0) Refers to the table specified by default when 0 is set. The default table is: Text/Photo: 4 Text: 5 User custom: 4
	7812	Text	
Full Color	7816	User custom	

Make a test copy and compare the image obtained with the current settings; if necessary, make adjustment.

<Procedure>
The procedure is the same as that of 📖 P.8-38 "8.6.2 Density adjustment".

8.6.17 Black area adjustment in twin color copy mode

<Adjustment Mode (05)>

Mode	Code	Item to be adjusted	Remarks
Twin color mode with selected colors	7641-0	High density	The larger the value is, the larger the area recognized as black in the original becomes. The smaller the value is, the larger the area recognized as the color other than black becomes. Acceptable values: 0 to 255 (Default: 128)
	7641-1	Medium density	
	7641-2	Low density	
Twin color mode (Black and red)	7642-0	High density	The larger the value is, the larger the black area becomes. The smaller the value is, the larger the red area becomes. Acceptable values: 0 to 255 (Default: 128)
	7642-1	Medium density	
	7642-2	Low density	

<Procedure>
The procedure is the same as that of 📖 P.8-39 "8.6.3 Color balance adjustment".

8.6.18 Judgment threshold adjustment for blank originals

The judgment level is adjusted for automatic identification of whether the original set is blank or not.
This adjustment is made when “OMIT BLANK PAGE” is selected on the control panel.
The adjustment value is simultaneously applied to all modes at PPC and NW scanning.

<Adjustment Mode (05)>

Code	Item to be adjusted	Remarks
7618	Judgment threshold adjustment for blank originals	The larger the value is, the more an original tends to be judged as a blank sheet. Acceptable values: 0 to 255 (Default: 128)

8.6.19 Background offsetting adjustment for ADF

The background level for scanning originals with the ADF is adjusted when the background fogging at the scanning of a manually-set original and an original used with the ADF is different. This is to adjust the level of the background image removed when the scanning of the originals with the ADF is performed.

<Adjustment Mode (05)>

Color mode	Code	Remarks
Full Color	7764	The larger the value is, the lower the background density becomes. Acceptable values: 0 to 255 (Default: 128)
Mono Color	7765	
Twin Color mode	7766	
ACS Black	7675	
Black	7025	

8.7 Image Quality Adjustment (Printing Function)

8.7.1 Automatic gamma adjustment

When the reproduction of gradation is not appropriate, the gradation reproducibility of all colors Y, M, C and K can be corrected by performing this automatic gamma adjustment. In case the gradation reproduction of the image checked is not satisfactory, make this adjustment as described below at parts replacement.

1. When unpacking or any of the following parts has been replaced, be sure to make this adjustment:
   - Photoconductive drum
   - Developer material
   - Laser optical unit
   - Transfer belt
   - 1st transfer roller
   - Drum cleaning blade
   - Needle electrode
   - Main charger grid
   - Image position aligning sensor
   - Image quality sensor
   - SRAM board (LGC board, SYS board)

2. When any of the following parts are replaced or adjusted, make a print and check the image to determine if adjustment is necessary:
   - 2nd transfer roller

   Note:
   Be sure that this adjustment be made after performing the image adjustment in 📖 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)" and 📖 P.8-15 "8.5.6 Image Dimensional Adjustment".

<Adjustment Mode (05)>

Code	Paper type	Remarks
1004-0	Plain paper	When the reproduction of gradation is not appropriate, the gradation reproducibility of all colors Y, M, C and K can be corrected by performing this automatic gamma adjustment.
1004-2	Recycled paper	
1004-3	Thick paper 1	
1004-4	Thick paper 2	
1004-5	Thick paper 3	
1004-6	Thick paper 4	
1004-7	Special paper 1	
1004-8	Special paper 2	
1008	All paper types	

* If the code 1008 is performed, the adjustment will be applied to all paper types.

<Procedure>
1. While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment Mode
2. Select the A4/LT drawer. Key in the pattern number and press the [FAX] button to output a “Patch chart for adjustment”.

Pattern No.	Paper type	Remarks
70	Plain paper	Used when the code 1004-0 is performed
74	Recycled paper	Used when the code 1004-2 is performed
76	Thick paper 1	Used when the code 1004-3 is performed
78	Thick paper 2	Used when the code 1004-4 is performed
80	Thick paper 3	Used when the code 1004-5 is performed
82	Thick paper 4	Used when the code 1004-6 is performed
84	Special paper 1	Used when the code 1004-7 is performed
86	Special paper 2	Used when the code 1004-8 is performed

Note:
However, this is applied to all paper types when 05-1008 is performed.

Code	Remarks
08-9059	0: No paper selecting buttons displayed 1: Paper selecting buttons displayed. (For both Copy and Printer)

3. Place the patch chart for adjustment printed in step (2) face down on the original glass, with its side, on which two black squares are present, aligned against the original scale.
4. Key in a code and press the [START] button. → The scanner reads the chart automatically and performs automatic gamma adjustment calculation (approx. 30 sec.).
5. When the adjustment has finished normally, “ENTER” is shown.
   Press the [ENTER] button to have the adjustment results reflected.
   (To cancel the reflection of adjustment results, press the [CANCEL] button.)
   In the case of an abnormal ending, “ADJUSTMENT ERROR” is shown. Press the [CANCEL] button to clear the error display.
   When it is cleared, the control panel display will return to the ready state. Then, check if the patch chart on the original glass is placed in the wrong direction or if it is placed inclined on the original glass, and then repeat step (3) and afterward.

8.7.2 Gamma balance adjustment (Black Mode)

The gamma balance is adjusted by adjusting the density at the Black Mode. The adjustment is performed by selecting its density area from the following: low density, medium density and high density.

<Adjustment Mode (05)>

Color mode	Language and screen						Item to be adjusted	Remarks
	Smooth (PS)	Detail (PS)	Smooth (PCL)	Detail (PCL)	Smooth (XPS)	Detail (XPS)		
Black	7315-0	7316-0	7317-0	7318-0	7319-0	7320-0	Low density	The larger the value is, the density of the item to be adjusted becomes darker. Acceptable values: 0 to 255 (Default: 128)
	7315-1	7316-1	7317-1	7318-1	7319-1	7320-1	Medium density	
	7315-2	7316-2	7317-2	7318-2	7319-2	7320-2	High density	

Notes:

- Be sure that this adjustment be made after performing 📖 P.8-51 "8.7.1 Automatic gamma adjustment".
- Changing the adjustment setting influences the adjacent density area slightly.
  E.g.: When the value of the medium density is larger, the adjacent areas in the low density and high density range will become slightly darker.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes to be adjusted (language and screen) and press the [START] button.
(3) Key in the value corresponding to the density area to be adjusted (0, 1 or 2) and press the [START] button.
  0: Low density 1: Medium density 2: High density
(4) Key in the adjustment value. (To correct the value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(6) For resetting the value, repeat step (2) to (5).
(7) Let the equipment restart and perform the printing job.
(8) If the image density has not been attained, repeat step (1) to (7).

<Range of the density area (low density, medium density, high density)>
The color from the 1st to the 7th stage (low density), from the 8th to the 11th stage (medium density) and from the 12th to the 13th stage (high density) in “Patch chart for gamma adjustment ([71] [FAX])” output in 🕮 P.8-51 "8.7.1 Automatic gamma adjustment" can be used as a guide for the range of the density area influenced by the adjustment with the change of the adjustment value (low density, medium density, high density).

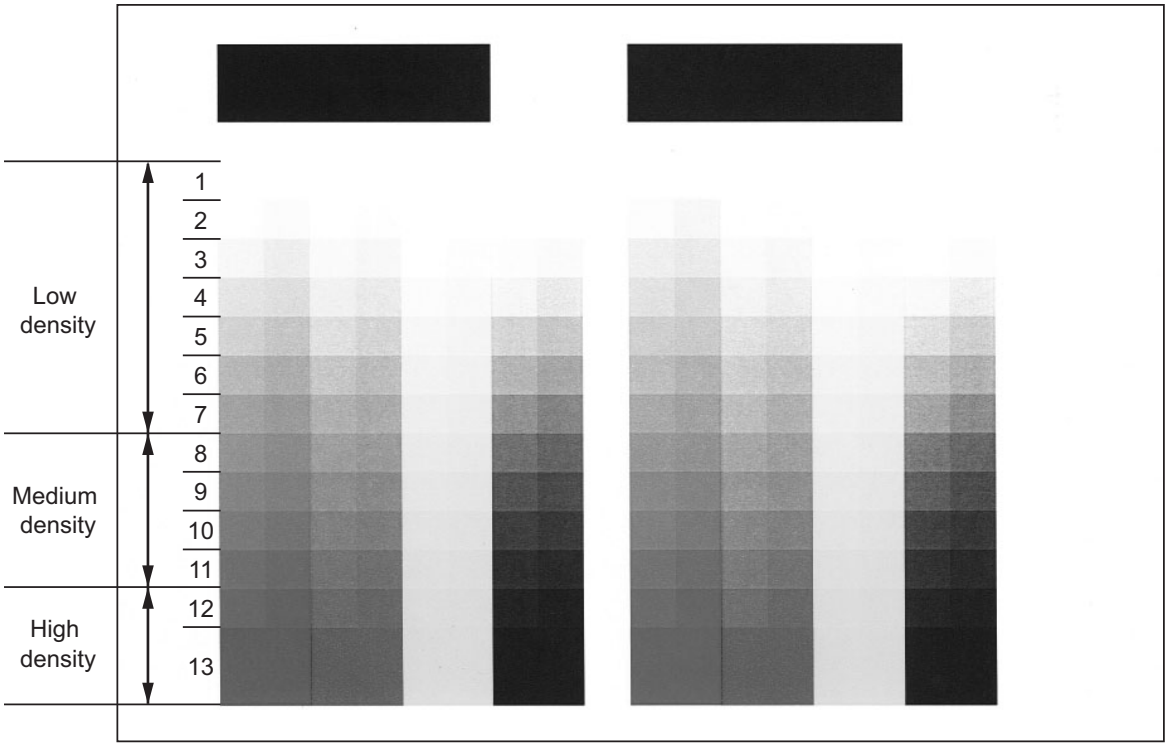


Fig. 8-30

8.7.3 Color balance adjustment

The color balance is adjusted by adjusting the density of each color. The adjustment is performed by selecting its density area from the following: low density, medium density and high density.

<Adjustment Mode (05)>

Color	PS		PCL		XPS		Density	Remarks
	Smooth	Detail	Smooth	Detail	Smooth	Detail		
Yellow	8050-0	8054-0	8058-0	8062-0	8042-0	8046-0	Low	The larger the value is, the darker the color to be adjusted becomes. Acceptable values: 0 to 255 (Default: 128)
	8050-1	8054-1	8058-1	8062-1	8042-1	8046-1	Medium	
	8050-2	8054-2	8058-2	8062-2	8042-2	8046-2	High	
Magenta	8051-0	8055-0	8059-0	8063-0	8043-0	8047-0	Low	
	8051-1	8055-1	8059-1	8063-1	8043-1	8047-1	Medium	
	8051-2	8055-2	8059-2	8063-2	8043-2	8047-2	High	
Cyan	8052-0	8056-0	8060-0	8064-0	8044-0	8048-0	Low	
	8052-1	8056-1	8060-1	8064-1	8044-1	8048-1	Medium	
	8052-2	8056-2	8060-2	8064-2	8044-2	8048-2	High	
Black	8053-0	8057-0	8061-0	8065-0	8045-0	8049-0	Low	
	8053-1	8057-1	8061-1	8065-1	8045-1	8049-1	Medium	
	8053-2	8057-2	8061-2	8065-2	8045-2	8049-2	High	

Notes:

- Be sure that this adjustment be made after performing 📖 P.8-51 "8.7.1 Automatic gamma adjustment".
- Changing the adjustment setting influences the adjacent density area slightly.
  E.g.: When the value of the medium density is larger, the adjacent areas in the low density and high density range will become slightly darker.

<Procedure>
The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

<Range of the density area (low density, medium density, high density)>
The color from the 1st to the 7th stage (low density), from the 8th to the 11th stage (medium density) and from the 12th to the 13th stage (high density) in “Patch chart for gamma adjustment ([71] [FAX])” output in 📖 P.8-51 "8.7.1 Automatic gamma adjustment" can be used as a guide for the range of the density area influenced by the adjustment with the printer driver and the change of the adjustment value (low density, medium density, high density (Refer to P.8-54 "Fig. 8-30").

8.7.4 Adjustment of faint text

The faint text can be improved in the following codes.

<Adjustment Mode (05)>

Black mode			Color mode			Remarks
PS	PCL	XPS	PS	PCL	XPS	
7340	7341	7342	8130	8131	8132	When the small characters or fine lines in a halftone image are faint, they can be improved by increasing the value to raise the density level. Acceptable values: 0 to 8 (Default: 0)

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes to be adjusted and press the [START] button.
(3) Key in the adjustment value. (To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(5) For resetting the value, repeat step (2) to (4).
(6) Let the equipment restart and perform the printing job.
(7) If the desired image has not been attained, repeat step (1) to (6).

8.7.5 Upper limit value at Toner Saving Mode

The upper limit value is adjusted at the Toner Saving Mode.

<Adjustment Mode (05)>

Black mode			Color mode			Remarks
PS	PCL	XPS	PS	PCL	XPS	
664-0	664-1	664-2	1055-0	1055-1	1055-2	The smaller the value is, the lighter the density of image becomes. Acceptable values: 0 to 255

<Procedure>
The procedure is the same as that of 🕮 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.6 Maximum toner density adjustment

The maximum toner amount adhering to the paper can be controlled.

<Adjustment Mode (05)>

Code	Paper type	Remarks
1050	OHP film	The smaller the value is, the toner amount adhered decreases of the high density area (ex. prevention of fusing offsetting, etc.). Acceptable values: 0 to 255 (Default: OHP film: 200)

<Procedure>

The procedure is the same as that of 📖 P.8-56 "8.7.4 Adjustment of faint text".

Note:

The larger the value is, the more frequently fusing offsetting occurs.

8.7.7 Fine line enhancement switchover

<Adjustment Mode (05)>

Black mode			Color mode			Remarks
PS	PCL	XPS	PS	PCL		
7322-0	7322-1	7322-2	8102-0	8102-1	8102-2	Whether fine lines are enhanced or not can be switched. 0: OFF 1: ON Acceptable values: 0 to 1 (Default: 1)

<Procedure>

The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.8 “PureBlack/PureGray” threshold adjustment (PCL)

<Adjustment Mode (05)>

Original mode				Item to be adjusted	Remarks
General	Photographic	Presentation	Line art		
8210-0	8210-1	8210-2	8210-3	Text	The larger the value is, the wider the color range to be printed only with the black toner becomes. The smaller the value is, the narrower this color range becomes. Acceptable values: 1 to 255
8211-0	8211-1	8211-2	8211-3	Graphics	
8212-0	8212-1	8212-2	8212-3	Image	

<Procedure>

The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.9 “PureBlack/PureGray” threshold adjustment (Twin color mode)

<Adjustment Mode (05)>

Code	Item to be adjusted	Remarks
8213	Text	The larger the value is, the wider the color range to be printed only with the black toner becomes. The smaller the value is, the narrower this color range becomes. Acceptable values: 1 to 255
8214	Graphics	
8215	Image	

<Procedure>

The procedure is the same as that of 📖 P.8-56 "8.7.4 Adjustment of faint text".

8.7.10 “PureBlack/PureGray” threshold adjustment (PS)

<Adjustment Mode (05)>

Original mode					Item to be adjusted	Remarks
General	Photographic	Presentation	Line art	Advanced		
8252-0	8252-1	8252-2	8252-3	8252-4	Text	The larger the value is, the wider the color range to be printed only with the black toner becomes. The smaller the value is, the narrower this color range becomes. Acceptable values: 1 to 255
8253-0	8253-1	8253-2	8253-3	8253-4	Graphics	
8254-0	8254-1	8254-2	8254-3	8254-4	Image	

<Procedure>

The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.11 “PureBlack/PureGray” threshold adjustment (XPS)

<Adjustment Mode (05)>

Original mode					Item to be adjusted	Remarks
General	Photographic	Presentation	Line art	Advanced		
8249-0	8249-1	8249-2	8249-3	8249-4	Text	The larger the value is, the wider the color range to be printed only with the black toner becomes. The smaller the value is, the narrower this color range becomes. Acceptable values: 1 to 255
8250-0	8250-1	8250-2	8250-3	8250-4	Graphics	
8251-0	8251-1	8251-2	8251-3	8251-4	Image	

<Procedure>

The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.12 Toner limit threshold adjustment

<Adjustment Mode (05)>

Smooth (PS/PCL/XPS)	Detail (PS/PCL/XPS)	Paper type	Remarks
8071-0	8070-0	Plain paper	The larger the value is, the darker the image in the high density area becomes. Acceptable values: 0 to 255 (Default: 128)
8071-2	8070-2	Recycled paper	
8071-3	8070-3	Thick paper 1	
8071-4	8070-4	Thick paper 2	
8071-5	8070-5	Thick paper 3	
8071-6	8070-6	Thick paper 4	
8071-7	8070-7	Special paper 1	
8071-8	8070-8	Special paper 2	
8071-9	8070-9	OHP film	

<Procedure>
The procedure is the same as that of 🕮 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.13 Screen switchover

<Adjustment Mode (05)>

Code	Remarks
8176	The level of screen ruling shown in the screen selecting menu of the printer driver can be switched. 0: High screen ruling value (smoother image) 1: Low screen ruling value (rougher image)
8179 (EFI Printer Board)	

<Procedure>
The procedure is the same as that of 🕮 P.8-56 "8.7.4 Adjustment of faint text".

8.7.14 Sharpness adjustment

This adjustment is applied when images need to be softer or sharper.
The adjustment for each original mode is available.

<Adjustment Mode (05)>

PS					EFI	Item to be adjusted	Remarks
monochrome	General	Photo	Presentation	Line art			
8118-0	8110-0	8111-0	8112-0	8113-0	8119-0	Text	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes. Acceptable values: 0 to 255 (Default: 128)
8118-1	8110-1	8111-1	8112-1	8113-1	8119-1	Graphics	
8118-2	8110-2	8111-2	8112-2	8113-2	8119-2	Image	

<Procedure>
The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.7.15 Thin line width lower limit adjustment

<Adjustment Mode (05)>

Code	Remarks
8240	Sets the lower limit value of the thin line width when “Distinguish Thin Lines” is selected in the screen selecting menu of the printer driver. The larger the value is, the thicker (darker) the thin line becomes. Acceptable values: 1 to 9 (Default: 2)

<Procedure>
The procedure is the same as that of 📖 P.8-56 "8.7.4 Adjustment of faint text".

8.7.16 Offsetting adjustment for background processing

<Adjustment Mode (05)>

	PS		PCL		XPS		Remarks
	Smooth	Detail	Smooth	Detail	Smooth	Detail	
Color	8010-0	8013-0	8010-1	8013-1	8010-2	8013-2	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes. Acceptable values: 0 to 255 (default: 128)
Twin Color	8011-0	8014-0	8011-1	8014-1	8011-2	8014-2	
Monochrome	8012-0	8015-0	8012-1	8015-1	8012-2	8015-2	

<Procedure>
The procedure is the same as that of 📖 P.8-53 "8.7.2 Gamma balance adjustment (Black Mode)".

8.8 Image Quality Adjustment (Scanning Function)

8.8.1 Gamma balance adjustment

The gamma balance at the Black Mode is adjusted by adjusting the density. The adjustment is performed by selecting its density area from the following: low density, medium density and high density.

<Adjustment Mode (05)>

Black				Gray Scale	Item to be adjusted	Remarks
Original mode						
Text/ Photo	Text	Photo	User custom			
880-0	881-0	882-0	7480-0	883-0	Low density	The larger the value is, the density of the item to be adjusted becomes darker. Acceptable values: 0 to 255 (Default: 128)
880-1	881-1	882-1	7480-1	883-1	Medium density	
880-2	881-2	882-2	7480-2	883-2	High density	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the code corresponding to the desired original mode and press the [START] button.
(3) Key in the value corresponding to the density area to be adjusted (0, 1 or 2) and press the [START] button.
0: Low density (L), 1: Medium density (M), 2: High density (H)
(4) Key in the adjustment value. (To correct the value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(6) For resetting the value, repeat step (2) to (5).
(7) Let the equipment restart and perform the scanning job.
(8) If the desired image has not been attained, repeat step (1) to (7).

8.8.2 Density adjustment

Adjusts the center density and the variation of density adjustment buttons.

<Adjustment Mode (05)>

Color Mode	Original mode				Item to be adjusted	Remarks
	Text	Photo	Printed image	User custom		
Color	8340	8341	8342	8380	Manual density center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)
	8344	8345	8346	8381	Manual density light step value	Sets the changing amount by 1 step at the density adjustment on the control panel. The larger the value is, the lighter the light side becomes. Acceptable values: 0 to 255 (Default: 20)
	8348	8349	8350	8382	Manual density dark step value	Sets the changing amount by 1 step at the density adjustment on the control panel. The larger the value is, the darker the dark side becomes. Acceptable values: 0 to 255 (Default: 20)

<Adjustment Mode (05)>

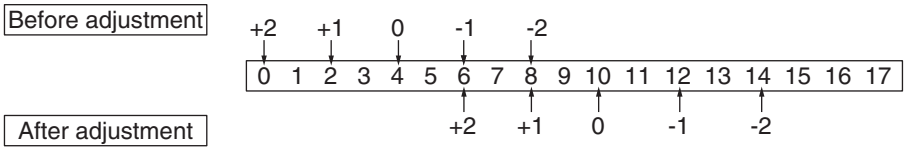
Black				Gray Scale	Item to be adjusted	Remarks
Original mode						
Text/ Photo	Text	Photo	User custom			
845	846	847	7475	848	Manual density center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)
860	861	862	7478	863	Automatic density	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in an adjustment value (acceptable values: 0 to 255).
(To correct a value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(5) Let the equipment restart and perform the scanning.
(6) If the desired image quality has not been attained, repeat step (1) to (5).

8.8.3 Background adjustment (Color Mode)

The adjustment level of background center value is adjusted. The control value of background adjustment button is automatically adjusted to the same level as the adjusted center value.
For example, when the control value of background adjustment key ranges from 0 to 6, the background center value (-2 to +2) is used to be the range from 6 to 14 accordingly.



<Adjustment Mode (05)>

Code	Original mode	Remarks
1070	Text	The smaller the value is, the background becomes lighter. Acceptable values: 0 to 50 (Default: 50)
1071	Printed Image	
1072	Photo	
8370	User custom	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes and press the [START] button.
(3) Key in the adjustment values. Acceptable values: 0 to 50. (To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(5) Let the equipment restart and perform the scanning job.
(6) If the desired image has not been attained, repeat step (1) to (5).

8.8.4 Judgment threshold for ACS (common for copy and network scan)

The judgment level is adjusted for the automatic identification of whether the original set on the glass is black or color. Namely, this is to adjust the judgment level used when “Auto Color” is selected at color modes. The same adjustment value is simultaneously applied to all cases of originals on the original glass for copier functions and network scanning functions, and those placed on the RADF.

<Adjustment Mode (05)>

Code	Item to be adjusted	Contents
1675	Judgment threshold for ACS	The larger the value is, the more an original tends to be judged as black even at the Auto Color Mode. The smaller the value is, the more it tends to be judged as color. Acceptable values: 0 to 255 (Default: 70)

<Procedure>:
The procedure is the same as that of 📖 P.8-62 "8.8.2 Density adjustment".

8.8.5 Sharpness adjustment

If you want to make scan images look softer or sharper, perform the following adjustment. The adjustment can be made for each of the color modes and original modes independently.

<Adjustment Mode (05)>

Code	Color mode	Original mode	Contents
1086	Full Color	Text	• The larger the value is, the sharper the image becomes; while the smaller the value is, the softer the image becomes. • The smaller the value is, the less moire tends to appear. • The acceptable values are 0 to 255. The center value is 128.
1087		Printed Image	
1088		Photo	
8375		User custom	
840	Black	Text/Photo	
841		Text	
842		Photo	
7470		User custom	
843	Gray Scale	-	

Note:
You have to make adjustment by balancing between moire and sharpness.

<Procedure>
The procedure is the same as that of 📖 P.8-62 "8.8.2 Density adjustment".

8.8.6 Setting range correction

The values of the background peak in the range correction at the Black Mode can be switched to “varied” or “fixed” in the following codes.
If they are fixed, the range correction is performed with standard values.
The values of the background peak affects the reproduction of the background density and the values of the text peak affects that of the text density.

<Adjustment Mode (05)>

Black				Gray Scale	Item to be adjusted	Remarks
Original mode						
Text/ Photo	Text	Photo	User custom			
7416	7417	7418	7425	7419	Range correction (Automatic density adjustment)	0: Background peak - fixed 1: Background peak - varied
7421	7422	7423	7426	7424	Range correction (Manual density adjustment)	

Color				Item to be adjusted	Remarks
Original mode					
Text	Photo	Printed Image	User custom		
8330	8331	8332	8334	Range correction (Automatic density adjustment)	0: Background peak - fixed 1: Background peak - varied
8361	8362	8363	8365	Range correction (Manual density adjustment)	

<Procedure>
The procedure is the same as that of 📖 P.8-62 "8.8.2 Density adjustment".

8.8.7 Fine adjustment of black density

The density of black side on scanned image is adjusted at color-scanning.

<Adjustment Mode (05)>

Code	Original mode	Remarks
1075	Text	The larger the value is, the black side of the image becomes darker. Acceptable values: 0 to 4 (Default: 0)
1076	Printed Image	
1077	Photo	
8371	User custom	

Note:

Be careful for the value not to be too large since the gradation is reproduced worse in darker side.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes and press the [START] button.
(3) Key in the adjustment values. Acceptable values: 0 to 4. (To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(5) Let the equipment restart and perform the scanning job.
(6) If the desired image has not been attained, repeat step (1) to (5).

8.8.8 RGB conversion method selection

The color space conversion method of image is decided at color-scanning.

<Adjustment Mode (05)>

Code	Original mode	Remarks
1080	Text	0: sRGB, 1: AppleRGB, 2: ROMMRGB, 3: AdobeRGB (Default: 0)
1081	Printed Image	
1082	Photo	
8372	User custom	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes and press the [START] button.
(3) Key in the adjustment values. Acceptable values: 0 to 3. (To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in memory. → The equipment goes back to the ready state.
(5) Let the equipment restart and perform the scanning job.
(6) If the desired image has not been attained, repeat step (1) to (5).

8.8.9 Adjustment of saturation

The saturation of the scanned image is adjusted for color-scanning.

<Adjustment Mode (05)>

Code	Original mode	Remarks
8325	Text	The larger the value is, the brighter the image becomes. The smaller the value is, the duller the image becomes. Acceptable values: 0 to 255 (Default: 128)
8326	Printed Image	
8327	Photo	
8373	User custom	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in the codes and press the [START] button.
(3) Key in the adjustment values. Acceptable values: 0 to 255.
(To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value in the memory. → The equipment goes back to the ready state.
(5) Let the equipment restart and perform the scanning job.
(6) If the desired image has not been attained, repeat step (1) to (5).

8.8.10 Background processing offset adjustment

The density of background is adjusted.

<Adjustment Mode (05)>

Black				Item to be adjusted	Remarks
Original mode					
Text/ Photo	Photo	User Custom	Gray Scale		
8400	8402	8404	8403	Background density adjustment / Automatic density adjustment	The larger the value is, the lower the density of the image background (low density section) becomes. The smaller the value is, the higher the density of the image background (low density section) becomes. Acceptable values: 0 to 255 (Default: 128)
8405	8407	8409	8408	Background density adjustment / Manual density adjustment	

Color				Item to be adjusted	Remarks
Original mode					
Text	Photo	Printed Image	User Custom		
8385	8386	8387	8389	Background density adjustment / Automatic density adjustment	The larger the value is, the lower the density of the image background (low density section) becomes. The smaller the value is, the higher the density of the image background (low density section) becomes. Acceptable values: 0 to 255 (Default: 128)
8390	8391	8392	8394	Background density adjustment / Manual density adjustment	

ADF		Item to be adjusted	Remarks
Black/ Gray Scale	Color		
7468	8395	Background density processing / ADF scanning	Adjusts the density of background for ADF scanning. The larger the value is, the lower the density of the background and the low density section (e.g. light text or lines) becomes. The smaller the value is, the higher the density of them becomes. Acceptable values: 0 to 255 (Default: 128)

<Procedure>

The procedure is the same as that of 📖 P.8-62 "8.8.2 Density adjustment".

8.9 Image Quality Adjustment (FAX Function)

8.9.1 Density adjustment

The center density and the density variation controlled by density adjustment keys can be adjusted as follows.

<Adjustment Mode (05)>

Color mode	Original mode			Item to be adjusted	Remarks
	Text/ Photo	Text *	Photo		
Black	714	700	710	Manual density center value	[TEXT/PHOTO], [PHOTO]: The larger the value is, the darker the image becomes. [Text]: The larger the value is, the lighter the image becomes. Acceptable values: 0 to 255 (Default: 128)
	729	-	725	Automatic density mode	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)

* Since the gradation in this mode is reproduced in a binary image (black and white), this adjustment should be a simple binary threshold adjustment.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in an adjustment value.
(To correct the value once keyed in, press the [CLEAR] button.)
(4) Press the [ENTER] or [INTERRUPT] button to store the value. → The equipment goes back to the ready state.
(5) Turn the power OFF.

<Confirmation>

If possible, perform a Fax transmission and check the adjusted density with the image on the recipient's side.

8.9.2 Beam level conversion setting

A beam level for smoothing process (divided into 4) in the fax function can be set. In this setting the size of dots is adjusted.

<Adjustment Mode (05)>

Code	Item to be adjusted	Remarks
678-0	Beam level 0/4	The smaller the value is, the smaller the beam width becomes. Therefore, the smaller dot is reproduced accordingly. Acceptable values: 0 to 255 (Default: Level 0/4: 0, Level 1/4: 63, Level 2/4: 127, Level 3/4: 191, Level 4/4: 255)
678-1	Beam level 1/4	
678-2	Beam level 2/4	
678-3	Beam level 3/4	
678-4	Beam level 4/4	

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.
(2) Key in a code and press the [START] button.
(3) Key in a sub-code and press the [START] button.
(4) Key in an adjustment value.
(To correct a value once keyed in, press the [CLEAR] button.)
(5) Press the [ENTER] or [INTERRUPT] button to store the value. → The equipment goes back to the ready state.
(6) Take the POWER OFF.

<Confirmation>
Check the beam level conversion setting with the actual fax data received, if possible.

Notes:

1. The setting value must increase as the beam level number (0 to 4) becomes higher. Do not increase this order when setting the values.
2. Usually, beam level 4 / 4 is most effective on black mode.

9. LASER OPTICAL UNIT

9.1 General Description

The laser optical unit radiates the laser beam onto the photoconductive drum responding to the digital image signals transmitted from the scanner, USB, network, etc. to create the latent image. Image signal is converted into the light emission signal of the laser diode on the laser driving PC board (LDR), then radiated on the drum through the optical elements such as cylinder lenses, polygonal mirror and fθ lens. The unit must not be disassembled in the field as they are very sensitive to dust and finely adjusted at the factory.
The polygonal motor in e-STUDIO3530C/4520C is different from the one in e-STUDIO2020C/2330C/2820C/2830C/3520C, and rotates faster. In order to avoid effects by the consequently increased heat and current, in e-STUDIO3530C/4520C, the driving PC board is placed outside the laser unit instead of being unified with the polygonal motor.

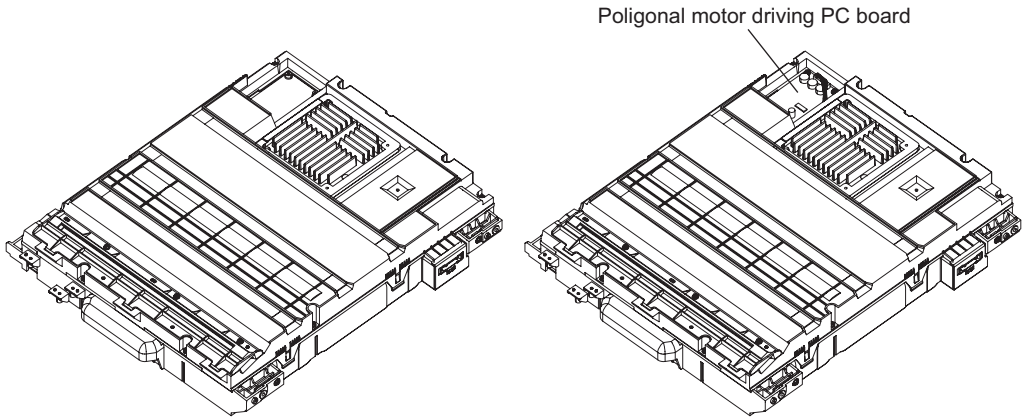


Fig. 9-1

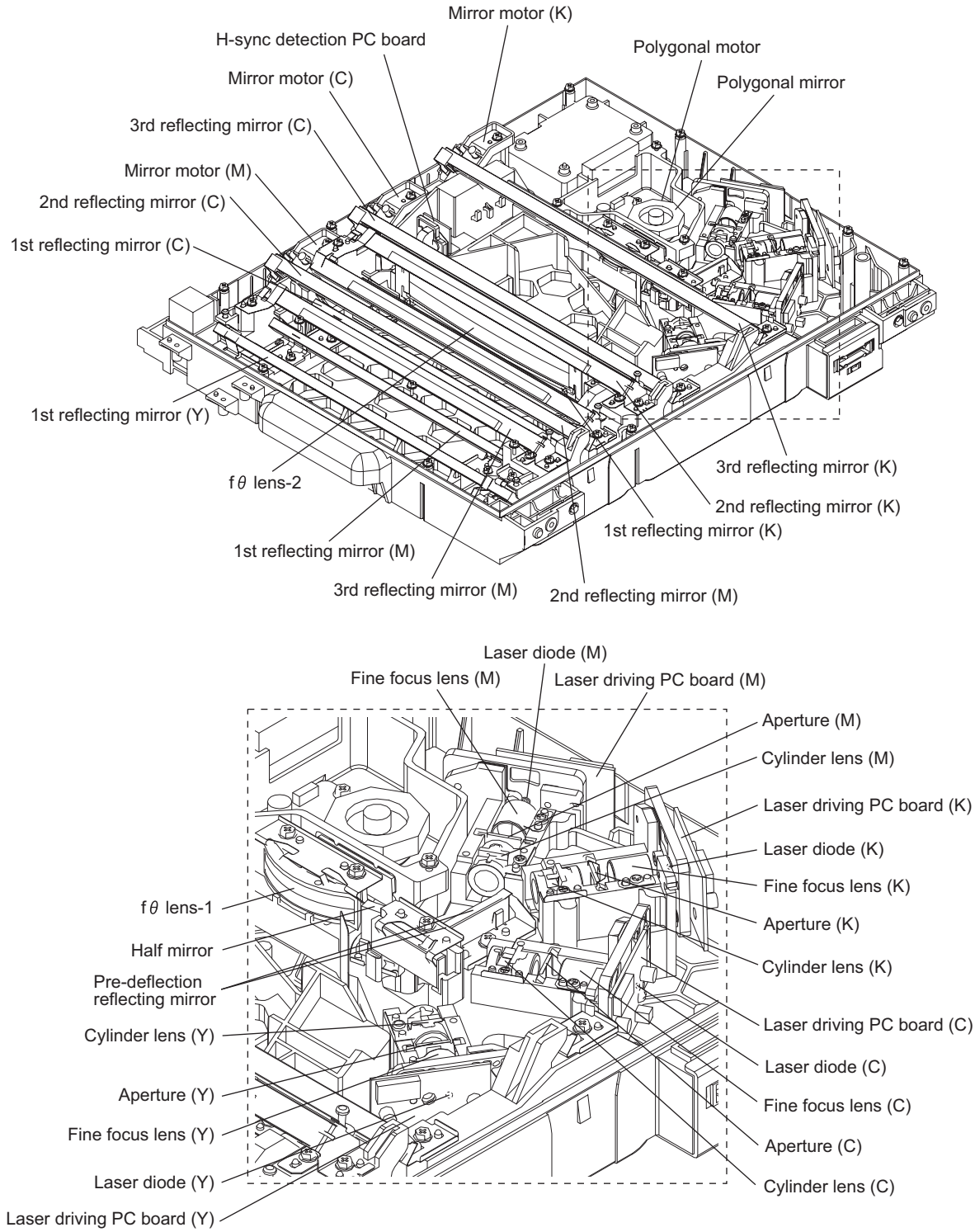


Fig. 9-2

9.2 Structure

Laser optical unit (4 beams)		
Laser emission unit	Laser diode	Wavelength: Approx.790nm Output power rating: 30 mW or less
	Fine focus lens	
	Aperture	
	Cylinder lens	
	Laser driving PC board (LDR)	
Polygonal motor unit	Polygonal motor	
	Polygonal mirror	8 planes
	Polygonal mirror cover / base	
fθ lens-1		
fθ lens-2		
Mirror		
Slit glass		
H-sync detection PC board (SNS)		

1. Laser emission Unit
   This unit consists of the laser diode, finite focus lens, aperture and cylinder lens.

   - Laser diode
     This laser diode features low droop, small laser variation and low threshold current.
     The aperture of the laser emission unit is located behind the finite focus lens to determine the shape of laser beams in both primary and secondary scanning directions.
     Laser diode radiates the laser beams responding to the laser emission control (ON/OFF) signals from the laser driving PC board (LDR). Laser beams which passed through the finite focus lens are focused on the drum surface.

   - Laser precautions
     A laser diode is used for this equipment and radiates an invisible laser beam.
     Since it is not visible, be extremely careful when handling the laser optical unit components, performing operations or adjusting the laser beam. Also never perform the procedure with other than the specified manuals because you could be exposed to the laser radiation.
     The laser unit is completely sealed with a protective cover. As long as only the operations of specified manuals are performed, the laser beam is not leaked and you are in no danger of being exposed to laser radiation.

     The following cautionary label for the laser is attached to the front right cover.

Fig. 9-3

Cautions:

- Avoid expose to laser beam during service. This equipment uses a laser diode. Be sure not to expose your eyes to the laser beam. Do not insert reflecting parts or tools such as a screwdriver on the laser beam path. Remove all reflecting metals such as watches, rings, etc. before starting service.
- When servicing the equipment with the power turned ON, be sure not to touch live sections and rotating/operating sections. Avoid exposing your eyes to laser beam.
- During servicing, be sure to check the rating plate and cautionary labels such as “Unplug the power cable during service”, “CAUTION. HOT”, “CAUTION. HIGH VOLTAGE”, “CAUTION. LASER BEAM”, etc. to see if there is any dirt on their surface and if they are properly stuck to the equipment.

2. Polygonal motor unit
   This unit consists of the polygonal motor, polygonal mirror and polygonal mirror cover.

a. Polygonal motor
   This motor rotates the polygonal mirror in high speed. The DC motor controls the rotation speed of the mirror motor as follows:
   - e-STUDIO2020C/2330C/2820C/2830C/3520C
     During ready: 10,000.000 rpm
     During printing
     : 26,574.803 rpm (600dpi)
     : 27,175.379 rpm (FAX 15.4x16.0dot/mm)
     : 26,156.302 rpm (FAX 16.0x15.4dot/mm)
   - e-STUDIO3530C/4520C
     During ready: 10,000.000 rpm
     During printing
     : 35,433.071 rpm (600dpi)
     : 36,233.839 rpm (FAX 15.4×16.0 dot/mm)
     : 34,875.070 rpm (FAX 16.0×15.4 dot/mm)

b. Polygonal mirror
   Four laser beams emitted from the laser diodes are reflected by this mirror. As the polygonal mirror is rotated by the polygonal motor, the reflected laser lights moves in sync with the rotation. The direction of the movement is the primary scanning direction of the image. One scan is performed on one plane of the polygonal mirror.
   As the polygonal mirror has eight planes, eight scans are performed in one rotation of the polygonal mirror.

c. Polygonal mirror cover / base
   Polygonal mirror cover reduces the windage loss and noise, prevents adhesion of foreign matters onto the mirror surface and releases heat.

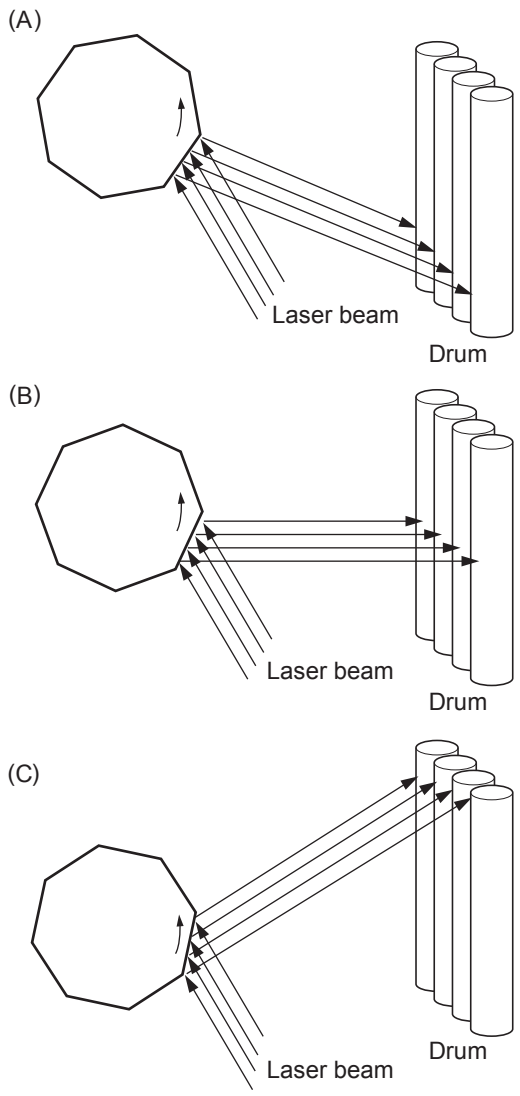
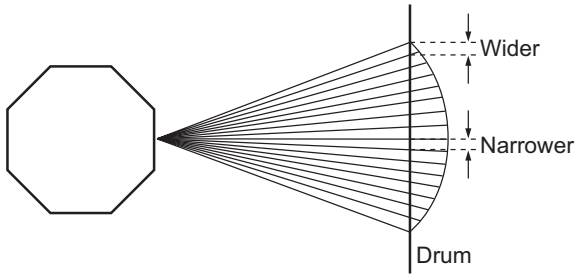


Fig. 9-4

One scan is completed by completion of steps (A) to (C). One scan is performed on one plane of the polygonal mirror. Eight scans can be made with one rotation of the polygonal mirror.

3. fθ lenses-1 and -2
   These two lenses perform the following adjustment on the laser beams reflected by the polygonal mirror.

   a. Uniform-velocity scanning
      Since the polygonal mirror is rotating at a uniform velocity, the laser beam reflected from the mirror scans over the drum surface at a uniform angular velocity; namely, the pitch between the dots on the drum is wider at both ends than at the center of the scanning range. The fθ lenses help to correct this difference, making all the dot-to-dot pitches equal on the drum surface.



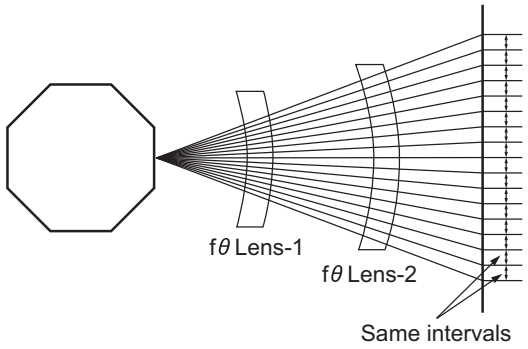


Fig. 9-5

   b. Face tilt correction
      The reflecting face of the polygonal mirror is tilted slightly to one side against the perfect vertical. Horizontal deviation of the laser light which is caused by the tilt is corrected.

   c. Sectional shape of laser beam
      The shape of the laser beam spotted on the drum is adjusted.

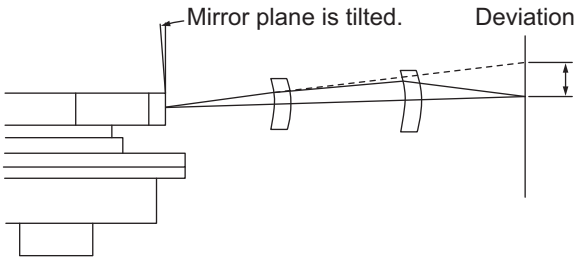


Fig. 9-6

4. H-sync detection PC board (SNS)
   The laser light which is started to be scanned from one of the reflected plane of the polygonal mirror is reflected by the H-sync detection mirror and enters the PIN diode on the H-sync detection PC board (SNS). The primary scanning synchronizing signal is generated based on this reflection.

5. Slit glass
   The slit glass is located where the laser beams are output from the laser optical unit, and it protects the unit from dust.
   Also, the shutter is attached to the upper side of the slit glass in order to prevent toner or dust from adhering to the slit glass, and it is normally closed. It is closed/opened by the shutter motor (M12). It is opened just before the laser beams are emitted and it closes just after the emission is finished. Because the image quality may be significantly affected by a dirty slit glass with adhering toner or dust, a message is set to appear (every 10k copies) prompting a user to clean the glass. Ask a user to perform cleaning when it appears. Although the slit glass cleaning pad is not a preventive maintenance part, replace it if it becomes dirty.

6. Reflecting mirrors
   These reflecting mirrors reflect and lead the laser beams scanned by the polygonal mirror and corrected by the fθ lenses to the drum. The laser beams of Y, M, C and K colors are directed to the drum by respectively different routes using one mirror for Y color beam and three each for M, C and K color beams.

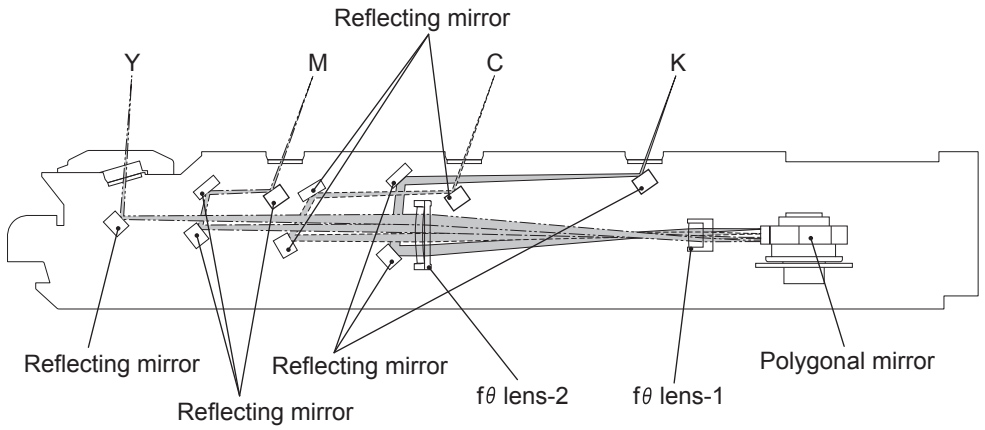


Fig. 9-7

7. Mirror motor (M14, M15, M16)
   At each of the third reflecting mirrors for M, C and K color laser beams, a mirror motor is installed to make tilt adjustment for the mirror. The parallel correction for the four scanning lines is performed by adjusting the tilt of mirrors in the following manner:
   a. A test pattern is written on the transfer belt. This is read by the Image position aligning sensors (S16, S17) to recognize the error in scanning lines.
   b. With the Y color scanning line as a standard, a mirror motor installed at each of the M, C and K color beam mirrors is driven to adjust the degree of laser beam parallelization by inclining the mirror.

9.3 Electric Circuit Description

9.3.1 Laser diode control circuit

This equipment uses an AlGaAs type semiconductive laser with 30 mW or less of optical output power rating. This laser emits a beam in a single transverse mode in approx. 790 nm wavelength. Si photo diode for monitoring optical output in this laser controls the laser intensity.
The relation between the forward current and optical output of a semiconductive laser is as shown below. Beam emission starts when the forward current exceeds a threshold current, and then the laser outputs a monitor current which is proportionate to the optical output. Since semiconductive lasers have an individual variability in their threshold current and monitor current, the optical output needs an adjustment to be maintained at a certain value.
The optical output of a semiconductive laser decreases as the laser temperature rises. Therefore APC (Auto Power Control) needs to be performed to maintain a constant optical output.

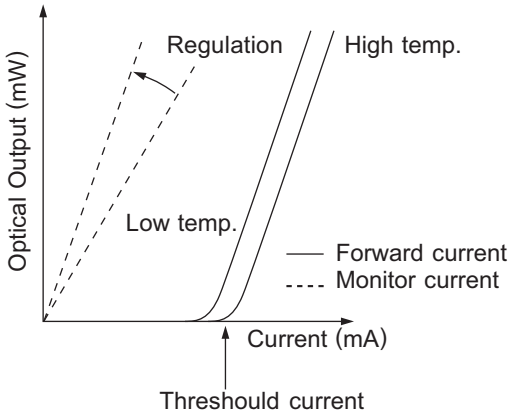


Fig. 9-8

A block diagram of the semiconductive laser control circuit is shown below. The semiconductive laser performs a monitor efficiency regulation (a process to control a monitor current for beam emission amount). The initial beam emission is adjusted to be approx. 5.5 mW (322 µW on the drum surface). The voltage of the monitor output, which has been regulated by this adjustment, is then fed back to a laser power comparison circuit.
In the laser power comparison circuit, this voltage fed back and a laser power voltage set for the control circuit are compared for every scanning. As the result of this, a laser driver circuit increases its forward current when the laser power is insufficient and decreases it when the laser power is excessive to maintain a constant optical output.

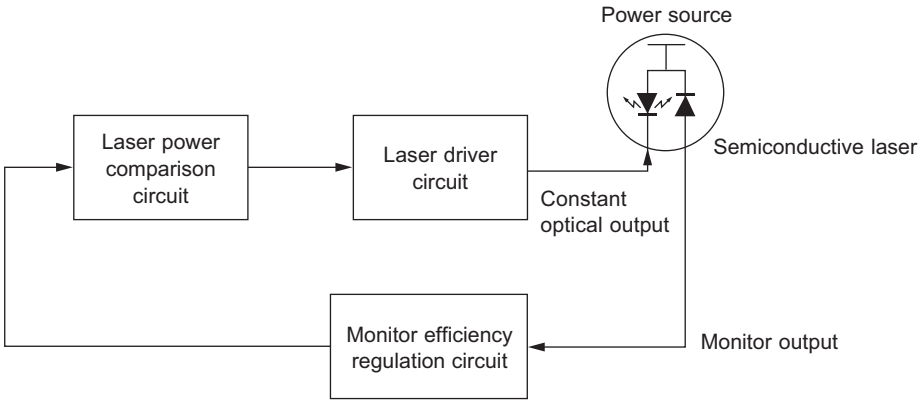


Fig. 9-9

9.3.2 Polygonal motor control circuit

The polygonal motor is a DC motor rotated by a clock signal (PMCK) output from the ASIC. This motor is controlled under PLL (Phase Locked Loop) to realize an accurate and constant rotation. Its rotation status is converted to a status signal (PMRDY) and then output to the ASIC. PMRDY signal moves to a low level only when the rotation status of the motor is constant. The ASIC detects the rotation status with this signal, and emits a laser beam only when the rotation status is constant.

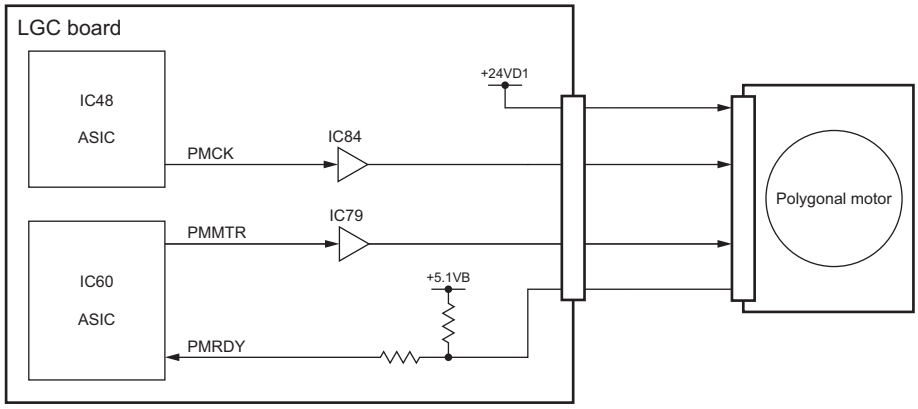


Fig. 9-10

Control signal

Signal	Function	Status	
		High level	Low level
PMMTR	Motor ON signal	OFF	ON
PMCK	Reference clock	---	---
PMRDY	PLL control signal	Stopping or error	Locked (Rotating at a constant speed)

9.3.3 Mirror motor control circuit

The mirror motor is a stepping motor driven by the control signal output from the ASIC on the LGC board and drives the tilt adjustment system of the reflection mirror.
The mirror motor is driven by each phase of the pulse signal (TILT0, TILT1, TILT2, TILT3) output from the ASIC. The rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.
Also, the pulse signal is used for each mirror motor of M, C and K color in common. Selecting the level of the enable signal (TILTM, TILTC, TILTK) sends the signal only to the mirror motor to be driven.

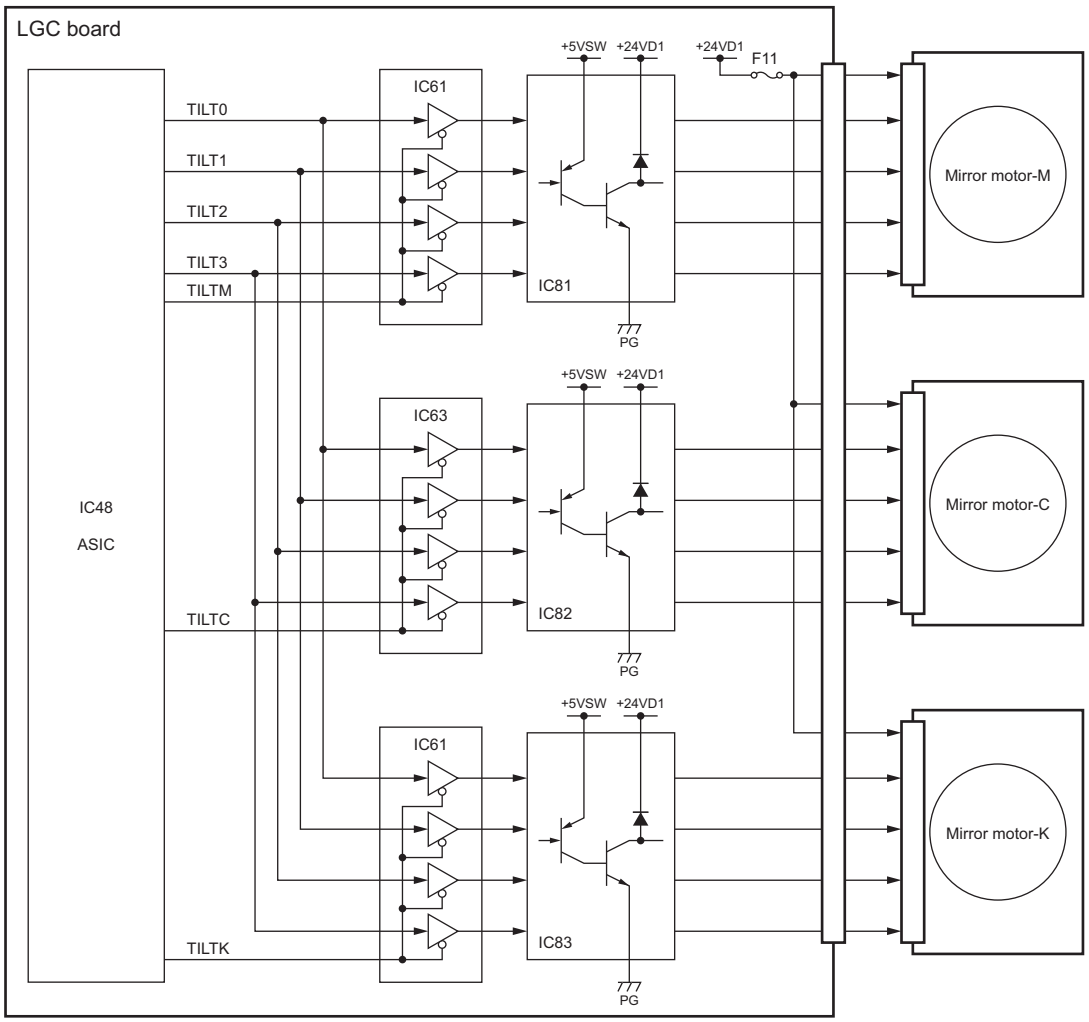


Fig. 9-11

Control signal

Signal	Function	Status	
		High level	Low level
TILT0/1/2/3	Mirror motor phase signal	---	---
TILTM/C/K	Enable signal	OFF	ON

Relation between enable signal and motor to be driven

Signal			Motor to be driven
TILTM	TILTC	TILTK	
L	H	H	Mirror motor-M
H	L	H	Mirror motor-C
H	H	L	Mirror motor-K
H	H	H	None (No tilt adjustment)

* Not available in the above combination

9.4 Disassembly and Replacement

9.4.1 Laser optical unit

(1) Take off the front cover.
📖 P.3-27 "3.5.1 Front cover"
(2) Open the waste toner box.
(3) Take off the 1st drawer.

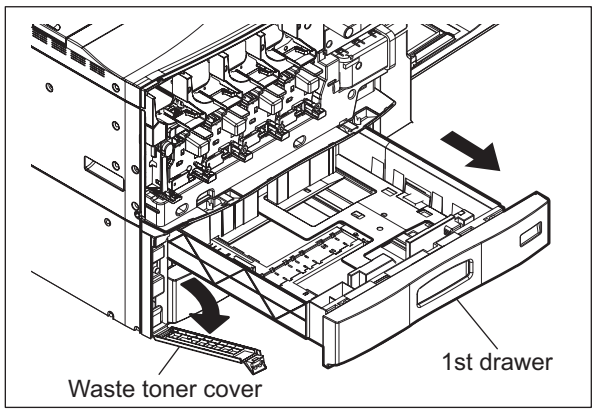


Fig. 9-12

(4) Take off the front hinge lower cover.

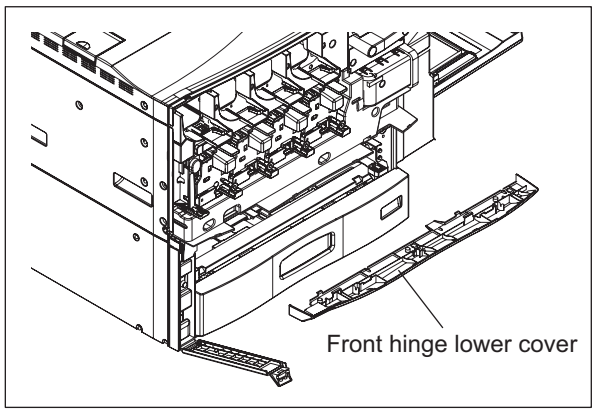


Fig. 9-13

(5) Remove 2 screws, and release 1 hook while pushing the right side of the inner cover downward and then take off the cover.

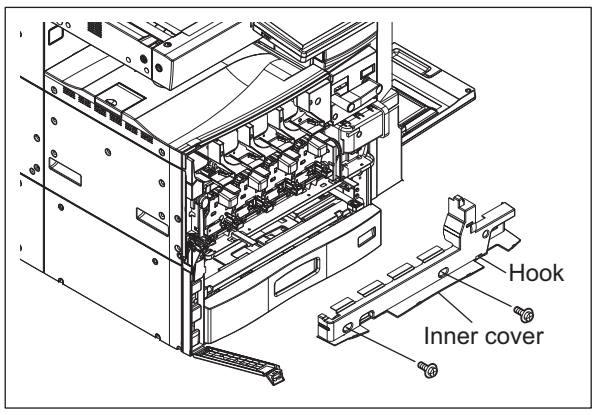


Fig. 9-14

(6) Remove 2 screws and take off the waste toner transport motor.

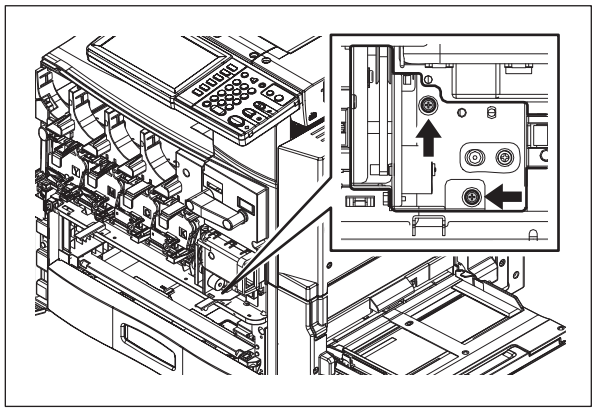


Fig. 9-15

(7) Disconnect 2 connectors.

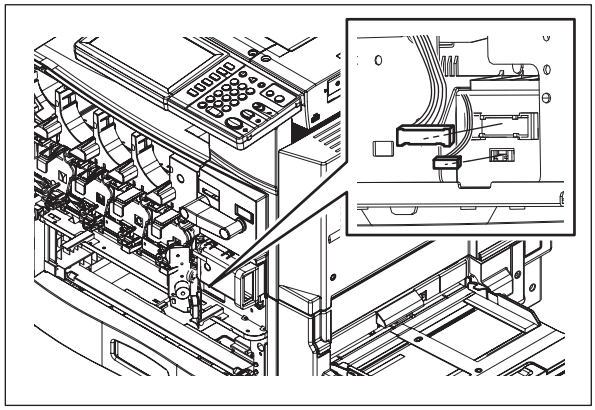


Fig. 9-16

(8) Remove 2 screws.

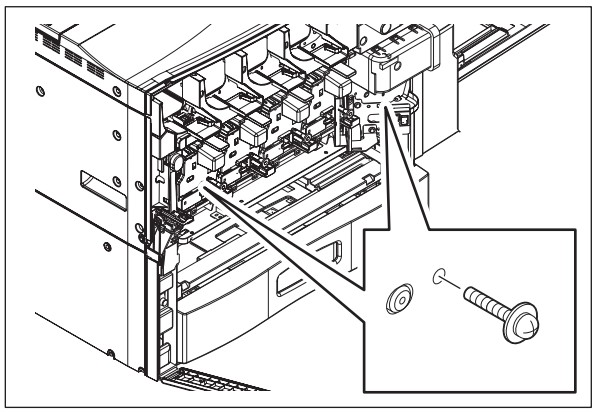


Fig. 9-17

(9) Take off the left cover.
📖 P.3-29 "3.5.7 Left cover"
(10) Disconnect 2 connectors and 1 harness clamp.
(11) Place the harness of the Damp Heater Kit (optional) on the rear side.

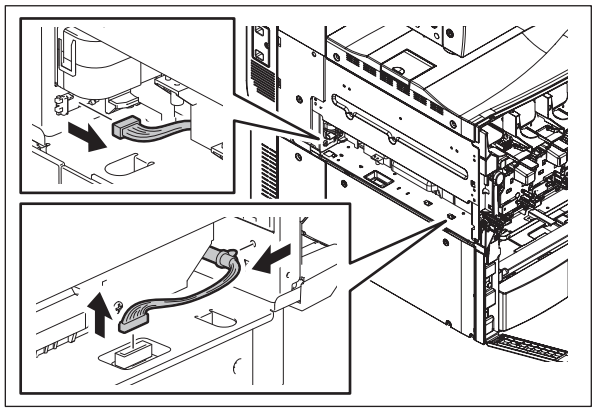


Fig. 9-18

(12) Pull out the laser optical unit.

Note:
When the laser optical unit is replaced, start the equipment in the adjustment mode and perform the adjustment code 05-4721 before the normal start-up.

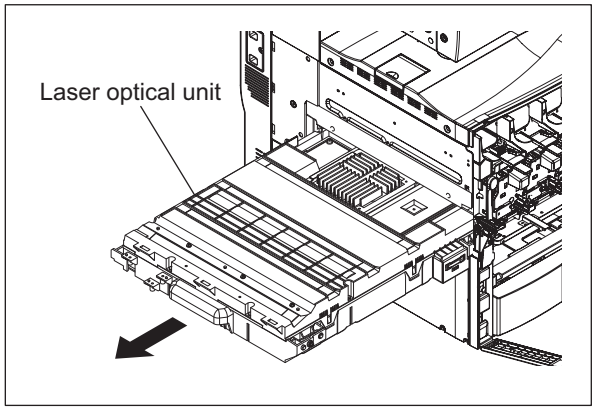


Fig. 9-19

Notes:
1. Do not leave fingerprints or stain on the slit glass of the laser optical unit.
2. Pay close attention not to make an impact or vibration on the laser optical unit because it is a precise apparatus.
3. Place the removed laser optical unit so as not to load on the polygonal motor.
4. Do not disassemble the laser optical unit in the field because it is precisely adjusted and very sensitive to dust and stain.
5. Hold the laser optical unit vertically. Do not press the top of the unit (the cover) where the slit glass and the polygonal motor are installed with your hands or other things.

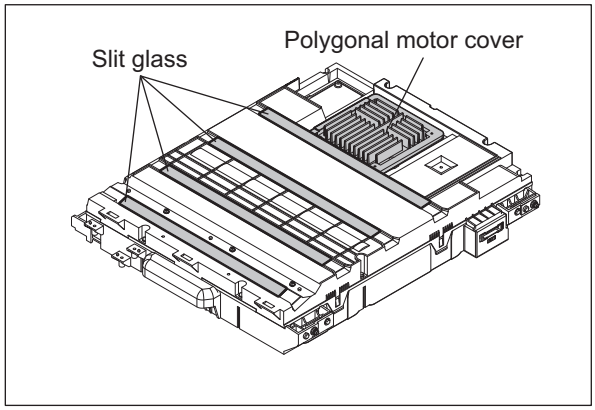


Fig. 9-20

9.4.2 Shutter unit

Note:
Perform steps (1) and (2) only when the Damp Heater Kit (optional) is installed.

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Release 2 clamps and disconnect 1 connector of the Damp Heater Kit (optional).

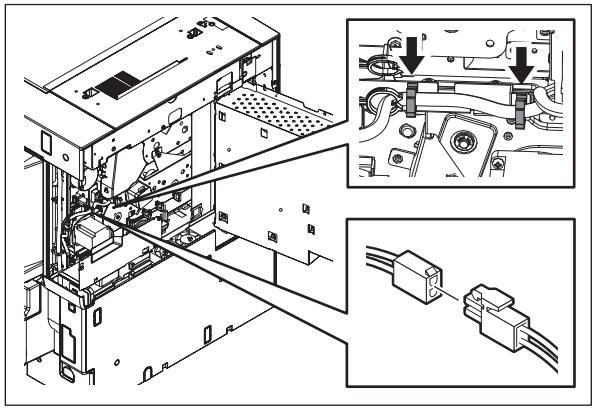


Fig. 9-21

(3) Take off the laser optical unit.
📖 P.9-11 "9.4.1 Laser optical unit"
(4) Take off the 4 ducts of the discharge LEDs.
📖 P.12-22 "12.6.11 Discharge LED (ERS-Y, ERS-M, ERS-C, ERS-K)"
(5) Take off the left lower cover.
📖 P.3-29 "3.5.8 Left lower cover"
(6) Disconnect 1 connector.
(7) Take off the left rear cover.
📖 P.3-30 "3.5.9 Left rear cover"

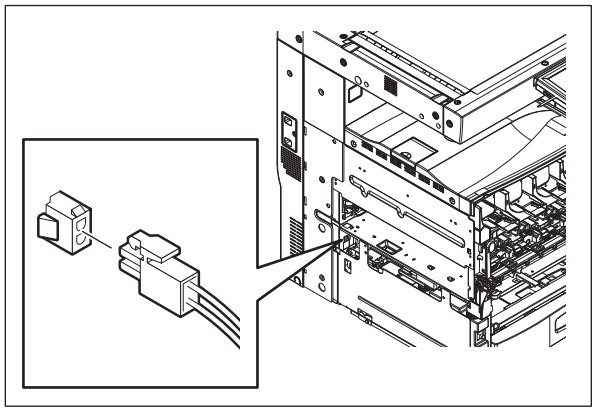


Fig. 9-22

(8) Remove 7 screws and take off the metal plate on the left side.

Note:
Check printed images after assembling the unit.

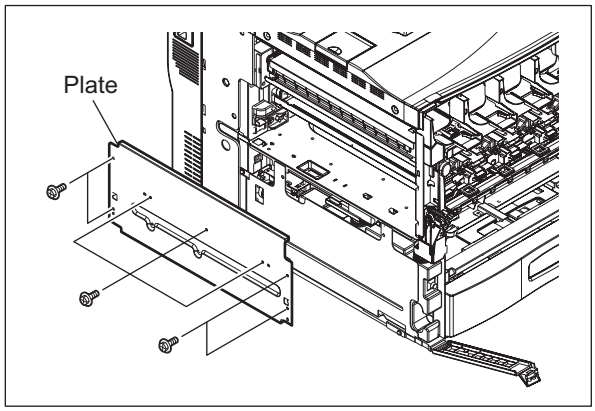


Fig. 9-23

(9) Remove 2 screws, slide the shutter unit to the front, and then pull it out to the exit side.

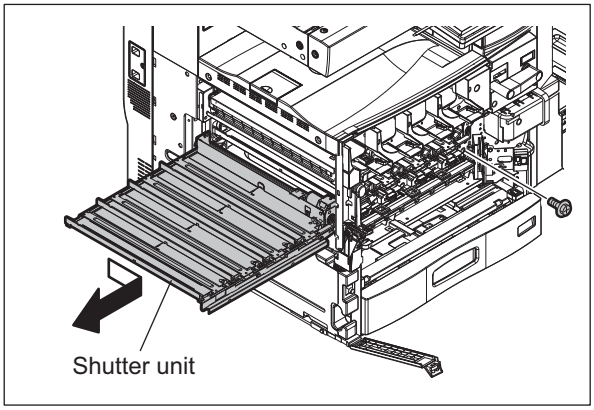


Fig. 9-24

9.4.3 Shutter motor (M12)

(1) Take off the shutter unit.
📖 P.9-14 "9.4.2 Shutter unit"

(2) Disconnect 1 connector, release 2 clamps, remove 3 screws and take off the shutter motor with the bracket.

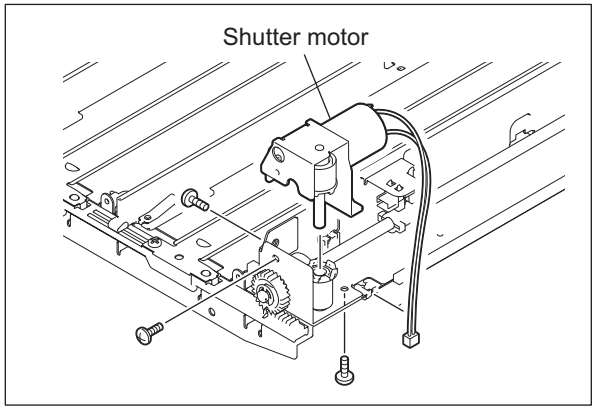


Fig. 9-25

(3) Remove the E-ring. Then remove 1 gear, 1 spring and 1 polyslider.

Note:
When assembling the unit, be sure to install the polyslider.

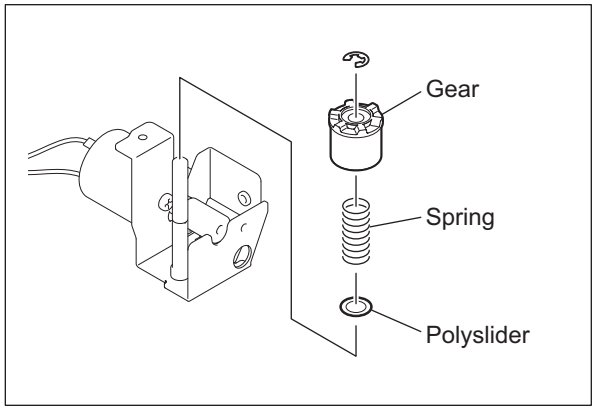


Fig. 9-26

(4) Remove 2 screws and take off the shutter motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

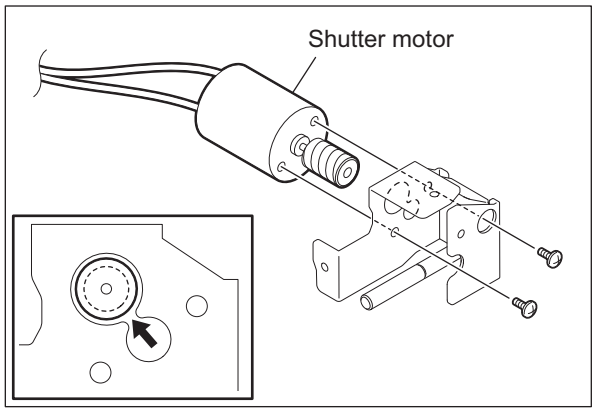


Fig. 9-27

9.4.4 Shutter status detection sensor (S20)

Note:
Perform step (2) only when the Damp Heater Kit (optional) is installed.

(1) Take off the shutter unit.
📖 P.9-14 "9.4.2 Shutter unit"
(2) Remove 2 screws, and then take off the Damp Heater Kit (optional).

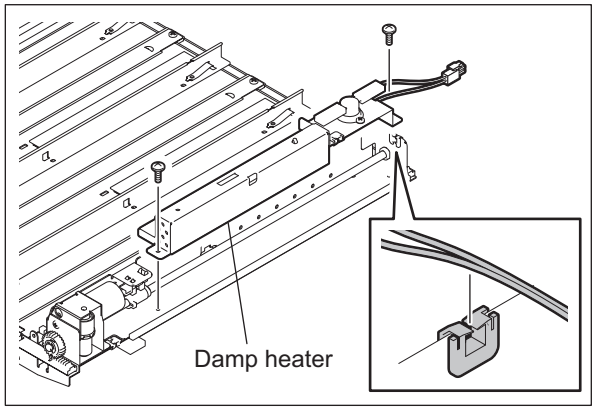


Fig. 9-28

(3) Remove 1 clip, and then slide the actuator to the rear side.

Note:
Be sure not to lose the removed pin.

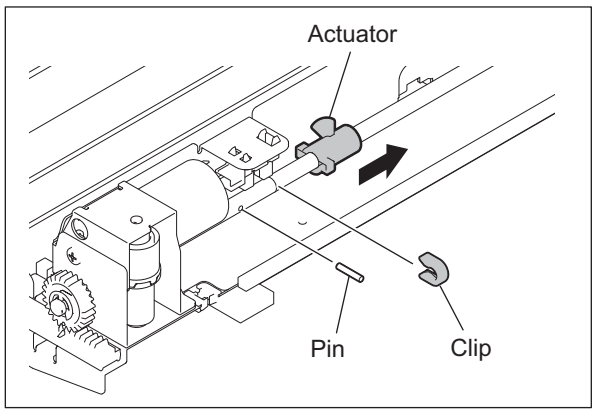


Fig. 9-29

(4) Disconnect 1 connector, release the latch and take off the shutter status detection sensor.

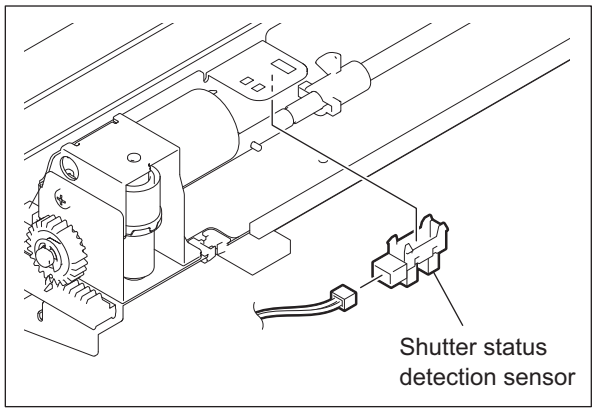


Fig. 9-30

Note:
If the gears (front/rear) of the shutter unit have been removed, be sure to align the mark on the gears with the one on each side of the rack respectively when reassembling them.

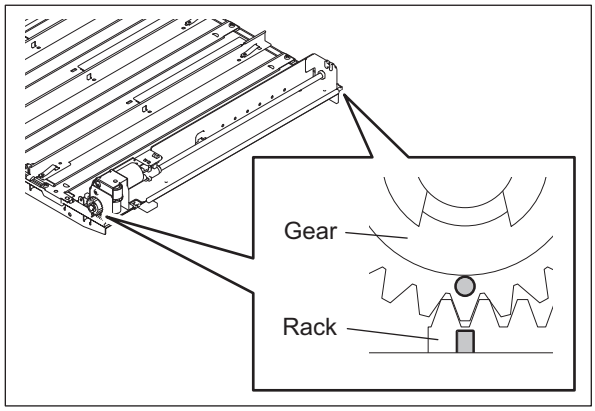


Fig. 9-31

9.4.5 Slit glass cleaning pad

(1) Open the front door. Then take off the slit glass cleaner.
(2) Press 2 latches to the inner side, and then remove the slit glass cleaning pad.

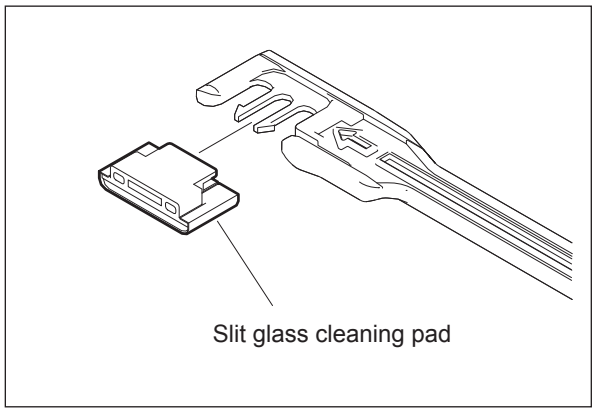


Fig. 9-32

9.4.6 Polygonal motor

Note:
Polygonal motor replacement is not recommended in the field; the image quality is not guaranteed in such a case.

(1) Take off the laser optical unit.
📖 P.9-11 "9.4.1 Laser optical unit"
(2) Remove 3 screws and take off the polygonal motor cover.

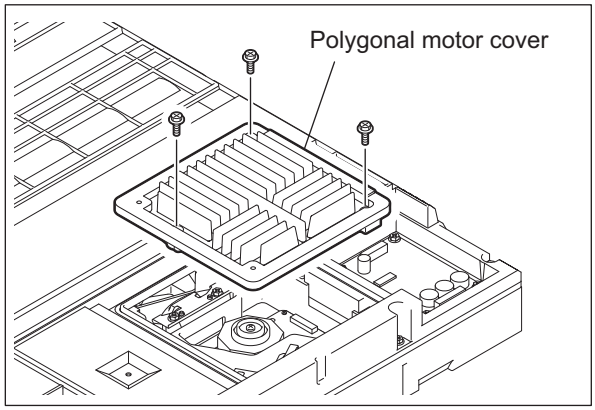


Fig. 9-33

Notes:
1. Treat the polygonal motor gently.
2. The polygonal motor for e-STUDIO2020C/2330C/2820C/2830C/3520C differs from the one for e-STUDIO3530C/4520C. Be sure to use the correct one.
3. Never touch the surface of the polygonal mirror or glass. If you do so, wipe the dirt off using a clean and soft cloth, taking care not to scratch the surface.

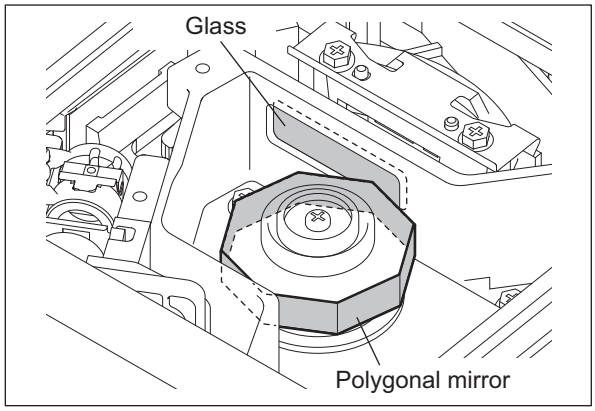


Fig. 9-34

(3) Disconnect 1 connector, remove 4 screws and then take off the polygonal motor.

Note:
Check that all 4 fixing screws for the polygonal motor contact the base before fixing the motor.

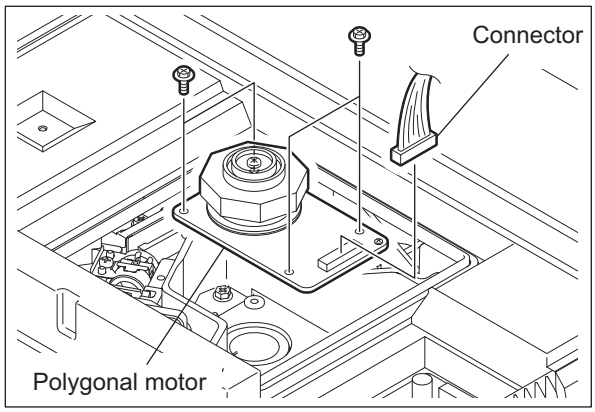


Fig. 9-35

9.5 Image Adjustment in Laser Optical Unit

See the following pages for details.

📖 P.8-23 "[A] Reproduction ratio of primary scanning direction (Fine adjustment of polygonal motor rotation speed (Printer))"
📖 P.8-23 "[B] Primary scanning data laser writing start position (Printer)"
📖 P.8-25 "[D] Secondary scanning data laser writing start position"
📖 P.8-26 "[E] Primary scanning data laser writing start position at duplexing"

10. DRIVE SYSTEM

10.1 General Description

Respective units and movable parts of the equipment are operated by corresponding motors.
The following list describes which part or unit is driven by each motor.

Motor	Operated section	
Scan motor (M1)	Carriage-1 and -2	Ch.7.
Toner motor (M2 - M5)	Toner cartridge	Ch.13.
Waste toner paddle motor (M6)	Waste toner box	Ch.13.
Transfer belt motor (M7)	• Transfer belt • Used toner auger of transfer belt	Ch.14.
1st transfer motor (M8)	1st transfer roller-Y, -M and -C (contact / release movement)	Ch.14.
Developer unit motor (M9)	Developer unit-Y, -M, -C and -K (magnetic roller, mixer)	Ch.13.
Drum motor (M10)	• Drum-Y, -M, -C and -K • Used toner auger of drum-Y, -M, -C and -K	Ch.12.
Drum switching motor (M11)	Transmitting/releasing the drive to the drum-Y, -M, and -C	Ch.12.
Shutter motor (M12)	Slit glass protective shutter	Ch.9.
Polygonal motor (M13)	Polygonal mirror	Ch.9.
Mirror motor (M14 - M16)	Laser unit third reflecting mirrors for M, C and K	Ch.9.
Fuser motor (M17)	• Fuser unit (Fuser roller, Pressure roller and Fuser roller) • Bridge unit (option)	Ch.16.
Exit motor (M18)	Exit roller	Ch.16.
Registration motor (M19)	• Registration roller • 2nd transfer roller (contact / release movement)	Ch.11. Ch.14.
Feed/transport motor (M20)	• 1st drawer transport clutch (Low / High speed): 1st drawer transport roller • 1st drawer feed roller • 1st drawer pickup roller • 2nd drawer transport clutch (Low / High speed): 2nd drawer transport roller • 2nd drawer feed roller • 2nd drawer pickup roller • Bypass feed clutch: Bypass transport roller, bypass feed roller and bypass pickup roller	Ch.11.
Tray-up motor (M21)	• 1st drawer tray • 2nd drawer tray	Ch.11.
ADU motor (M22)	ADU (Upper, middle and lower transport roller)	Ch.17.
Waste toner transport motor (M31)	Waste toner transport auger	Ch.13.

11. PAPER FEEDING SYSTEM

11.1 General Descriptions

This chapter explains how the system works to pick up paper from the drawer or bypass tray and transport it to the 2nd transfer position.
The paper feeding system mainly consists of the pickup roller, feed roller, separation roller, transport roller, registration roller, bypass paper sensor (S40), drawer empty sensor (S32, 36), drawer paper stock sensor (S33, 37), bypass feed sensor (S41), drawer feed sensor (S30, 34), registration sensor (S28) and drive system for these components. The feed/transport motor (M20) and registration motor (M19) drives the above rollers.

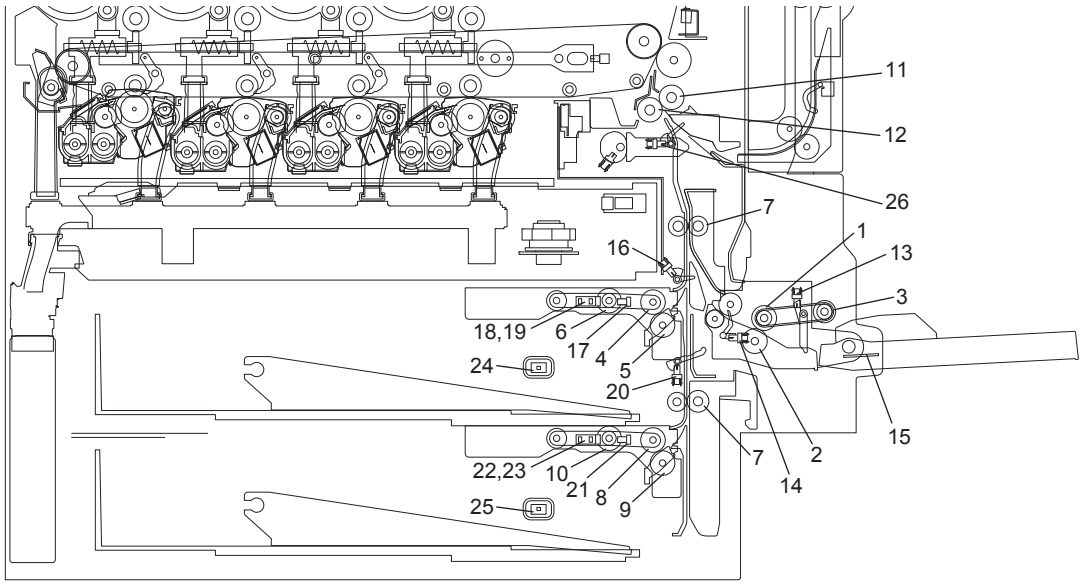


Fig. 11-1

No.	Name	No.	Name
1	Bypass feed roller	14	Bypass feed sensor (S41)
2	Bypass separation roller	15	Paper width detection PC board (SFB)
3	Bypass pickup roller	16	1st drawer feed sensor (S30)
4	1st drawer feed roller	17	1st drawer tray-up sensor (S31)
5	1st drawer separation roller	18	1st drawer empty sensor (S32)
6	1st drawer pickup roller	19	1st drawer paper stock sensor (S33)
7	1st/2nd drawer transport roller	20	2nd drawer feed sensor (S34)
8	2nd drawer feed roller	21	2nd drawer tray-up sensor (S35)
9	2nd drawer separation roller	22	2nd drawer empty sensor (S36)
10	2nd drawer pickup roller	23	2nd drawer paper stock sensor (S37)
11	Registration roller (rubber roller)	24	1st drawer detection switch (SW5)
12	Registration roller (metal roller)	25	2nd drawer detection switch (SW6)
13	Bypass paper sensor (S40)	26	Registration sensor (S28)

11.2 Composition

Feeding system		
1st drawer feeding unit / 2nd drawer feeding unit	1st / 2nd drawer pickup roller	PM parts
	1st / 2nd drawer feed roller	PM parts
	1st / 2nd drawer separation roller	PM parts
	1st / 2nd drawer feed clutch	CLT3/CLT6
	1st / 2nd drawer tray-up sensor	S31/S35
	1st / 2nd drawer empty sensor	S32/S36
	1st / 2nd drawer paper stock sensor	S33/S37
1st / 2nd drawer transport clutch (High speed)		CLT1/CLT5
1st / 2nd drawer transport clutch (Low speed)		CLT2/CLT4
1st / 2nd drawer transport roller		
1st / 2nd drawer feed sensor		S30/S34
1st / 2nd drawer detection switch		SW5/SW6
Bypass unit	Bypass pickup roller	PM parts
	Bypass feed roller	PM parts
	Bypass separation roller	PM parts
	Bypass paper sensor	S40
	Bypass feed sensor	S41
	Bypass pickup solenoid	SOL1
	Bypass tray slide guide width detection PC board	SFB
	Bypass feed clutch	CLT8
Feed/transport motor		M20
Registration motor		M19
Registration roller		
Registration sensor		S28
Tray-up motor		M21

11.3 Functions

1. Pickup roller (Drawers and bypass feed)
   This roller moves up and down and draws out the paper from the bypass tray or drawer and transport it to the feed roller.

2. Feed roller (Drawers and bypass feed)
   This roller is placed against the separation roller. It transports the paper from the pickup roller to the transport roller.

3. Separation roller (Drawers and bypass feed)
   This roller is placed against the feed roller. When two sheets of paper or more are transported from the pickup roller, the load of the torque limiter of the separation roller is heavier than the frictional force between the sheets. As the result, the separation roller is stopped and the lower paper is not advanced any further. When only one sheet is transported from the pickup roller, the separation roller rotates following the feed roller.

4. Transport roller (Drawers and bypass feed)
   This roller transports the paper sent from the feed roller to the registration roller.

5. Registration roller
   Paper transported from the transport roller is pushed against the registration roller which aligns the leading edge of the paper.
   Then, the registration rollers rotate to transport the paper to the transfer unit.

6. Bypass paper sensor (S40)
   This sensor detects if paper is set in the bypass tray. If it is, bypass feeding always comes before drawer feeding.

7. Empty sensor (1st drawer (S32) / 2nd drawer (S36))
   This is a transmissive-type sensor and detects the availability of paper in the drawer by using an actuator. When there is no paper in the drawer, the actuator blocks the light path of the sensor, and the sensor determines that there is no paper.

8. Paper stock sensor (1st drawer (S33) / 2nd drawer (S37))
   This is a transmissive-type sensor which detects the amount of the remaining paper in the drawer using an actuator. When the remaining paper is consumed and becomes around 100 sheets, the actuator blocks the light path for the transmissive-type sensor to notify that the paper is getting fewer.

9. Feed sensor (1st drawer (S30) / 2nd drawer (S34) / bypass (S41))
   This sensor detects if the leading edge or trailing edge of the paper has passed the feed roller. It also detects jamming such as misfeeding.

10. Registration sensor (S28)
    This sensor detects that the leading edge of the paper has reached the registration roller and the trailing edge of the paper has passed the registration roller.

11. Drawer tray-up sensor (1st drawer (S31) / 2nd drawer (S35))
    This sensor stops the tray at the predetermined height when the tray is moved up. When the tray-up sensor is turned ON, the tray-up motor is turned OFF to stop the upward movement of the tray.

12. Drawer detection switch (1st drawer (SW5) / 2nd drawer (SW6))
    This switch detects if the drawer is fully inserted.

13. Feed clutch (1st drawer (CLT3) / 2nd drawer (CLT6) / Bypass (CLT8))
    This is a clutch used to transmit the drive from the feed/transport motor to the drawer pickup roller and drawer feed roller.

14. Drawer transport clutch (High speed) (1st drawer (CLT1) / 2nd drawer (CLT5))
    This is a clutch used to transmit the drive from the feed/transport motor to the transport roller. When the clutch is turned ON, the transport roller rotates at high speed to transport paper.

15. Drawer transport clutch (Low speed) (1st drawer (CLT2) / 2nd drawer (CLT4))
    This is a clutch used to transmit the drive from the feed/transport motor to the transport roller. After the paper is aligned by the registration roller, the drawer transport clutch (High speed) is turned OFF and this clutch is turned ON. Then the transport roller rotates at low speed to transport the paper.

16. Feed/transport motor (M20)
    This motor drives the pickup rollers, feed rollers and transport rollers of the drawers and bypass tray.

17. Registration motor (M19)
    This motor drives the registration roller. Normal rotation of the motor rotates the registration roller while the reverse rotation of the motor creates the contact/release movement of the 2nd transfer roller with the transfer belt.

18. Tray-up motor (M21)
    When this motor rotates normally, the tray in the 1st drawer moves up, and when the motor rotates reversely, the tray in the 2nd drawer moves up.

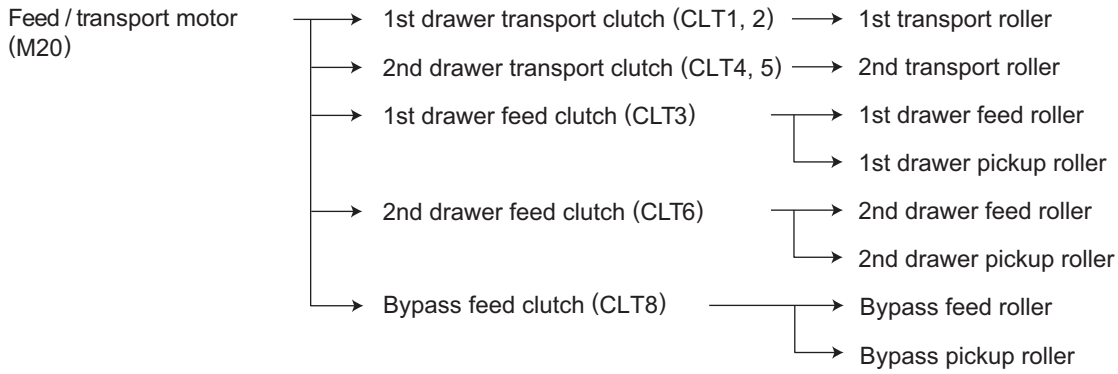
19. Bypass pickup solenoid (SOL1)
    This is a solenoid to move down the bypass pickup roller.

20. Paper width detection board (SFB)
    This sensor works directly with the sidewalls of the bypass tray to detect the paper width on the tray.

11.4 Description of Operation

11.4.1 Drive of rollers

The drive of each motor in the paper feeding area activates the paper transfer roller as follows.



Registration motor (M19) → Registration roller

Tray-up motor (M21) → Trays in 1st/2nd drawer

11.4.2 Operation of bypass pickup roller

When the bypass pickup solenoid (SOL1) is turned ON, the plunger is pulled, and then the lever is rotated. The pickup arm is then brought down with its own weight. When the bypass pickup solenoid (SOL1) is turned OFF, the pickup arm is brought up by the spring force.
The driving force transmitted through the bypass feed clutch (CLT8) is transmitted to the bypass feed roller through the shaft and then to the bypass pickup roller through the timing belt. The roller is rotated by this driving force.

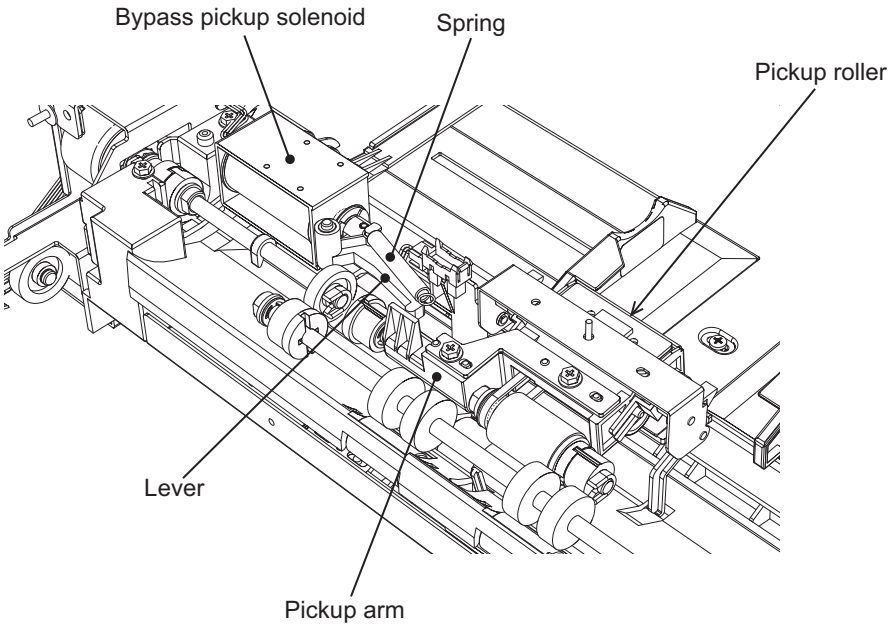


Fig. 11-2

11.4.3 Operation of drawer pickup roller

When the drawer is inserted, the protrusion at the rear side of the drawer moves up the lever (a) to the direction of A. The pickup roller and roller holder are then lowered by its own weight.

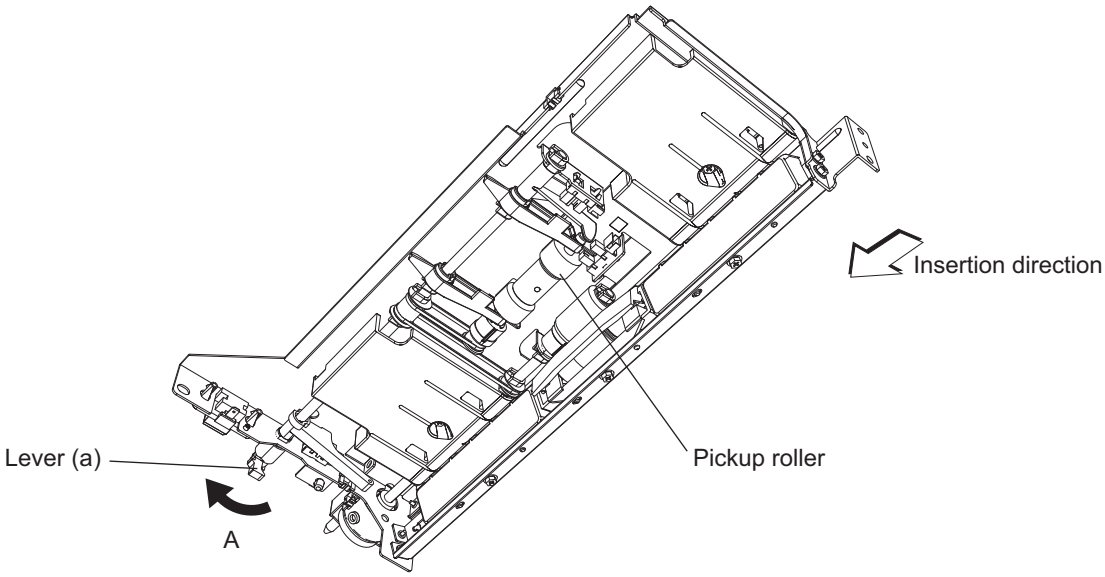


Fig. 11-3

11.4.4 Separation of paper

The separation roller in this equipment works to separate the sheets being fed. The separation roller unit consists of the feed roller, separation roller, spring joint, etc., as shown below.
The feed roller is rotated by the feed clutch in the direction of the white arrow at the same timing as the pickup roller rotation.
The P.11-8 "Fig. 11-5" shows how duplicate feeding is prevented: Since the friction between two sheets is small, the lower sheet is not transported any further while the upper sheet is transported by the feed roller in the direction of the black arrow.

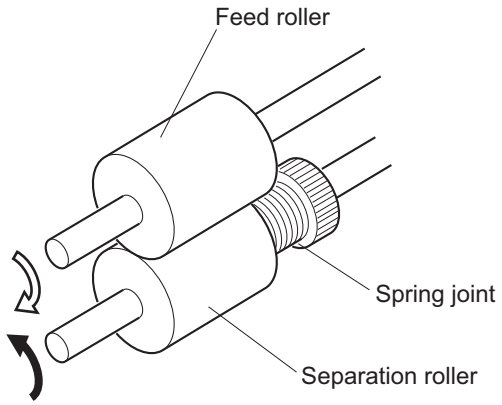


Fig. 11-4

[Example]
When only one sheet enters between the rollers: Since the transporting force of the feed roller is greater than the braking force of the separation roller, the separation roller follows the feed roller, making the sheet go forward to the registration roller.
When two sheets enter between the rollers at the same time:
Since the transporting force of the feed roller and the breaking force of the separation roller are greater than the frictional force between two sheets, the paper A is transported to the direction of the black arrow and the paper B is braked by the separation roller and is not transported any further.

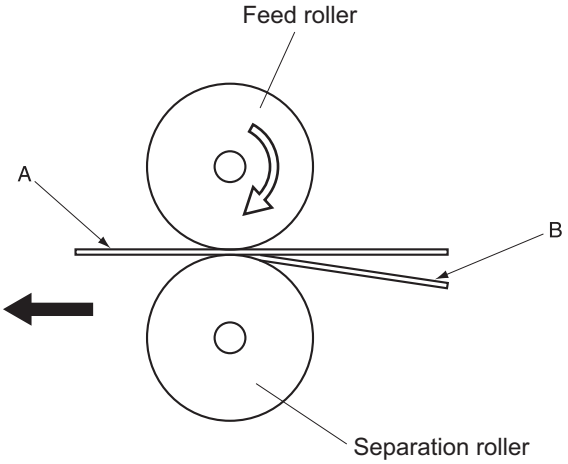


Fig. 11-5

11.4.5 General operation

[A] From power-ON to ready status

1. When the equipment is turned ON, the tray-up motor (M21) is activated and the 1st drawer tray starts to rise. When the tray-up sensor (S31) is turned ON (L→H), the tray-up motor (M21) is turned OFF, and the tray is stopped. At this time, if the empty sensor (S32) is OFF (L), it is judged that there is no paper in the drawer.
   If the empty sensor (S32) is ON (H), there is paper in the drawer. The tray stops at raised position regardless of availability of paper. The tray-up motor (M21) then starts to rotate in reverse and the 2nd drawer is raised. The 2nd drawer is stopped in the same manner as the 1st drawer, and the empty sensor (S36) detects if there is any paper in the drawer.

2. If the drawer is not completely inserted when the equipment is turned ON, the tray for that drawer is not raised. When the drawer is inserted completely, the tray is raised and checks the availability of the paper.

3. If either of the sensors on the transport path is ON (means there is paper on the transport path) when the equipment is turned ON, it is determined that a paper jam has occurred and no operation is enabled until the paper is removed.

[B] Ready status

1. After the tray is moved up and availability of paper is checked as described above, the equipment enters the ready status.
   At ready status, the tray remains at raised position.

2. When a drawer is inserted or removed at ready status, the tray is raised again to check the availability of paper.

[C] Bypass feeding

- The bypass paper sensor (S40) detects availability of paper.
- The bypass pickup solenoid (SOL1) is turned ON and the bypass pickup roller is lowered.
- The bypass feed clutch (CLT8) is turned ON and then the bypass pickup roller, bypass feed roller and bypass transport roller are rotated and start feeding.
- The leading edge of paper turns ON the bypass feed sensor (S41) and bypass pickup solenoid (SOL1) is turned OFF. Then the bypass pickup roller is raised.
- The leading edge of paper turns ON the registration sensor (S28) and the paper is aligned by the registration roller.
- The bypass feed clutch (CLT8) is turned OFF, and then the bypass pickup roller, bypass feed roller and bypass transport roller are stopped.
- The registration motor (M19) is turned ON and the paper is transported to the 2nd transfer position.

[D] Drawer feeding

[D-1] 2nd drawer

- The feed clutch (CLT6) and the transport clutch (high speed) (CLT1, 5) are turned ON, and the pickup roller, feed roller and transport roller are rotated to start feeding paper.
- Passing of the leading edge of the paper turns ON the 2nd drawer feed sensor (S34), then the feed clutch (CLT6) and transport clutch (high speed) (CLT1, 5) is turned OFF then back ON.
- Passing of the leading edge of the paper turns ON the registration sensor (S28) and the paper is aligned by the registration roller.
- The transport clutch (high speed) (CLT1, 5) is turned OFF and the transport roller is stopped.
- The registration motor (M19) and transport clutch (low speed) (CLT2, 4) are turned ON and the paper is transported to the 2nd transfer position.

[D-2] 1st drawer

- The feed clutch (CLT3) and the transport clutch (high speed) (CLT1) are turned ON, and the pickup roller, feed roller and transport roller are rotated to start feeding paper.
- Passing of the leading edge of the paper turns ON the 1st drawer feed sensor (S30), then the feed clutch (CLT3) and the transport clutch (high speed) (CLT1) are turned OFF then back ON.
- Passing of the leading edge of the paper turns ON the registration sensor (S28) and the paper is aligned by the registration roller.
- The feed clutch (CLT3) and the transport clutch (high speed) (CLT1) is turned OFF and the transport roller is stopped.
- The registration motor (M19) and transport clutch (low speed) (CLT2) are turned ON and the paper is transported to the 2nd transfer position.

11.5 Electric Circuit Description

11.5.1 Tray-up motor control circuit

The tray-up motor (M21) is a DC brush motor driven by the control signal output from the ASIC on the LGC board and moves up the tray in each drawer.
The motor driver outputs the drive signal (CS1TUMA -0J, CS1TUMB-1J) to the motor based on the control signal (CS1TUMA-0C, CS1TUMB-1C) output from the ASIC. The motor operates the rotation, stop or brake according to the status of these drive signals.

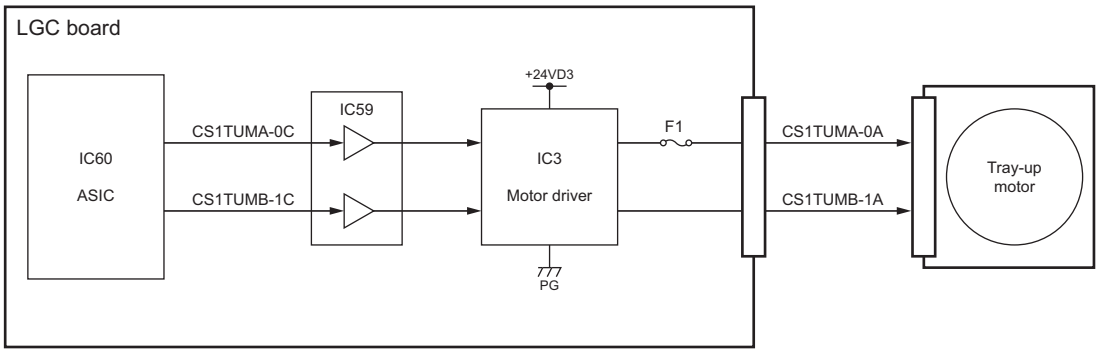


Fig. 11-6

Control signal

Signal				Motor status
ASIC output		Motor driver output		
CS1TUMA-0C	CS1TUMB-1C	CS1TUMA-0J	CS1TUMB-1J	
L	L	OFF (high impedance)		Stop
L	H	L	H	CW (Tray-up of 2nd drawer)
H	L	H	L	CCW (Tray-up of 1st drawer)
H	H	H	H	Brake

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

11.5.2 Registration motor control circuit

The registration motor (M19) is a stepping motor driven by the control signal output from the engine CPU on the LGC board and rotates the registration roller.
The registration motor is driven by the pulse signal (RGTMA, RGTMB, RGTMC, RGTMD) output from the motor driver. These pulse signals are formed based on the reference clock (RGMCK) and output only when the enable signal (RGMEN) is a high level. Also, the rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.

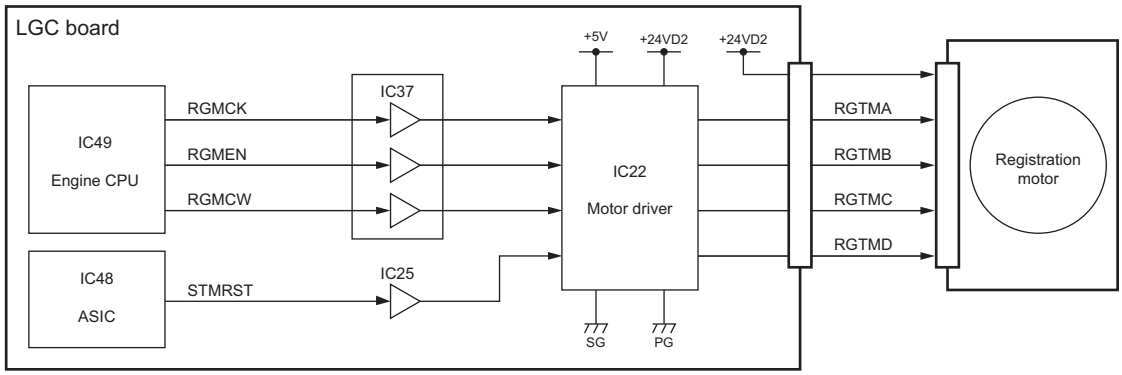


Fig. 11-7

Control signal

Signal	Function	Status	
		High level	Low level
RGMCK	Reference clock	---	---
RGMEN	Enable signal	ON	OFF
RGMCW	Rotation direction signal	CCW	CW
STMRST	Reset signal	Normal operation	Reset

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

11.5.3 Feed/Transport motor control circuit

The feed/transport motor (M20), which is a brush-less DC motor driven by control signals from the ASIC on the LGC board, drives the feed roller, pickup roller and transport roller in each drawer and the bypass unit.

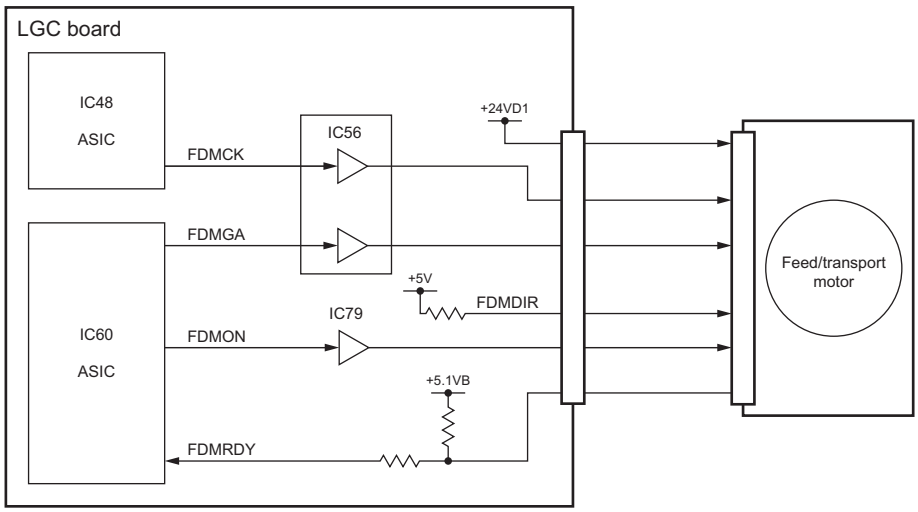


Fig. 11-8

Control signal

Signal	Function	Status	
		High level	Low level
FDMON	Motor ON signal	OFF	ON
FDMDIR	Rotation direction signal	CCW	CW (unused)
FDMGA	Speed switching signal	High speed	Low speed
FDMCK	Reference clock	---	---
FDMRDY	Rotation lock detection signal	Unlocked	Locked (Rotating at a constant speed)

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis
* FDMDIR signal is fixed at a high level and rotates only counter clockwise.
* When thick paper or OHP sheet is used, the clock frequency of FDMCK signal is changed to reduce the motor speed in half and lower the paper transport speed so that the fusibility of toner is improved.
* When the rotation speed of the motor is set to a low speed, FDMGA signal is changed to a low level to suppress the rotation fluctuation of the motor.

11.6 Disassembly and Replacement

11.6.1 Bypass unit

(1) Take off the right front hinge cover.
🕮 P.3-31 "3.5.14 Right front hinge cover"
(2) Take off the right rear hinge cover.
🕮 P.3-31 "3.5.12 Right rear hinge cover"
(3) Remove 1 screw of ground wires. Disconnect 1 connector and release the harnesses from 1 harness clamps.

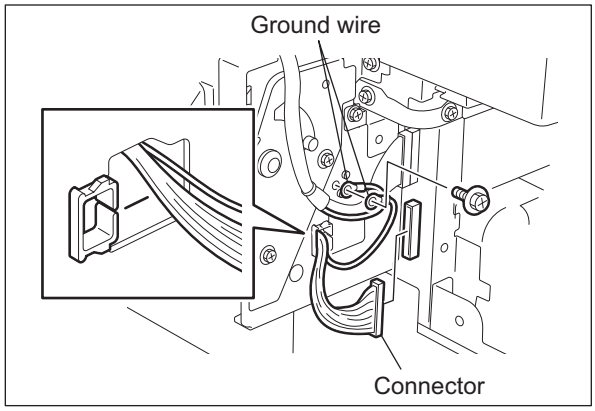


Fig. 11-9

(4) Remove 1 screw and take off the bypass feed rear cover.

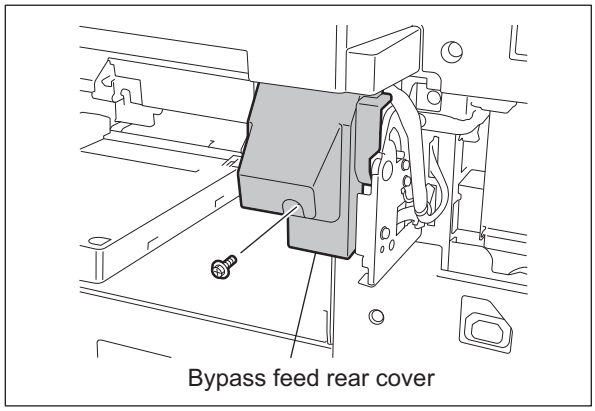


Fig. 11-10

(5) Open the side cover.
(6) Remove 2 screws. Lift up the bypass unit and take it off toward you.

Note:
When installing the bypass unit, make sure that the ADU is closed in advance since the bypass unit occasionally does not slide smoothly.

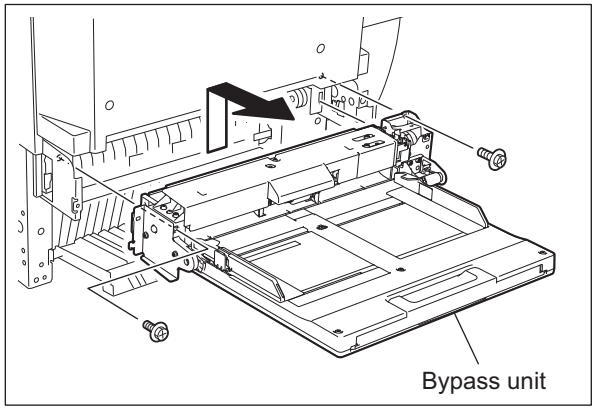


Fig. 11-11

11.6.2 Hinge assembly

(1) Take off the bypass unit.
📖 P.11-14 "11.6.1 Bypass unit"
(2) Disconnect 1 connector and release the harness from the harness clamp.

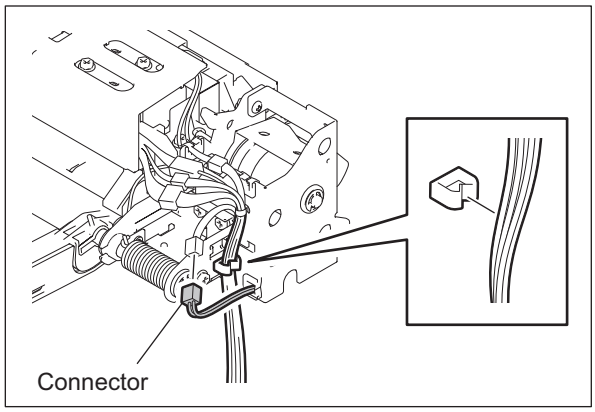


Fig. 11-12

(3) Release the spring from the hook.

Note:
Release it while the tray is standing so as to weaken the tension of the spring.

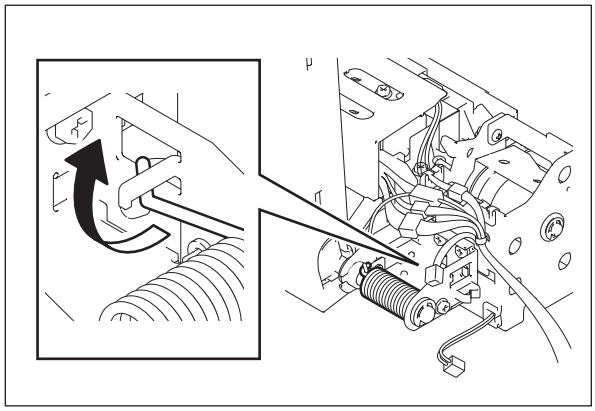


Fig. 11-13

(4) Remove 2 screws, and then take off the hinge by sliding it.

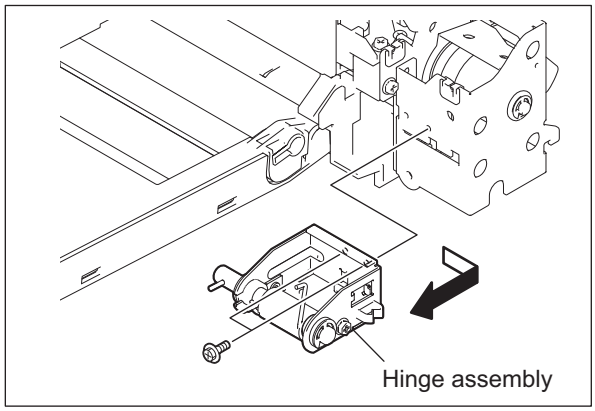


Fig. 11-14

(5) Take off the tray from the bypass unit.

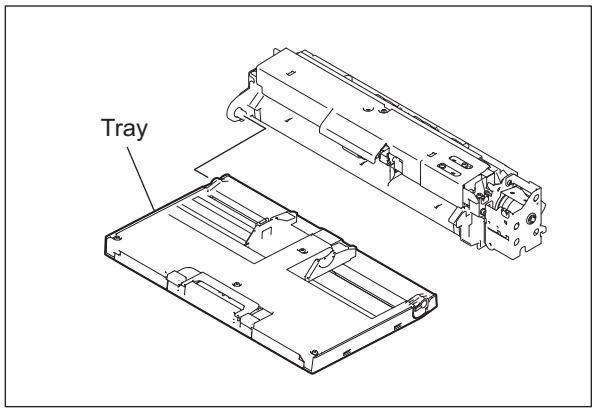


Fig. 11-15

11.6.3 SFB board (SFB)

(1) Take off the hinge assembly.
📖 P.11-15 "11.6.2 Hinge assembly"
(2) Remove 5 screws and take off bypass tray upper cover.

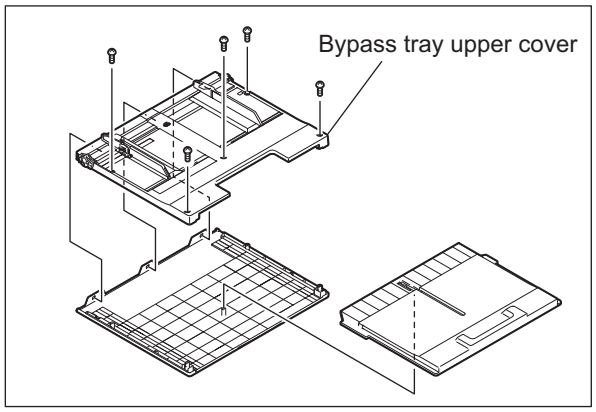


Fig. 11-16

(3) Remove 1 screw for the leaf spring. And remove 1 screw on the tray side and take off the bracket.

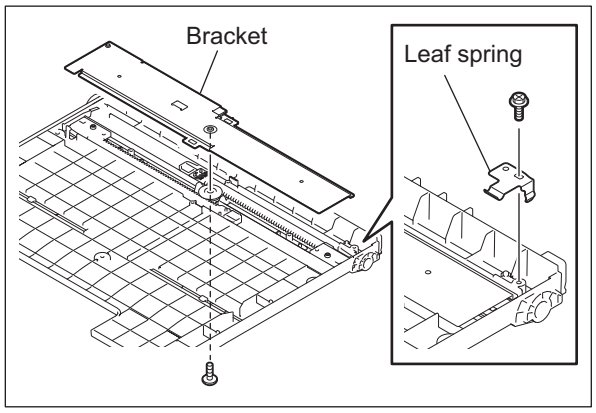


Fig. 11-17

Note:

Install the bracket so that its pointer is placed at the same position as before.

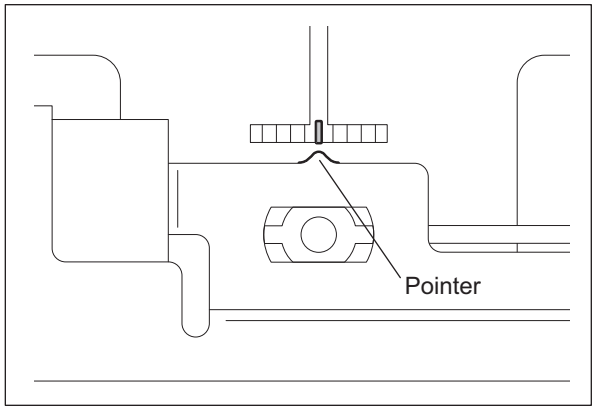


Fig. 11-18

(4) Disconnect 1 connector, remove 1 screw and take off the SFB board.

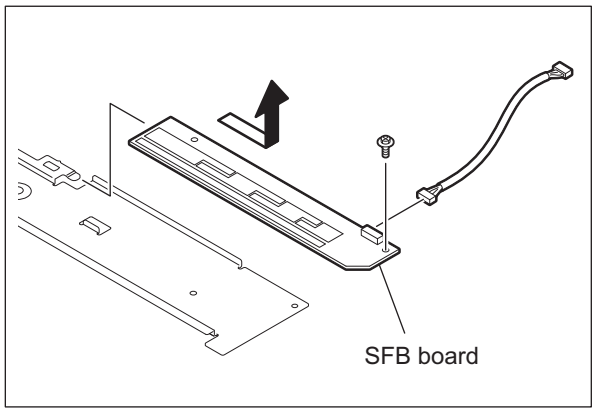


Fig. 11-19

11.6.4 Bypass feed upper cover

(1) Take off the bypass unit.
P.11-14 "11.6.1 Bypass unit"

(2) Remove 1 screw and slide the bypass feed upper cover to take it off.

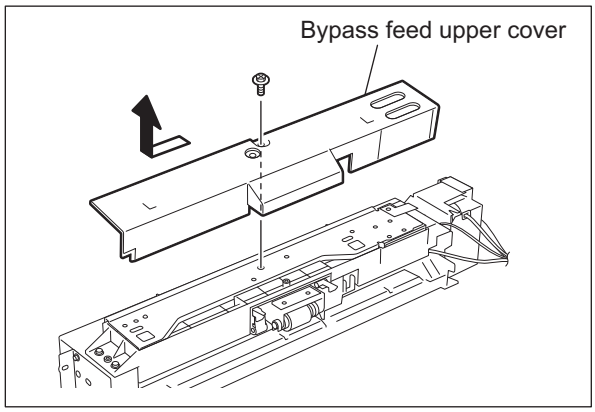


Fig. 11-20

11.6.5 Bypass upper guide

(1) Take off the bypass feed upper cover.
P.11-17 "11.6.4 Bypass feed upper cover"
(2) Remove 4 screws and take off the bypass upper guide.

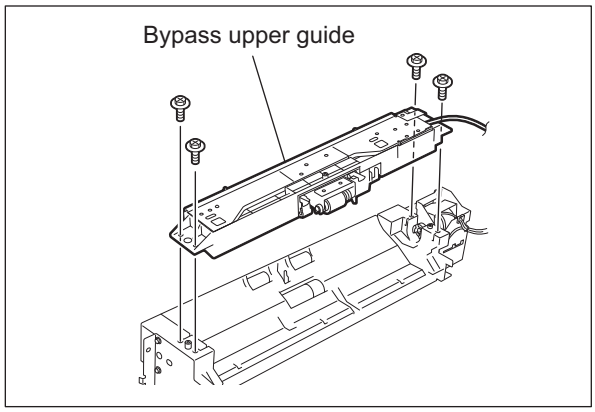


Fig. 11-21

11.6.6 Bypass pickup solenoid (SOL1)

(1) Take off the bypass feed upper cover.
P.11-17 "11.6.4 Bypass feed upper cover"
(2) Remove 4 screws and take off the upper plate.

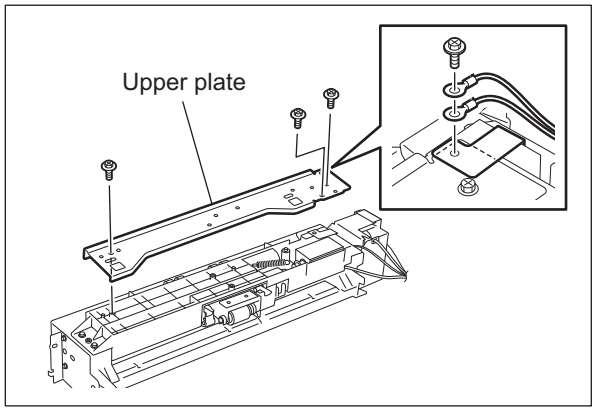


Fig. 11-22

(3) Remove 1 spring. Disconnect 1 connector and take off the bypass pickup solenoid with the solenoid arm.

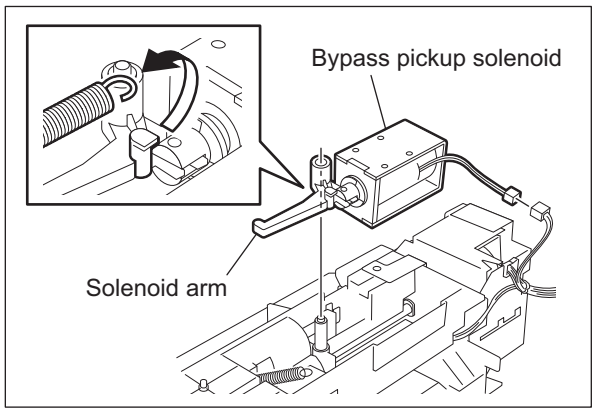


Fig. 11-23

11.6.7 Bypass paper sensor (S40)

(1) Take off the bypass feed upper cover.
📖 P.11-17 "11.6.4 Bypass feed upper cover"
(2) Remove 4 screws and take off the upper plate.

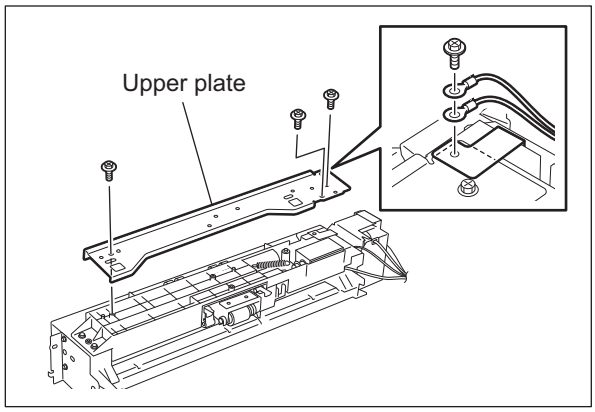


Fig. 11-24

(3) Take off the sensor arm.

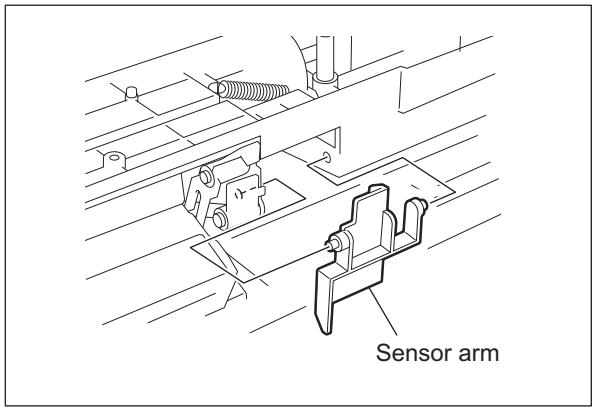


Fig. 11-25

(4) Disconnect the connector from the sensor and release the latch to take off the bypass paper sensor.

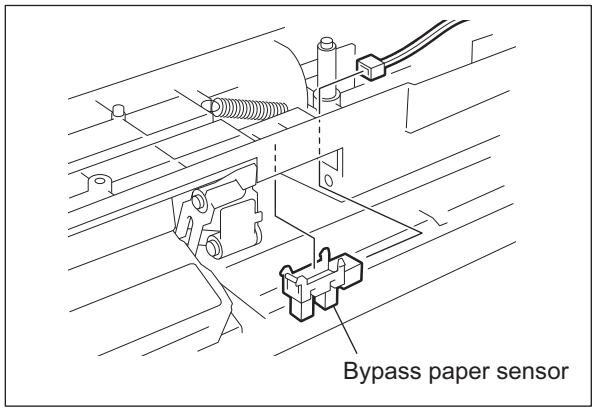


Fig. 11-26

11.6.8 Bypass pickup roller PM

(1) Take off the bypass upper guide.
P.11-18 "11.6.5 Bypass upper guide"
(2) Remove the clip, pull out the shaft and take off the bypass pickup roller.

Notes:
Make sure the following items when assembling the bypass pickup roller.
1. Set the timing belt to the pulley securely.
2. Do not put the wrong position when setting the timing belt.
3. Be sure to insert the clip into the groove of shaft.
4. Check that there is no stain such as oil on the surface of timing belt, the pulley and the roller.
5. Install the bypass pickup roller and the bypass feed roller in the correct direction.

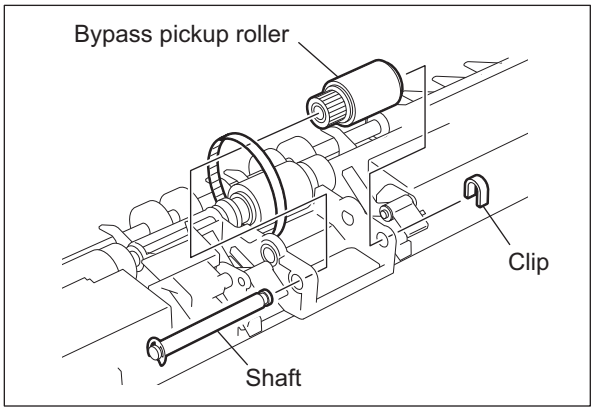


Fig. 11-27

11.6.9 Bypass feed roller PM

(1) Take off the bypass upper guide.
P.11-18 "11.6.5 Bypass upper guide"
(2) Remove the clip and take off the bypass feed roller.

Notes:
Make sure the following items when assembling the bypass feed roller.
1. Set the timing belt to the pulley securely.
2. Do not put the wrong position when setting the timing belt.
3. Be sure to insert the clip into the groove of shaft.
4. Check that there is no stain such as oil on the surface of timing belt, the pulley and the roller.
5. Install the bypass pickup roller and the bypass feed roller in the correct direction.

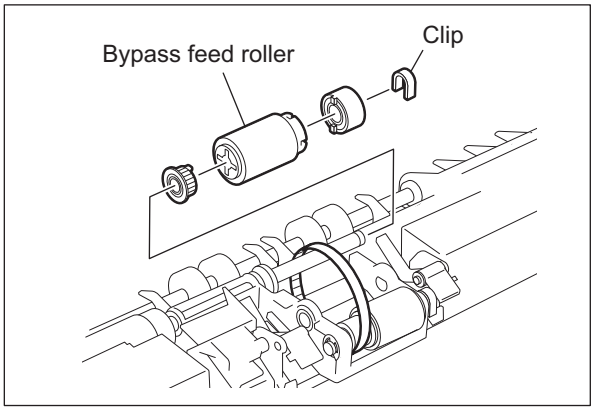


Fig. 11-28

11.6.10 Bypass transport roller

(1) Take off the bypass upper guide.
📖 P.11-18 "11.6.5 Bypass upper guide"
(2) Remove the E-ring, pull out the shaft and take off the bypass transport roller.

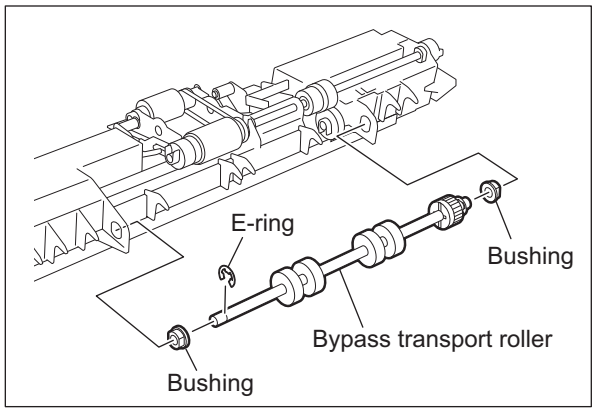


Fig. 11-29

11.6.11 Bypass feed clutch (CLT8)

(1) Take off the bypass tray and hinge assembly.
📖 P.11-15 "11.6.2 Hinge assembly"
(2) Disconnect 1 connector and release the harness clamp.

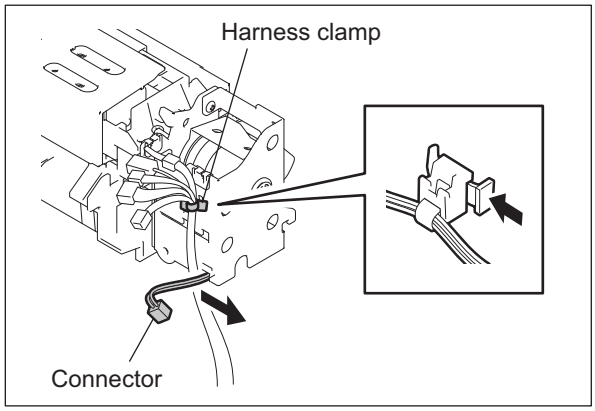


Fig. 11-30

(3) Remove the E-ring and the bushing.
(4) Remove 3 screws and take off the bracket.
(5) Remove the bushing and the bypass feed clutch.

Note:
Match the protruding portion of the clutch and bracket for assembling.

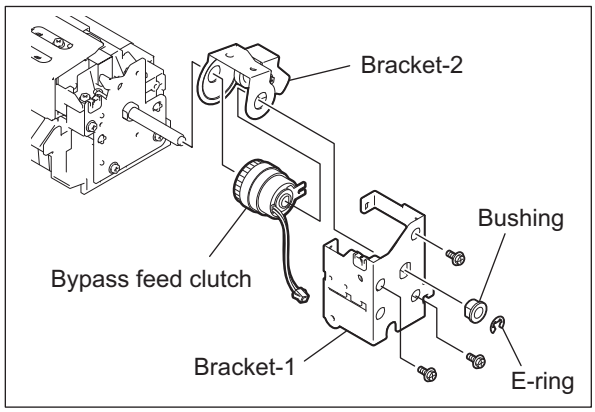


Fig. 11-31

11.6.12 Bypass separation roller PM

(1) Take off the bypass unit.
P.11-14 "11.6.1 Bypass unit"
(2) Remove 3 screws and take off the lower plate.

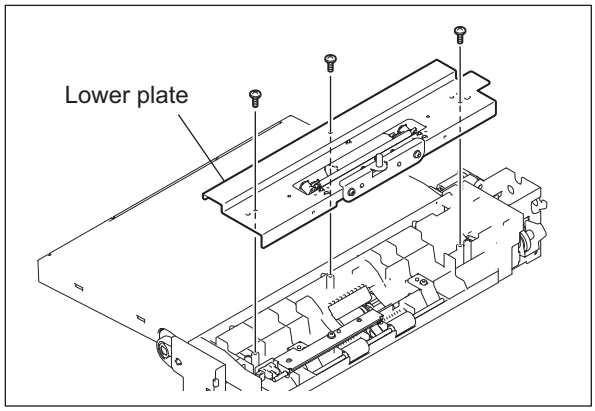


Fig. 11-32

(3) Take off the bypass separation roller assembly.

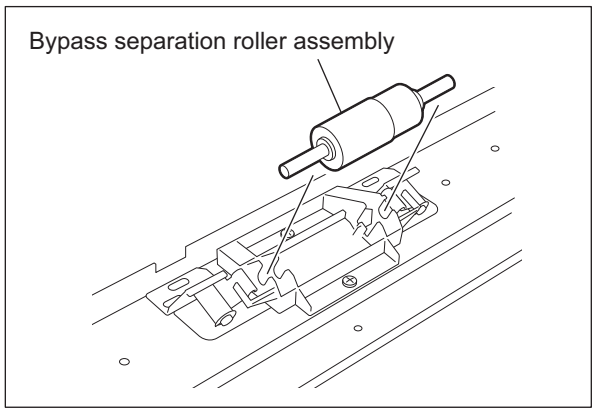


Fig. 11-33

(4) Detach the cover, the arbor, and the clutch spring from the shaft, and then take off the bypass separation roller.

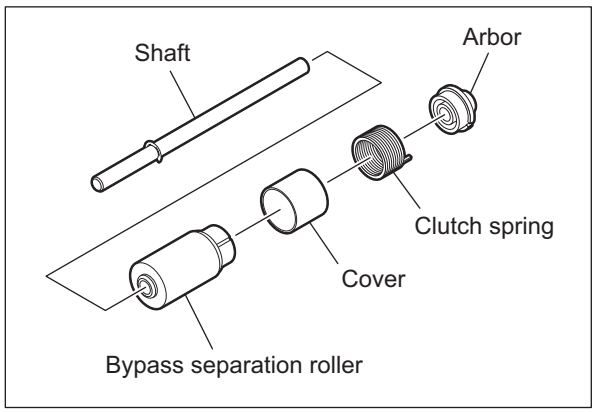


Fig. 11-34

11.6.13 Bypass feed sensor (S41)

(1) Take off the bypass unit.
📖 P.11-14 "11.6.1 Bypass unit"

(2) Remove 3 screws and take off the lower plate.

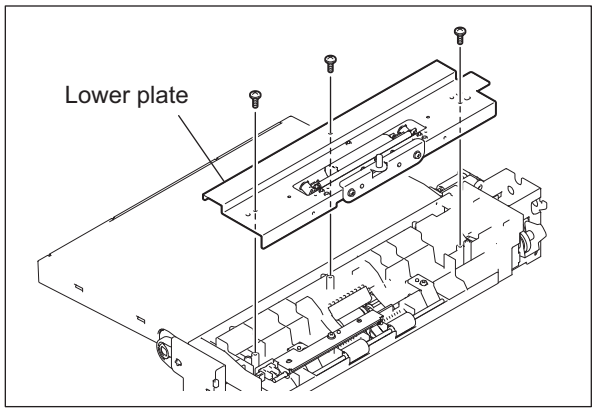


Fig. 11-35

(3) Disconnect 1 connector. Remove 1 screw and take off the sensor plate.

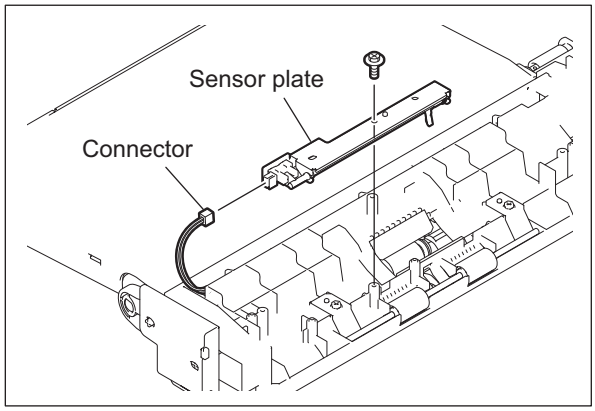


Fig. 11-36

(4) Release the latch to take off the bypass feed sensor.

Note:
Be careful not to come off the sensor arm and the sensor spring after taking off the sensor.

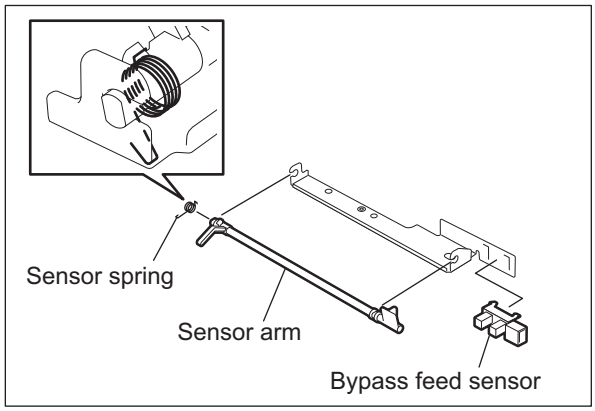


Fig. 11-37

11.6.14 Drawer feeding unit

(1) Take off the upper and lower drawers.
(2) Remove 1 screw and take off the drawer feeding unit by sliding it to the front side.

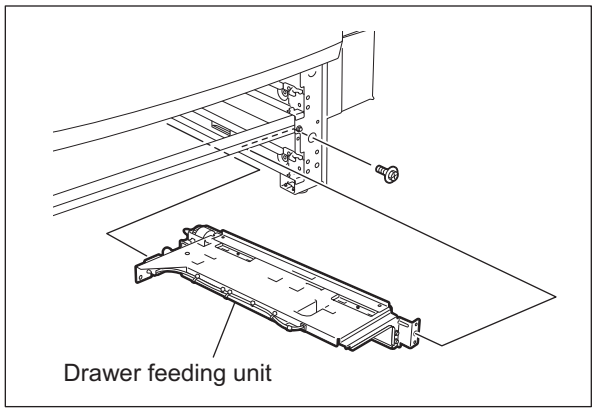


Fig. 11-38

11.6.15 Tray-up sensor (S31/S35) / Empty sensor (S32/S36)

(1) Take off the drawer feeding unit.
📖 P.11-24 "11.6.14 Drawer feeding unit"
(2) Disconnect the connector and release the latch to take off the tray-up sensor.
(3) Disconnect the connector and release the latch to take off the empty sensor.

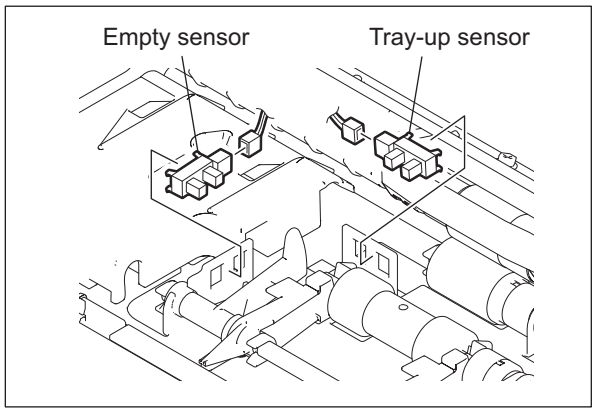


Fig. 11-39

11.6.16 Paper stock sensor (S33/S37)

(1) Take off the drawer feeding unit.
📖 P.11-24 "11.6.14 Drawer feeding unit"
(2) Pull up the paper stock sensor arm.
(3) Disconnect the connector and release the latch to take off the paper stock sensor.

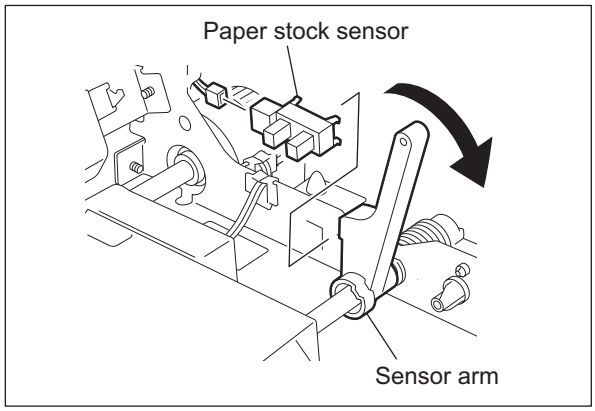


Fig. 11-40

11.6.17 Separation roller PM

(1) Take off the drawer feeding unit.
P.11-24 "11.6.14 Drawer feeding unit"
(2) Remove 1 screw and take off the separation roller holder.

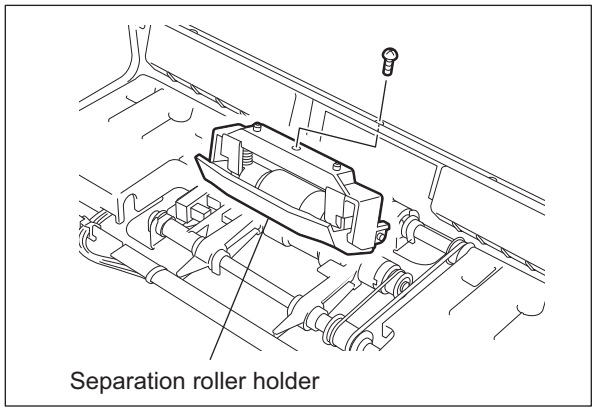


Fig. 11-41

(3) Detach the lever from the holder and take off the separation roller with the shaft.

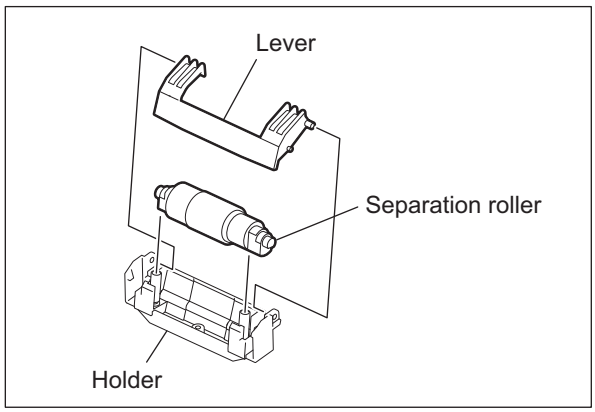


Fig. 11-42

(4) Detach the cover, the arbor and the clutch spring from the shaft, and then takeoff the separation roller.

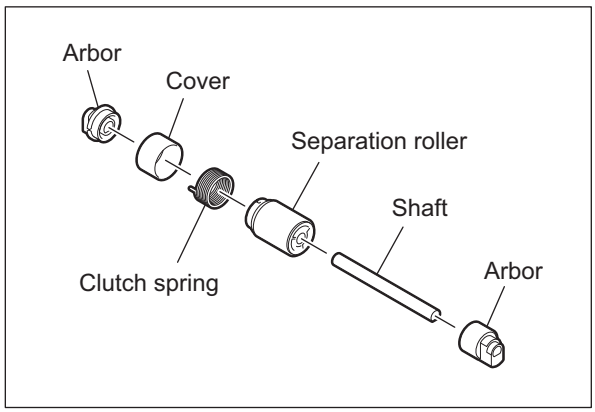


Fig. 11-43

11.6.18 Feed roller PM

(1) Take off the separation roller holder.
P.11-25 "11.6.17 Separation roller"
(2) Remove the clip and take off the feed roller.

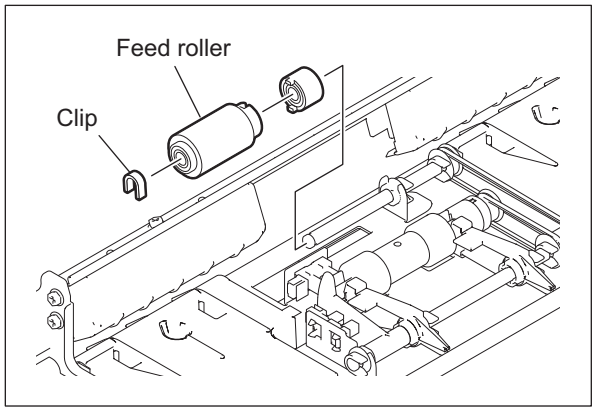


Fig. 11-44

11.6.19 Pickup roller PM

(1) Take off the drawer feeding unit.
P.11-24 "11.6.14 Drawer feeding unit"
(2) Remove the pickup roller assembly from the pickup arms and take off the belt.

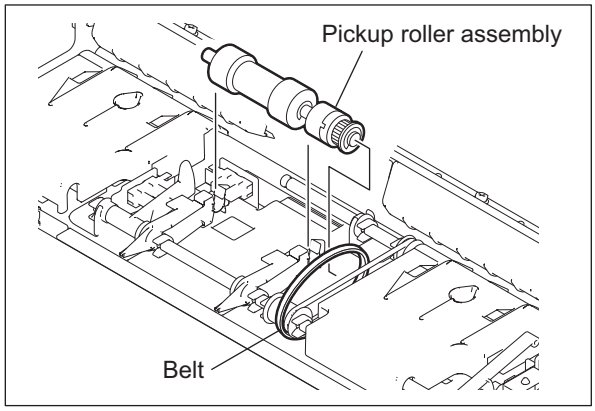


Fig. 11-45

(3) Remove 3 E-rings, pulley, one-way clutch and take off the pickup roller.

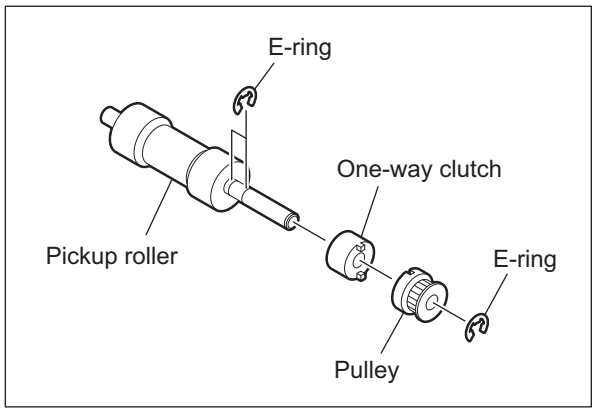


Fig. 11-46

11.6.20 Drawer feed clutch (CLT3/CLT6)

(1) Take off the drawer feeding unit.
P.11-24 "11.6.14 Drawer feeding unit"
(2) Disconnect the connector and release the harness from the harness clamp.

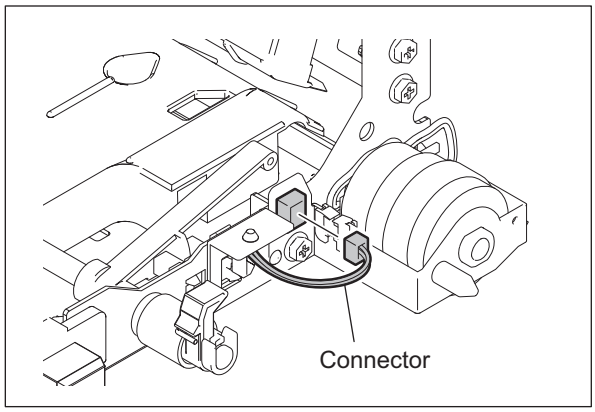


Fig. 11-47

(3) Remove 2 screws and take off the clutch with the bracket.

Note:
Match the protruding portion of clutch with the position shown in the figure for assembling

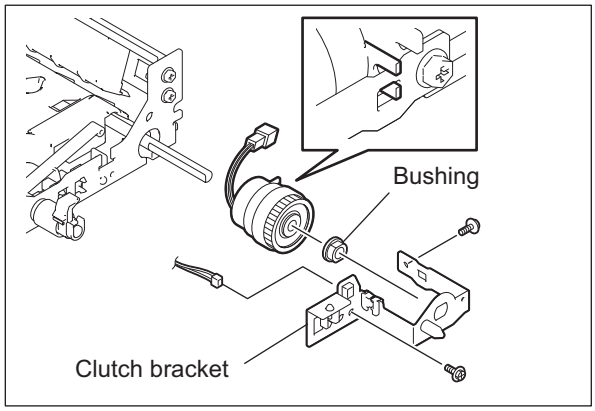


Fig. 11-48

11.6.21 Tray-up motor (M21)

(1) Remove the upper and lower drawers.
(2) Take off the filter bracket.
P.21-8 "21.1.10 FIL board"
(3) Disconnect 1 connector. Remove 4 screws and take off the tray drive unit.

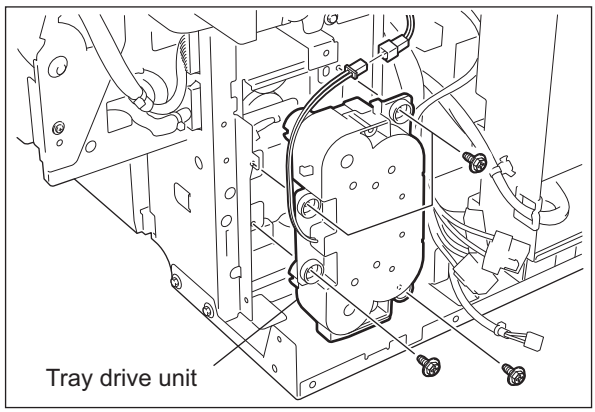


Fig. 11-49

(4) Place the unit with its coupling up and release 6 latches to take off the cover.

Note:
Be careful in taking off the cover because there is a spring in the tray drive unit.

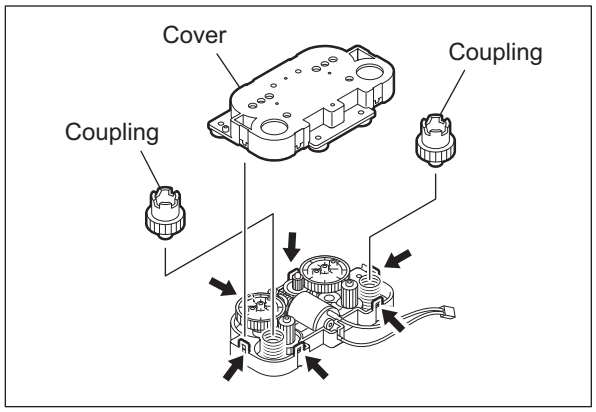


Fig. 11-50

(5) Take off the tray-up motor.

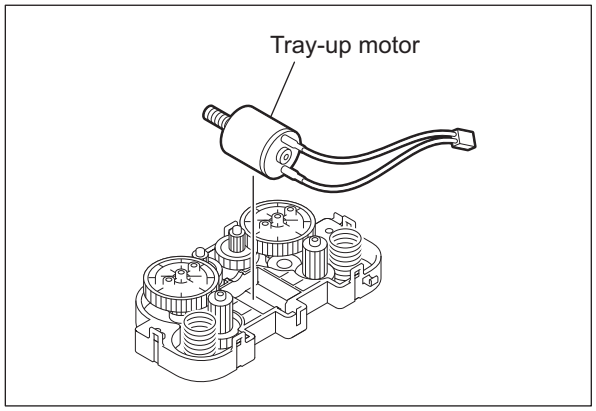


Fig. 11-51

Note:
Match the boss of the gear with the hole of the cover when installing the motor.

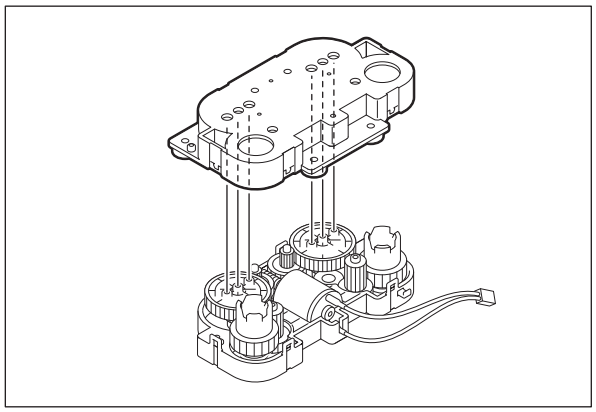


Fig. 11-52

11.6.22 Tray drive unit

(1) Remove the upper and lower drawers.
(2) Take off the filter bracket.
📖 P.21-8 "21.1.10 FIL board"
(3) Disconnect 1 connector. Remove 4 screws and take off the tray drive unit with the bracket.

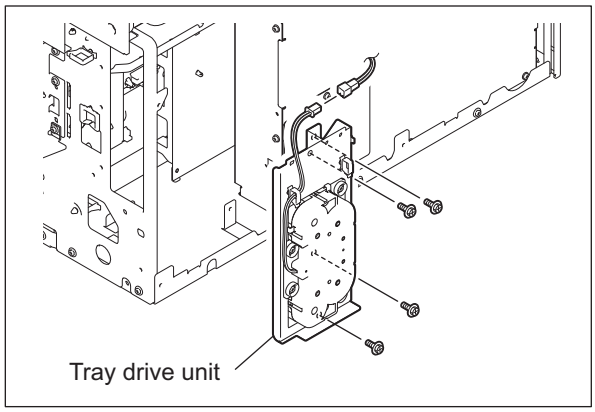


Fig. 11-53

11.6.23 2nd drawer transport clutch (Low speed) (CLT4)

(1) Take off the tray drive unit.
📖 P.11-29 "11.6.22 Tray drive unit"
(2) Disconnect 1 connector and remove 1 clip to take off the 2nd drawer transport clutch (low speed).

Note:
When assembling the clutch, match the protruded portion of the clutch with the position shown in the figure.

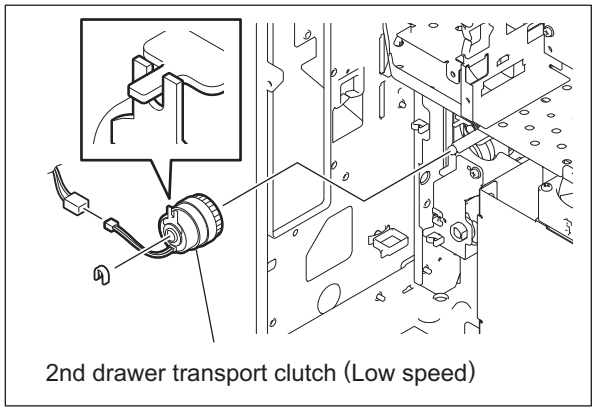


Fig. 11-54

11.6.24 2nd drawer transport clutch (High speed) (CLT5)

(1) Take off the tray drive unit.
📖 P.11-29 "11.6.22 Tray drive unit"
(2) Disconnect 1 connector and remove 2 screws to take off the whole set of the clutch.
(3) Take off the bracket, shaft, gear and 2 bushings.

Note:
When assembling the clutch, match the protruded portion of the clutch with the position shown in the figure.

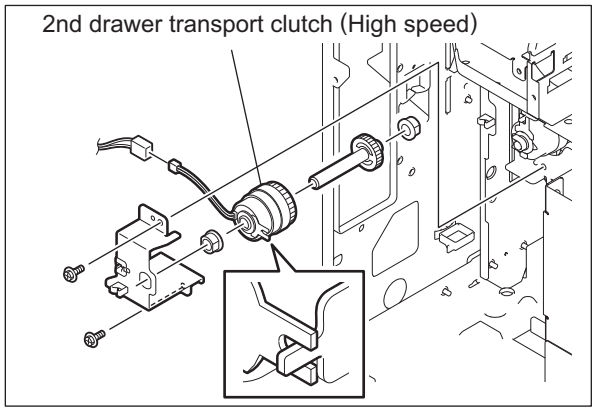


Fig. 11-55

11.6.25 1st drawer detection switch (SW5) / 2nd drawer detection switch (SW6)

(1) Take off the tray drive unit.
📖 P.11-29 "11.6.22 Tray drive unit"
(2) Disconnect 1 connector each from both switches. Then release 2 latches to take off the switches by pushing them out toward the drawer.

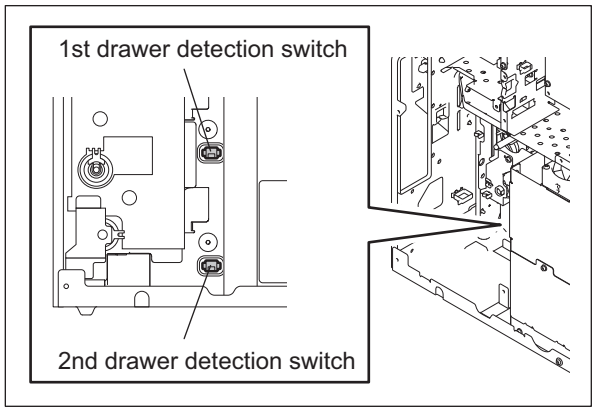


Fig. 11-56

11.6.26 Paper feed guide assembly

(1) Take off the ADU.
📖 P.17-13 "17.7.2 Automatic Duplexing Unit (ADU)"
(2) Take off the bypass unit.
📖 P.11-14 "11.6.1 Bypass unit"
(3) Take off the 2nd transfer unit.
📖 P.14-25 "14.6.11 2nd transfer unit (TRU)"
(4) Disconnect 1 connector, and then release the harness from 2 hooks.
(5) Remove 3 screws, and then take off the paper feed guide assembly by sliding it to the rear side slightly.

Note:
When installing the assembly, be sure not to deform the Mylar on the transport path.

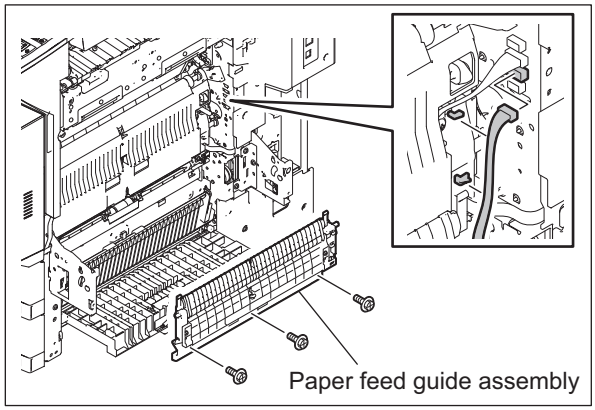


Fig. 11-57

11.6.27 2nd drawer feed sensor (S34)

(1) Take off the paper feed guide assembly.
📖 P.11-30 "11.6.26 Paper feed guide assembly"
(2) Remove the seal and disconnect 1 connector to take off the 2nd drawer feed sensor.

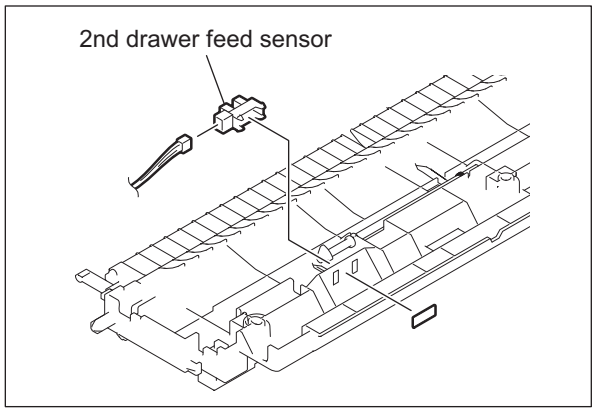


Fig. 11-58

11.6.28 Side cover switch (SW4)

(1) Take off the paper feed guide assembly.
📖 P.11-30 "11.6.26 Paper feed guide assembly"
(2) Remove 2 screws, and then take off the paper feed guide A by sliding it.

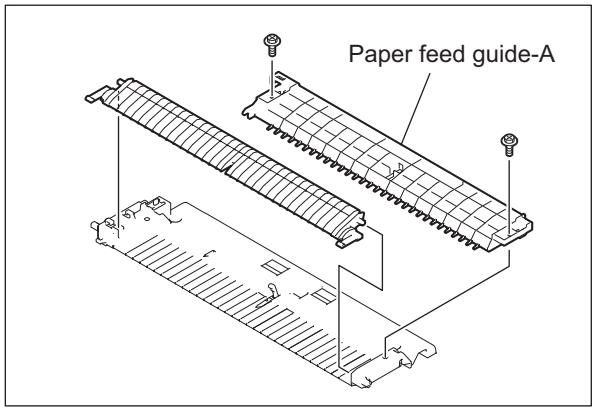


Fig. 11-59

(3) Disconnect 1 connector, and then release 2 latches to take off the side cover switch.

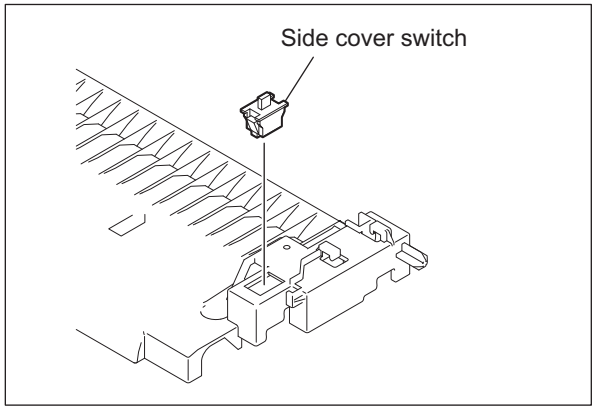


Fig. 11-60

11.6.29 Registration guide

(1) Perform the output check (03-239) to set the plunger at the receded position before taking off the registration guide.

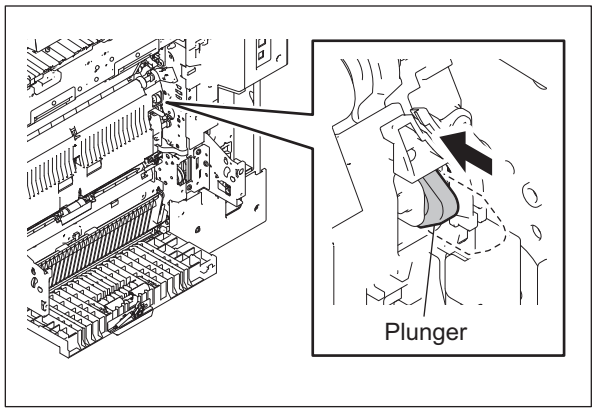


Fig. 11-61

(2) Take off the paper feed guide assembly.
📖 P.11-30 "11.6.26 Paper feed guide assembly"
(3) Take off each cover of the both sides of the registration guide.

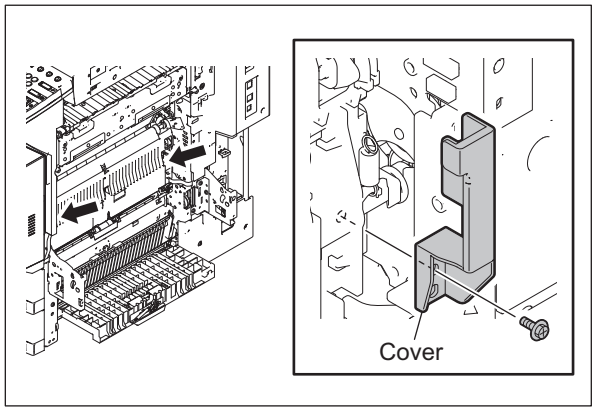


Fig. 11-62

(4) Remove the spring by releasing the front side hook, and remove the wire and cam.

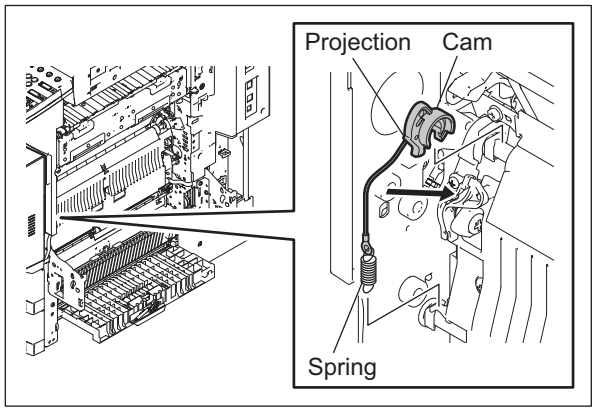


Fig. 11-63

(5) Remove the spring by releasing the rear side hook, and remove the wire and cam.

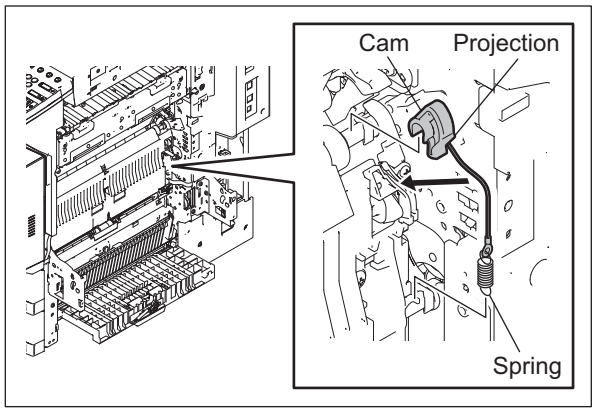


Fig. 11-64

Notes:

Keep the following points in mind when assembling.

1. Since the shape of the front and rear side cam is different, be careful not to assemble the wrong one.
2. Make sure that you route the wire along the correct wiring route.
3. After assembling, check that the front and rear side cams move smoothly.
4. Make sure that the protrusions of the cams are on the upper side of the registration guide.

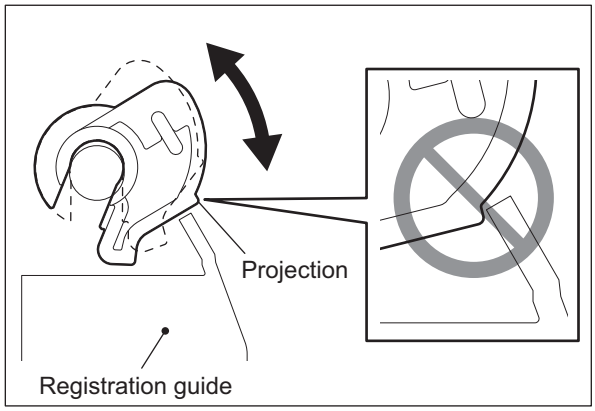


Fig. 11-65

(6) Disconnect 1 connector and remove 3 screws. Then take off the registration guide.

Note:

The outer 2 of these 3 screws are stepped screws.

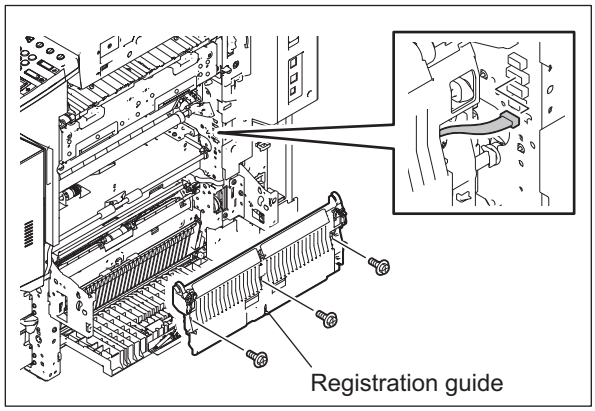


Fig. 11-66

11.6.30 Registration sensor (S28)

(1) Take off the registration guide.
📖 P.11-32 "11.6.29 Registration guide"
(2) Disconnect 1 connector and remove 1 screw. Then take off the registration sensor with its bracket.

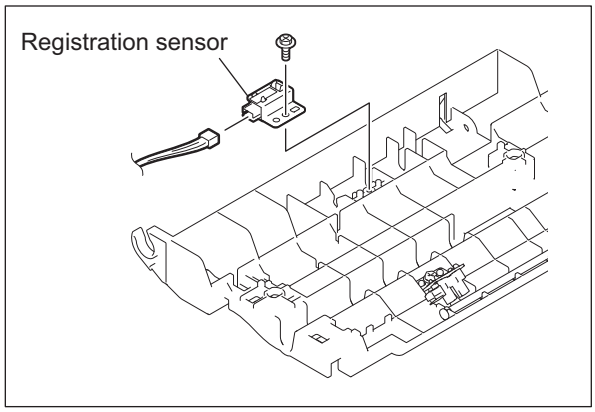


Fig. 11-67

(3) Remove the seal, and then take off the registration sensor.

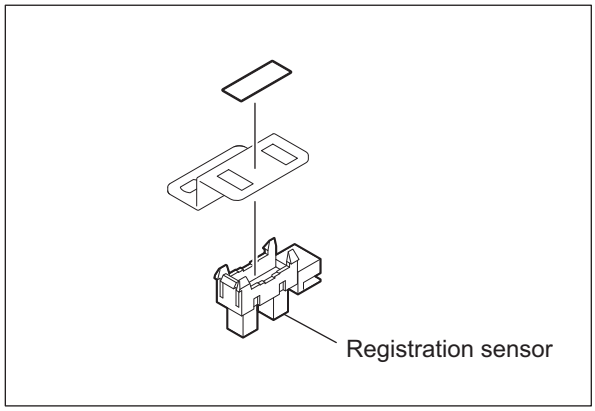


Fig. 11-68

11.6.31 1st drawer feed sensor (S30)

(1) Take off the registration guide.
📖 P.11-32 "11.6.29 Registration guide"
(2) Disconnect 1 connector and remove 1 screw. Then take off the 1st drawer feed sensor with its bracket.

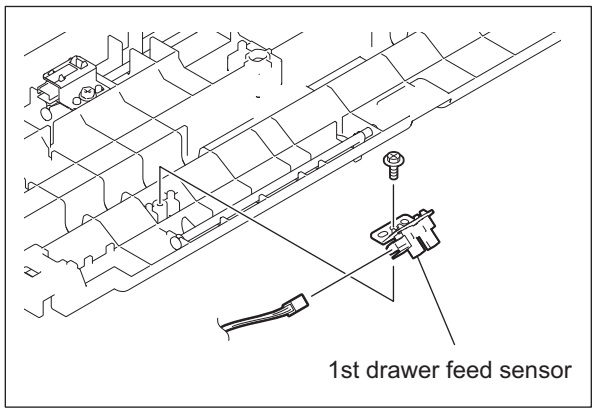


Fig. 11-69

(3) Remove the seal, and then take off the 1st drawer feed sensor.

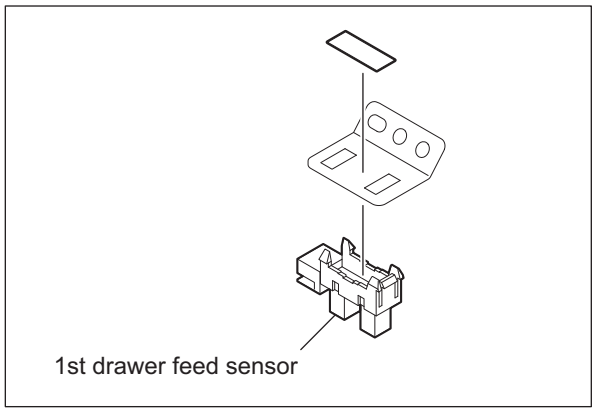


Fig. 11-70

11.6.32 Registration roller (Rubber)

(1) Open the 2nd transfer unit.
(2) Remove 1 screw on the front side, and then remove the holder and spring.
(3) Remove 1 screw on the rear side, and then remove the holder and spring.

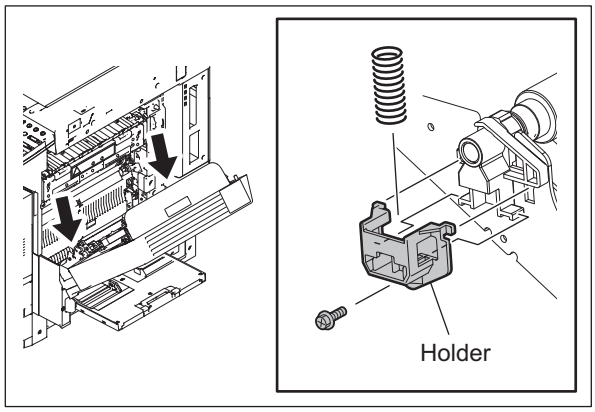


Fig. 11-71

(4) Take off the registration roller (rubber) with its holder.

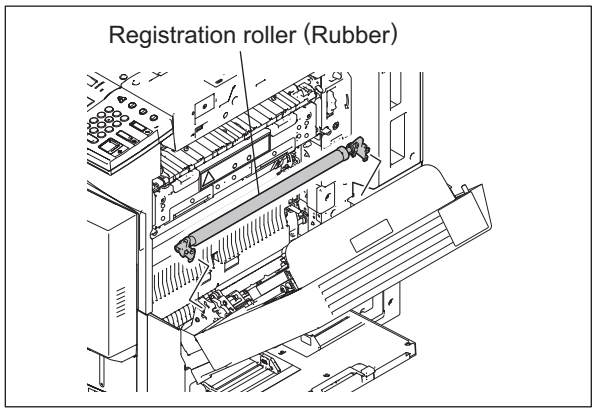


Fig. 11-72

(5) Remove 2 holders, 3 E-rings, 1 gear and the grounding plate.

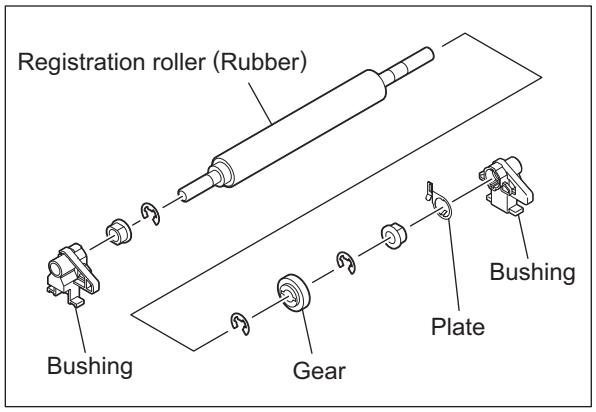


Fig. 11-73

11.6.33 Registration motor unit

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Disconnect 1 connector and remove 4 screws. Then take off the registration motor unit.

Note:
Be sure not to drop the bushing.

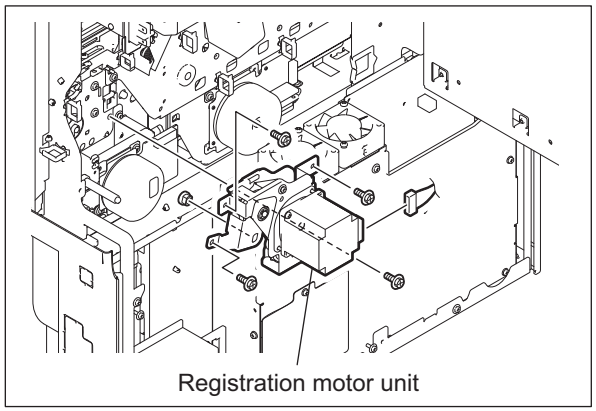


Fig. 11-74

11.6.34 Registration motor (M19)

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Take off the registration motor unit.
📖 P.11-39 "11.6.37 1st drawer transport clutch (Low speed) (CLT2)"
(3) Remove 3 screws to take off the plate.

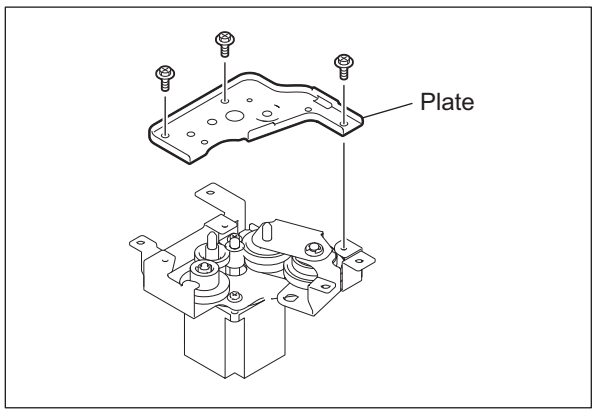


Fig. 11-75

(4) Remove 1 screw, 3 gears and the bracket with gear.

Note:
Replace the registration motor with the damper and the bracket installed.

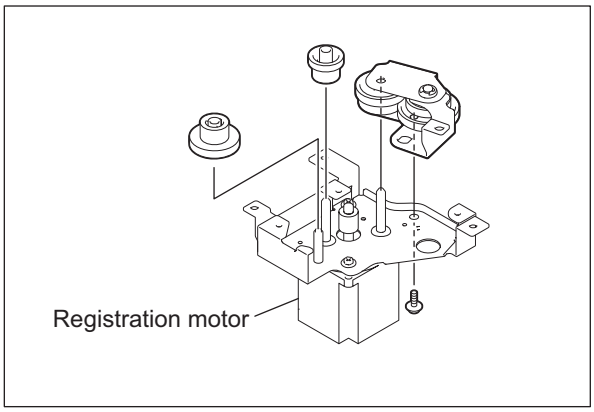


Fig. 11-76

Note:
Never attempt to loosen 4 screws with lock paint.

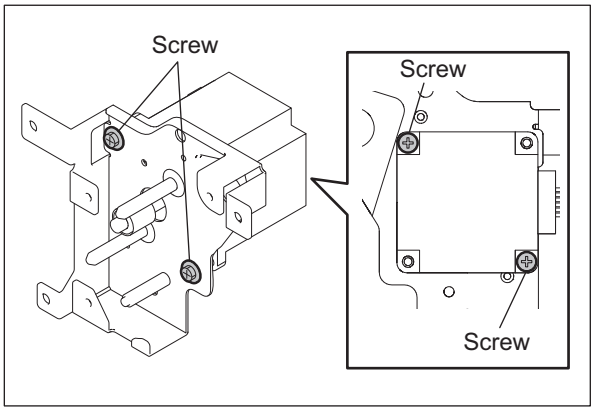


Fig. 11-77

11.6.35 Registration roller (Metal)

(1) Take off the registration motor unit.
P.11-36 "11.6.33 Registration motor unit"
(2) Take off the registration guide.
P.11-32 "11.6.29 Registration guide"
(3) Take off the middle guide.

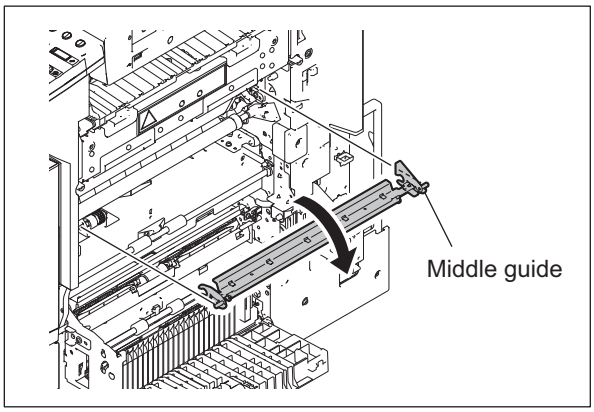


Fig. 11-78

(4) Remove the clip on the rear side of the registration roller (metal). Then remove the gear and parallel pin.

Note:
Be sure not to drop the parallel pin.

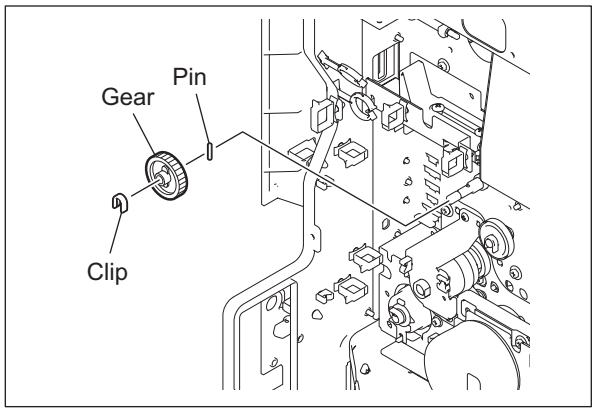


Fig. 11-79

(5) Remove 2 screws, and then take off the duct.

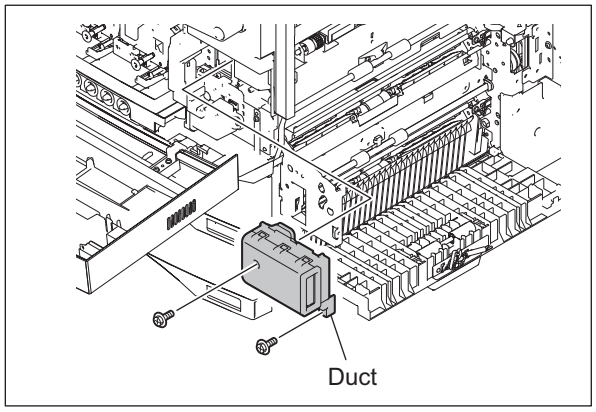


Fig. 11-80

(6) Remove 1 screw, and then take off the cover.

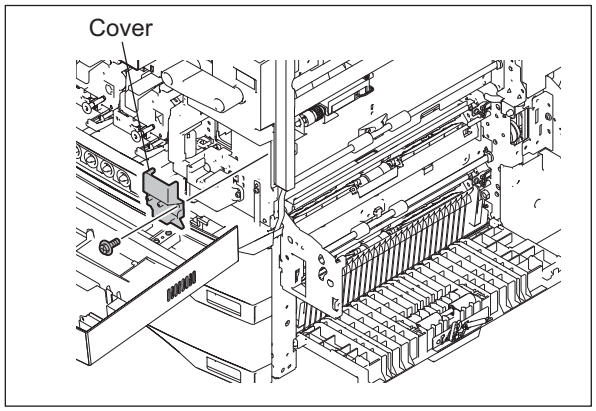


Fig. 11-81

(7) Remove each 1 screw fixing the both front and rear holders.
(8) Remove 2 clips, and then move the front and rear holders and bushings to the inner side.
(9) Move the registration roller (metal) to the rear side, and then take it off from the front side.

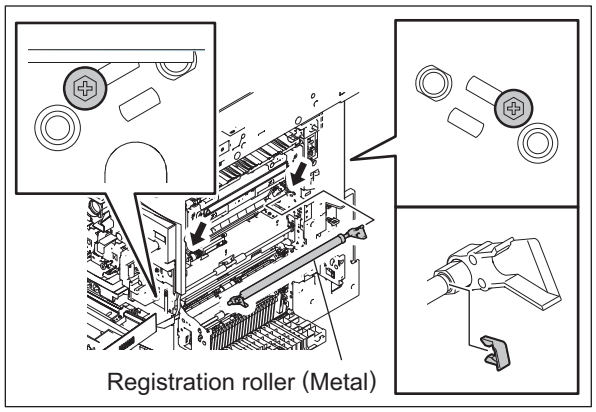


Fig. 11-82

11.6.36 Paper dust holder

(1) Take off the registration roller (metal).
📖 P.11-37 "11.6.35 Registration roller (Metal)"
(2) Remove 2 screws, and then take off the paper dust holder.

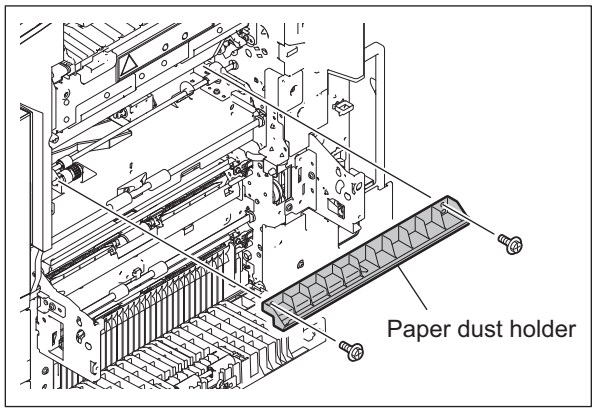


Fig. 11-83

11.6.37 1st drawer transport clutch (Low speed) (CLT2)

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Remove 2 screws and take off the bracket.
(3) Disconnect 1 connector and take off the 1st drawer transport clutch (Low speed).

Note:
When assembling the clutch, match the protruded portion of the clutch with the position shown in the figure.

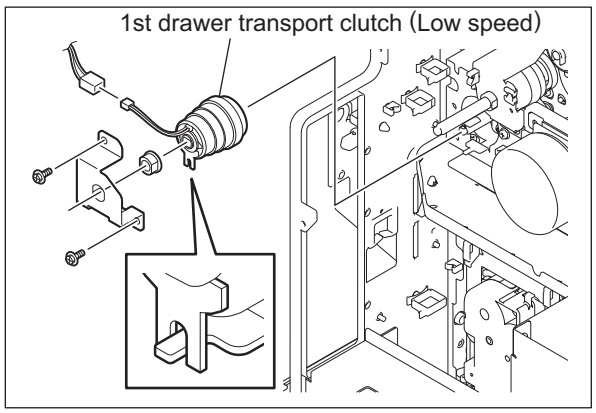


Fig. 11-84

11.6.38 Feed/transport motor (M20)

(1) Open the board case.
🕮 P.21-10 "21.1.11 Board case"
(2) Disconnect 1 connector and remove 4 screws to take off the feed/transport motor.

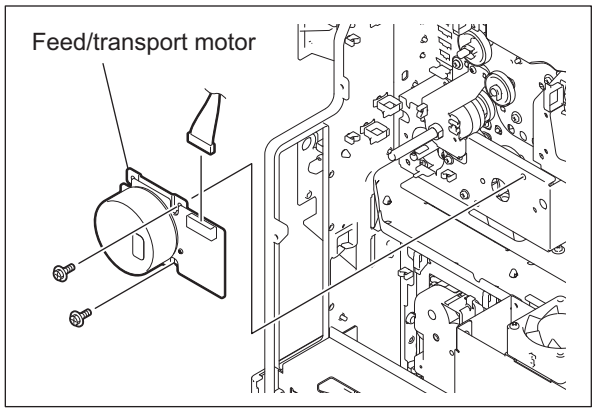


Fig. 11-85

11.6.39 Feed/transport gear unit

(1) Take off the feed/transport motor.
🕮 P.11-40 "11.6.38 Feed/transport motor (M20)"
(2) Take off the 1st drawer transport clutch (Low speed).
🕮 P.11-39 "11.6.37 1st drawer transport clutch (Low speed) (CLT2)"
(3) Disconnect 1 connector, and then release the harness out of the clamp.
(4) Remove 4 screws, and then take off the feed/transport gear unit.

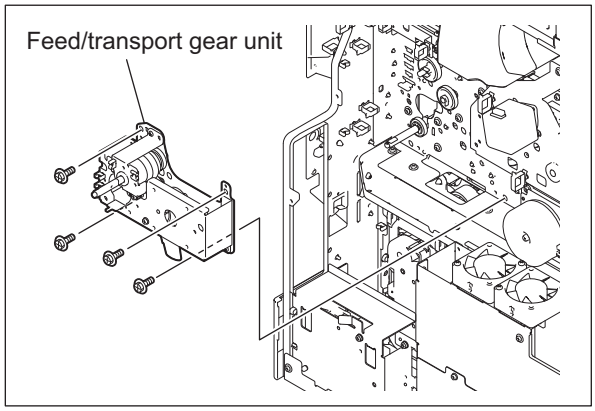


Fig. 11-86

11.6.40 1st drawer transport clutch (High speed) (CLT1)

(1) Take off the feed/transport gear unit.
🕮 P.11-40 "11.6.39 Feed/transport gear unit"
(2) Remove 2 screws, and then take off the 1st drawer transport clutch (High speed) with its bracket.
(3) Remove the shaft and gear from the 1st drawer transport clutch (High speed).

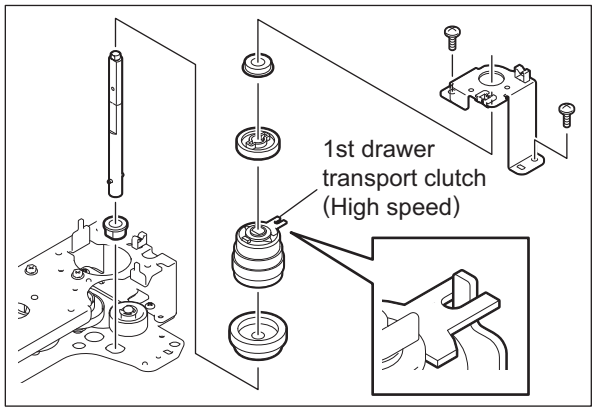


Fig. 11-87

11.6.41 1st drawer transport roller

(1) Take off the registration guide.
📖 P.11-32 "11.6.29 Registration guide"
(2) Take off the feed/transport motor.
📖 P.11-40 "11.6.38 Feed/transport motor (M20)"
(3) Remove 2 clips to move 2 bushings to the inside.
(4) Lift up the 1st drawer transport roller and take it off to the rear side.
(5) Remove 1 E-ring, 1 gear and 2 bushings from the 1st drawer transport roller.

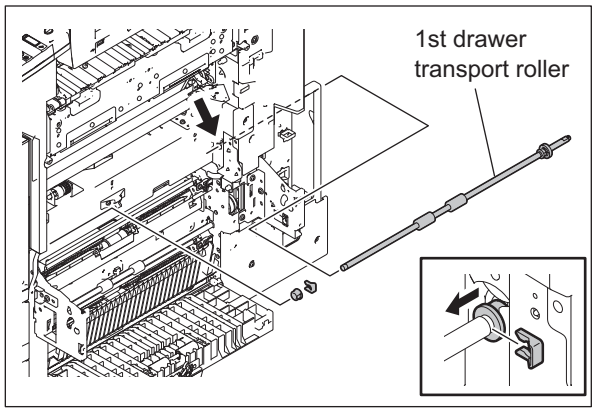


Fig. 11-88

11.6.42 2nd drawer transport roller

(1) Take off the paper feed guide assembly.
📖 P.11-30 "11.6.26 Paper feed guide assembly"
(2) Take off the tray drive unit.
📖 P.11-29 "11.6.22 Tray drive unit"
(3) Take off the 2nd drawer transport clutch (low speed).
📖 P.11-29 "11.6.23 2nd drawer transport clutch (Low speed) (CLT4)"
(4) Remove 1 clip, and then remove the gear and parallel pin.

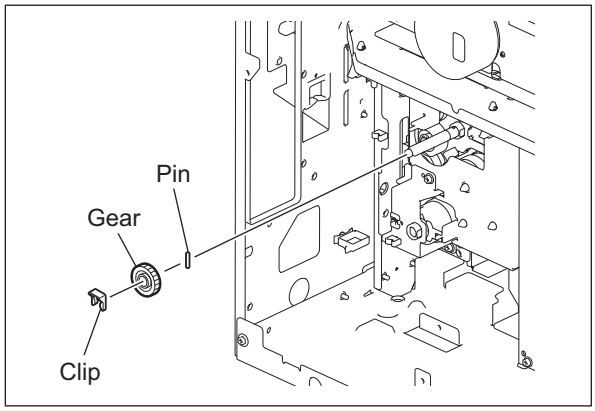


Fig. 11-89

(5) Remove 2 clips, and then take off the 2nd drawer transport roller by moving it to the rear side slightly.

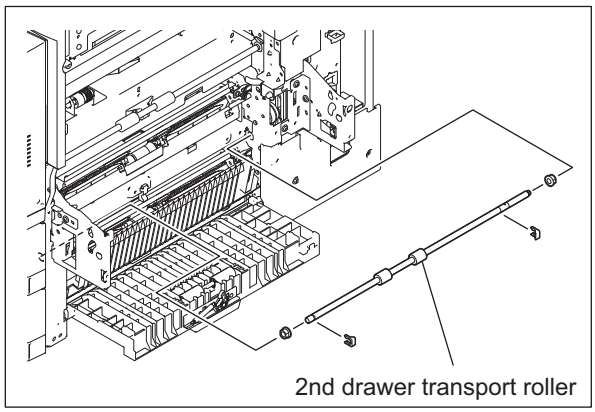


Fig. 11-90

11.7 Adjustment of the Paper Feeding System

11.7.1 Sheet sideways deviation caused by paper feeding

<Procedure>

- The center of the printed image shifts to the front side. → Move the guide to the front side (Arrow (A) direction in the lower figure).

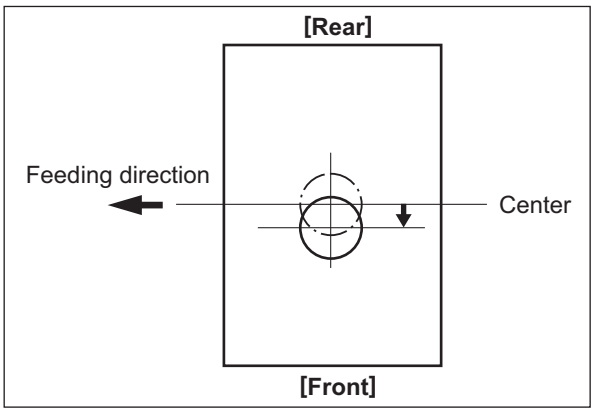


Fig. 11-91

- The center of the printed image shifts to the rear side. → Move the guide to the rear side (Arrow (B) direction in the lower figure).

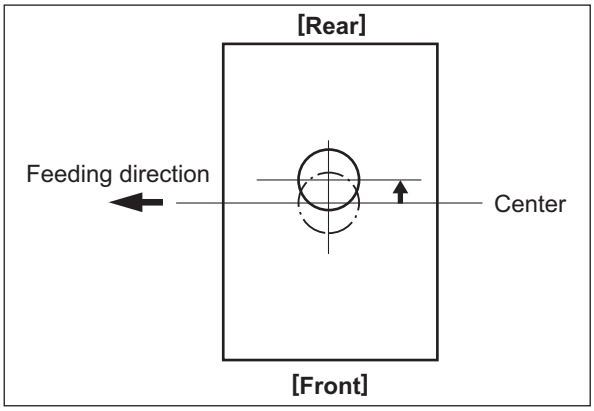


Fig. 11-92

- Bypass feeding

1. Loosen the screen.
2. Move the entire guide to the front or rear side.
3. Tighten the screw.

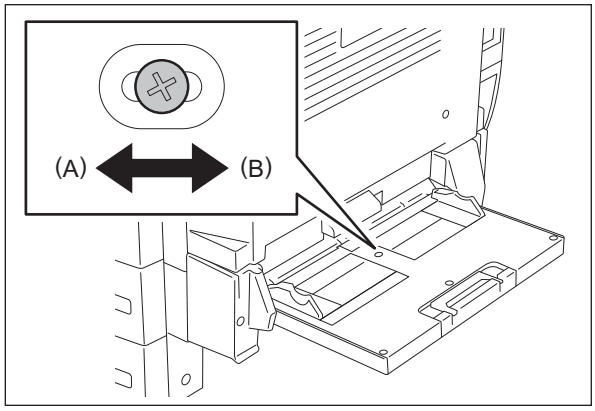


Fig. 11-93

- Drawer feeding

1. Pull out the drawer until the locking lever [1] on the rear side comes to the operable position. If the lever is locked, release it.

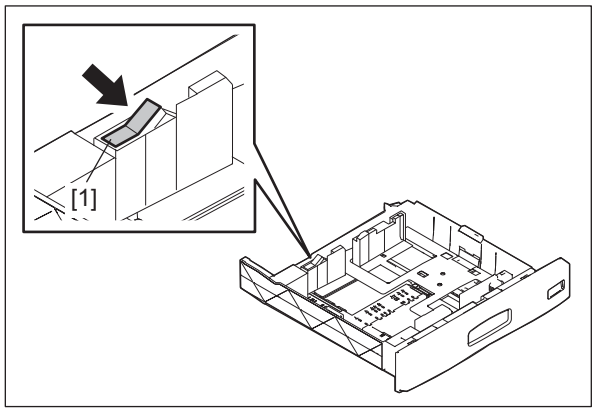


Fig. 11-94

2. If the side guides [1] are located on the extreme outside, slightly shift them to the inside. (Keep the locking lever on the rear side released.)

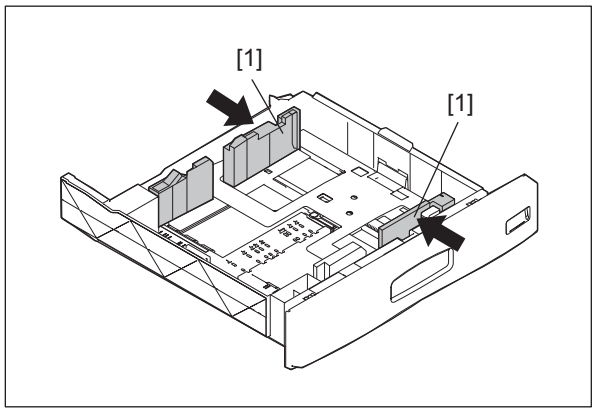


Fig. 11-95

3. Rotate 2 screws about half a turn to loosen them.

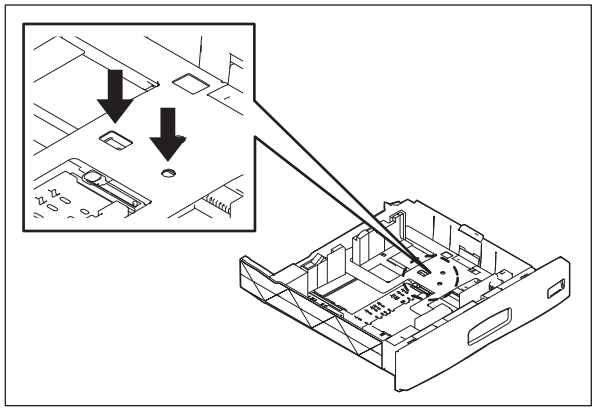


Fig. 11-96

4. Pull down the protrusion indicated by the arrow and shift it in the specified direction.

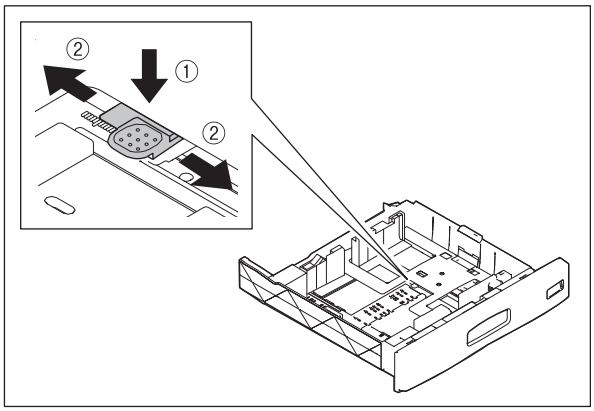


Fig. 11-97

5. Tighten 2 screws.

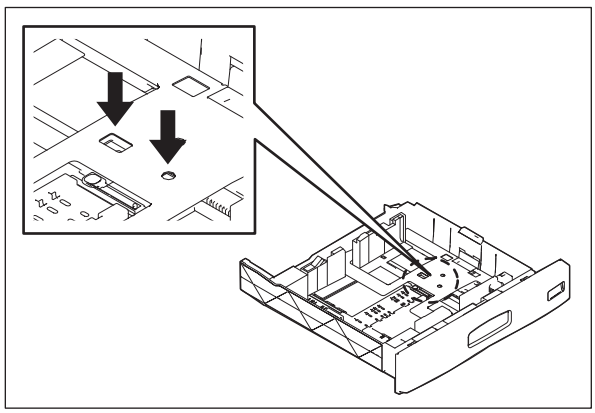


Fig. 11-98

12. PROCESS UNIT RELATED SECTION

12.1 General description

The equipment has 4 process units (EPU: Electrographic Processing Unit). Each process unit consists of the drum cleaner unit and developer unit which are unified, and it corresponds to the image forming process of Y, M, C, K colors. Also, the main charger unit is installed with the cleaner unit, and the discharge LEDs are installed on the ozone duct.
This chapter explains about the process unit and parts around this unit which are provided for image formation. Except the developer unit, which is one of units composing the process unit, is described in chapter 12 in detail.

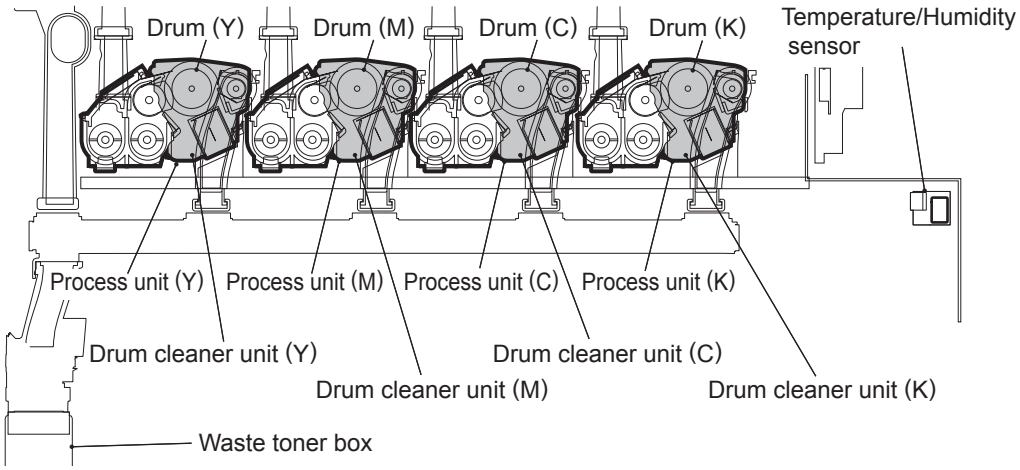


Fig. 12-1

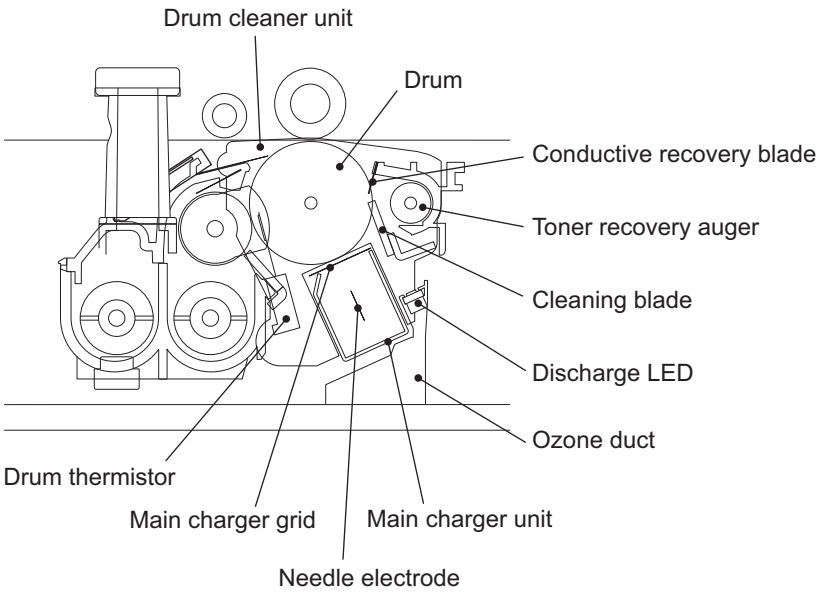


Fig. 12-2

12.2 Composition

Process unit (Y, M, C, K)	Drum cleaner unit	Drum	PM parts
		Cleaning blade	PM parts
		Conductive recovery blade	
		Toner recovery auger	
	Main charger unit	Main charger grid	PM parts
		Needle electrode	PM parts
		Needle electrode cleaner	PM parts
	Developer unit		Ch.13
		Drum thermistor-Y, -K	THM1, THM2
Discharge LED			ERS-Y, -M, -C, -K
Temperature/Humidity sensor			S12
Ozone filter-1, -2			PM parts
Ozone exhaust fan			M24
High-voltage transformer			
Drum motor			M10
Drum switching motor			M11

12.3 Functions

1. Drum
   Drum is made of a cylindrical aluminum base coated with thin film of organic photoconductive substance. Photoconductive object becomes insulative (high electrical resistance) when it is not exposed to lights and becomes conductive (low electrical resistance) when it is exposed to lights. This object is called photoconductor.

2. Drum cleaner unit
   - Cleaning blade
     This blade is pressed against the drum surface with a constant force by pressure springs, and scrapes off the residual toner on the drum surface.
   - Conductive recovery blade
     This blade prevents the toner which was scraped off by the cleaning blade from being scattered to the outside. Negative bias is applied on this blade to remove positive charge on the photoconductive drum.
   - Toner recovery auger
     This auger carries the residual toner scraped off to the waste toner box.

3. Main charger
   The main charger in this equipment consists of a metal rod with U-shaped section, insulated terminals at both ends of the rod and a needle electrode attached between them. When a high voltage is applied to the needle electrode, the air around it is charged (ionized). The ionized air then flows into the drum causing it to be charged. This phenomenon is called “corona discharge”. At the same time, a control bias is applied to the main charger grid to control the charging amount. In a dark place, negative charge is evenly applied onto the drum surface by the corona discharge and this grid. In addition, a cleaner is installed to clean up the dust attached on the needle electrode.
   - Needle electrode
     The needle electrode has aligned needles and their points perform the corona discharge. These points (electrodes) discharge toward the drum in one direction to realize the more efficient discharging comparing to the charger wire which discharges in a radial direction. Therefore, the needle electrode enables to reduce the ozone amount.

4. Drum thermistor (THM1, THM2)
   Since the photoconductive characteristic of the drum surface changes depending on the temperature of the drum surface, the drum thermistor detects the temperature of the drum surface and controls to gain the charging potential according to the environment.
   The equipment uses 2 drum thermistors and they detect surface temperature of K and Y drums respectively.

5. Discharge LED (ERS-Y, -M, -C, -K)
   Discharge is a process to decrease or eliminate the static electricity on the drum surface.
   The electrical resistance of the photosensitive layer is decreased by the light, and the residual charge on the drum surface is neutralized and eliminated (cleaned). Electrical potential of the drum surface is fixed to a certain amount before the drum is charged.

6. Temperature/humidity sensor (S12)
   This sensor measures the environment inside the equipment. The values of the temperature and humidity detected inside the equipment are output to the LGC board.

7. Ozone filter
   Ozone produced by corona discharge of the main charger is exhausted through this filter.
   The catalyzer of the ozone filter degrades the ozone.

8. Ozone exhaust fan (M24)
   This fan exhausts air through the ozone filter-1.

9. High-voltage transformer (HVT)
   A circuit generates the output control voltage Vc of the main charger bias, main charger grid bias, 1st transfer roller bias, 2nd transfer roller bias, developer bias and cleaning blade bias.

10. Drum motor (M10)
    This motor drives each drum and toner recovery auger. The drive of the motor is transmitted to each drum by gears in the following 2 lines: Drum motor → K drum, drum motor → C drum → M drum → Y drum
    The gears and drum couplings are assembled with high precision in order to improve accuracy of color overlay.

11. Drum switching motor (M11)
    This motor switches ON/OFF the transmission of drive to the Y, M, C drums. When the motor rotates normally or reversely, the gear of the motor moves the rack to shift the guides. And this movement of the guides controls the transmission of the drive by engaging and disengaging gears which transmit the drive to the Y, M, C drums. Additionally, the drum switching sensor detects the phase of the guide to control the drum switching motor, and checks whether the drive is transmitted to the Y, M, C drums or not.

12. Color drum phase sensor (S43), K drum phase sensor (S44)
    This sensor matches the phase of Y, M, C drums and K drum. Matching the phase of each drum improves the accuracy of color overlay. The actuator (disk) installed in the same shaft as the driving gear of the K drum and C drum detects the position of their drums to match the phase.

12.4 Description of Operation

12.4.1 Drum phase registration mechanism

[1] Drive of each drum

Each of Y, M, C and K drums is rotated with drive from the drum in the corresponding color. However in some cases in the black mode (when the transfer belt is released), only the K drum is rotated.
The phase of the K drum will not deviate because it is driven directly with a gear (except in the cases of wrong assembling or a K drum phase sensor defect).
On the other hand, the drive of the Y, M and C drums is transmitted by connecting the gear of each drum with a coupling.
Each gear is connected with the corresponding coupling only at the specified position. However, if the gear ratio is not proper, the phases of the color drums may deviate from that of the K drum.
The color drum phase sensor and the K drum phase sensor thus detect and correct the drum phases.
The phases of the Y, M and C drums will not deviate from each other because their gears are connected in one row, unless they are wrongly assembled.
Drive is transmitted to each drum as shown below.

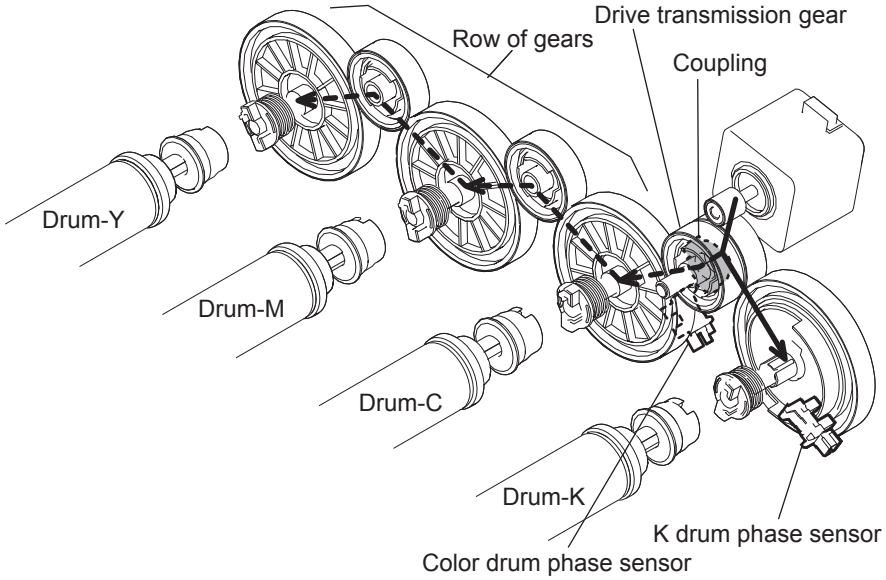


Fig. 12-3

[2] Phase checking procedure

Drum phase registration is controlled with signals from the color drum phase sensor installed on the gear of the C drum and the K drum phase sensor installed on that of the K drum.
To check the deviation, the time lag between the output of the K drum phase sensor and that of the color drum phase sensor is considered as the deviation amount.
If this deviation amount falls within the acceptable range, the deviation is corrected. If the deviation amount is still not corrected, an error message (CE71) appears.

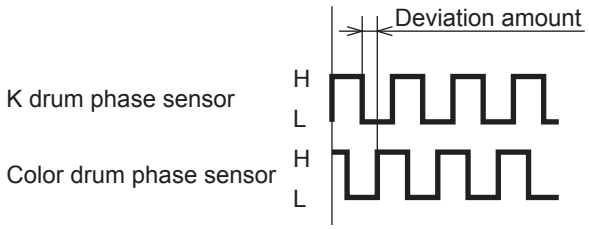


Fig. 12-4

[3] Phase check timing

Phase checking is performed at the timings shown below.

- At power-ON
- When a cover is closed
- When starting 04 mode
- When starting 05 mode or starting printing
- Before performing the enforced color registration adjustment (05-4719)

12.5 Electric Circuit Description

12.5.1 High-voltage transformer control circuit

[1] General description

The high-voltage transformer is controlled by the on-off signal of each bias output from the ASIC on the LGC board, the clock signal for generating AC bias and the reference voltage signal (VR) output through a D/A converter. The high-voltage transformer generates the output current or voltage of each bias, based on the input +24V voltage (+24VD3).

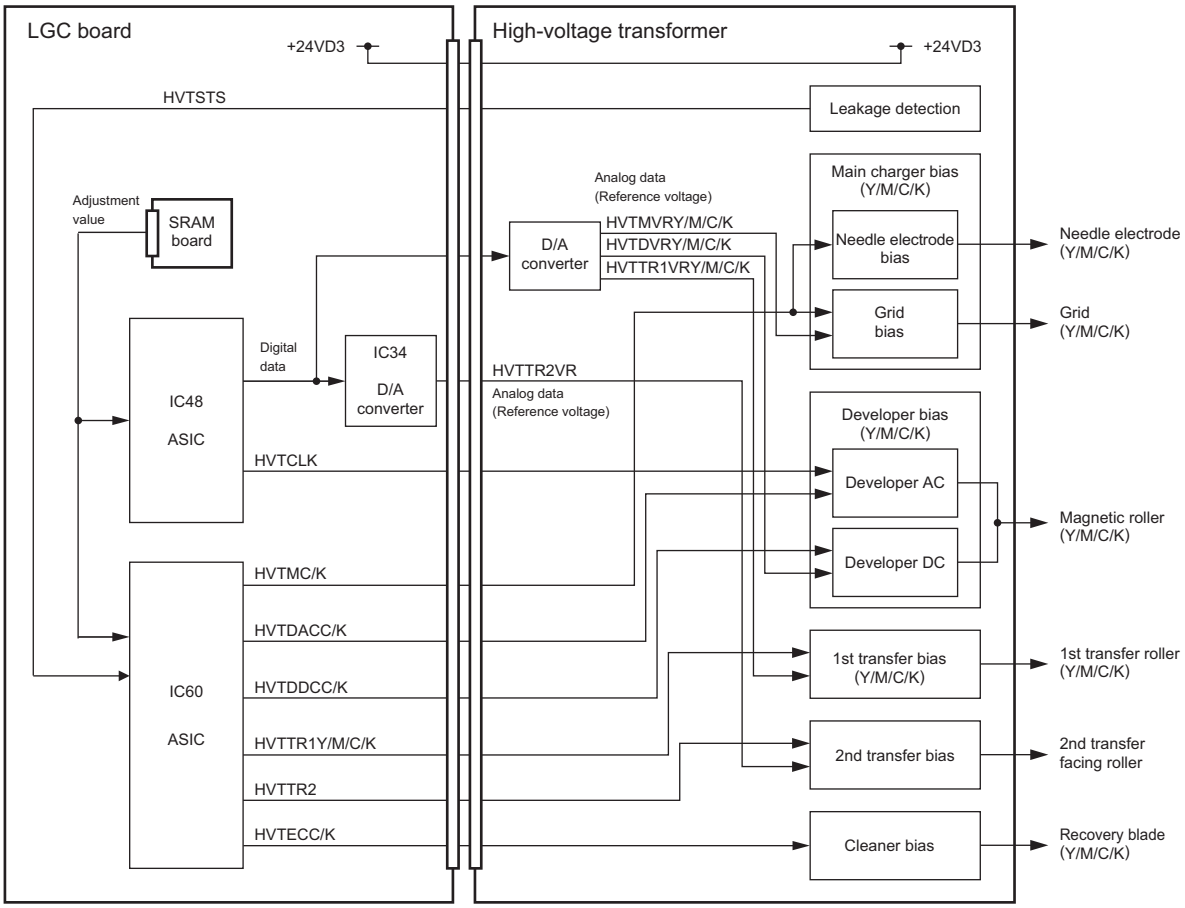


Fig. 12-5

[2] Description of operation

The function and operation of each signal are as follows.

- On-off signal (HVTMC/K, HVTDACC/K, HVTDDCC/K, HVTTR1Y/M/C/K, HVTTR2, HVTECC/K):
  These signals are the on-off signals of each output to the main charger (needle electrode and grid), developer bias (AC/DC), 1st transfer bias (1st transfer roller), 2nd transfer bias (2nd transfer facing roller) and cleaner bias (recovery blade). When these signals move to a low level, the generating circuit of each bias on the high-voltage transformer becomes ON status, thus the current or voltage is output.

- Reference voltage (HVTMVRY/M/C/K, HVTDVRY/M/C/K, HVTTR1VRY/M/C/K, HVTTR2VR):
  These analog voltages are the reference for each output of the main charger grid, developer bias (DC),1st transfer bias and 2nd transfer bias. Each output of the high-voltage transformer can be changed linearly by changing these reference voltages.

  The output procedure of the reference voltages is shown below.
  - The adjusted values of the main charger bias, developer bias and transfer bias in the SRAM are output to the ASIC.
    ↓
  - The data of the reference voltage is output from the ASIC to the D/A converter.
    ↓
  - Digital-to-analog conversion at the D/A converter
    ↓
  - The reference voltage of each bias is output to the generating circuit of each bias.
    ↓
  - The circuit of each bias generates the output current or output voltage proportionate to the reference voltage.

  * The reference voltage can be adjusted in the Adjustment Mode (05).

- Developer AC bias generating clock (HVTDACK):
  This clock signal is a reference for the AC component of the developer bias.

- Leak detection signal (HVTSTS):
  This signal detects the abnormality (leakage) of the high-voltage transformer output. When the abnormality is detected, the signal moves to a low level.

12.5.2 Drum Temperature Detection Circuit

The drum temperature detection circuit is composed as shown in the figure below. It converts the input voltage from the drum thermistor into a digital signal by means of the A/D converter on the LGC board. The drum thermistor is a device whose resistance value is smaller when the temperature is higher. Therefore, when the temperature becomes higher, the input voltage to the A/D converter becomes lower.

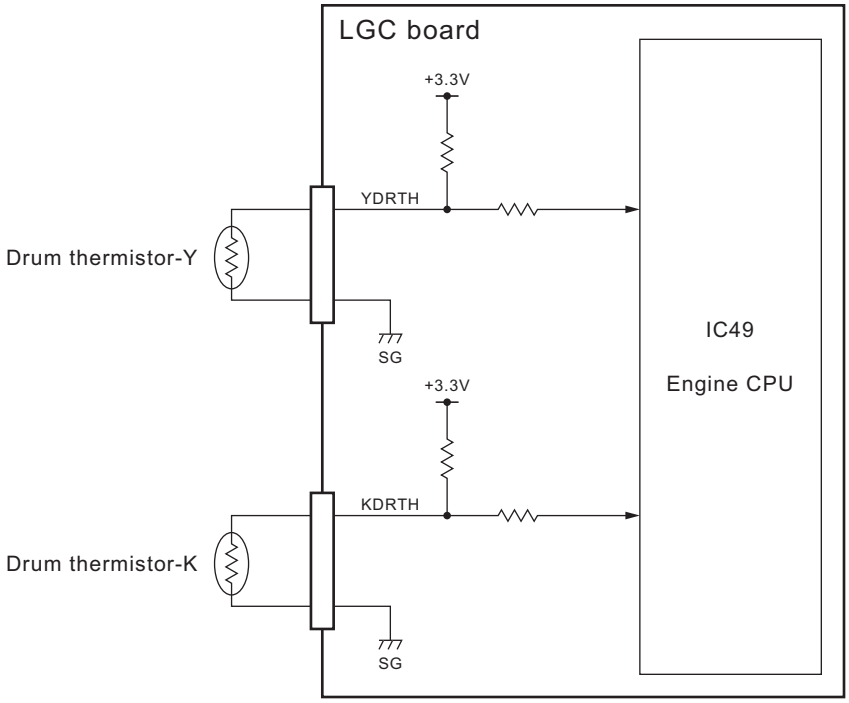


Fig. 12-6

12.5.3 Drum motor control circuit

The drum motor is a stepping motor driven by the control signal output from the ASIC on the LGC board and rotates the drum.
The drum motor is driven by the pulse signal (DRMA, DRMB, DRMC, DRMD) output from the motor driver. These pulse signals are formed based on the reference clock (DMCK) and output only when the enable signal (DMEN) is a high level. Also, the rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.

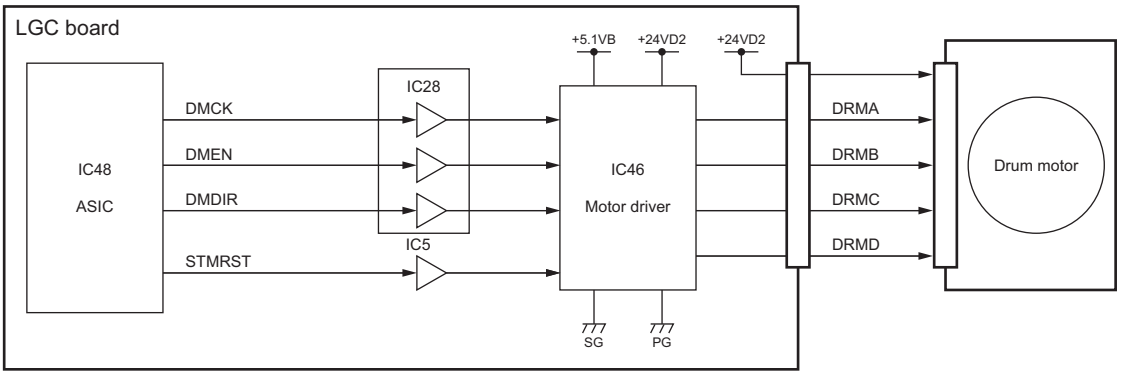


Fig. 12-7

Control signal

Signal	Function	Status	
		High level	Low level
DMCK	Reference clock	---	---
DMEN	Enable signal	ON	OFF
DMDIR	Rotation direction signal	CCW	CW
STMRST	Reset signal	Normal operation	Reset

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

12.5.4 Drum switching motor control circuit

The drum switching motor is a DC brush motor driven by the control signal output from the ASIC on the LGC board and moves the guide to engage/disengage the gear which transmits the driving force of the drum motor.
The motor driver outputs the drive signal (CKMMA-0A, CKMMB-1A) to the motor based on the control signal (CKMMA-0C, CKMMB-1C) output from the ASIC. The motor operates the rotation, stop or brake according to the status of these drive signals.

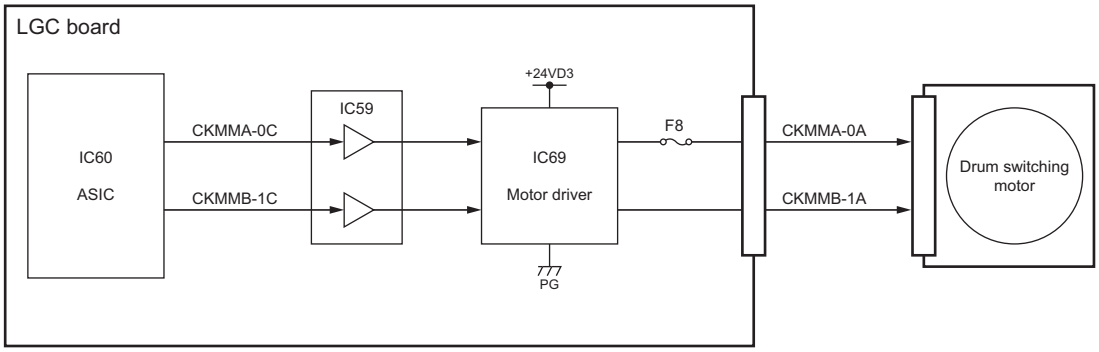


Fig. 12-8

Control signal

Signal				Motor status
ASIC output		Motor driver output		
CKMMA-0C	CKMMB-1C	CKMMA-0A	CKMMB-1A	
L	L	OFF (high impedance)		Stop
L	H	L	H	CW (Gear engaged)
H	L	H	L	CCW (Gear disengaged)
H	H	H	H	Brake

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

12.6 Disassembly and Replacement

12.6.1 Process unit (EPU)

(1) Open the front cover.
(2) Remove 1 screw, and then turn the TBU lifting lever counterclockwise for 90 degrees.

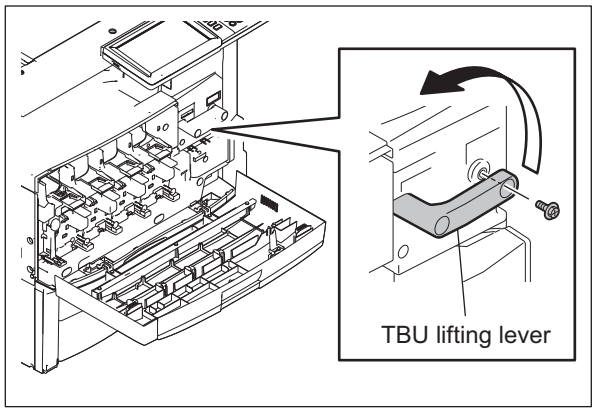


Fig. 12-9

(3) Hold the A part of the process unit and pull it out while pushing the lock handle down. Then hold the B part and take off each process unit of EPU (Y), EPU (M), EPU (C) and EPU (K).

Notes:

- Be sure not to touch, spit or scratch on the drum surface.
- Check if the shutter of the toner supply opening on the removed process unit is closed.
- Avoid a direct sunlight onto the drum. Move it to a dark place as soon as it is taken off.

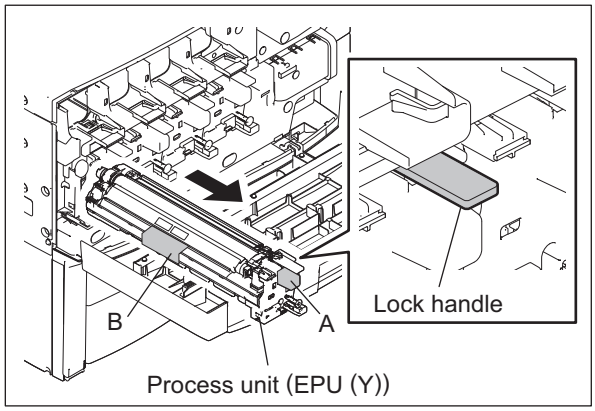


Fig. 12-10

Note:

When installing, wipe out toner on the drawer connector of the equipment because toner attached on the contacts of the connector will cause conduction blockage.

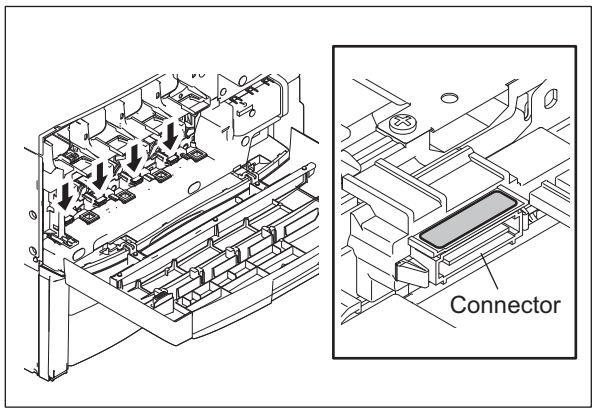


Fig. 12-11

12.6.2 Process cover

(1) Take off the process unit (EPU).
📖 P.12-12 "12.6.1 Process unit (EPU)"
(2) Take off the main charger cleaner handle.

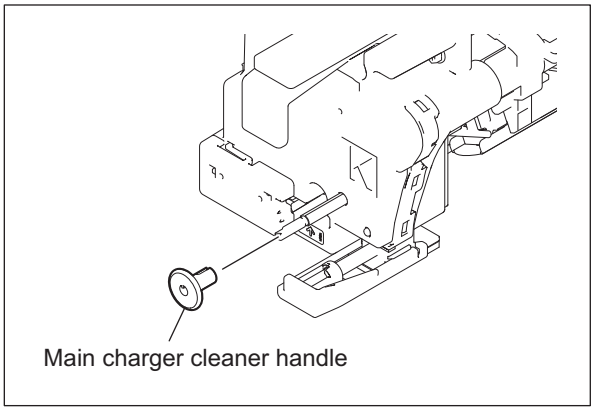


Fig. 12-12

(3) Release 2 latches, and then take off the connector cover.

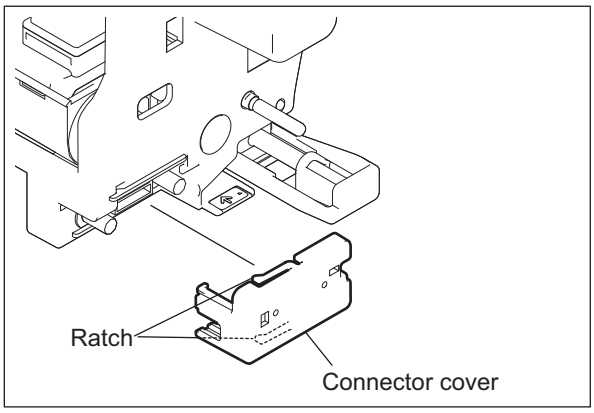


Fig. 12-13

(4) Disconnect the connector.

Notes:
- Be sure to place the process unit (EPU) in the correct position as shown in Figure to avoid the damage on the drum.
- When installing, be sure not to have harnesses being loosened.

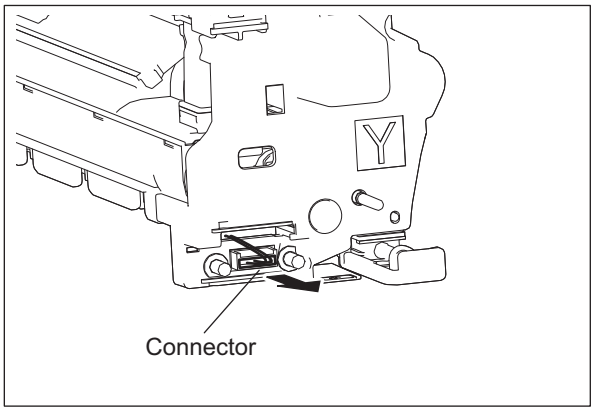


Fig. 12-14

(5) Remove 2 screws.
(6) Release the latch, and then take off the process cover.

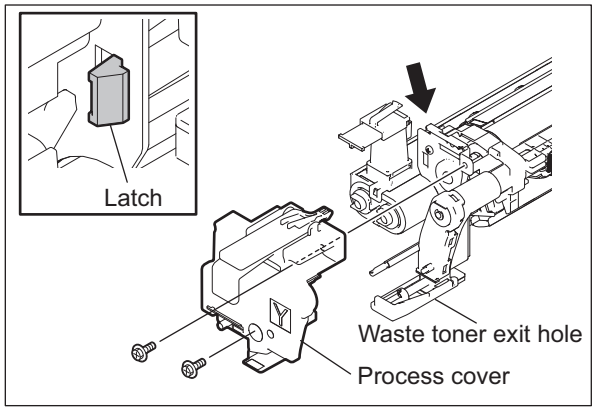


Fig. 12-15

Note:
When installing, fit 2 bosses of the process cover and 1 boss of the waste toner drain into respective boss holes securely.

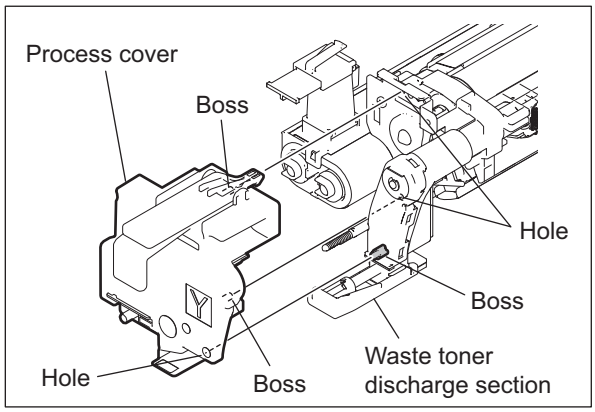


Fig. 12-16

12.6.3 Cleaning unit/ Developer unit

[A] Cleaning unit/ Developer unit

(1) Take off the process cover.
📖 P.12-13 "12.6.2 Process cover"
(2) Remove 2 screws and take off the front retainer.

Note:
Be sure not to lose the bearing installed on the front retainer.

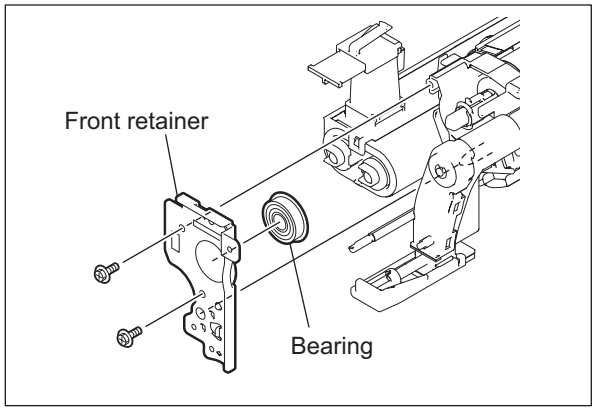


Fig. 12-17

(3) Release 1 latch on the rear side of the developer unit to open the cleaner unit in the direction of the arrow. Slide the cleaning unit to the rear side to separate it from the developer unit.

Notes:
- Be sure not to touch, spit or scratch on the drum surface.
- Avoid a direct sunlight onto the drum. Move it to a dark place as soon as it is taken off.

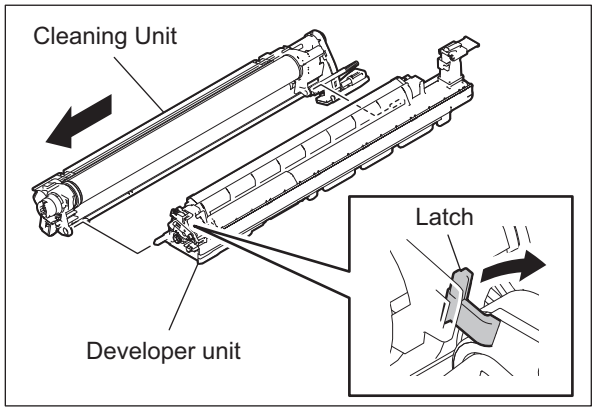


Fig. 12-18

12.6.4 Main charger assembly

(1) Take off the cleaning unit.
📖 P.12-15 "[A] Cleaning unit/ Developer unit"
(2) Hold (A) part on the front side of the main charger assembly, lift the cleaner case up and take off the main charger assembly.

Notes:
- Be sure not to touch, spit or scratch on the drum surface.
- Avoid a direct sunlight onto the drum. Move it to a dark place as soon as it is taken off.

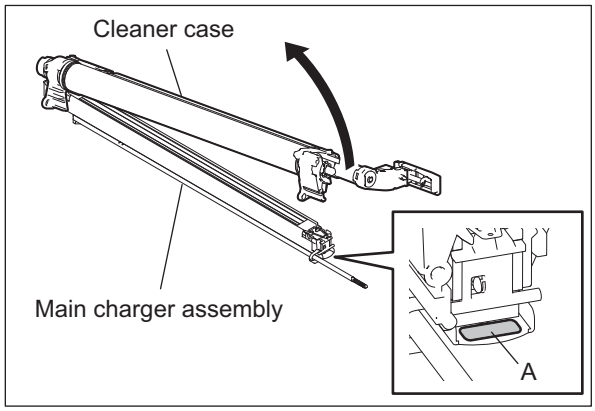


Fig. 12-19

12.6.5 Main charger cleaner PM

(1) Take off the main charger assembly.
📖 P.12-15 "12.6.4 Main charger assembly"
(2) Remove the main charger cleaner rod from the guide.
(3) Turn the main charger cleaner rod for 90 degrees to take it off.

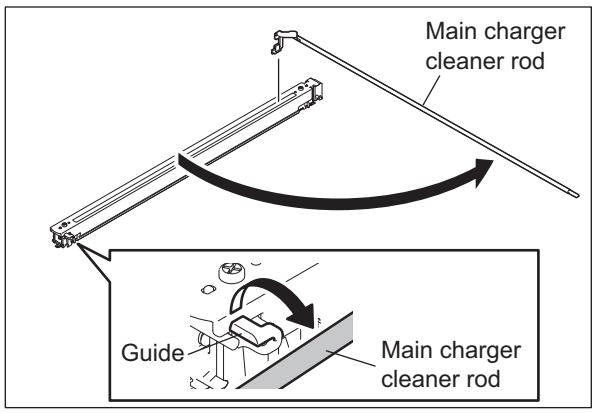


Fig. 12-20

Note:
Be sure to insert the main charger cleaner rod all the way in before turning it 90 degrees, otherwise the needle electrodes may be damaged.

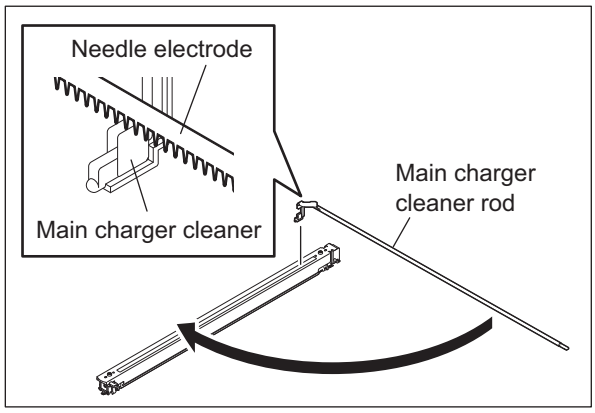


Fig. 12-21

(4) Peel 2 main charger cleaner off the main charger cleaner rod.

Note:
Attach the main charger cleaner with its sides contacting the rib of the main charger cleaner rod as indicated by arrows shown in the figure.

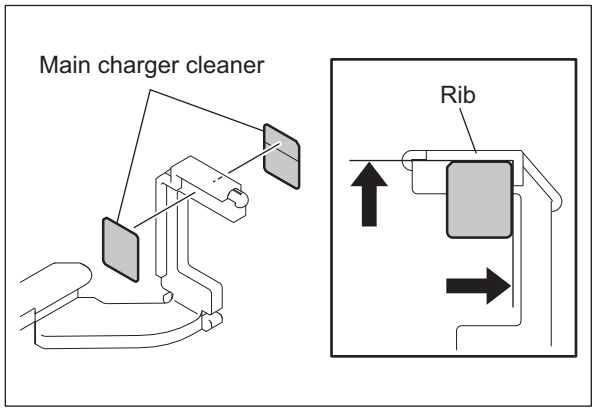


Fig. 12-22

12.6.6 Main charger grid PM

(1) Take off the Main charger cleaner.
P.12-16 "12.6.5 Main charger cleaner"
(2) Lift it up the arm of the front terminal, and then take off the main charger grid.

Notes:
- Do not touch the mesh area of the grid.
- There are 2 holes on the rear side of the main charger grid for determining which is the front or back surface. Be sure to place the grid so that the 2 holes come as shown in the figure.

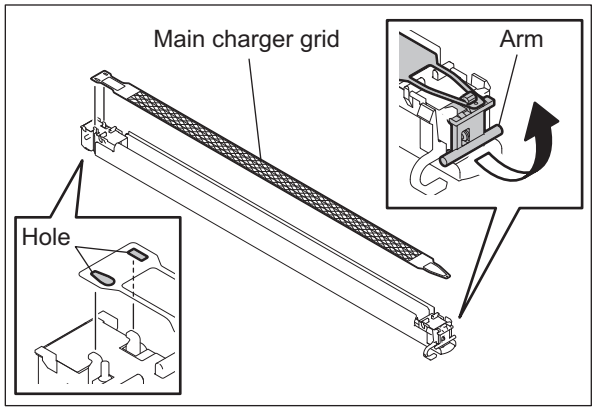


Fig. 12-23

12.6.7 Needle electrode PM

(1) Take off the main charger grid.
P.12-17 "12.6.6 Main charger grid"
(2) Take off each terminal cover on both front and rear sides.

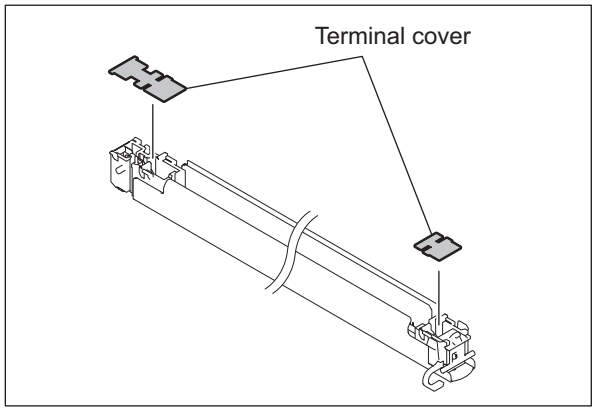


Fig. 12-24

(3) Remove the arm from the front terminal.
(4) Take off the spring.
(5) Hold the front side of the main charger to lift it up, and then take it off from the rear terminal.

Notes:
When installing the needle electrode, be sure of the following:
- Be sure that its needle comes at its top side.
- Hook the needle electrode and the spring on both front and rear terminals securely.
- Do not twist the needle electrode.
- Do not touch the needle electrode directly with bare hands.

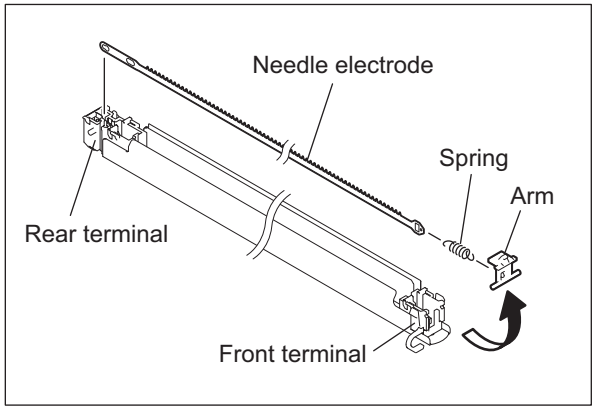


Fig. 12-25

12.6.8 Drum PM

(1) Take off the main charger assembly.
📖 P.12-15 "12.6.4 Main charger assembly"
(2) Release the 2 latches, and then take off the bushing.

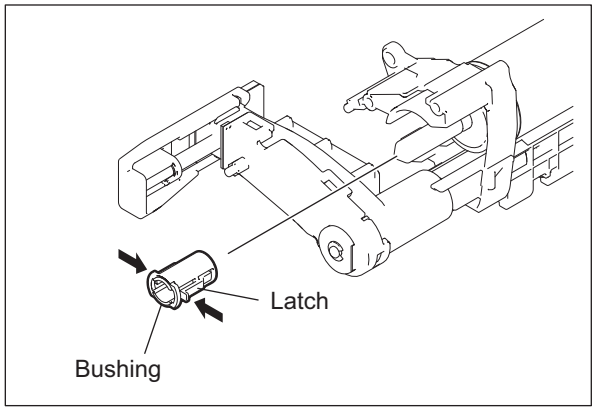


Fig. 12-26

(3) Pull out the shaft from the rear side, then hold the gear part of the drum and take it off.

Notes:
- Be sure not to lose the sleeve which will remain on the shaft or rear side of the drum.
- Be sure not to lose the bearing installed on the frame.
- Be sure not to touch, spit or scratch on the drum surface.
- Avoid a direct sunlight onto the drum. Move it to a dark place as soon as it is taken off.
- Be sure not to touch or scratch the edge of the drum cleaning blade.

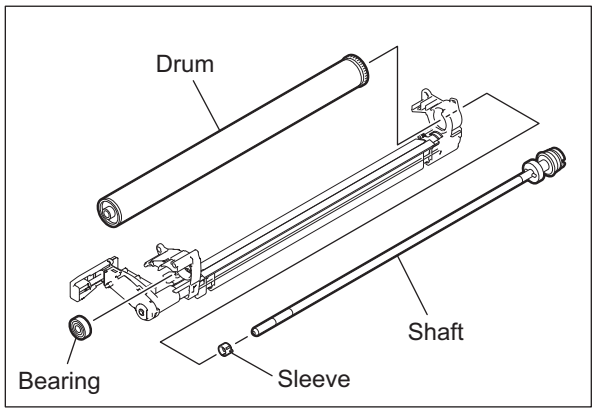


Fig. 12-27

Note:
When the retainer installed on the drum shaft has been taken off, be sure to install it while aligning the direction of the ribs of the coupling with the pin on the drum shaft.

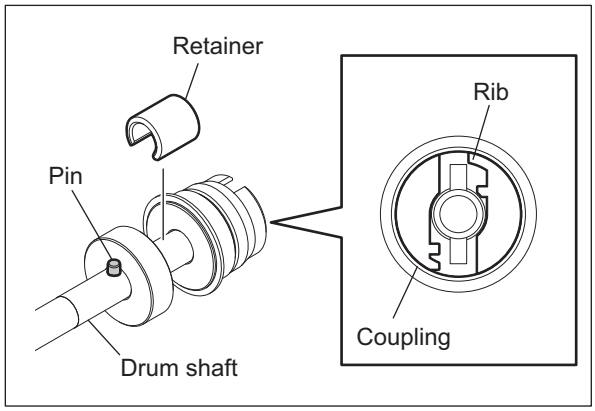


Fig. 12-28

Note:

When installing the drum, not use a patting powder.

Install the drum, shaft and sleeve by means of the following procedure.

1. Install the drum to the cleaner case with its front side boss aligned with the seal on the case. Be careful not to have the seal on the rear side come off of the drum.

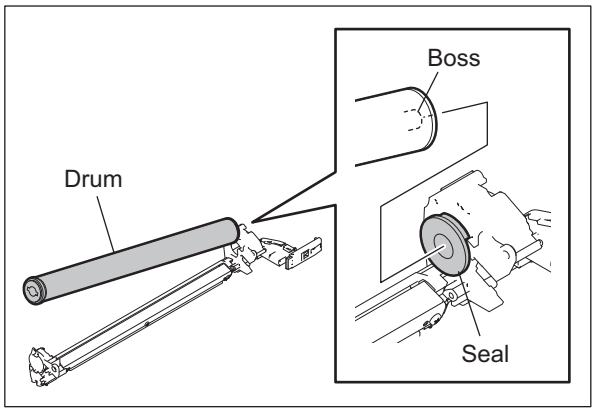


Fig. 12-29

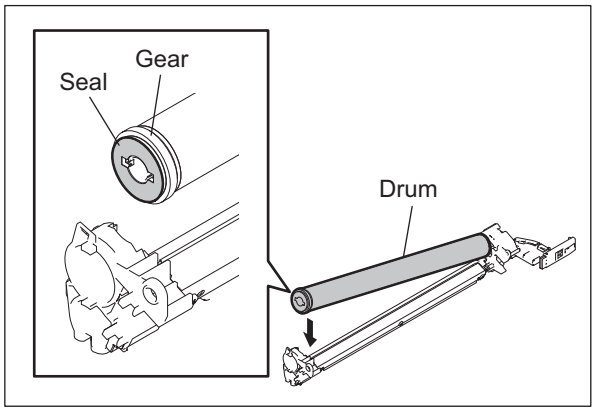


Fig. 12-30

2. Install the sleeve with its groove aligned with the pin on the drum shaft.

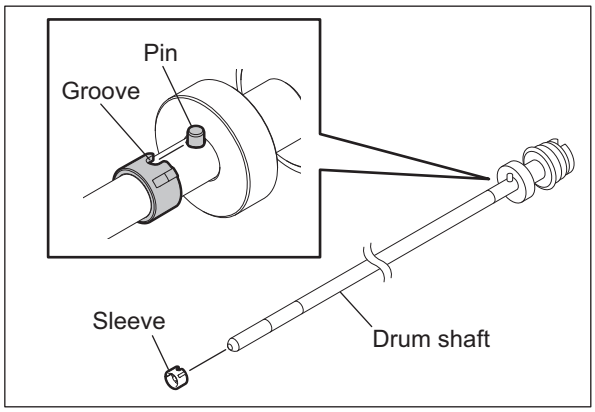


Fig. 12-31

3. Insert the drum shaft to the drum while aligning the position of the pin on the shaft with the groove of the drum. After they are aligned, push the shaft fully in to engage the groove and pin with the sleeve.

Note:
Be sure to align the position before inserting the shaft. If the drum or drum shaft is rotated with the sleeve engaged with the groove and pin, sleeve may be deformed.

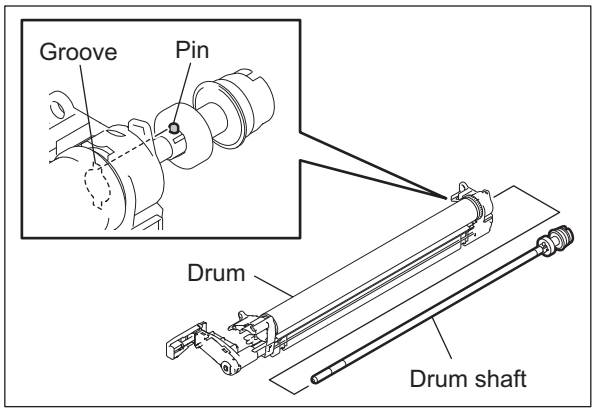


Fig. 12-32

4. Install the bearing on the front side of the drum shaft.

12.6.9 Drum cleaning blade PM

(1) Take off the Drum.
P.12-18 "12.6.8 Drum"
(2) Remove 2 screws and take off the drum cleaning blade.

Note:
Be sure not to touch or scratch the edge of the cleaning blade.

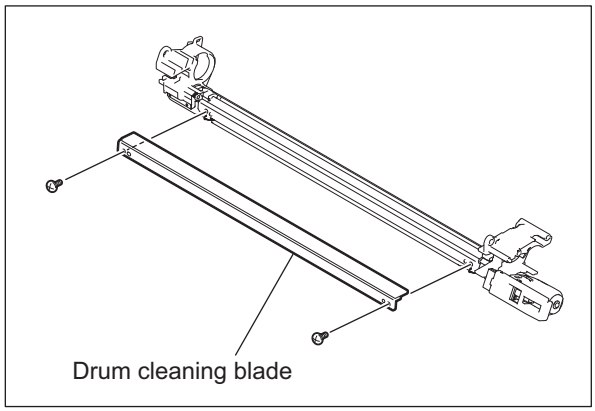


Fig. 12-33

Note:
When replacing the drum cleaning unit, check if there is no gap between the blade and pad on both ends. If there is, or when the pads put pressure to the cleaning blade, reattach the pads on the position shown in the figure (by slightly pushing them to the direction of the arrows).

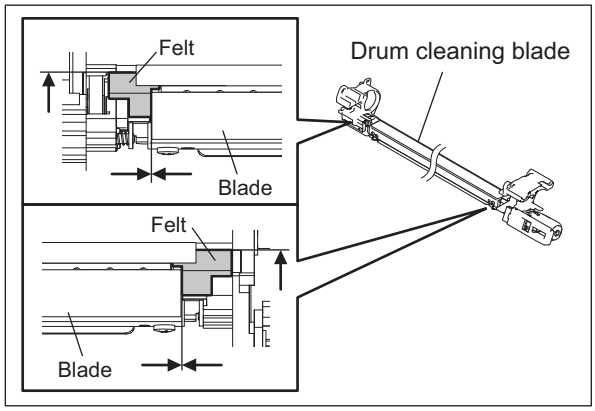


Fig. 12-34

12.6.10 Drum thermistor (THM1, THM2)

The drum thermistors are installed in the process units (EPU (Y) and EPU(K)).

- Process unit (EPU (Y)): Drum thermistor (THM1)
- Process unit (EPU (K)): Drum thermistor (THM2)

(1) Take off the corresponding process unit, and then take off the developer unit.
🕮 P.12-12 "12.6.1 Process unit (EPU)"
🕮 P.12-15 "[A] Cleaning unit/ Developer unit"

(2) Remove 1 screw and take off the drum thermistor.

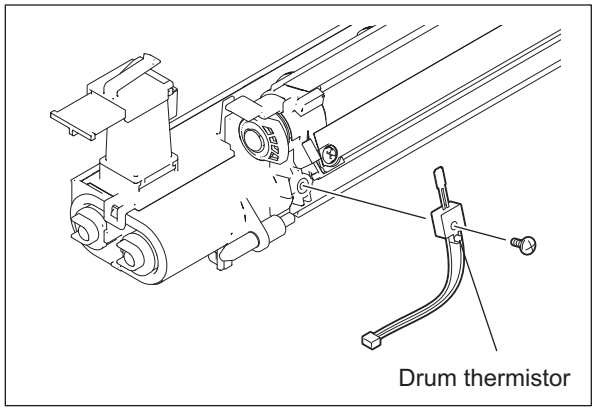


Fig. 12-35

12.6.11 Discharge LED (ERS-Y, ERS-M, ERS-C, ERS-K)

Dedicated discharge LEDs which correspond to the process units (EPU (Y, M, C, K)) respectively are installed.

- Process unit (EPU (Y)): Discharge LED (ERS-Y)
- Process unit (EPU (M)): Discharge LED (ERS-M)
- Process unit (EPU (C)): Discharge LED (ERS-C)
- Process unit (EPU (K)): Discharge LED (ERS-K)

Take off the corresponding the discharge LED.

(1) Take off the process unit (EPU).
P.12-12 "12.6.1 Process unit (EPU)"

(2) Disconnect 1 relay connector from the discharge LED. Remove 1 screw and take off the duct.

Notes:

- When installing the duct, hang the 1 hook of the duct on the hole of the frame.
- When installing the duct, be sure to hold the harness between the duct and main frame in order not to have the duct lose contact with the main frame.
- Since the actuator is installed on the duct for the discharge LED (ERS-K), be sure to install it in the correct position.

(3) Lift the discharge LED slightly and slide it to take it off.

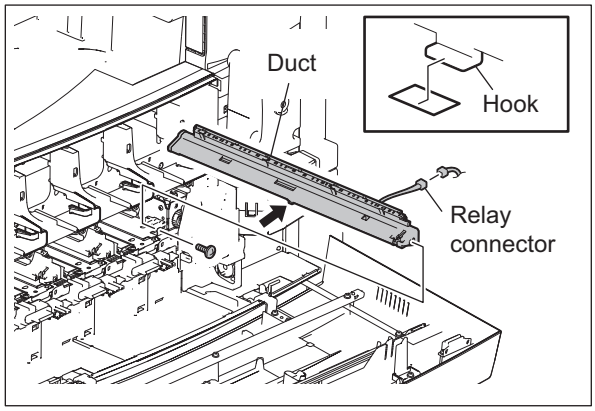


Fig. 12-36

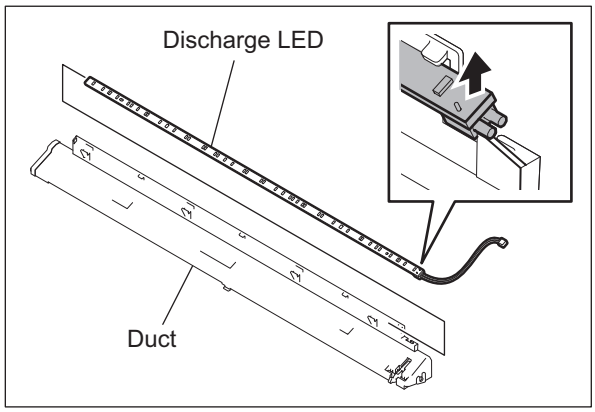


Fig. 12-37

12.6.12 Needle electrode cleaner detection sensor (S21)

(1) Take off the shutter unit.
P.9-14 "9.4.2 Shutter unit"

(2) Take off the duct of the discharge LED (ERS-K).
P.12-22 "12.6.11 Discharge LED (ERS-Y, ERS-M, ERS-C, ERS-K)"

(3) Disconnect 1 connector. Release the latch, and take off the needle electrode cleaner detection sensor.

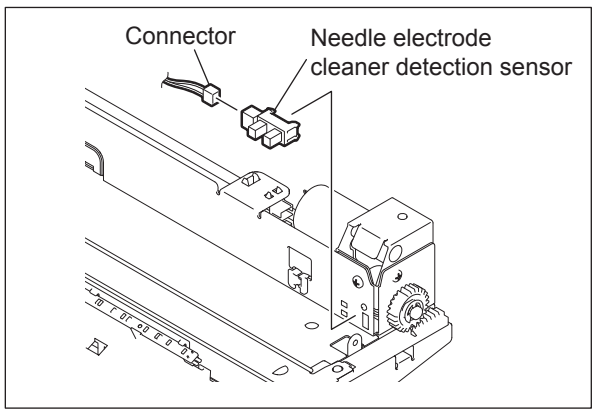


Fig. 12-38

12.6.13 Drum drive unit

(1) Take off the ozone exhaust duct.
🕮 P.13-34 "13.5.23 Ozone exhaust duct"
(2) Remove 1 screw on the right side of the drum drive unit.

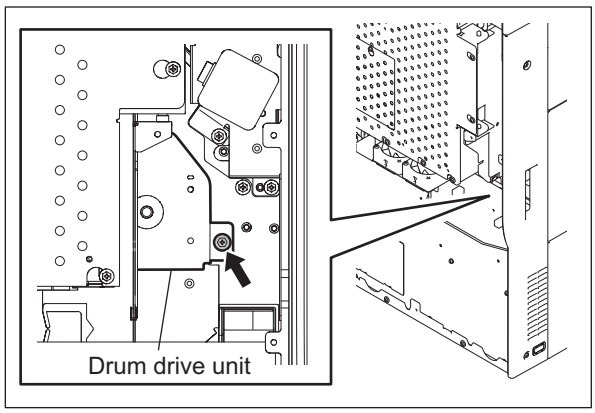


Fig. 12-39

(3) Open the board case.
🕮 P.21-10 "21.1.11 Board case"
(4) Release the harness from the 3 harness clamps.
(5) Disconnect the 1 connector and 2 relay connectors.
(6) Remove 3 screws and take off the drum drive unit.

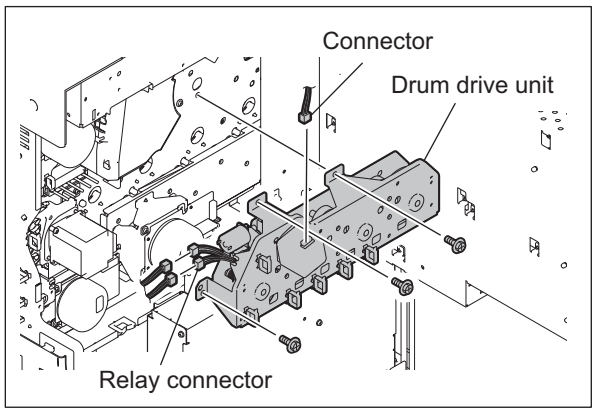


Fig. 12-40

12.6.14 Drum motor (M10)

Note:

Never remove the damper fixed on the drum drive unit with 2 screws (red).
When the drum motor is replaced, discard the dumper attached to the new motor and install it to the existing dumper on the frame instead.

(1) Take off the Drum drive unit.
📖 P.12-23 "12.6.13 Drum drive unit"
(2) Remove 2 screws and take off the drum motor.

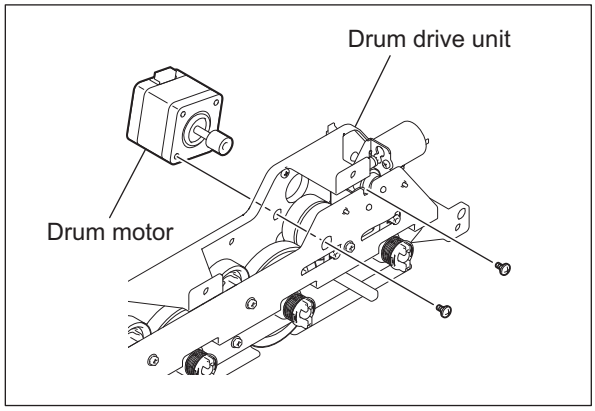


Fig. 12-41

12.6.15 Drum switching motor (M11)

(1) Take off the Drum drive unit.
📖 P.12-23 "12.6.13 Drum drive unit"
(2) Remove 1 screw and take off the drum switching motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

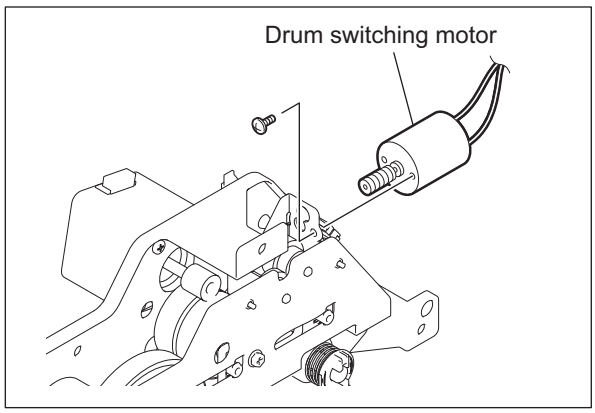


Fig. 12-42

Notes:
After assembling, if the rotation is not smooth when the motor gear is turned manually, carry out the following check.
1. Reinstall the motor while pushing it upward.

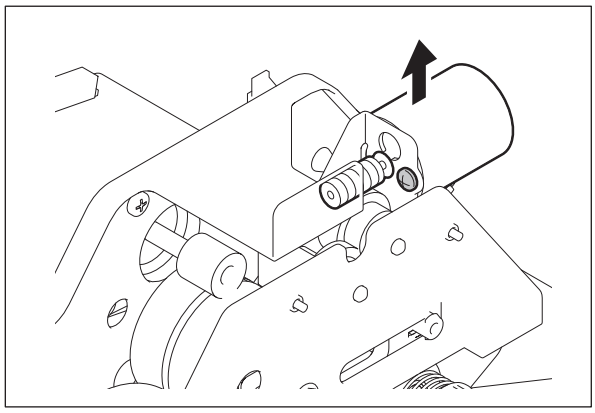


Fig. 12-43

2. If the rotation is still not smooth, remove the motor and try to move the guide. If the guide does not move properly, check if there is anything wrong with the guide or the plate.

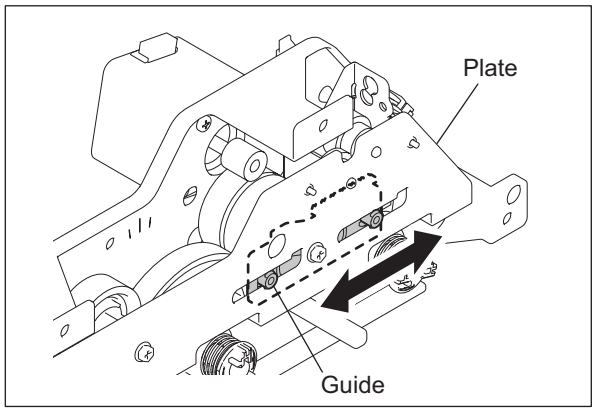


Fig. 12-44

12

12.6.16 Drum switching detection sensor (S19)

(1) Take off the Drum drive unit.
P.12-23 "12.6.13 Drum drive unit"
(2) Push the 4 couplings to pull out the 4 pins.
(3) Remove the 4 couplings and 4 springs.

Note:
When installing, take care of the direction of the spring.

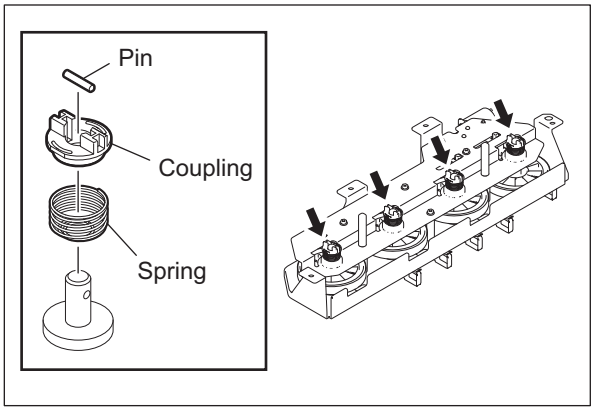


Fig. 12-45

Note:
When installing the coupling, rotate the gear until the mark appears, and then align the mark with the narrower rib of the coupling.

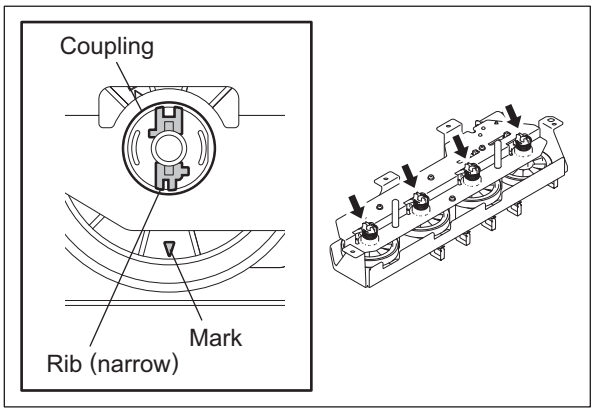


Fig. 12-46

(4) Remove 4 screws, and then take off the plate.

Notes:
- Be sure not to lose the gear of the drum drive unit.
- Be careful not to damage the gear of the drum drive unit.

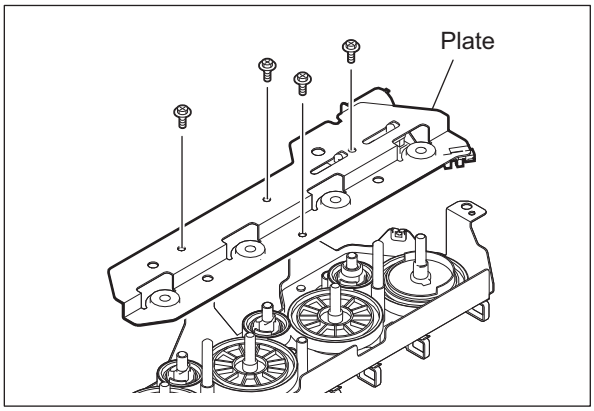


Fig. 12-47

Note:

If the gear of the drum drive unit has been disassembled, install it with the mark on the gear aligned within the area of the punched mark on the frame.

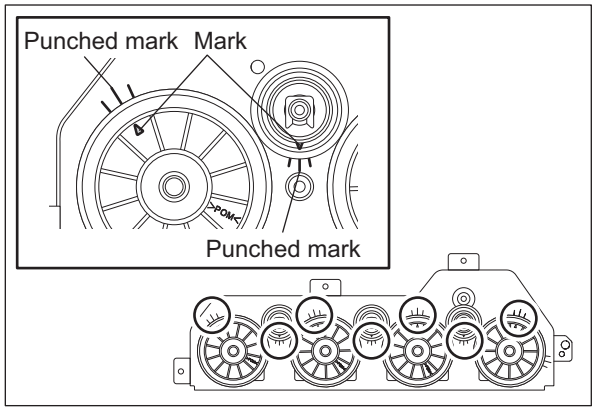


Fig. 12-48

(5) Remove 2 screws, and then take off the sensor bracket.

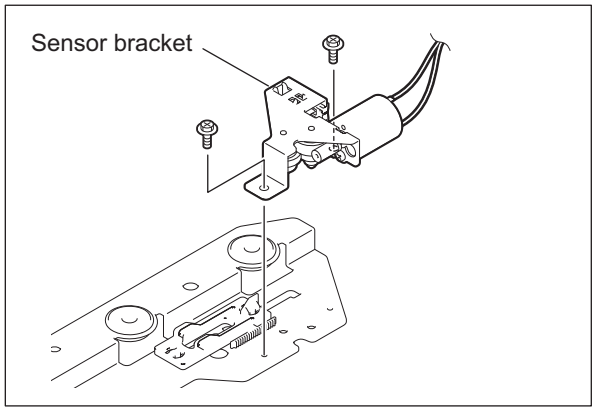


Fig. 12-49

(6) Disconnect 1 connector, and then release the latch to take off the drum switching detection sensor.

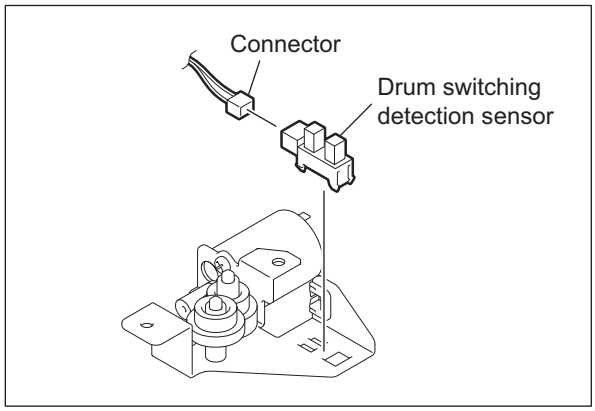


Fig. 12-50

12

12.6.17 K drum phase sensor (S44)

(1) Take off the plate.
📖 P.12-26 "12.6.16 Drum switching detection sensor (S19)"
(2) Disconnect 1 connector.
(3) Release 3 latches, and take off the K drum phase sensor.

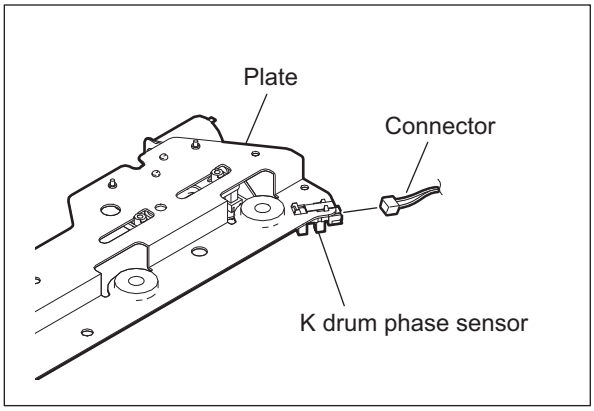


Fig. 12-51

12.6.18 Color drum phase sensor (S43)

(1) Take off the plate.
📖 P.12-26 "12.6.16 Drum switching detection sensor (S19)"
(2) Remove 1 gear and 1 pin of the C drum.
(3) Disconnect 1 connector.
(4) Release 3 latches, and take off the color drum phase sensor.

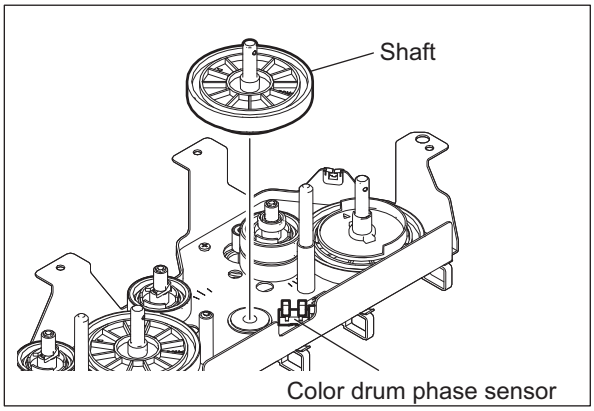


Fig. 12-52

Note:
When installing the actuator (disk), make sure that its triangle mark is facing in the same direction as the concave indentation of the gear.

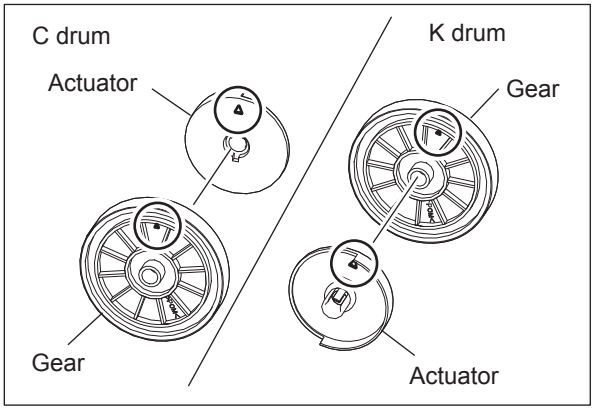


Fig. 12-53

12.7 Adjustment of the Process unit Related Section

12.7.1 High-Voltage Transformer Setting

The high-voltage transformers (PS-HVT-450) supply high-voltage to the parts related to charging, development, transfer and Discharging blade.
The high-voltage transformer has the following high-voltage outputs.

CH1	1	Main charger needle (Y)
	2	Main charger needle (M)
	3	Main charger needle (C)
	4	Main charger needle (K)
CH2	1	Main charger grid bias (Y)
	2	Main charger grid bias (M)
	3	Main charger grid bias (C)
	4	Main charger grid bias (K)
CH3	1	Developer bias (Y)
	2	Developer bias (M)
	3	Developer bias (C)
	4	Developer bias (K)
CH4	1	1st transfer roller bias (Y)
	2	1st transfer roller bias (M)
	3	1st transfer roller bias (C)
	4	1st transfer roller bias (K)
CH5	-	2nd transfer roller bias
CH6	1	Recovery blade bias (Y)
	2	Recovery blade bias (M)
	3	Recovery blade bias (C)
	4	Recovery blade bias (K)

Note:
Never move the variable resistance on the board since the output adjustment has been performed at the shipment for the high-voltage transformer supplied as a service part. Also do not perform the setting change when the high-voltage power supply is replaced.

13. DEVELOPER UNIT

13.1 General Description

The equipment has 4 process units (EPU: Electrographic Processing Unit). Each process unit consists of the drum cleaner unit and developer unit which are unified, and it corresponds to the image forming process of Y, M, C and K colors. This chapter describes the development (developer unit) which is a process of making toner adhere to the drum.
The developer material which is comprised of a mixture of toner and carrier, and is filled in the developer unit of each color. The toner is charged to a negative polarity and the carrier to a positive polarity, due to the friction with each other caused by mixing in the developer unit. The charged toner is supplied to the photoconductive drum surface by means of a magnetic roller, allowing it to adhere to the areas on the drum surface where the potential is lower than the developer bias which is applied to the magnetic roller. Through this process, the latent images are formed on the photoconductive drum surface.

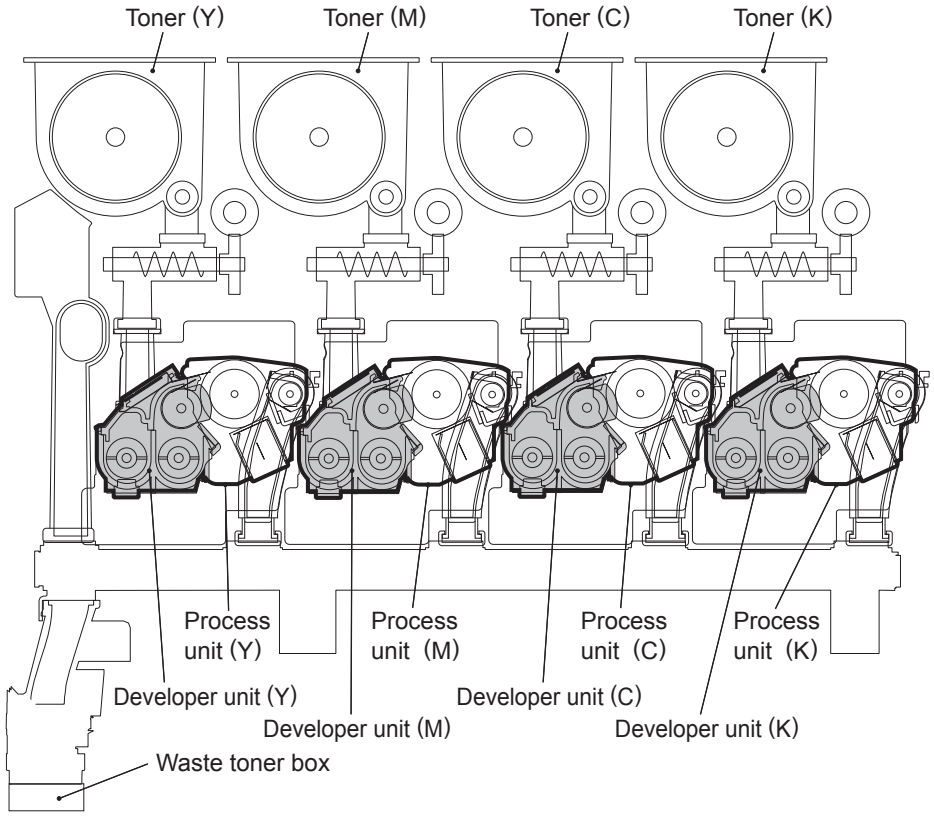


Fig. 13-1

13.2 Composition

Process unit (Y, M, C, K)	Drum cleaner unit		Ch.12
	Main charger unit		Ch.12
	Developer unit	Developer material	PM parts
		Developer filter	PM parts
		Mixer	
		Developer sleeve (Magnetic roller)	
		Doctor blade	
		Auto-toner sensor	S22, 23, 24, 25
Developer unit motor			M9

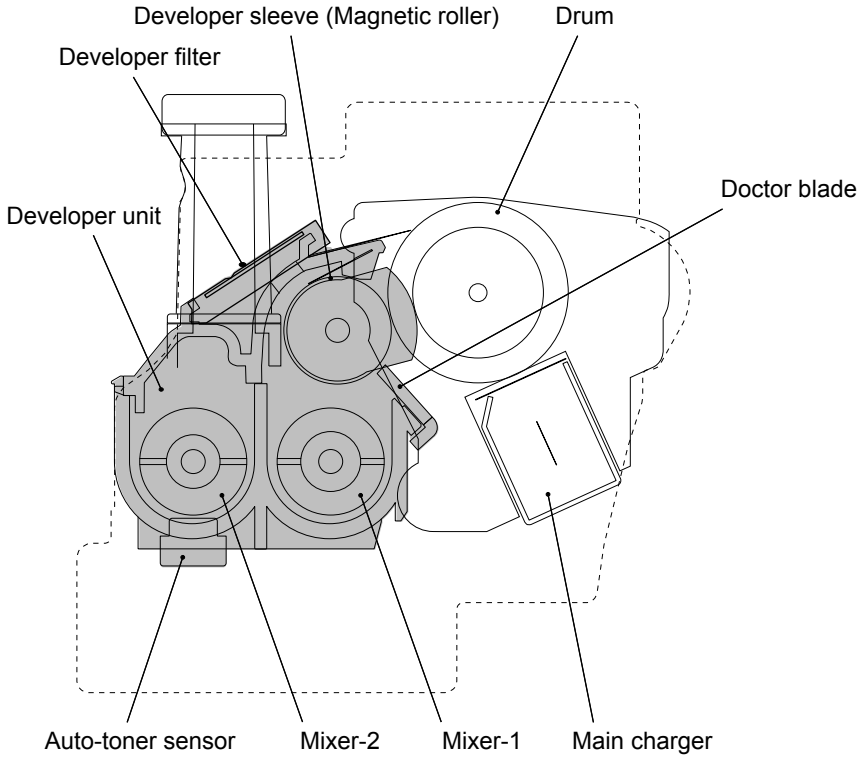


Fig. 13-2

13.3 Functions

1. Developer material
   The developer material consists of the carrier and toner. The carrier is made of electrically conductive ferrites which is 30-100 µm and the toner is made of the resin particle which is approx. 6.8 µm. Since the developer material deteriorates after a long time use, periodic replacements are needed.

2. Developer filter
   This filter equalizes pressure in the developer unit to prevent toner from blowing out of the unit.

3. Mixer
   The carrier and toner are frictionized each other when the developer material is stirred. Then the carrier is positively charged (+) and the toner is negatively charged (–), and the toner is adhered by the electrostatic force.

4. Developer sleeve (Magnetic roller)
   These aluminum rollers have magnets inside. The developer material is pulled by these magnets to form a magnetic brush. The magnets are fixed at their position so only the sleeve rotates. By this rotation, the developer material is transported to the developer sleeve.
   Then the magnetic brush formed at the developer sleeve sweeps over the drum surface and thus development is performed.

5. Doctor blade
   The doctor blade controls the amount of the developer material from the developer sleeve so that the magnetic brush of the developer material can contact with the drum surface properly.

6. Auto-toner sensor (S22, 23, 24, 25)
   To print out a precise image, the proportion (toner density ratio) of the carrier and the toner in the developer material needs to be always constant. The magnetic bridge circuit in the black auto-toner sensor detects the toner ratio in the developer material. This sensor supplies the toner from the toner cartridge.

7. Developer unit motor (M9)
   This motor rotates the Y, M, C, K developer units. The drive of the motor is transmitted to each developer unit by gears in the following 2 lines: Developer motor → K developer unit, developer motor → C developer unit → M developer unit → Y developer unit
   The one-way clutch is installed in the gear which links the drive. When the motor rotates normally, all the Y, M, C, K developer units rotate, when the motor rotates reversely, only the K developer unit rotates.

8. Toner motor (M2/M3/M4/M5)
   These motors drive the paddles and auger in the toner cartridge and transport the toner filled in the cartridge to the developer unit. Each toner cartridge of Y, M, C and K mounts one toner motor correspondingly.

9. Waste toner paddle motor (M6)
   This motor rotates the paddles mounted in the Waste toner box to level the Waste toner accumulated in the waste toner box. When the Waste toner paddle motor is locked by the Waste toner paddle motor lock detection sensor (S14), “Reboot the machine” appears. Also, if it is detected twice in a row, a service call (CD70) occurs.

10. Waste toner transport motor (M31)
    This motor rotates the auger in the waste toner transport unit, and transports the waste toner discharged from each developer unit of Y, M, C and K or the transfer belt cleaner unit to the waste toner box.

11. Auger lock detection sensor (S42)
    This sensor detects locking of the waste toner transport auger. When the waste toner transport auger stops rotating due to load growth and motor defects, this sensor detects locking.

12. Waste toner box full detection sensor (S13)
    This sensor is a transmissive sensor to monitor the edge of the Waste toner box. When the Waste toner box becomes full of Waste toner and the accumulated Waste toner shields the sensor path, this sensor detects that the Waste toner box is full.

13. Waste toner box
    This collects the residual toner scraped off on the drum surface by the cleaning blade and residual toner scraped off on the transfer belt by the transfer belt cleaning blade.

14. Waste toner cover open/close detection switch (SW8)
    This switch detects opening/closing of the waste toner cover. This has also a structure in which the cover cannot be closed if no toner box has been installed.

13.4 Electrical Circuit Description

13.4.1 Temperature/humidity detection circuit

The temperature/humidity detection circuit detects the temperature and humidity inside of the equipment by means of the corresponding sensor so that the printing quality is not changed due to their adverse influence where the equipment is set up, and corrects the output of the auto-toner sensor or similar according to the result.
The temperature/humidity detection circuit is composed as shown in the figure below. It converts the voltage of each analog signal output from the temperature/humidity sensor into a digital signal by means of the A/D converter on the LGC board. The lower the temperature and the higher the humidity, the higher the voltage of each analog signal output from the temperature/humidity sensor becomes.

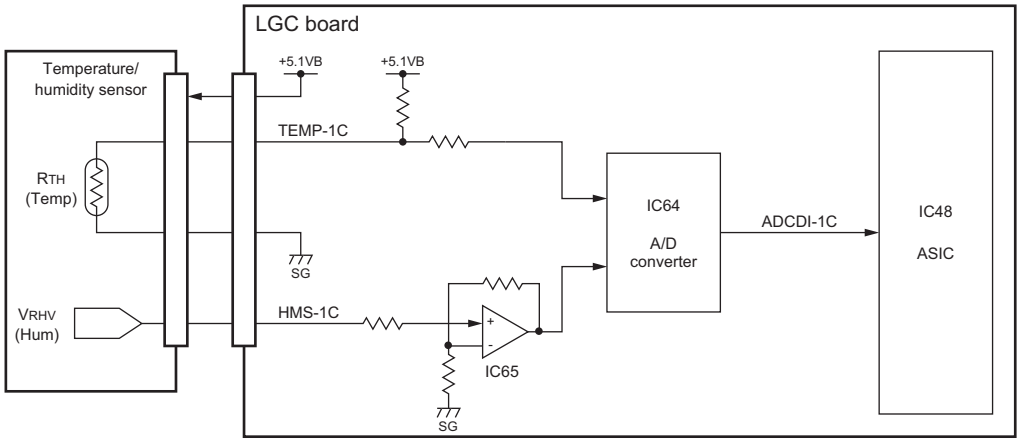


Fig. 13-3

Control signal

Signal	Function
TEMP-1C	Temperature detection signal (analog)
HMS-1C	Humidity detection signal (analog)

13.4.2 Toner motor control circuit

The toner motor is a DC brush motor driven by the control signal output from the ASIC on the LGC board and rotates the mixing paddle and toner supply auger in each toner cartridge.

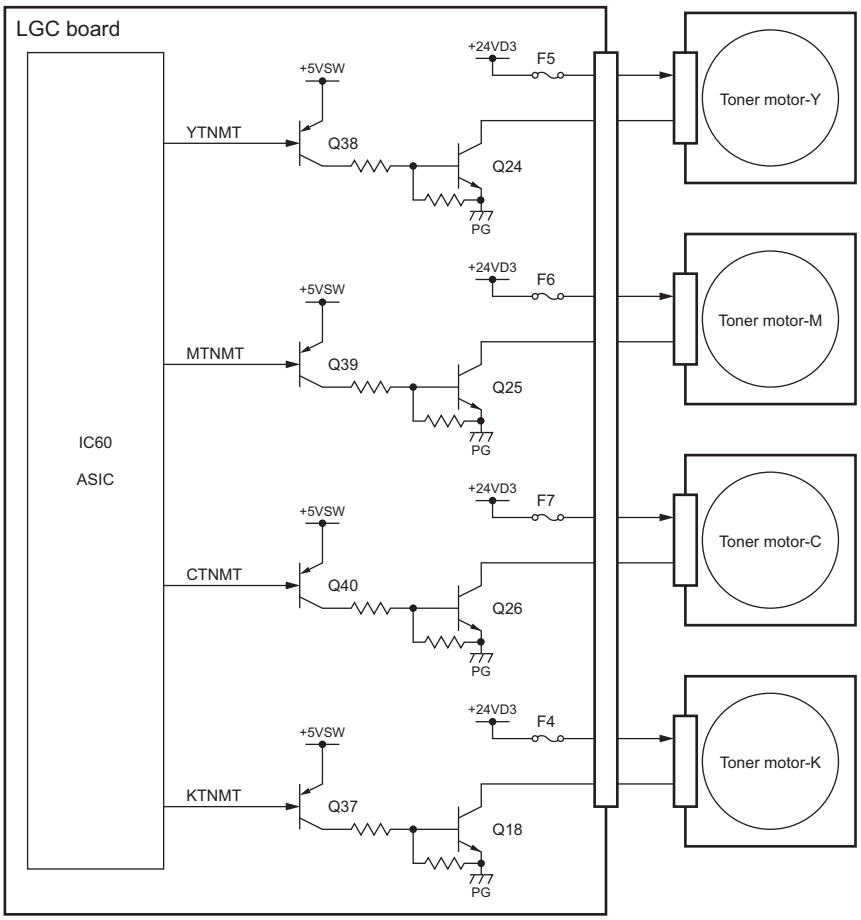


Fig. 13-4

Control signal

Signal	Function	Status	
		High level	Low level
YTNMT	Toner motor-Y ON signal	Stop	Rotate
MTNMT	Toner motor-M ON signal		
CTNMT	Toner motor-C ON signal		
KTNMT	Toner motor-K ON signal		

13.4.3 Waste toner transport motor control circuit

The waste toner transport motor is a DC brush motor driven by the control signal output from the ASIC on the LGC board and rotates the auger in the waste toner transport unit.

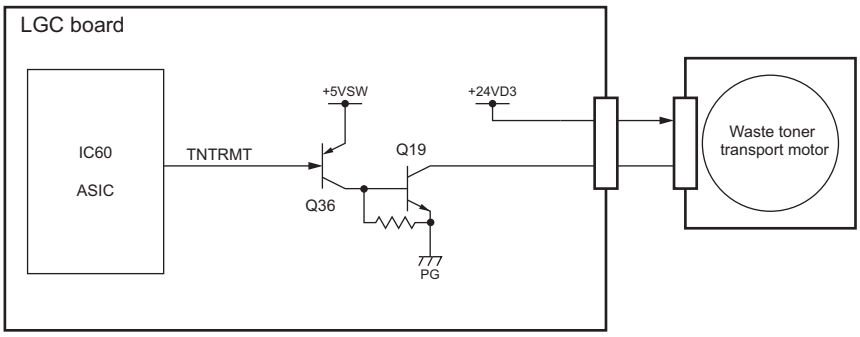


Fig. 13-5

Control signal

Signal	Function	Status	
		High level	Low level
TNTMRMT	Waste toner transport motor ON signal	Stop	Rotate

13.4.4 Waste toner paddle motor control circuit

The waste toner paddle motor is a DC brush motor driven by the control signal output from the ASIC on the LGC board and rotates the mixing paddle in the waste toner box.

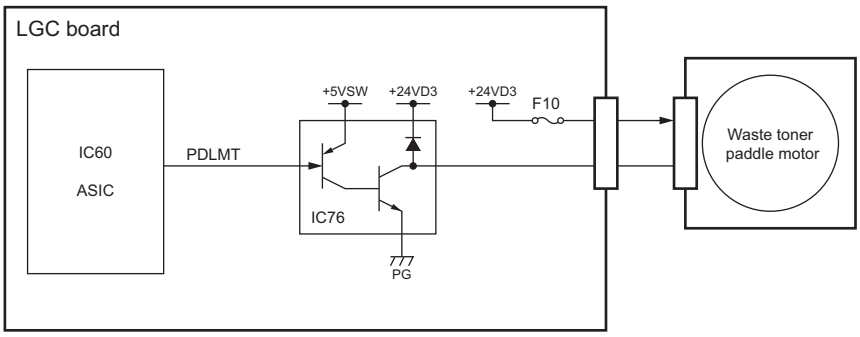


Fig. 13-6

Control signal

Signal	Function	Status	
		High level	Low level
PDLMT	Waste toner paddle motor ON signal	Stop	Rotate

13.4.5 Auto-toner Circuit

[1] General description

[1-1] Function of the auto-toner circuit

- Detects the toner density in the developer material for each color, and supplies toner when the density is lowered to a certain level.
- Detects that there is no toner left in the developer unit for each color.

[1-2] Configuration of the auto-toner circuit

- Auto-toner sensor (Y/M/C/K): Detects the toner density.

- Control section:
  Controls each section to keep the toner density of the developer material constant.

- Control panel:
  Displays a status that the toner cartridge is nearly empty.

- Toner supply section:
  Toner is supplied from the toner cartridge to the developer unit by the toner supply motor in this section.

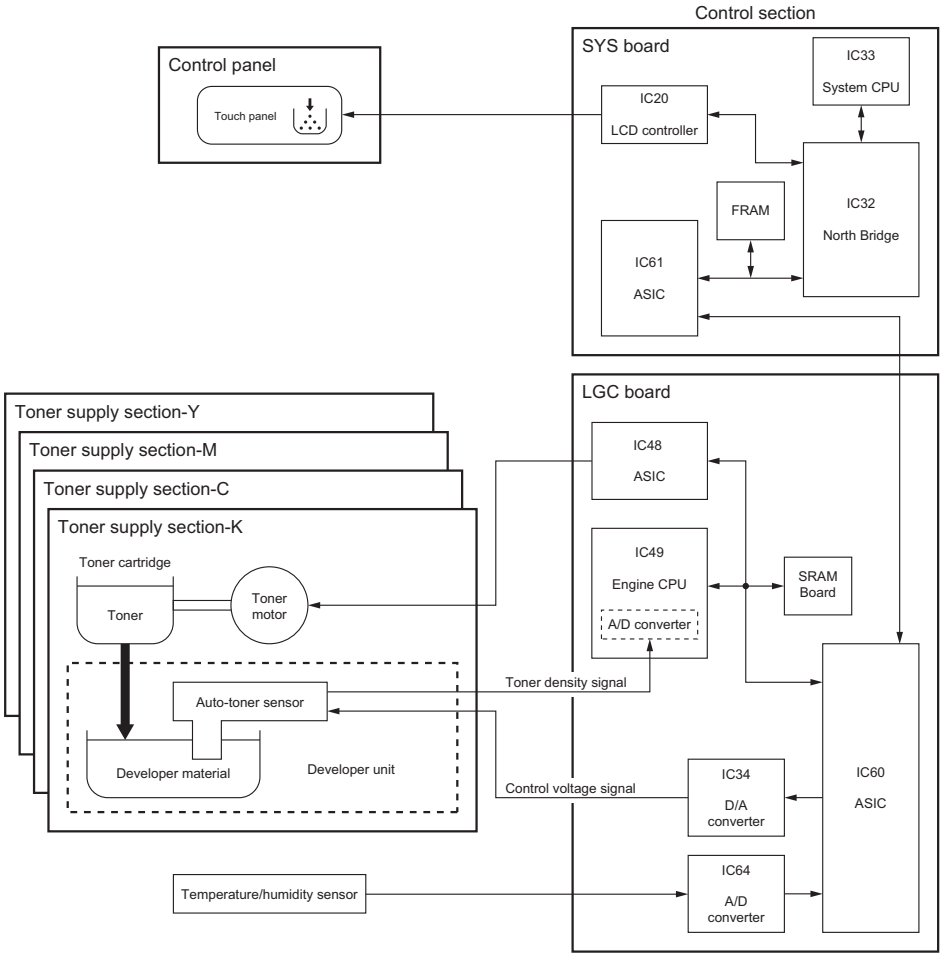


Fig. 13-7

[2] Operations of black auto-toner sensor

[2-1] Functions of the auto-toner sensor

- Initializing function: When unpacking and replacing the developer material
  The automatic adjustment is made so that the output of the auto-toner sensor will be 1.42 V to 1.99 V for the toner density of new developer material.

- Toner density stabilizing function: During the printing operation
  Through the following phases, the toner density is kept constant.
  Toner is consumed.
  → Toner density decreases.
  → Output change of the auto-toner sensor is detected depending on the humidity.
  → Drives toner motor.
  → Supplies toner to the developer unit from the toner cartridge.

- Toner-empty detection/clear function:
  Detects toner being empty in the toner cartridge.
  Drives toner motor.
  → Output of the auto-toner sensor is not changed.
  → Toner density is not changed.
  → Detects toner being empty.

  Toner-empty clear
  Drives toner motor.
  → Supplies toner from the toner cartridge.
  → Output of the auto-toner sensor changes.
  → Toner density recovers to its normal value.
  → “Toner-empty” is cleared.

[2-2] Auto-toner sensor control circuit

The auto-toner sensor is composed of the following circuits.

- Drive winding:
  Magnetic head (primary side) with a high-frequency magnetic field, which forms a magnetic circuit in the developer material

- Detection winding:
  Receiving the changes in the magnetic resistance of the developer material via a magnetic circuit (secondary side)

- DC conversion circuit:
- Converting the high-frequency output from the detection winding to a DC signal (auto-toner output ATSN)

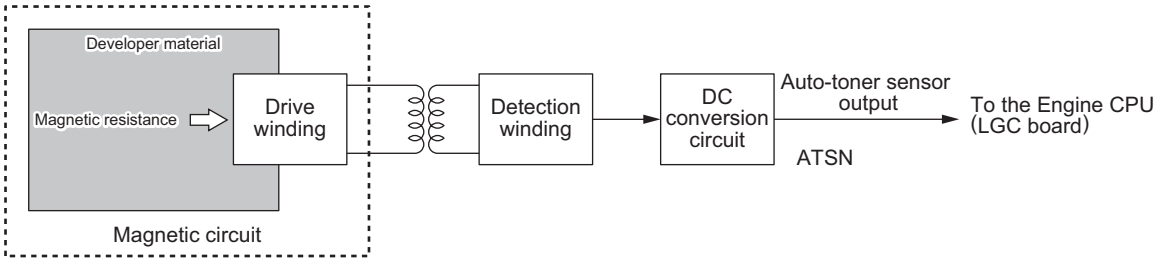


Fig. 13-8

- When the toner density is low:
  Toner ratio to the carrier in the developer material decreased
  → Magnetic resistance decreased
  → Detection output increased
  → Auto-toner output ATSN increased

- When the toner density is high:
  Toner ratio to the carrier in the developer material increased
  → Magnetic resistance increased
  → Detection output decreased
  → Auto-toner output ATSN decreased

13

13.5 Disassembly and Replacement

13.5.1 Waste toner box

(1) Open the waste toner cover.
(2) Pull out the waste toner box toward you until it comes to a stop.

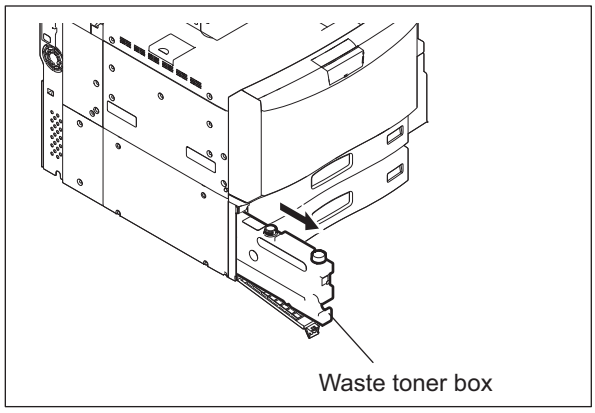


Fig. 13-9

(3) Attach a cap onto the waste toner recovery opening of the box.
(4) Hold the upper knob (A) of the waste toner box, and then take off the waste toner box.

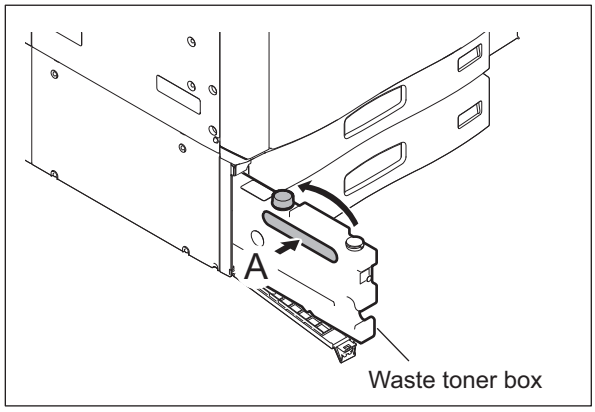


Fig. 13-10

13.5.2 Developer filter PM

(1) Take off the Developer unit.
📖 P.12-15 "12.6.3 Cleaning unit/ Developer unit"
(2) Push the protrusions on the both edges of the developer filter in the direction of the arrow, and then take off the developer filter by sliding it.

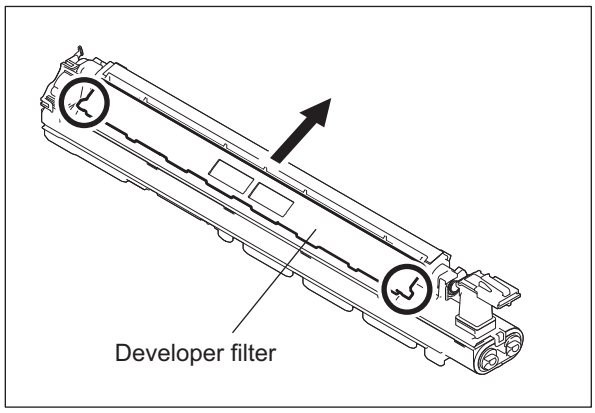


Fig. 13-11

13.5.3 Developer material PM

(1) Take off the Developer unit.
📖 P.12-15 "12.6.3 Cleaning unit/ Developer unit"

(2) Lift up the latch on the front side of the upper cover as shown in the figure A, and release it by pulling the toner supply section in the direction shown in the figure B.

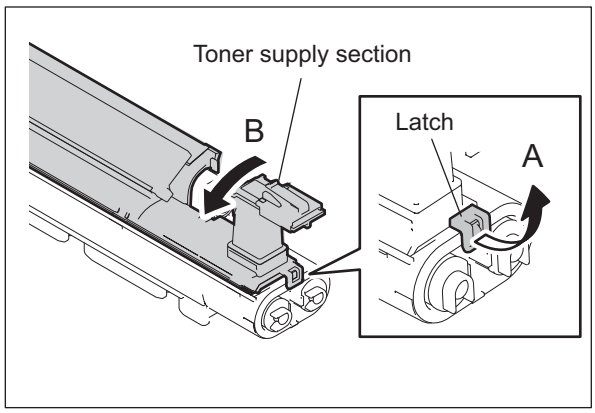


Fig. 13-12

(3) Insert the flat head screwdriver between the latch and the frame on the front side of the upper cover, and pull the toner supply section toward the front while turning the screwdriver in the direction of the arrow shown in the figure C to release the latch shown in the figure D.

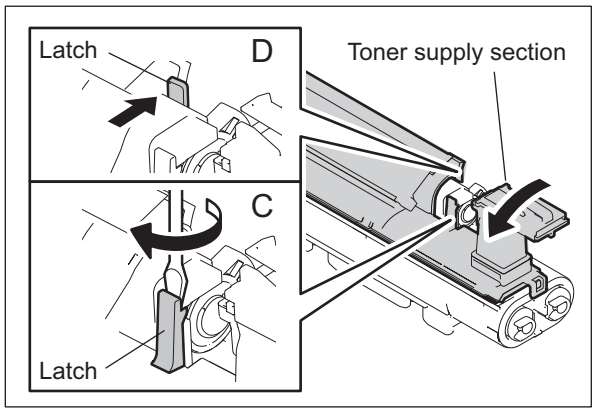


Fig. 13-13

(4) Insert the flat head screwdriver between the latch and the frame on the rear side of the upper cover as shown in the figure E, and release it by pulling down the screwdriver in the direction of the arrow in the figure to make a gap between the latch and the frame. The latch shown in the figure F is also released accordingly.

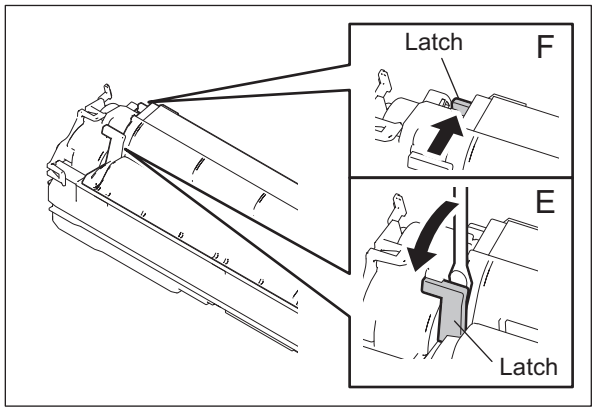


Fig. 13-14

13

(5) Take off the upper cover.

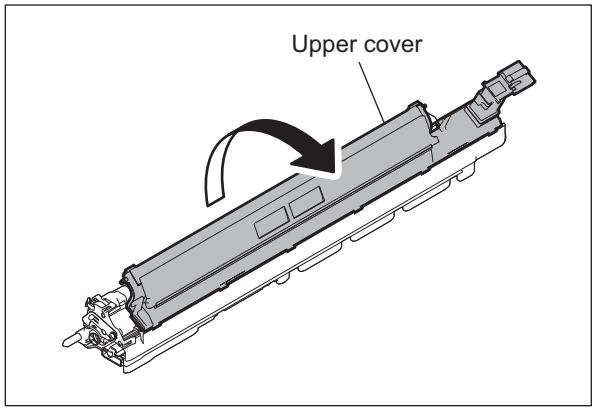


Fig. 13-15

(6) Discharge the developer material.

Notes:

- Make sure not to have developer material adhering to the drive gears or bushings.
- If the developer material on the developer sleeve is hard to come off, use a brush (jig) to clean it off.
  4407915710 BRUSH-33

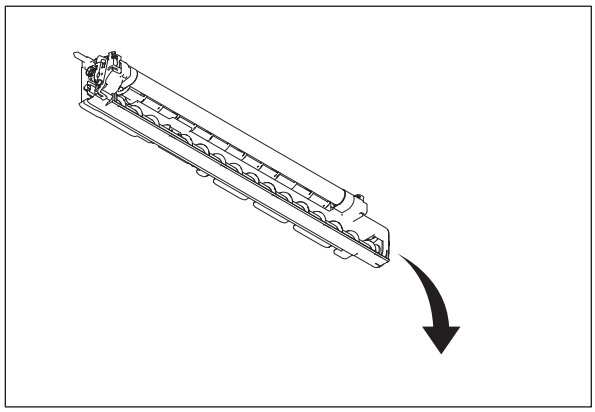


Fig. 13-16

(7) Shake the developer bottle and attach the nozzle to it.

(8) Fill up the mixer section under the developer sleeve with the developer.

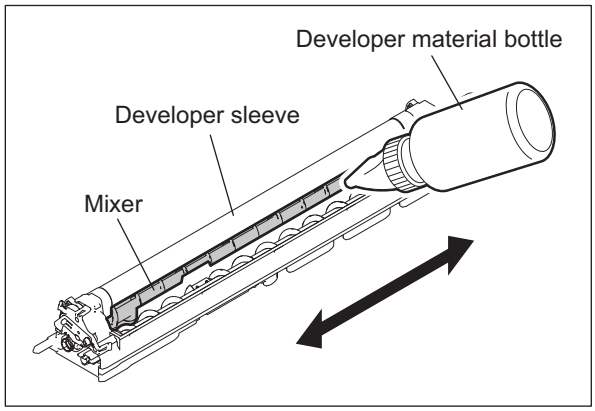


Fig. 13-17

(9) Rotate the knob in the direction described in the figure until the developer adheres on the surface of the developer sleeve evenly.

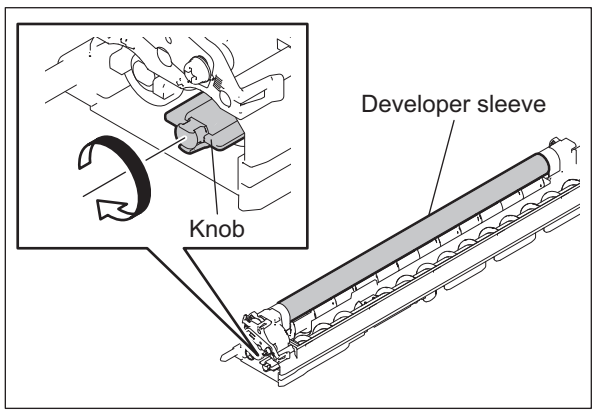


Fig. 13-18

(10) Lift up the rear side of the developer unit so that the developer material is moved to the front side of the mixer section under the developer sleeve.

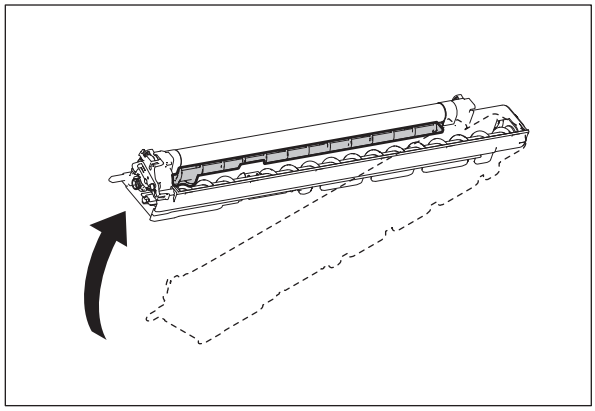


Fig. 13-19

(11) Fill up the mixer section under the developer sleeve with the developer again.

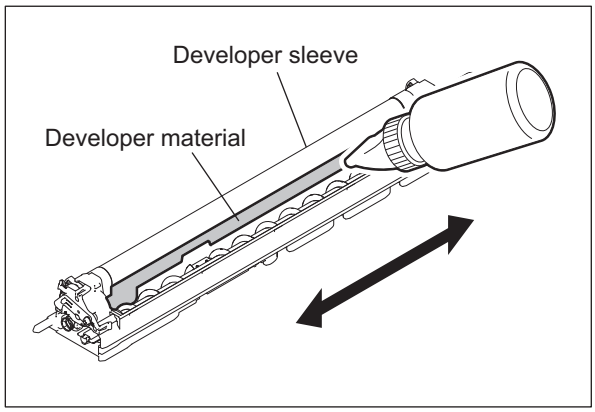


Fig. 13-20

(12) Fill the other mixer section with all the remained toner.

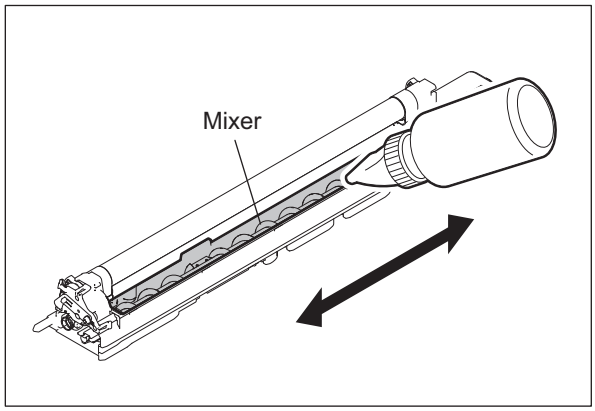


Fig. 13-21

Notes:

- Fill the developer material in the mixer section under the developer sleeve as much as possible.
- Check if the developer does not adhered to the joint of the upper cover indicated in the figure.

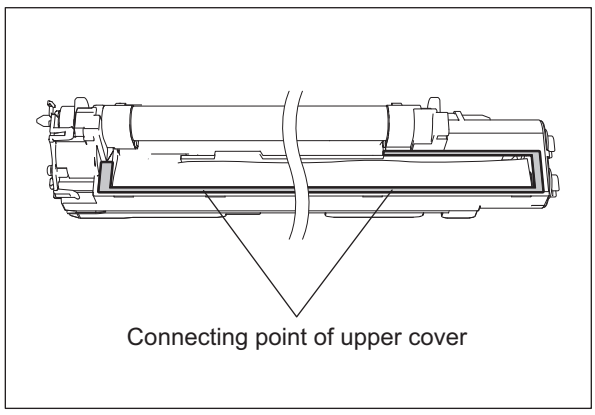


Fig. 13-22

(13) Fit the protrusions on the upper cover in the 6 concaves on the developer unit. Press each 2 portions on the front and rear side indicated by arrows to lock 4 latches while pushing the protrusions on the upper cover to the 6 concaves to fit them securely.

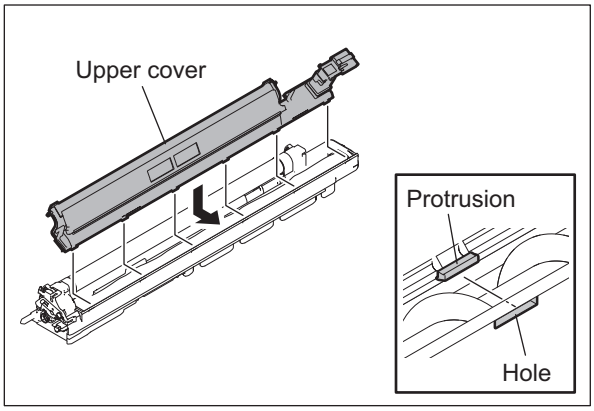


Fig. 13-23

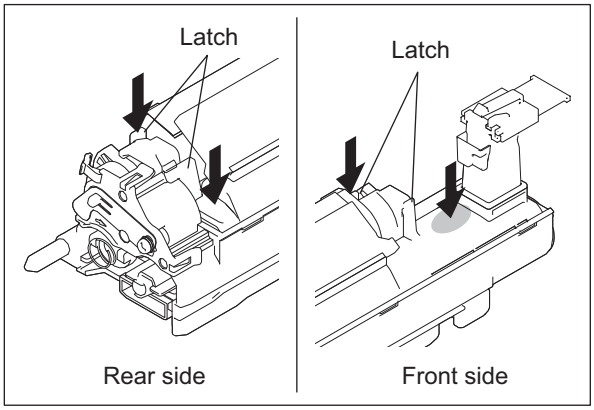


Fig. 13-24

(14) Press the portion indicated by the arrow in the figure to lock the front side latch of the upper cover.

Note:
After the installation, check that all the protrusions and latches are fitted and locked securely.

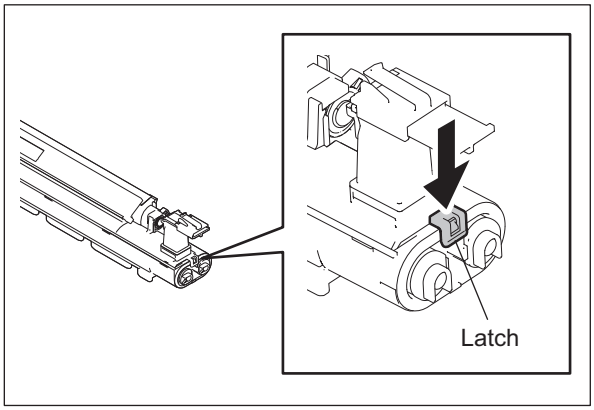


Fig. 13-25

13.5.4 Doctor blade

(1) Discharge the developer material.
📖 P.13-13 "13.5.3 Developer material"

(2) Remove the side seal (both front and rear sides).

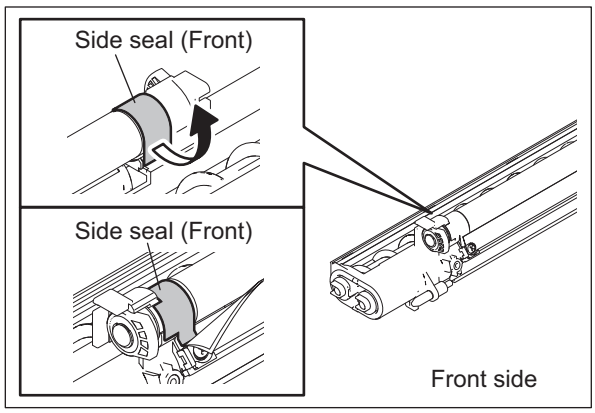


Fig. 13-26

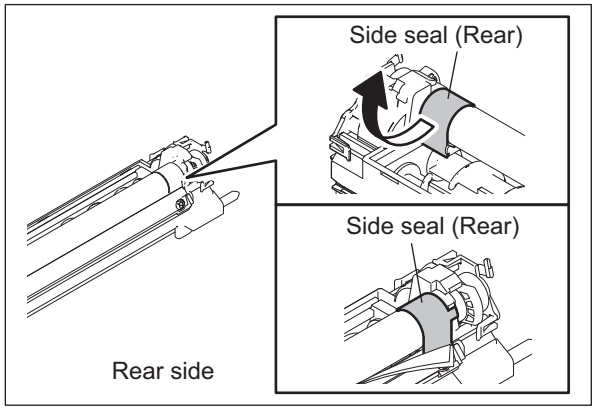


Fig. 13-27

(3) Remove 2 screws and take off the doctor blade.

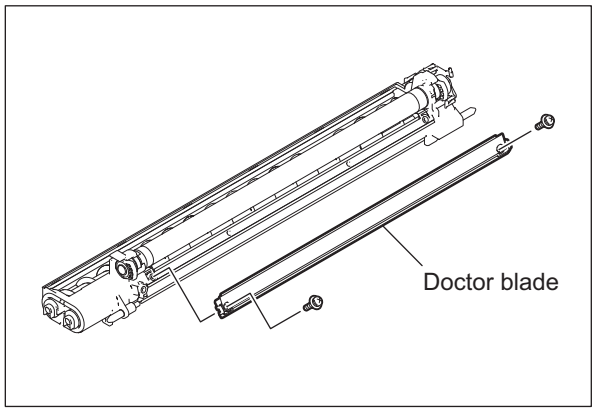


Fig. 13-28

13

Note:

When the side seal are being attached, attach them on the position shown in the figure (by slightly pushing it to the direction of the arrow).

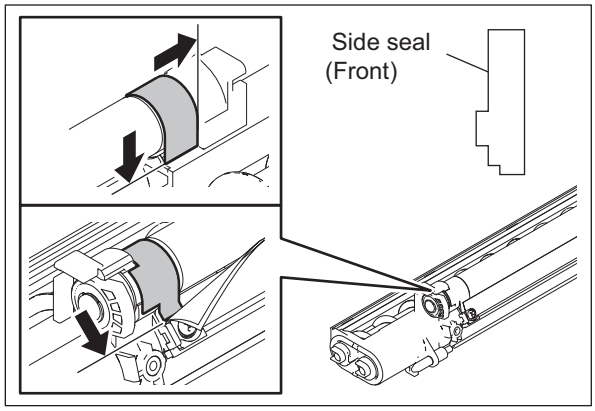


Fig. 13-29

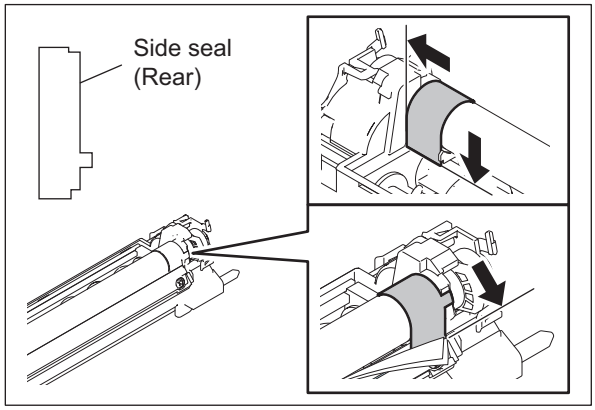


Fig. 13-30

13.5.5 Auto-toner sensor (S22, S23, S24, S25)

The auto-toner sensors are installed in the process units (EPU (Y, M, C, K)).

- Process unit (EPU (Y)): Auto-toner sensor (S22)
- Process unit (EPU (M)): Auto-toner sensor (S23)
- Process unit (EPU (C)): Auto-toner sensor (S24)
- Process unit (EPU (K)): Auto-toner sensor (S25)

(1) Take off the corresponding the process unit (EPU), and then take off the developer unit to remove the developer material out of the unit.
📖 P.12-12 "12.6.1 Process unit (EPU)"
📖 P.12-15 "12.6.3 Cleaning unit/ Developer unit"
📖 P.13-13 "13.5.3 Developer material"

(2) Remove 2 screws, and take off the duct.

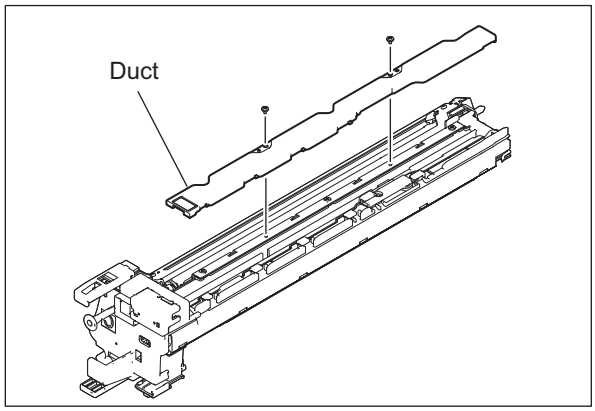


Fig. 13-31

(3) Disconnect the connector.

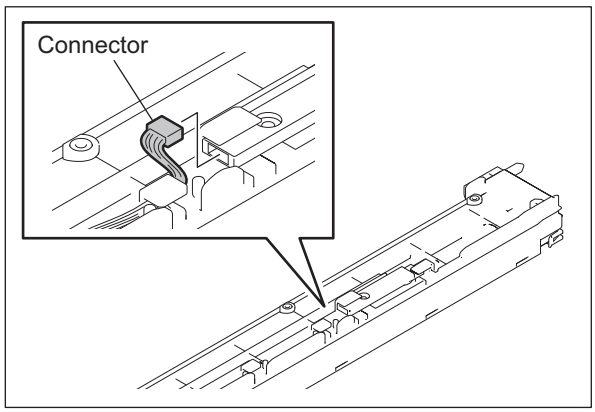


Fig. 13-32

(4) Hold the locking part to lift it up, and then turn the auto-toner sensor counterclockwise for 90 degrees to take it off.

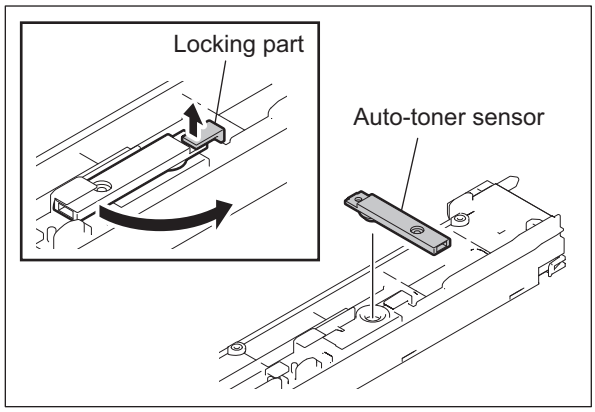


Fig. 13-33

13.5.6 Developer sleeve

(1) Take off the doctor blade.
📖 P.13-17 "13.5.4 Doctor blade"

(2) Rear side: Remove 1 screw and take off the polarity adjustment plate.

Note:
Before disassembling, record (mark if any) the scale pointed by the polarity adjustment lever. Then match the polarity adjustment plate at the scale previously recorded when reassembling.

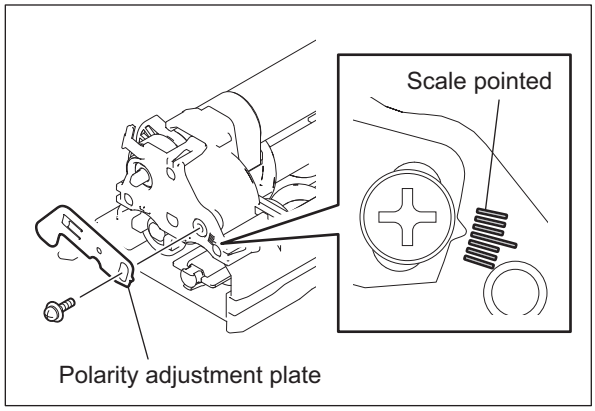


Fig. 13-34

(3) Release the 3 latches and take off the gear holder.

Note:
When installing the developer sleeve, match the positions of the idler gear shaft and the hole of the gear holder.

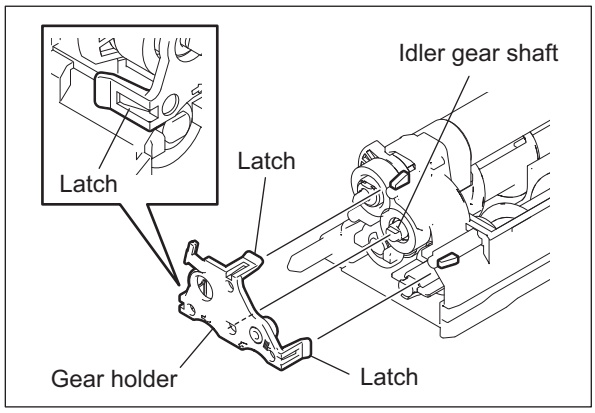


Fig. 13-35

(4) Remove the idler shaft and 2 idler gears, and then remove the parts installed on the developer sleeve shaft (in order of the C-ring, gear, developer guide, and bearing).

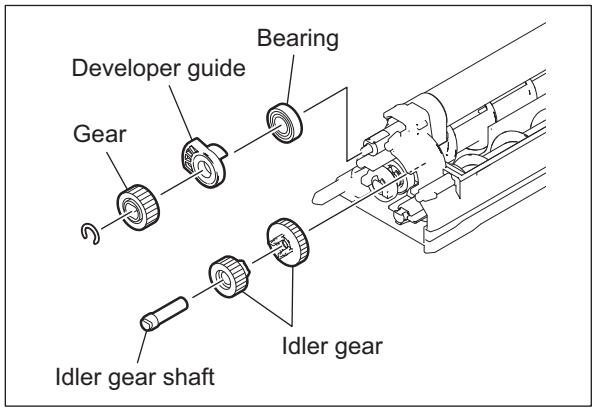


Fig. 13-36

(5) Rear side: Remove the parts installed on the developer sleeve shaft (the C-ring, developer guide, bearing and oil seal). Then take off the developer sleeve.

Note:

When installing, adjust the gap between the developer sleeve and the doctor blade.
P.13-37 "13.6.2 Adjustment of the doctor-to-sleeve gap"

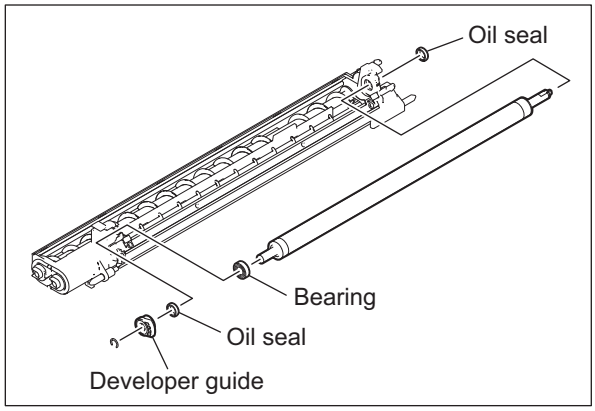


Fig. 13-37

Notes:

Be sure not to lose the oil seal left on the front side of the frame.

<<Procedure for replacing an oil seal>>

1. Take off the oil seal by hooking out its inside with a fine screwdriver and such.
2. Push in a new oil seal parallel to the frame, bushing and so on with paying attention to its direction (as shown y the figure at right).
3. Spread a minute amount of the grease (Alvania No.2) all around the inside diameter. Wipe off the grease which has run off to the inner side of the oil seal.

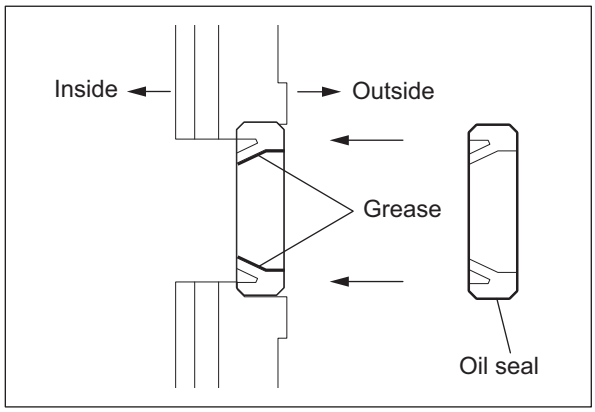


Fig. 13-38

13

13.5.7 Mixer

(1) Discharge the developer material.
📖 P.13-13 "13.5.3 Developer material"
(2) Rear side: Remove 1 screw and take off the polarity adjustment plate.

Note:
Before disassembling, record (mark if any) the scale pointed by the polarity adjustment lever. Then match the polarity adjustment plate at the scale previously recorded when reassembling.

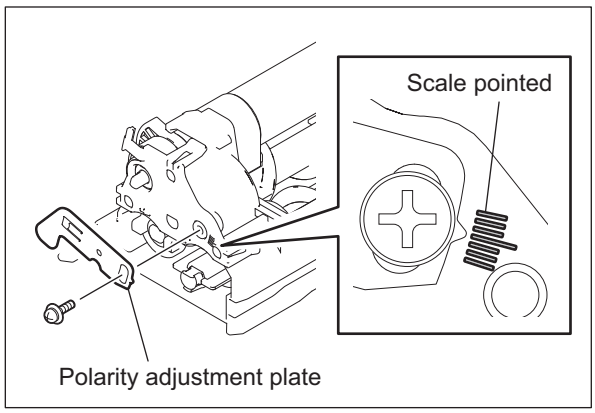


Fig. 13-39

(3) Release the 3 latches and take off the gear holder.

Note:
When installing the mixer, match the positions of the idler gear shaft and the hole of the gear holder.

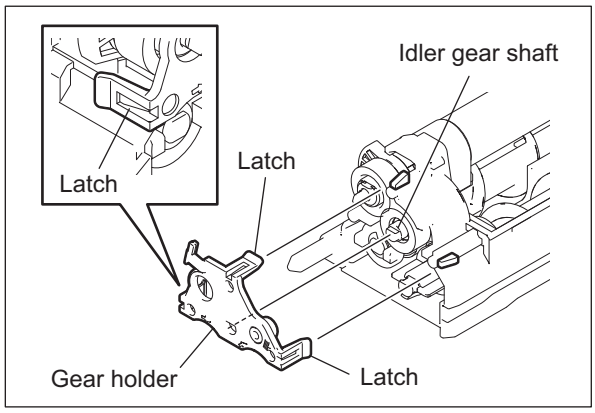


Fig. 13-40

(4) Remove 1 clip and take off the bushing and the spring.
(5) Remove 1 clip and take off the gear.
(6) Release the 1 latch and take off the gear.

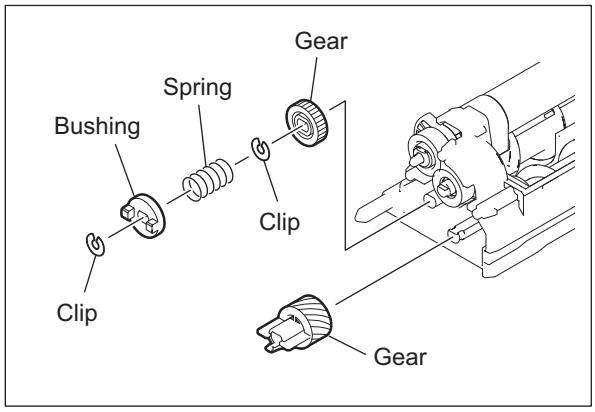


Fig. 13-41

(7) Front side: Remove 2 clips and take off the 2 bushings and the front bushing holder.

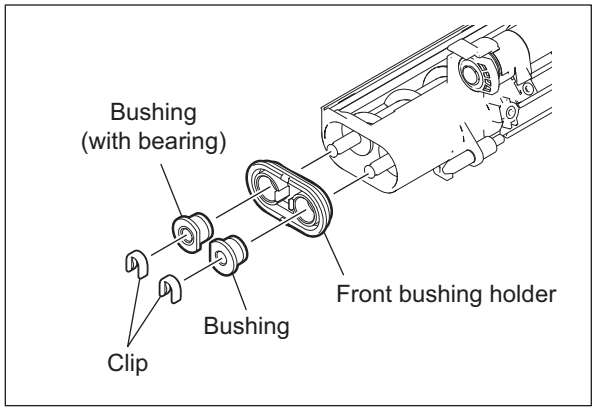


Fig. 13-42

(8) Take off the mixer from the hole of front side.

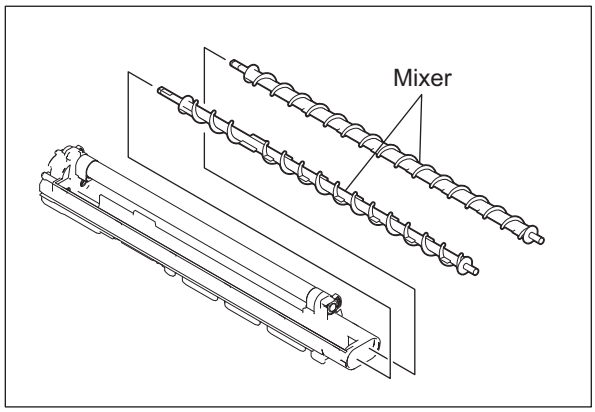


Fig. 13-43

13

13.5.8 Waste toner transport motor (M31)

(1) Take off the inner cover.
P.9-11 "9.4.1 Laser optical unit"

(2) Disconnect 1 connector. Remove 2 screws, and take off the waste toner transport auger drive unit.

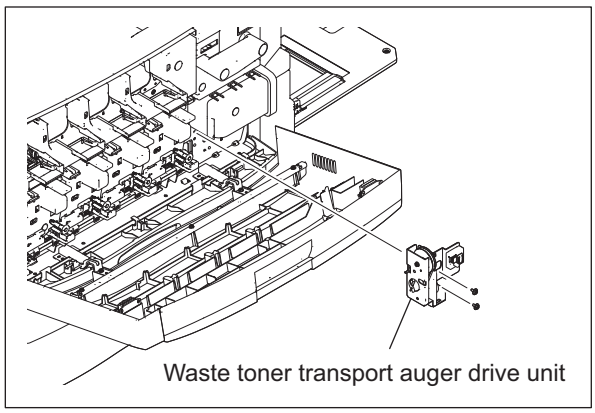


Fig. 13-44

(3) Remove 2 screws, and take off the bracket.

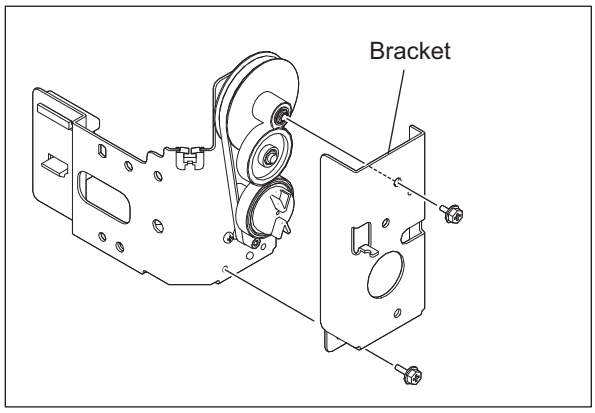


Fig. 13-45

(4) Remove 2 screws, and take off the belt. Then take off the waste toner transport motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

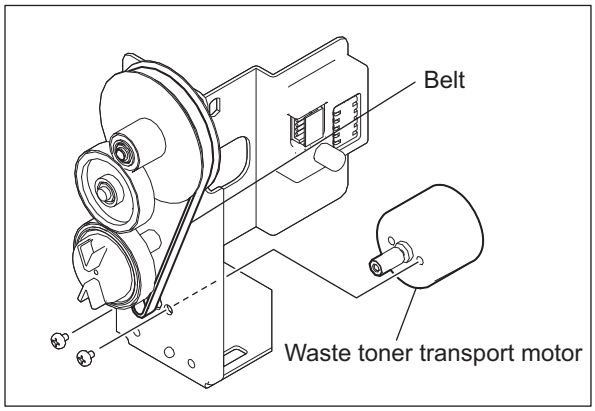


Fig. 13-46

13.5.9 Temperature / humidity sensor (S12)

(1) Take off the waste toner transport auger drive unit.
📖 P.13-24 "13.5.8 Waste toner transport motor (M31)"
(2) Release the 2 latches. Disconnect the 1 connector and take off the temperature / humidity sensor.

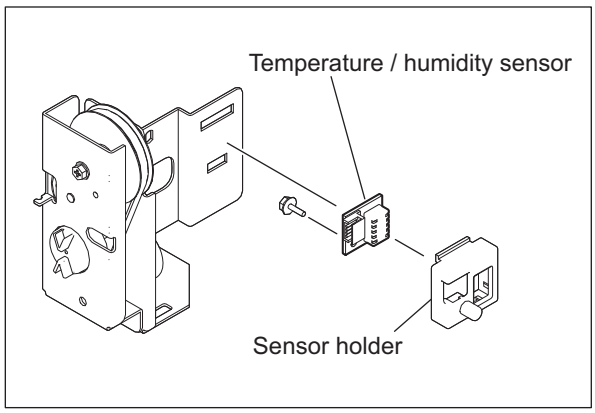


Fig. 13-47

13.5.10 Waste toner box full detection sensor (S13)

(1) Take off the waste paddle toner motor drive unit.
📖 P.13-27 "13.5.12 Waste toner paddle motor (M6)"
(2) Disconnect 1 connector.
(3) Release 3 latches, and take off the waste toner box full detection sensor.

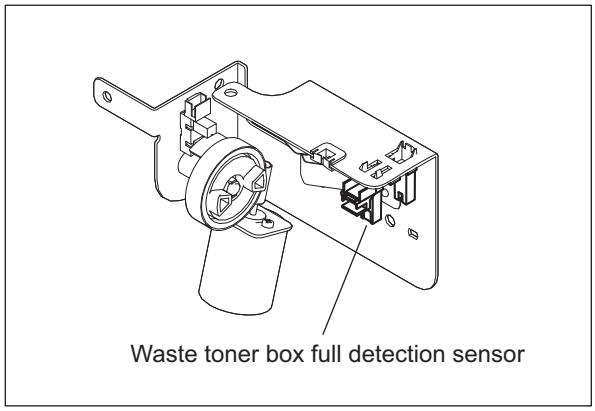


Fig. 13-48

13.5.11 Waste toner paddle motor lock detection sensor (S14)

(1) Take off the waste toner paddle motor drive unit.
📖 P.13-27 "13.5.12 Waste toner paddle motor (M6)"
(2) Release 2 latches, and take off the gear, coupling and spring.

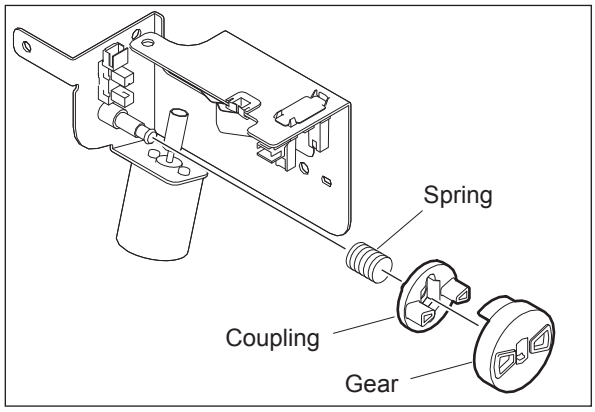


Fig. 13-49

(3) Disconnect 1 connector. Release 3 latches, and take off the waste toner paddle motor lock detection sensor.

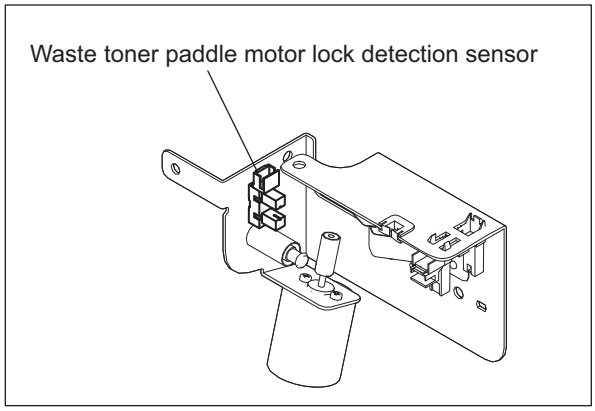


Fig. 13-50

13.5.12 Waste toner paddle motor (M6)

(1) Take off the waste toner box.
📖 P.13-12 "13.5.1 Waste toner box"
(2) Take off the left lower cover.
📖 P.3-29 "3.5.8 Left lower cover"
(3) Remove 6 screws, and take off the plate.

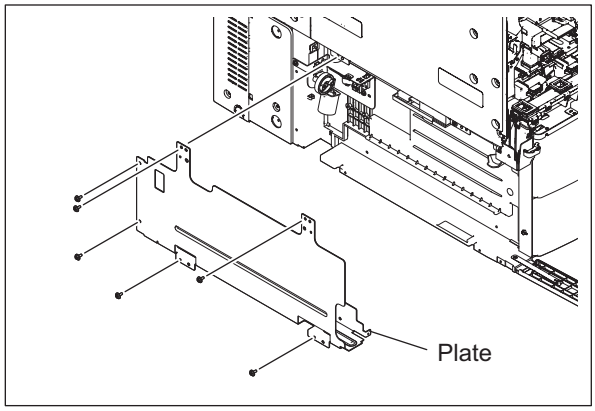


Fig. 13-51

(4) Disconnect 1 connector and remove 3 screws. Then take off the waste toner paddle motor drive unit.

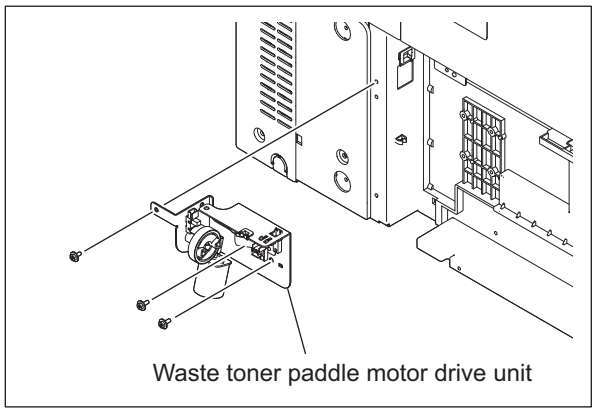


Fig. 13-52

(5) Disconnect 1 connector and remove 2 screws. Then take off the waste toner paddle motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

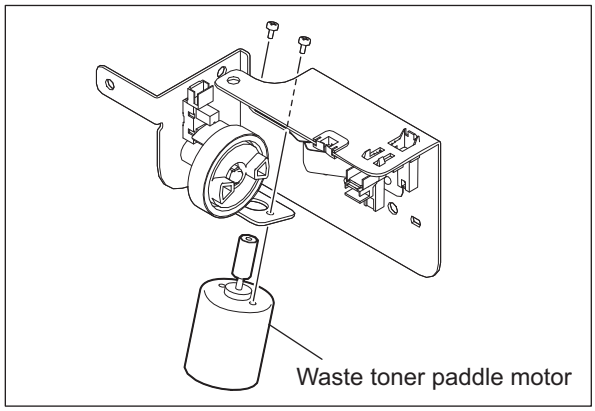


Fig. 13-53

13

13.5.13 Waste toner transport unit

(1) Take off the inner cover.
🕮 P.9-11 "9.4.1 Laser optical unit"
(2) Take off the plate.
🕮 P.13-27 "13.5.12 Waste toner paddle motor (M6)"
(3) Disconnect 1 connector.
(4) Remove 3 screws and release 6 hooks. Then take off the waste toner transport unit.

Note:
Be sure not to tilt the unit. This could make the toner spill out.

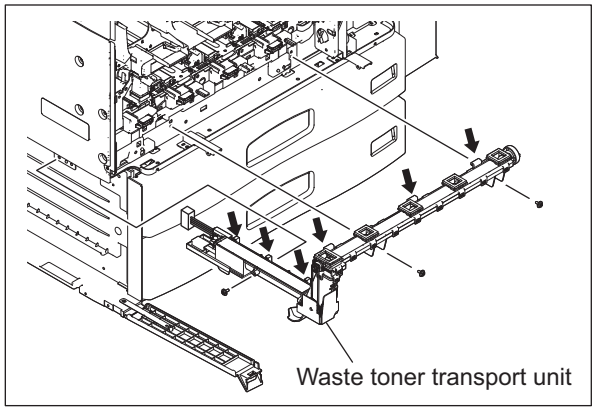


Fig. 13-54

13.5.14 Waste toner cover open/close detection switch (SW8)

(1) Take off the waste toner transport unit.
🕮 P.13-28 "13.5.13 Waste toner transport unit"
(2) Disconnect 1 connector. Release 2 latches, and take off the waste toner cover open/close detection switch.

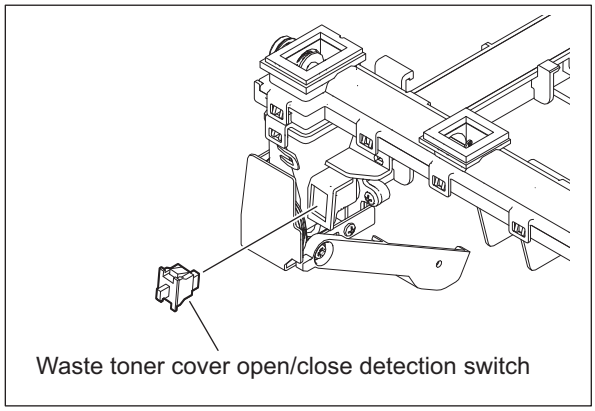


Fig. 13-55

13.5.15 Auger lock detection sensor (S42)

(1) Take off the waste toner transport unit.
🕮 P.13-28 "13.5.13 Waste toner transport unit"
(2) Release 1 latch, and take off the actuator.

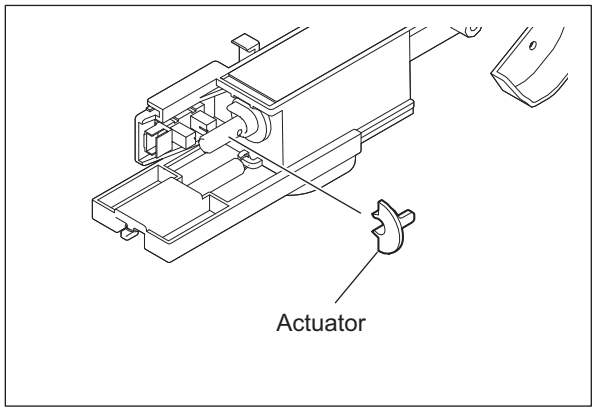


Fig. 13-56

(3) Disconnect 1 connector. Release 3 latches, and take off the auger lock detection sensor.

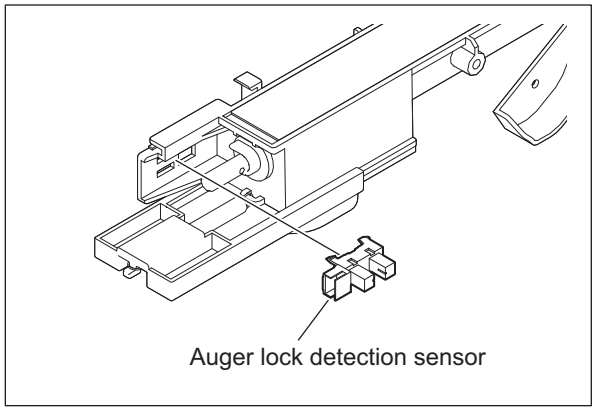


Fig. 13-57

13.5.16 Developer unit motor (M9)

(1) Take off the switching regulator.
📖 P.21-5 "21.1.8 Switching regulator"
(2) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(3) Remove 2 screws. Disconnect the 1 connector and take off the developer unit motor.

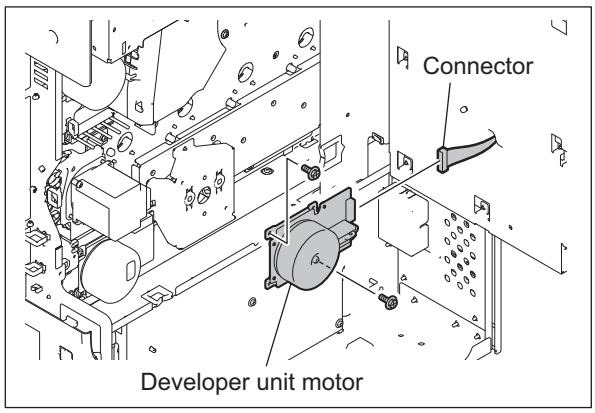


Fig. 13-58

13.5.17 Developer drive unit

(1) Take off the switching regulator and drum drive unit.
📖 P.21-5 "21.1.8 Switching regulator"
📖 P.12-23 "12.6.13 Drum drive unit"
(2) Remove 1 screw on the right side of the developer drive unit.

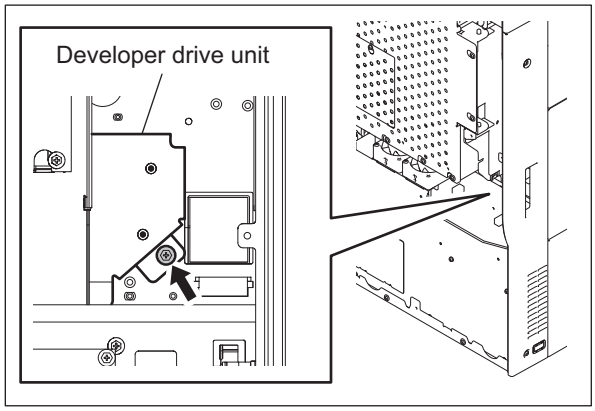


Fig. 13-59

(3) Disconnect the 1 connector on the developer unit motor.
(4) Remove 2 screws and take off the developer drive unit.

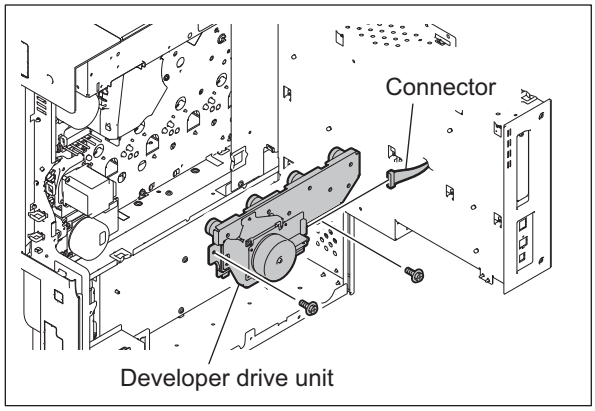


Fig. 13-60

13.5.18 Toner motor assembly

Dedicated toner motors and toner cartridge detection sensors which correspond to the process units (EPU (Y, M, C, K)) respectively are installed.

- Process unit (EPU (Y)): Toner motor (M2), Toner cartridge detection sensor (S8)
- Process unit (EPU (M)): Toner motor (M3), Toner cartridge detection sensor (S9)
- Process unit (EPU (C)): Toner motor (M4), Toner cartridge detection sensor (S10)
- Process unit (EPU (K)): Toner motor (M5), Toner cartridge detection sensor (S11)

Take off the corresponding toner motor assembly.

(1) Take off the tray back cover and transfer belt cleaning unit.
P.3-27 "3.5.3 Tray back cover"
P.14-11 "14.6.1 Transfer belt cleaning unit"

(2) Remove 2 screws and slide the toner cover to take it off.

Note:
When installing, make sure that 4 hooks are secured.

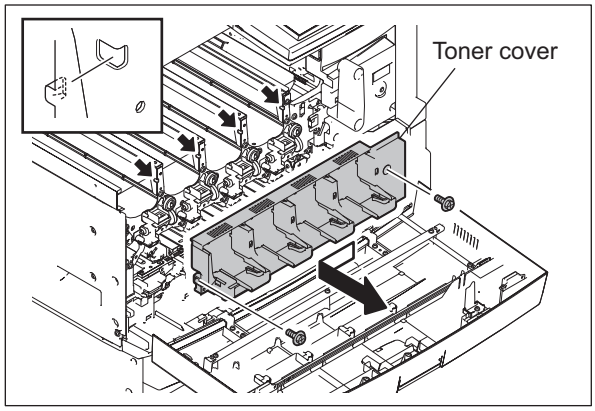


Fig. 13-61

(3) Remove 2 screws and take off the toner supply section.

Note:
Remove the toner supply section by turning it so that its notch and the rib of the toner transport gear are engaged.
Be careful not to scatter the toner inside the toner supply section.

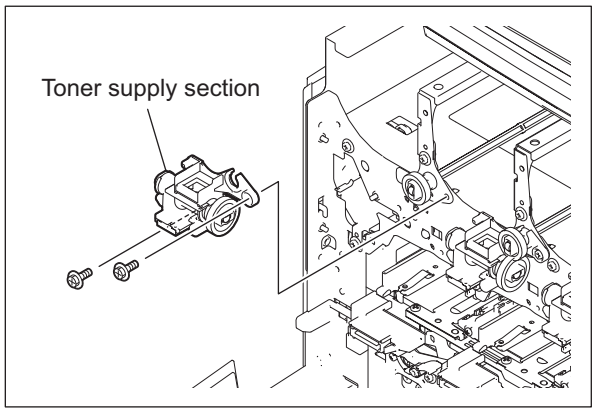


Fig. 13-62

(4) Remove 1 clamp, and then disconnect 1 relay connector.

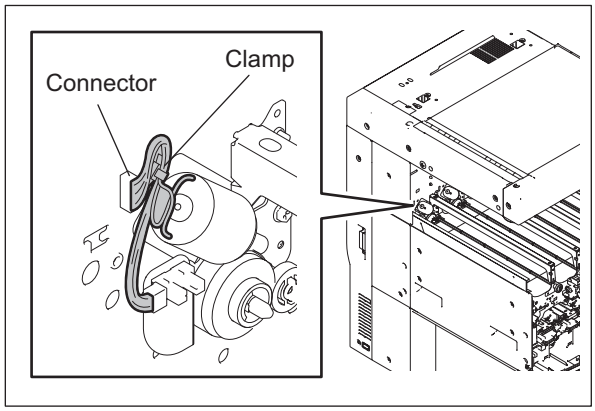


Fig. 13-63

13

(5) Remove 1 screw.
(6) Pull out the toner rod to the front of the equipment. Remove 1 clip and take off the toner motor assembly from the toner rod.

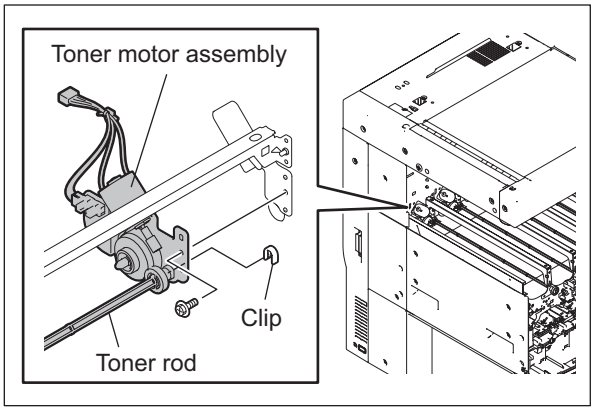


Fig. 13-64

13.5.19 Toner motor (M2, M3, M4, M5)

(1) Take off the toner motor assembly.
📖 P.13-31 "13.5.18 Toner motor assembly"
(2) Release the 2 latches and take off the gear.

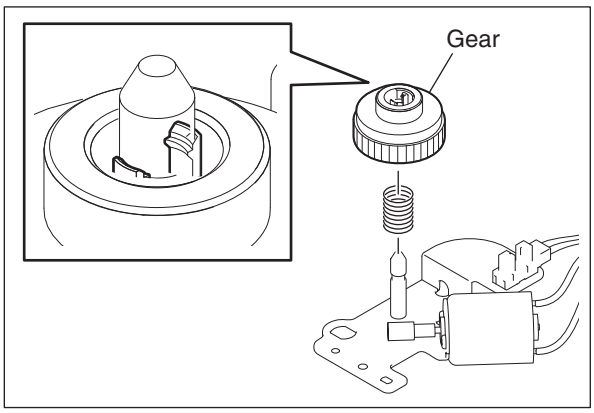


Fig. 13-65

(3) Remove 2 screws and take off the toner motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

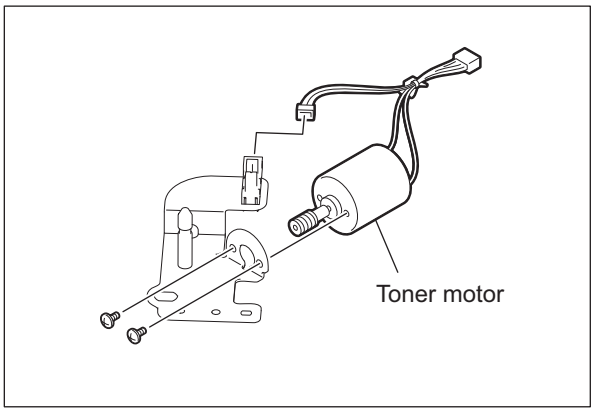


Fig. 13-66

13.5.20 Toner cartridge detection sensor (S8, S9, S10, S11)

(1) Take off the toner motor assembly.
📖 P.13-31 "13.5.18 Toner motor assembly"
(2) Disconnect 1 connector, and then release the latch to take off the Toner cartridge detection sensor.

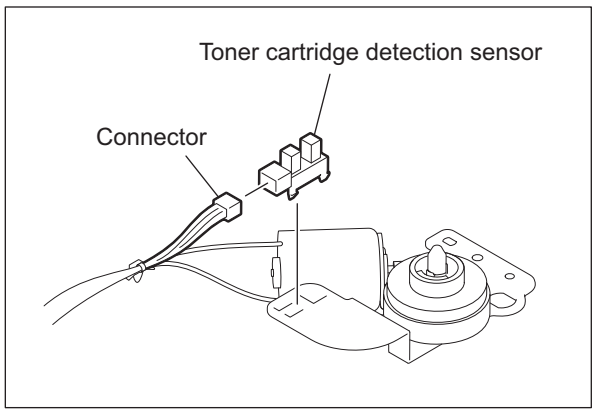


Fig. 13-67

13.5.21 Ozone filter-1 PM

(1) Remove 1 screw, and then take off the ozone filter-1.

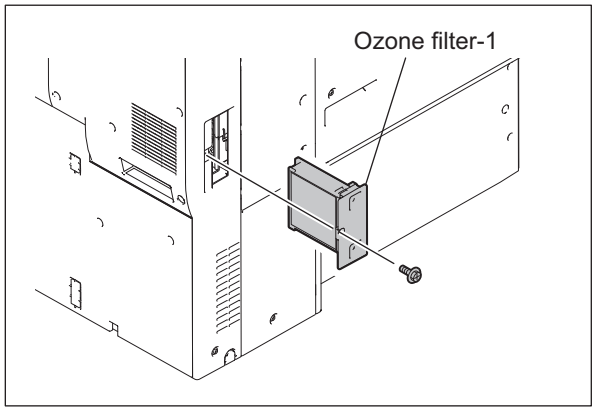


Fig. 13-68

13

13.5.22 EPU cooling fan (M33)

e-STUDIO4520C Only

(1) Take off the rear cover-2.
🕮 P.3-33 "3.5.19 Rear cover-2"
(2) Disconnect 1 connector, remove 1 screw, and take off the duct.

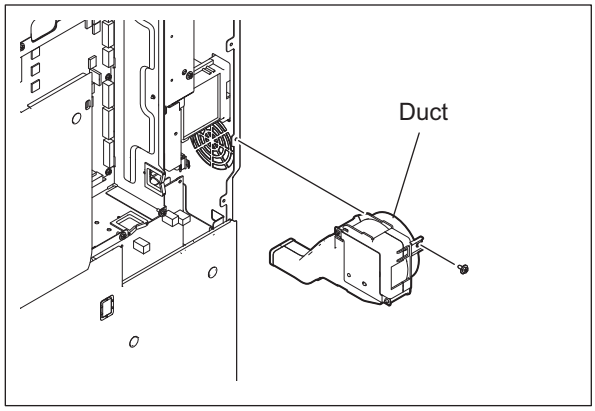


Fig. 13-69

(3) Remove 2 screws. Release 5 latches, and take off the EPU cooling fan.

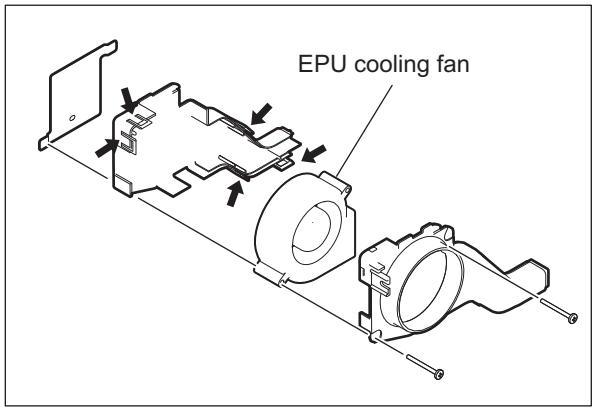


Fig. 13-70

13.5.23 Ozone exhaust duct

(1) Take off the EPU cooling fan.
🕮 P.13-34 "13.5.22 EPU cooling fan (M33)"
(2) Remove 1 screw. Disconnect the 1 relay connector, and then take off the ozone exhaust duct.

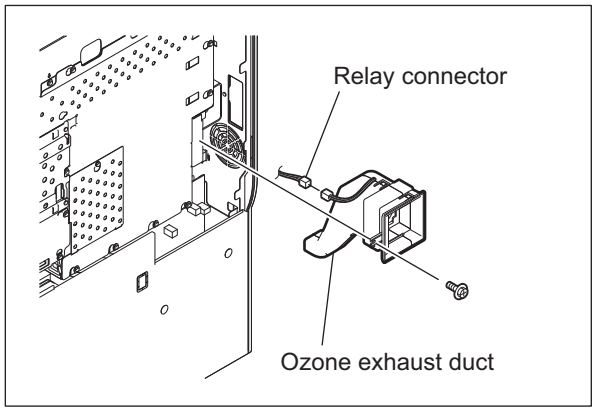


Fig. 13-71

13.5.24 Ozone exhaust fan (M24)

(1) Take off the ozone exhaust duct.
📖 P.13-34 "13.5.23 Ozone exhaust duct"
(2) Release the 6 latches and take off the ozone exhaust fan.

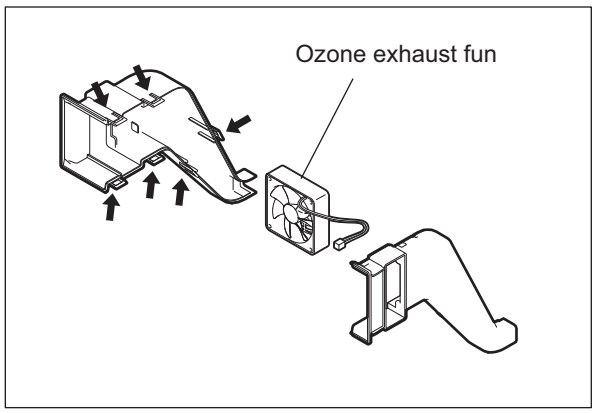


Fig. 13-72

13.5.25 Internal cooling fan (M23)

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Remove 2 screws. Disconnect 1 relay connector, and take off the internal cooling duct.

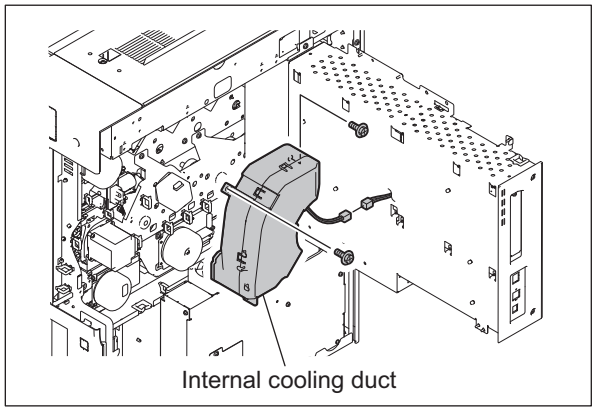


Fig. 13-73

(3) Release the 7 latches and take off the internal cooling fan.

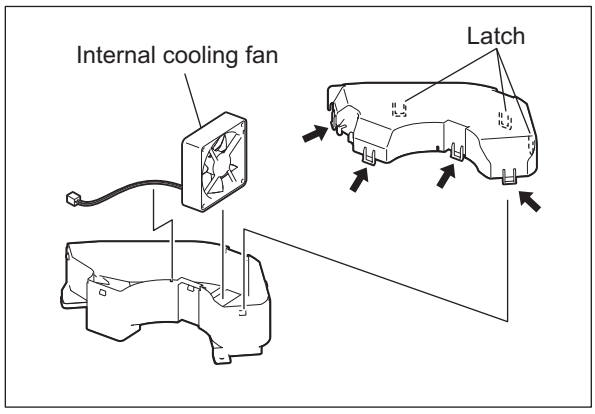


Fig. 13-74

13.5.26 Ozone filter-2 PM

(1) Remove 1 screw, and then take off the filter cover.

Note:
When installing the filter cover, be sure to install it with 2 hooks on the cover inserted to respective holes on the frame.

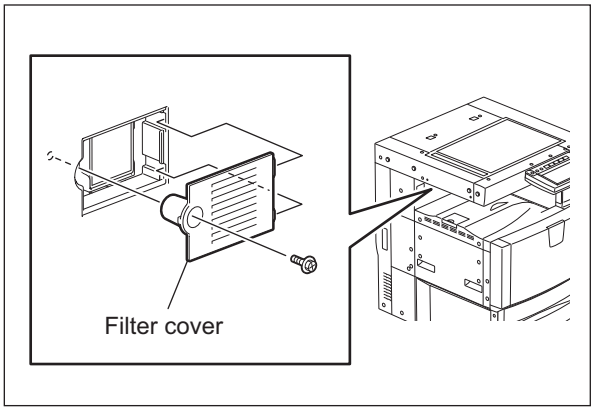


Fig. 13-75

(2) Remove the ozone filter-2.

Note:
When installing the ozone filter-2, be sure to insert it all the way in and be careful not to damage the mesh.

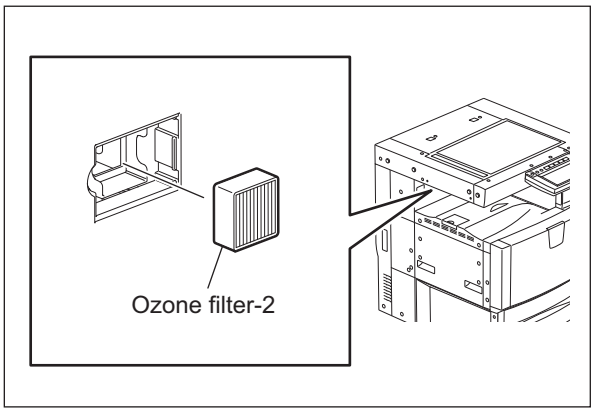


Fig. 13-76

13.6 Adjustment of the developer unit

13.6.1 Adjustment of the Auto-Toner Sensor

When the developer material is replaced, adjust the auto-toner sensor.
📖 P.8-9 "8.5.2 Adjustment of the Auto-Toner Sensor"

13.6.2 Adjustment of the doctor-to-sleeve gap

For the adjustment of the doctor-to-sleeve gap, perform the same procedure for the Y, M, C and K developer units.
Adjustment tool to use: Doctor-sleeve gap jig

<Adjustment procedure>

(1) Take off the process unit from the equipment.
(2) Take off the developer unit from the process unit.
📖 P.12-12 "12.6 Disassembly and Replacement"
(3) Take off the developer material cover. Then discharge the developer material.

Note:
While reattaching the developer material cover set the latches securely.

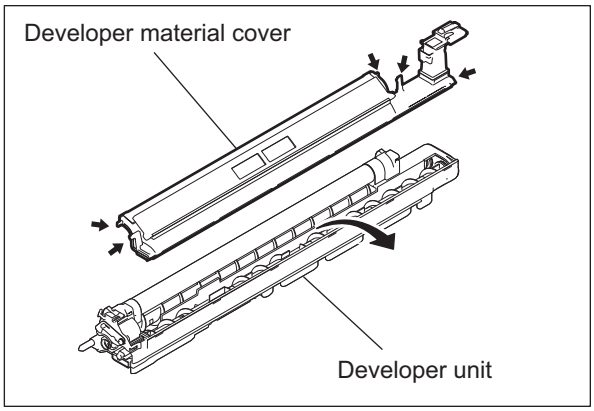


Fig. 13-77

(4) Loosen 2 doctor blade fixing screws.
(5) Insert the doctor-sleeve gap jig to adjust the gap.

- Using the sandblasted magnetic roller:
  Insert the gauge "0.65" of the doctor-sleeve gap jig between the developer sleeve and the doctor blade to adjust the gap, and tighten the screws.
- Using the knurled magnetic roller:
  Insert the gauge "0.70" of the doctor-sleeve gap jig between the developer sleeve and the doctor blade to adjust the gap, and tighten the screws.

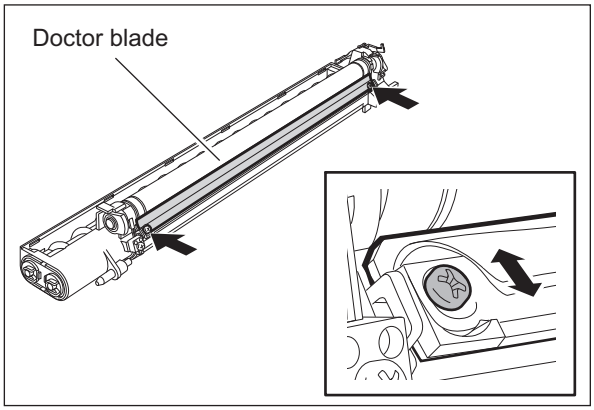


Fig. 13-78

Notes:

1. Flip up 2 protection sheets for the doctor blade from the sleeve before inserting the gauge. Also, be sure not to damage the protection sheets.

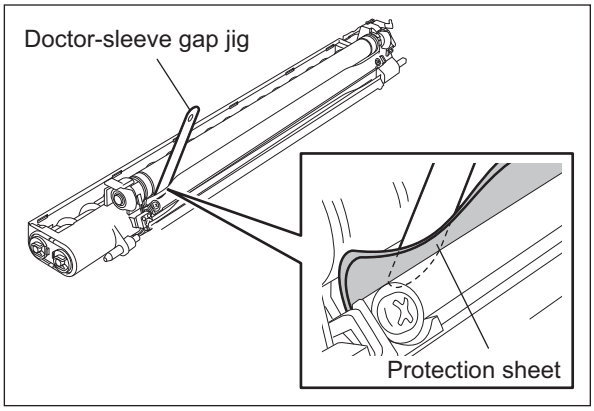


Fig. 13-79

2. When confirming and adjusting the gap between the developer sleeve and the doctor blade, insert the gauges into the gap after rotating the developer sleeve so that its marking faces the doctor blade.

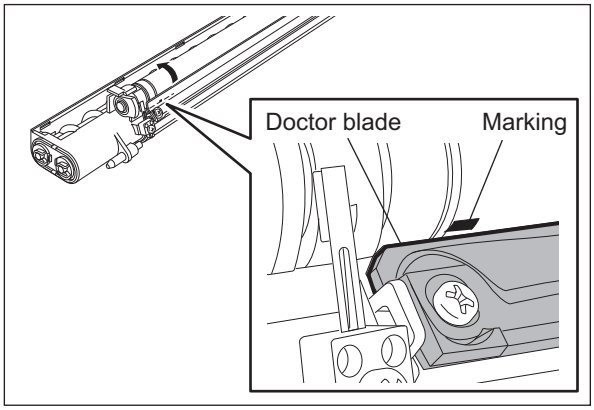


Fig. 13-80

(6)

- Using the sandblasted magnetic roller:
  Insert the gauge "0.60" of the doctor-sleeve gap jig between the developer sleeve and the doctor blade to make sure that the gauge can move smoothly in the front/rear direction and the gauge "0.70" cannot be inserted into the gap.

- Using the knurled magnetic roller:
  Insert the gauge "0.65" of the doctor-sleeve gap jig between the developer sleeve and the doctor blade to make sure that the gauge can move smoothly in the front/rear direction and the gauge "0.75" cannot be inserted into the gap.

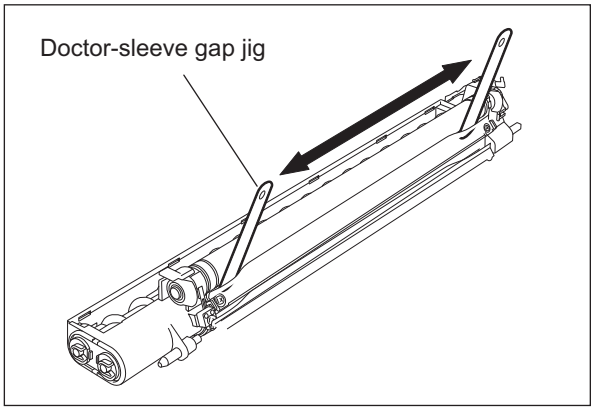


Fig. 13-81

14. TRANSFER UNIT

14.1 General Descriptions

Transfer is a process of decaling a toner image from the photoconductive drum onto paper.
A toner image formed on the photoconductive drum is temporarily transferred onto the transfer belt, and the toner image is then transferred from the transfer belt onto paper. The first transfer from the drum to the transfer belt is called the 1st transfer, and the second transfer from the transfer belt to paper is called the 2nd transfer. To form a color image, the images of yellow (Y), magenta (M), cyan (C) and black (K) are transferred and overlaid on the transfer belt in order, and then the overlaid images are transferred onto paper.
After the completion of the 2nd transfer, the residual toner on the transfer belt is scraped off by the transfer belt cleaning blade and then transported to the waste toner box.

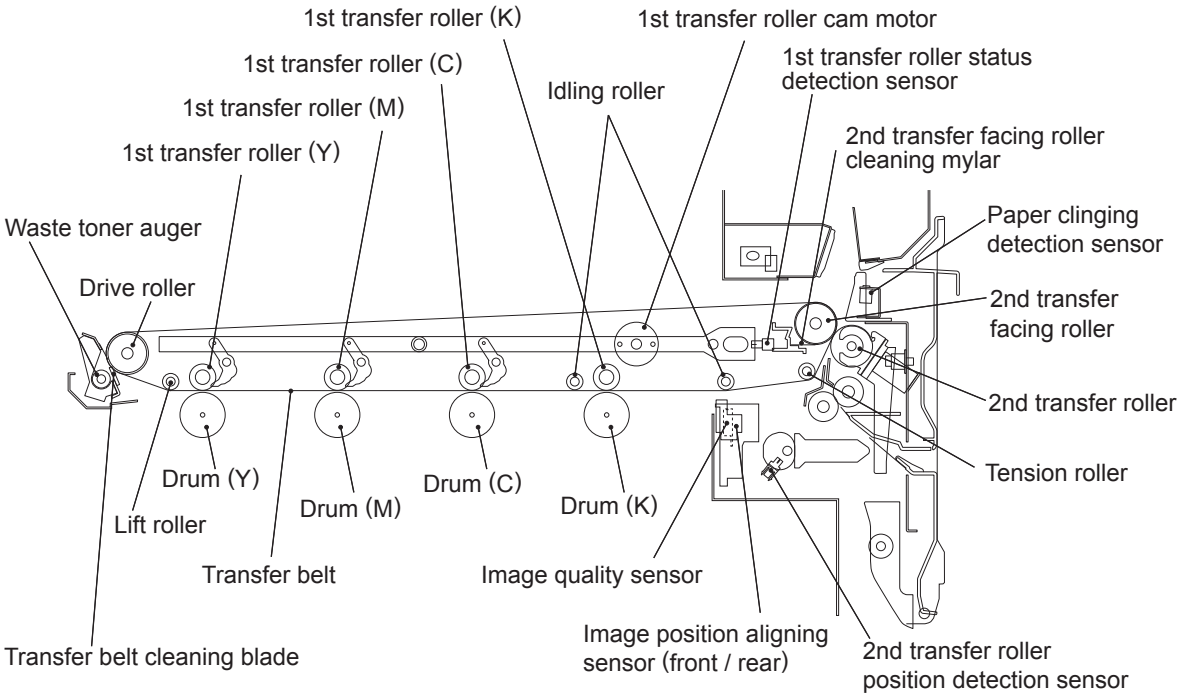


Fig. 14-1

14

14.2 Composition

Transfer belt unit	Transfer belt	
	1st transfer roller	Y, M, C, K
	Drive roller	
	Tension roller	
	2nd transfer facing roller	
	Lift roller	
	Idling roller	
	1st transfer roller cam motor	M8
	1st transfer roller status detection sensor	S15
	2nd transfer facing roller cleaning Mylar	PM parts
Transfer belt cleaning	Transfer belt cleaning blade	PM parts
	Waste toner auger	
Transfer belt motor		M7
2nd transfer unit	2nd transfer roller	PM parts
	2nd transfer roller position detection sensor	S29
	Paper clinging detection sensor	S27
Image position aligning sensor (front / rear)		S16 / S17
Image quality sensor		S18 (Chapter 15)
Registration motor		M19 (Chapter 11)

14.3 Functions

1. Transfer belt
   This belt, made of electrical resistance resin, is formed in a highly-precise technique. The drive of the transfer belt motor rotates the drive roller and thus the transfer belt is rotated.
   The length of the transfer belt may vary depending on environments such as temperature or humidity. When the belt length varies, the leading position of an image also varies. Therefore, check image position in the secondary scanning direction after installation or parts replacement because there is difference between the environments of an installation site and a factory where the equipment was shipped. (Although image adjustment is already performed at the shipment from the factory, this adjustment must be performed again in the installation site.) If required, perform “Leading edge position adjustment / Common items (05-408)”.
   📖 P.14-30 "14.7.1 Adjustment of the transfer belt due to environmental factors"

2. 1st transfer roller
   When the 1st transfer bias from the high-voltage transformer is applied to this roller, a toner image is transferred from the photoconductive drum onto the transfer belt. The spring of this roller presses the transfer belt and the photoconductive drum to contact each other.

3. Drive roller
   This roller rotates the transfer belt with the drive transmitted from the transfer belt motor. It also supports an easy contact between the transfer belt cleaning blade and the transfer belt.

4. Tension roller
   This roller applies tensile force to the transfer belt with its spring.

5. 2nd transfer facing roller
   This roller contacts with the 2nd transfer roller, holding the transfer belt between them to nip paper. When the 2nd transfer bias (negative polarity) is applied from the high-voltage power supply to the 2nd transfer facing roller, a toner image is transferred onto paper.
   To clean off the toner adhered on the 2nd transfer roller, positive bias is applied on the 2nd transfer facing roller to transport the positively charged toner on the 2nd transfer roller to the transfer belt, and then negative bias is applied to transport the negatively charged toner on the 2nd transfer roller to the transfer belt.

6. Lift roller
   This roller retains the contacting position of the transfer belt and the photoconductive drum. When only a black (K) image is being developed, the 1st transfer roller cam motor lifts up the 1st transfer rollers of yellow (Y), magenta (M) and cyan (C), together with this roller.

7. Idling roller
   This roller retains the contacting position of the transfer belt and the photoconductive drum.

8. 1st transfer roller cam motor (M8)
   This motor lifts up the 1st transfer rollers (Y), (M) and (C) when only a black (K) image is being developed. Installed in the transfer belt unit, this motor drives the cam and also moves the linked lever to lift up the 1st transfer rollers (Y), (M) and (C).

9. 1st transfer roller status detection sensor (S15)
   This sensor installed in the transfer belt unit detects the timing to apply brake on the 1st transfer roller cam motor, and also detects if the 1st transfer rollers are at their contacting or releasing position.

10. Transfer belt cleaning blade
    This blade removes the residual toner, paper dust or foreign objects on the transfer belt surface. It is pressed onto the transfer belt unit by its spring. The recovery blade and urethan seal prevent the removed residual toner or other objects from leaking out of the transfer belt cleaning unit.

11. Waste toner auger
    This auger transports the residual toner, paper dust or foreign objects scraped off by the transfer belt cleaning blade to the waste toner box.

12. Transfer belt motor (M7)
    This two-phase stepping motor drives the drive roller of the transfer belt unit and the waste toner auger.

13. 2nd transfer roller
    This metal roller, covered with sponge and an NBR tube, is located to face the 2nd transfer facing roller through the transfer belt. When the registration motor is rotated reversely, the drive from the registration motor is transmitted to this roller through the cam and arm, and thus this roller contacts with or releases from the transfer belt.

14. 2nd transfer roller position detection sensor (S29)
    This photointerrupter detects if the 2nd transfer roller is contacted with or released from the transfer belt.

15. Paper clinging detection sensor (S27)
    This sensor detects thin paper clinging to the transfer belt. When a sheet of thin paper which is not allowed in the specification is fed, this thin paper may cling to the transfer belt. The clung paper causes a service call because it cannot be removed in a normal jam releasing process. This sensor forestalls such case and helps to remove it as a normal paper jam.

14.4 General description of operation

14.4.1 Printing in the color modes

[A] 1st transfer

1. Printing starts and the photoconductive drums, developer units and transfer belt start the rotation.

2. The 1st transfer rollers (Y), (M) and (C) move to a position contacting with the photoconductive drum, with the transfer belt nipped between them.

3. A voltage is applied through the 1st transfer roller (Y) and a toner image on the photoconductive drum (Y) is transferred onto the transfer belt.

4. A voltage is applied through the 1st transfer roller (M) and a toner image on the photoconductive drum (M) is transferred onto the transfer belt to be overlaid on the toner image (Y).

5. A voltage is applied through the 1st transfer roller (C) and a toner image on the photoconductive drum (C) is transferred onto the transfer belt to be overlaid on the toner images (Y) and (M).

6. A voltage is applied through the 1st transfer roller (K) and a toner image on the photoconductive drum (K) is transferred onto the transfer belt to be overlaid on the toner images (Y), (M) and (C).

7. When the printing operation is completed, the 1st transfer rollers of Y, M and C move to a position released from the drum.

[B] 2nd transfer

1. The 2nd transfer roller waits at the position released from the transfer belt during the equipment's waiting period.

2. Printing starts and then the 2nd transfer roller moves to the position contacting with the transfer belt.

3. The transfer belt rotates and then a toner image on the transfer belt surface is moved to the 2nd transfer position.

4. The registration rollers align paper and then the paper is transported to the 2nd transfer roller.

5. A bias is applied to the 2nd transfer roller and then the toner image on the transfer belt surface is transferred onto the transported paper.

6. After the completion of the 2nd transfer, the 2nd transfer roller is escaped to the releasing position.

7. When the toner image has been transferred onto the paper in the 2nd transfer process, the residual toner on the transfer belt is scraped off by the transfer belt cleaning blade.

14.4.2 Printing in the black mode

[A] 1st transfer

1. Printing starts (The 1st transfer rollers (Y), (M) and (C) have moved to the position released from the photoconductive drum.)

2. The photoconductive drum (K), developer unit (K) and transfer belt start the rotation.

3. A voltage is applied through the 1st transfer roller (K) and a toner image on the photoconductive drum (K) is transferred onto the transfer belt.

4. Completion of printing.

[B] 2nd transfer

1. The 2nd transfer roller waits at the position released from the transfer belt during the equipment's waiting period.

2. Printing starts and then the 2nd transfer roller moves to the position contacting with the transfer belt.

3. The transfer belt rotates and then a toner image on the transfer belt surface is moved to the 2nd transfer position.

4. The registration rollers align paper and then the paper is transported to the 2nd transfer roller.

5. A bias is applied to the 2nd transfer roller and then the toner image on the transfer belt surface is transferred onto the transported paper.

6. After the completion of the 2nd transfer, the 2nd transfer roller is escaped to the releasing position.

7. When the toner image has been transferred onto the paper in the 2nd transfer process, the residual toner on the transfer belt is scraped off by the transfer belt cleaning blade.

14.4.3 Color registration control

In this equipment, color registration control method is used to correct any registration deviation in any of the four colors. This color registration control is performed during warming-up, and at fixed intervals (every 30 min.). The aim of controlling at fixed intervals is to correct deviation in the relative positions of the laser optical system components caused by the rise of the temperature inside the equipment after warming-up. However, there are cases such as when the equipment is turned ON again immediately after it is turned OFF, it may not be necessary to correct deviation in the relative positions of the laser optical system components caused by the rise of the temperature inside the machine after warming-up. For such cases, the temperature of the fuser belt (heat roller) is checked when the power is turned ON, and if it is within the allowable temperature range, color registration control at the warming-up will be omitted.
Also the temperature of drum (K) thermistor is checked at the fixed intervals (every 30 min.). If the difference between the temperature at the last color registration control and the current temperature is within the allowable range, color registration control will be omitted.

Color registration control is performed in the following order.

1. A built-in 4-color test pattern is printed on the transfer belt several times.*

2. This printed test pattern is read by the rear and front registration sensors each time to measure the amount of deviation between four colors.

3. The amount of deviation thus measured is arithmetically operated on by the microcomputer.

4. The deviation amount is judged from the result of calculation, and then the correction for the laser write position (correction of primary and secondary scanning deviation) and the tilt angle adjustment of laser beam reflection mirrors will be made.

5. After the correction is made, the amount of deviation is checked whether it is within-spec or not. If the value is within-spec, the color registration control will be completed, and if it is out-of-spec, the color registration control will be restarted from step 1).

   * After the test patterns are printed, if the specified number of data is unable to be read successfully, an error (CA00) is generated.

The test patterns for the 4 colors illustrated below are regarded as one set. Several sets are printed directly onto the transfer belt, and the pitch of the test patterns is measured by the color registration sensors.
Corrections will be made after four types of deviation are calculated according the measurement: parallel deviation in the secondary-scanning direction; deviation of write start position in the primary-scanning direction; deviation of reproduction ratio in the primary-scanning direction and tilt deviation

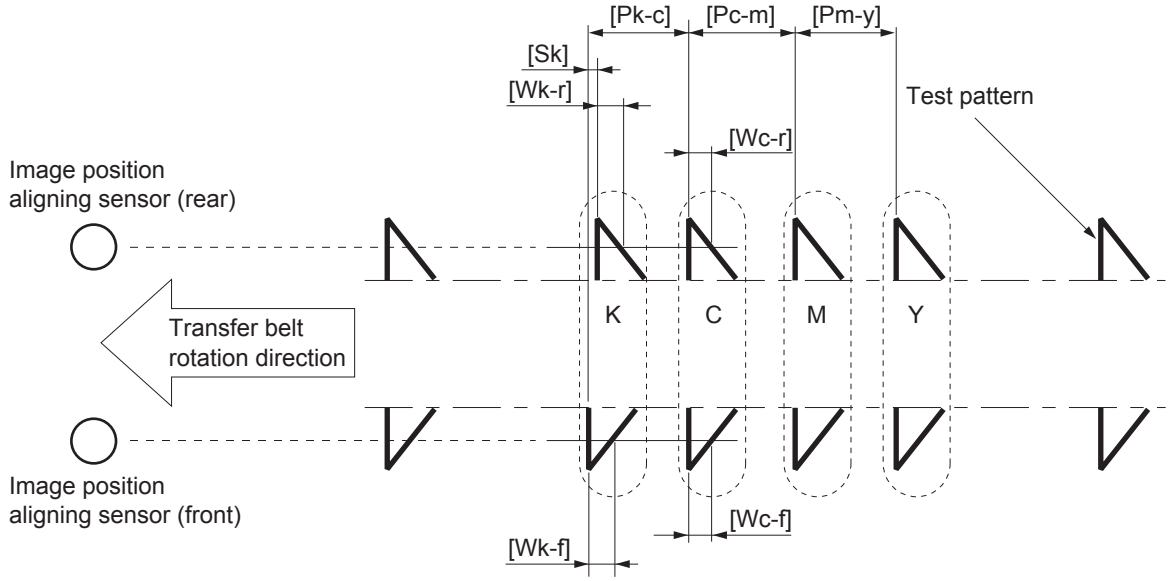


Fig. 14-2

Deviation	Measurement/Calculation Pitch (x=m, c, k)	Object of Correction
Parallel deviation in the secondary-scanning direction	[Pk-c], [Pc-m], [Pm-y]	Laser write start position (secondary-scanning direction)
Deviation of write start position in the primary-scanning direction	[Wx-r]-[Wy-r]	Laser write start position (primary-scanning direction)
Deviation of reproduction ratio in the primary-scanning direction	([Wx-r]+[Wx-f])-([Wy-r]+[Wy-f])	Image writing frequency
Tilt deviation	[Sx]	Angle of reflection mirror in the laser unit

Because the color registration control of the equipment optimizes the laser write start position to correct the deviation of 4 colors that appears uniformly on the paper, it cannot correct the following deviations that fluctuate.

- Deviation caused by drum rotation errors
  Deviation in the secondary-scanning direction of approximately 94 mm pitch caused by eccentricity of the driving parts from the drum motor to the drum, or etc.

- Deviation caused by fluctuations in transfer belt speed
  Fluctuating deviation in the secondary-scanning direction resulted from fluctuations in transfer belt speed caused by eccentricity of the driving parts from the transfer belt motor to the transfer belt drive roller, as well as by slippage between the transfer belt and the transfer belt drive roller

- Deviation caused by meandering of the transfer belt
  Fluctuating deviation in the primary-scanning direction caused by meandering of the transfer belt

14.5 Electric Circuit Description

14.5.1 Transfer belt motor control circuit

The transfer belt motor is a stepping motor driven by the control signal output from the ASIC on the LGC board and rotates the drive roller.
The transfer belt motor is driven by the pulse signal (TBMA, TBMB, TBMC, TBMD) output from the motor driver. These pulse signals are formed based on the reference clock (TBMCK) and output only when the enable signal (TBMEN) is a high level. Also, the rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.

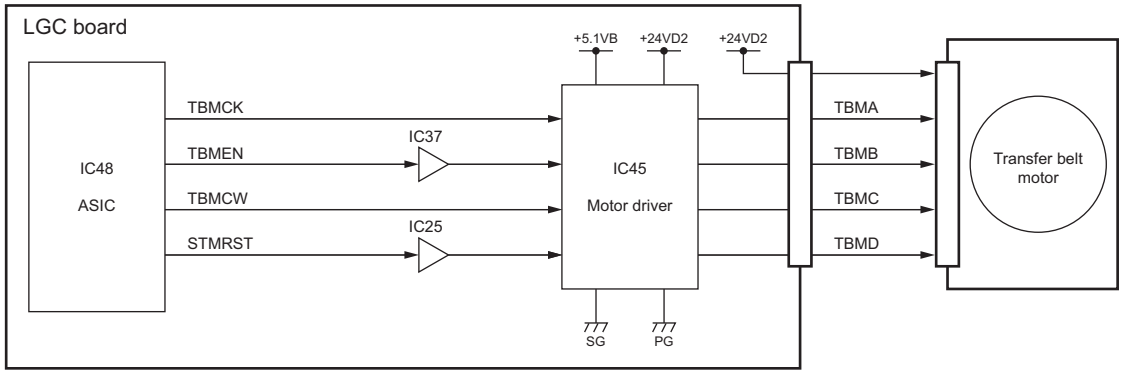


Fig. 14-3

Control signal

Signal	Function	Status	
		High level	Low level
TBMCK	Reference clock	---	---
TBMEN	Enable signal	ON	OFF
TBMDIR	Rotation direction signal	CCW	CW
STMRST	Reset signal	Normal operation	Reset

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

14.5.2 1st transfer roller cam motor control circuit

The 1st transfer roller cam motor is a DC motor driven by the control signal output from the ASIC on the LGC board and rotates the 1st transfer roller cam to contact/release each 1st transfer roller for Y, M and C color to/from the transfer belt.
The motor driver outputs the drive signal (TBLTM1A-0A, TBLTM1B-1A) to the motor based on the control signal (TBLTM1A-0C, TBLTM1B-1C) output from the ASIC. The motor operates the rotation, stop or brake according to the status of these drive signals.

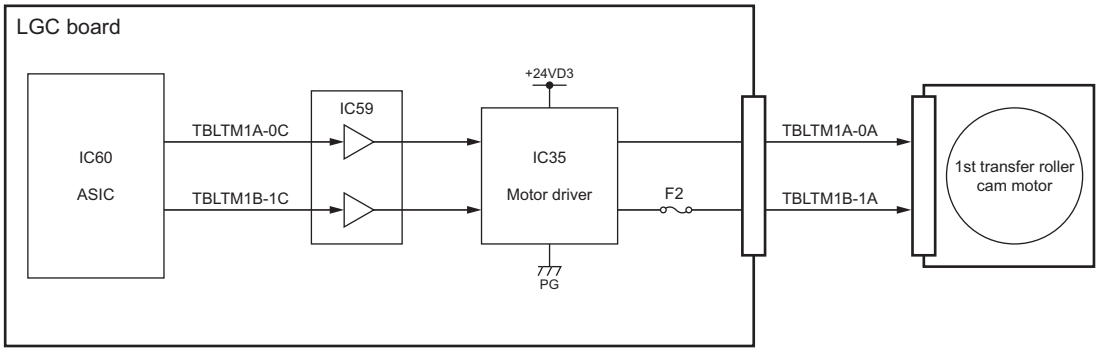


Fig. 14-4

Control signal

Signal				Motor status
ASIC output		Motor driver output		
TBLTM1A-0C	TBLTM1B-1C	TBLTM1A-0A	TBLTM1B-1A	
L	L	OFF (high impedance)		Stop
L	H	L	H	Rotation
H	L	H	L	Unused
H	H	H	H	Brake

14.6 Disassembly and Replacement

14.6.1 Transfer belt cleaning unit

(1) Open the front cover. Take off the process unit (EPU(Y)).
P.12-12 "12.6.1 Process unit (EPU)"
(2) Remove 1 screw, and then pull the transfer belt cleaning duct toward the front to take it off.

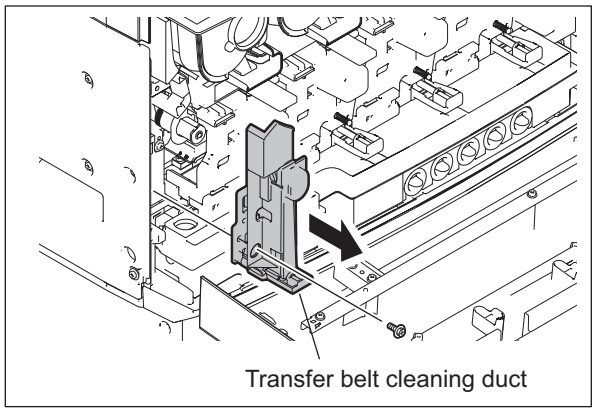


Fig. 14-5

(3) Turn the TBU lifting lever clockwise for 90 degrees.

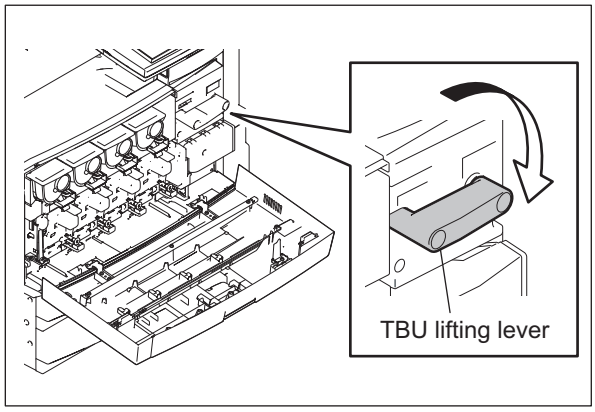


Fig. 14-6

(4) Rotate the lever (sky blue) counterclockwise and pull it to the front to take it off.

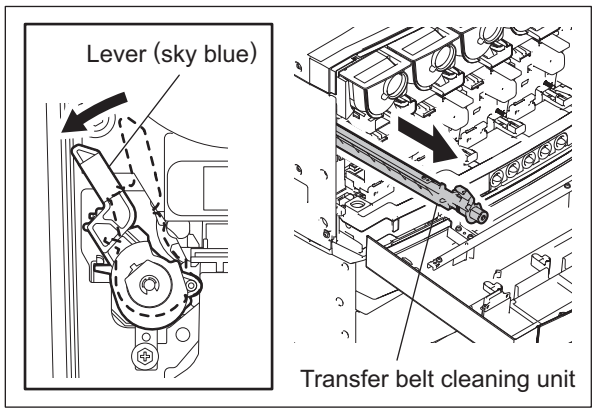


Fig. 14-7

Notes:

Follow the procedure below for the installation.

1. When installing, be sure to check if the TBU separation lever is at the fixed position (horizontal position) with the transfer belt installed.
2. Check if the TBU cleaner pressure hook is locked. If it is released, rotate the TBU cleaner pressure hook lever to lock it as shown in the figure, otherwise the transfer belt cleaning unit cannot be installed.

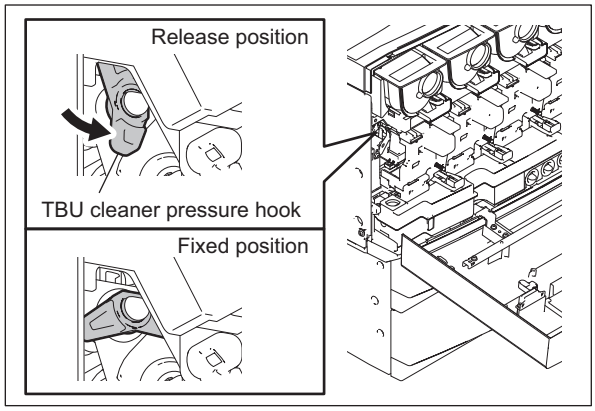


Fig. 14-8

3. Insert the A portion of the transfer belt cleaning unit beneath the stay (B) of the main frame.
4. Align the portion (C) of the transfer belt cleaning unit with the portion (D) of the main frame, then slide the transfer belt cleaning unit along the stay (B) of the main frame all the way in.
5. Rotate the lever E (sky blue) clockwise to lift it up until it clicks.

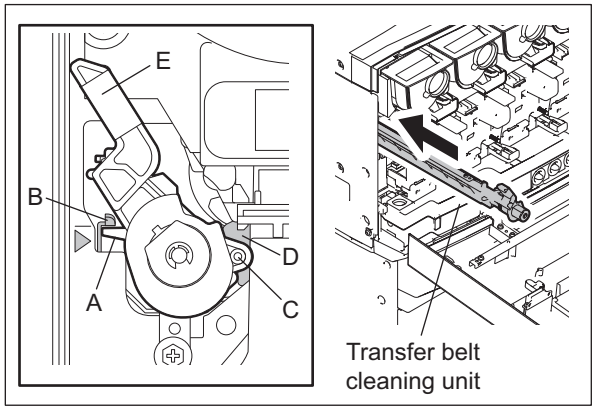


Fig. 14-9

6. Be sure to turn the TBU lifting lever counterclockwise for 90 degrees before installing the process unit (EPU(Y)).

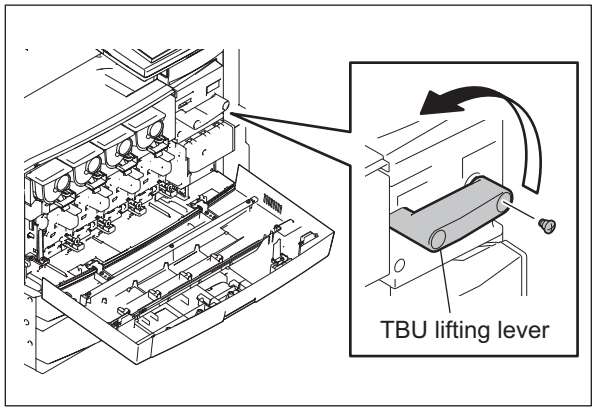


Fig. 14-10

14.6.2 Transfer belt cleaning blade PM / Blade seal PM

(1) Take off the transfer belt cleaning unit.
📖 P.14-11 "14.6.1 Transfer belt cleaning unit"
(2) Remove 2 screws, and then take off the transfer belt cleaning blade.
(3) Remove 2 screws, and then take off the recovery blade.

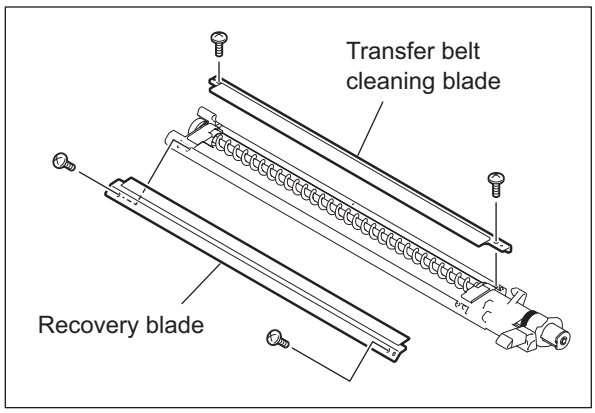


Fig. 14-11

(4) Remove the blade seals (both front and rear sides).

Notes:
1. When the blade seals are being attached, attach them on the position shown in the figure (by slightly pushing it to the direction of the arrow).
2. After the blade seals have been attached, be sure that no gap is left between the blade seals and the edge of the transfer belt cleaning blade.

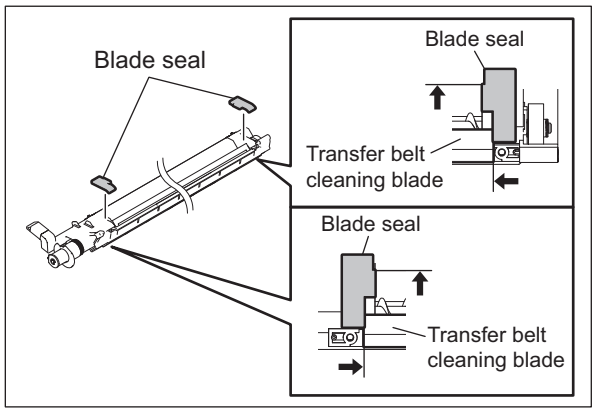


Fig. 14-12

14

14.6.3 Transfer belt unit (TBU)

Notes:

It is recommended to wear gloves to avoid a direct touch on the belt surface. When any of the following maintenance works has been done, be sure to adjust the axis gap of the TBU drive gear. P.14-33 "14.7.2 Adjustment of Gap between Transfer Belt Unit (TBU) Drive Gears"

- Replacing the transfer belt.
- Disassembling the roller or frame of the transfer belt unit (except when only the transfer belt or drive roller is disassembled).

(1) Take off the transfer belt cleaning unit.
P.14-11 "14.6.1 Transfer belt cleaning unit"

(2) Remove 1 screw, and then turn the TBU lifting lever counterclockwise for 90 degrees.

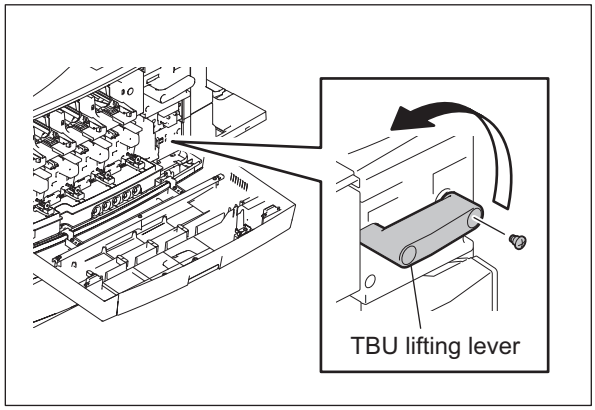


Fig. 14-13

(3) Move the automatic duplexing unit to its maintenance position.
P.17-13 "17.7.1 ADU maintenance position"

(4) Open the 2nd transfer unit and ADU.

(5) Open the middle guide by holding its knob.

Note:

Do not hold the middle guide itself when opening and closing it.

(6) Disconnect the 1 connector.

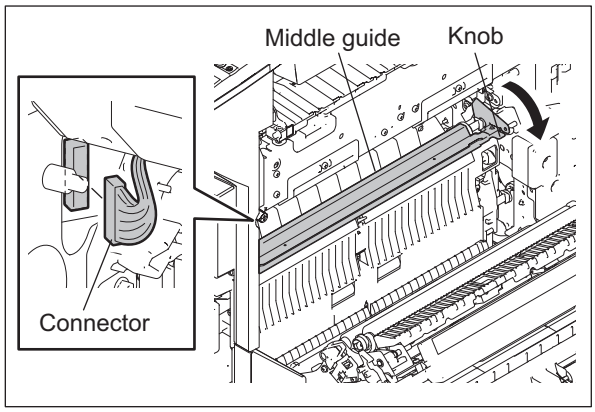


Fig. 14-14

(7) Hold the holder, and then pull out the transfer belt unit toward you.

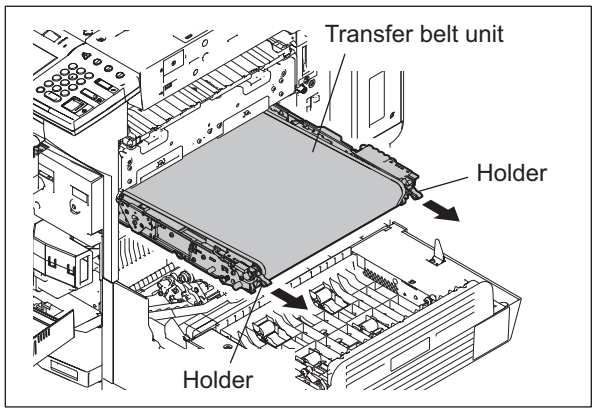


Fig. 14-15

(8) Raise the front handle, and then hold it together with the rear handle (light blue) to take off the transfer belt unit.

Note:

When taking off the transfer belt unit, be sure not to contact the bottom of this unit and the 2nd transfer unit to prevent the transfer belt from being scratched.

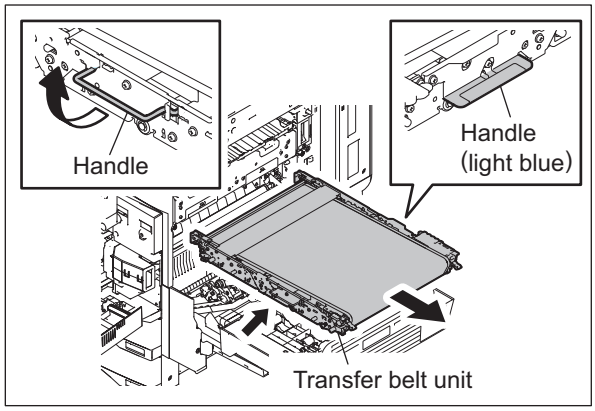


Fig. 14-16

Note:

Be careful not to deform the spring when removing/installing the transfer belt unit.

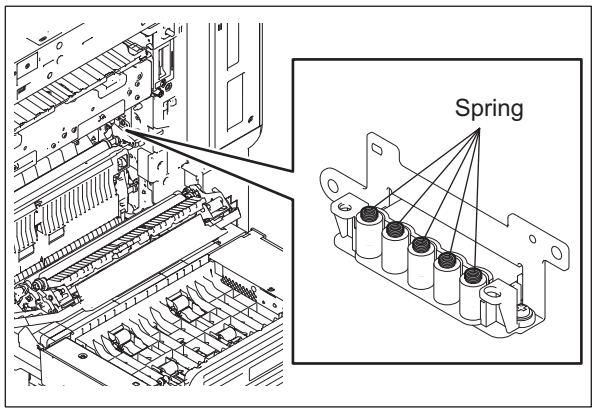


Fig. 14-17

Notes:

Follow the procedure below for the installation.

1. Rotate the TBU cleaner pressure hook lever on the transfer belt unit to lock the TBU cleaner pressure hook.
2. Check if the TBU release lever is at the release position (vertical position).
3. Check that the middle guide of the unit is opened.
4. Insert the transfer belt unit by sliding the unit along the rail.
5. Store the front handle, and then push the holder all the way in until it comes to a stop.
6. When the unit has been securely inserted, close the middle guide.

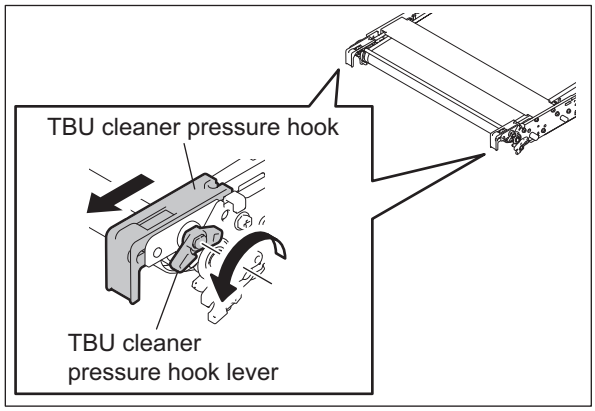


Fig. 14-18

14.6.4 Transfer belt

Note:
It is recommended to wear gloves to avoid a direct touch on the belt surface.

(1) Take off the transfer belt unit.
📖 P.14-14 "14.6.3 Transfer belt unit (TBU)"
(2) Remove 4 screws, and then take off the stay.

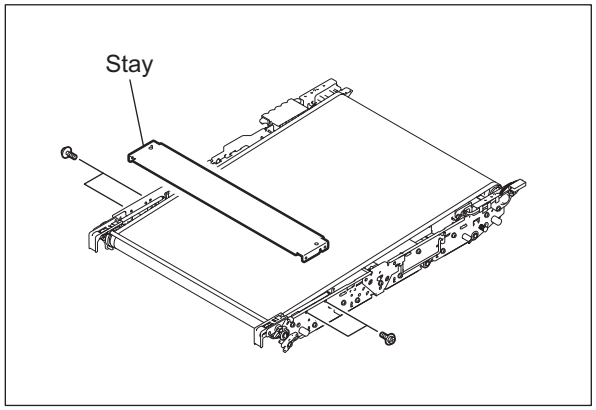


Fig. 14-19

(3) Remove 2 screws, and then take off the TBU cleaner pressure hook assembly and 2 springs.

Note:
When removing the screw, ensure that the driver does not collide with the gear.

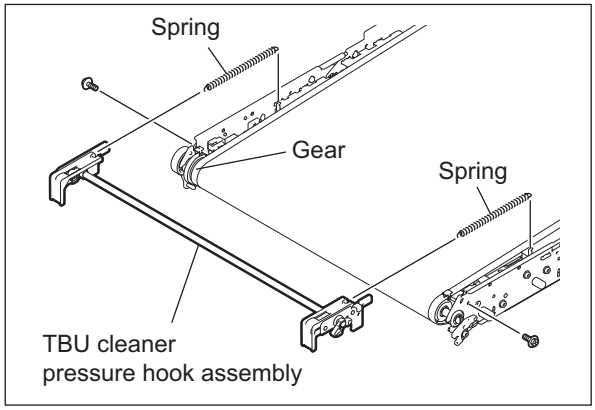


Fig. 14-20

Note:
Check that the cams on both the front and rear side (the latter is shown with the arrow in the right-hand figure) are attached to the link arms securely when the TBU cleaner pressure hook assembly is installed.

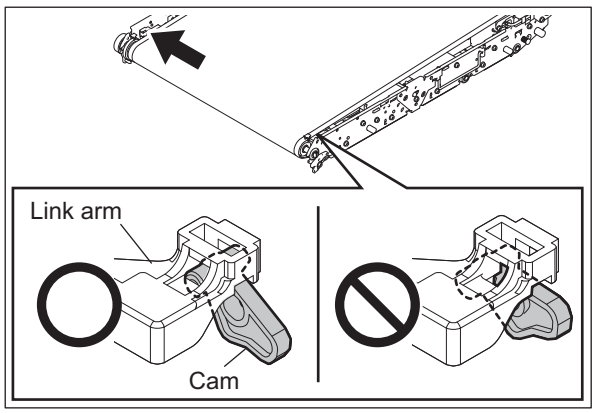


Fig. 14-21

(4) Remove 1 screw, and then take off the front bracket and handle.

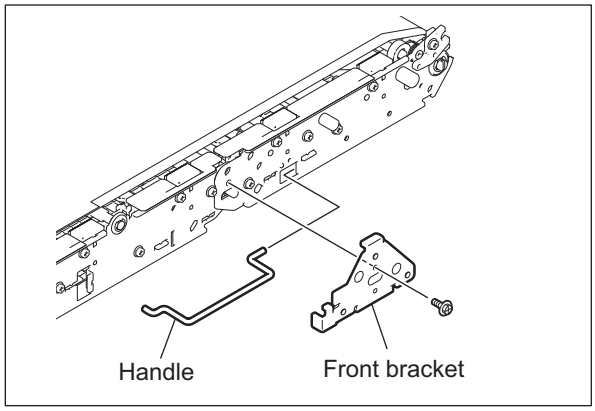


Fig. 14-22

(5) Remove 2 screws, and then take off the rear bracket.

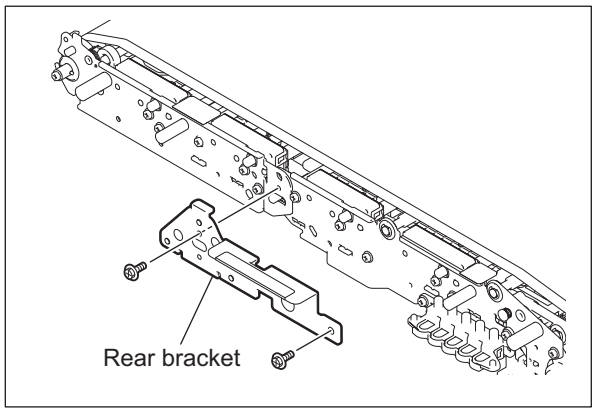


Fig. 14-23

(6) Fold the frame with its rear side up.

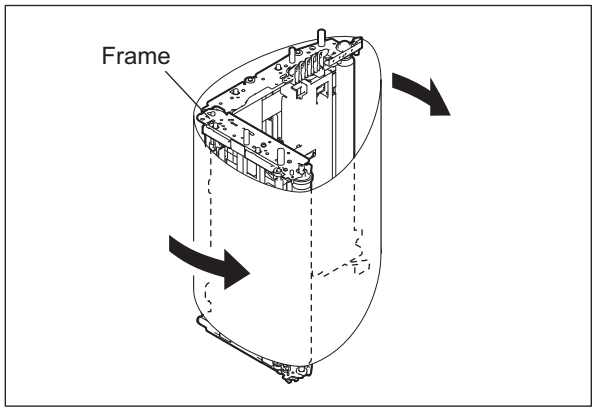


Fig. 14-24

(7) Pull out the transfer belt.

Notes:

1. Install the transfer belt in the middle so that it does not move to one side.
2. Install the transfer belt so that the serial number inside of the belt comes at the rear side.
3. Do not touch the belt surface directly with bare hands.
4. Ensure the gear's grease does not adhere to the transfer belt.
5. Be sure not to scratch the belt surface.
6. When the belt is being replaced, clean its drive roller, 2nd transfer facing roller, tension roller and idling roller with alcohol.
7. Check if the rib on both ends of the transfer belt does not run on the rollers.

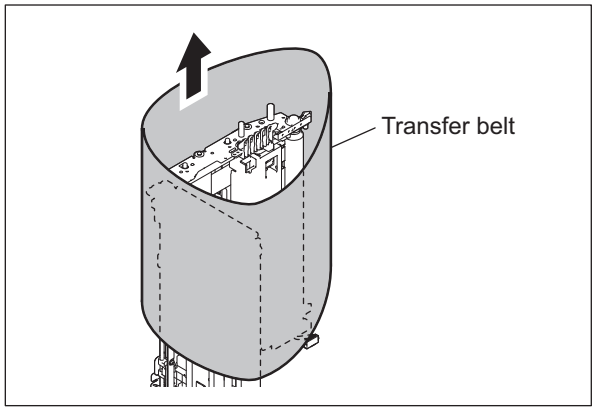


Fig. 14-25

14.6.5 Drive roller

(1) Take off the transfer belt.
📖 P.14-16 "14.6.4 Transfer belt"

(2) Remove 1 E-ring, 1 bearing on the front side of the drive roller.

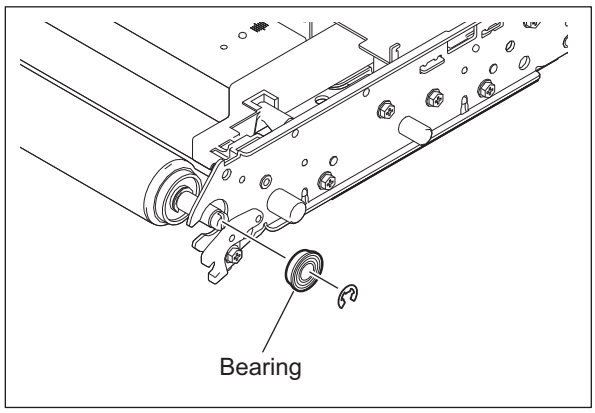


Fig. 14-26

(3) Take off the drive roller.

Note:

Ensure the grease does not adhere to the hands.

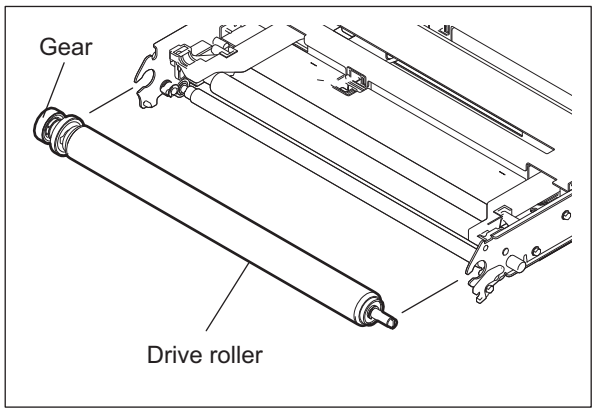


Fig. 14-27

(4) Remove 1 screw, 2 gears, 2 pins and 1 bearing on the rear side of the drive roller.

Note:
When taking out the gear, ensure that the gear does not get scratched.

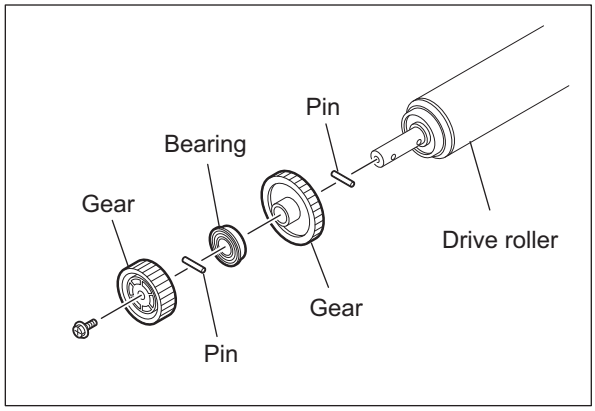


Fig. 14-28

14.6.6 1st transfer roller

(1) Take off the transfer belt.
📖 P.14-16 "14.6.4 Transfer belt"
(2) Rotate the gear of the 1st transfer roller cam motor with your fingers to move 6 lift levers up.

Note:
Do not touch the conducting grease (front/ rear) applied on the shaft of 1st transfer roller cam motor.

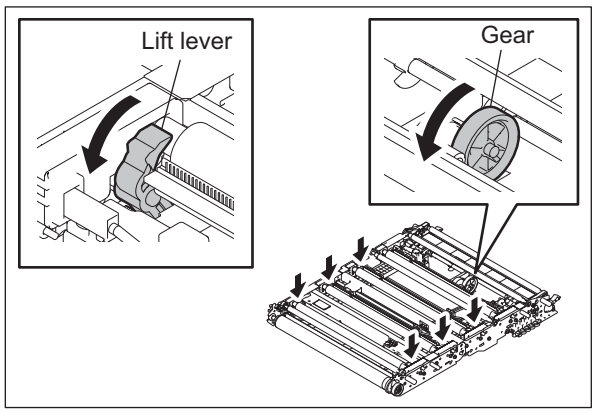


Fig. 14-29

(3) Remove 4 screws.
(4) Then remove 4 of the 1st transfer rollers and 4 front terminals.

Note:
When fitting the front terminals, align with the positioning dowels.

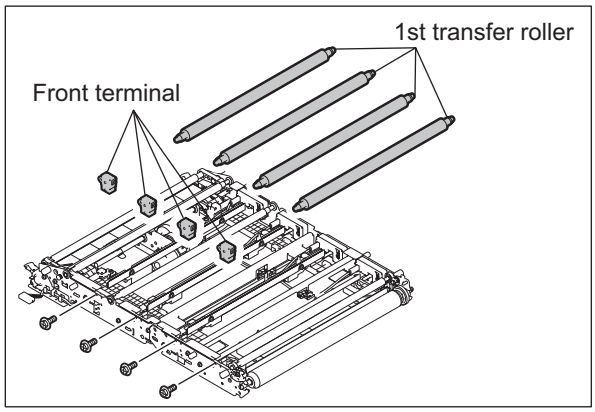


Fig. 14-30

14

14.6.7 2nd transfer facing roller / 2nd transfer facing roller cleaning Mylar PM

(1) Take off the transfer belt.
P.14-16 "14.6.4 Transfer belt"

(2) Remove 2 screws, and then take off the 2nd transfer facing roller front holder. Then take off the 2nd transfer facing roller and 1 bearing.

Note:
Be sure not to damage the earth plate of 2nd transfer facing roller rear holder.

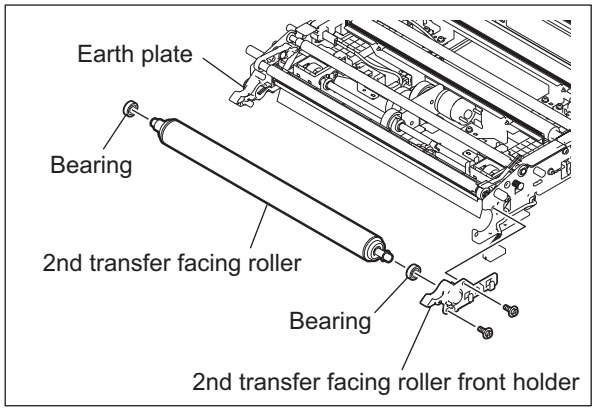


Fig. 14-31

(3) Peel the 2nd transfer facing roller cleaning Mylar.

Note:
Attach the 2nd transfer facing roller cleaning Mylar to the position shown in the figure within the error of 0.5 mm or less (by slightly pushing it to the 2 edges of the 2nd transfer facing roller cleaning holder in the direction of the arrow).

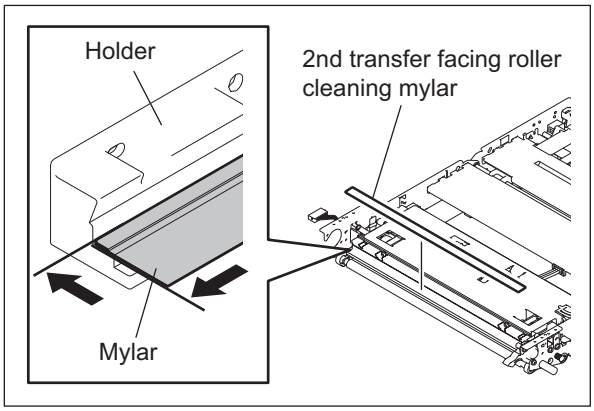


Fig. 14-32

Note:
Never attempt to loosen the 2 red screws shown in the figure.

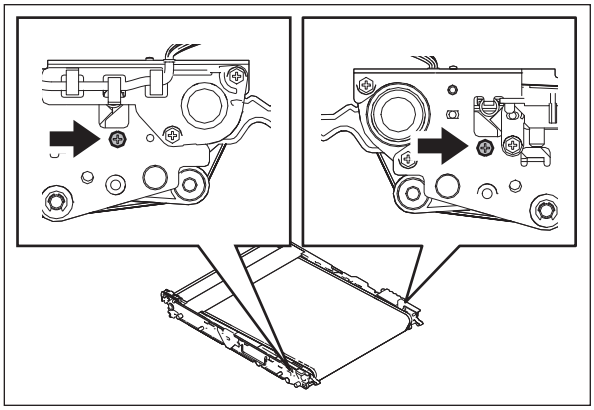


Fig. 14-33

14.6.8 Tension roller

(1) Take off the transfer belt.
📖 P.14-16 "14.6.4 Transfer belt"
(2) Remove 1 E-ring, 2 bearings and the bushing, and take off the tension roller.

Note:
Be careful not to deform the earth plate of the tension roller arm on the front side.

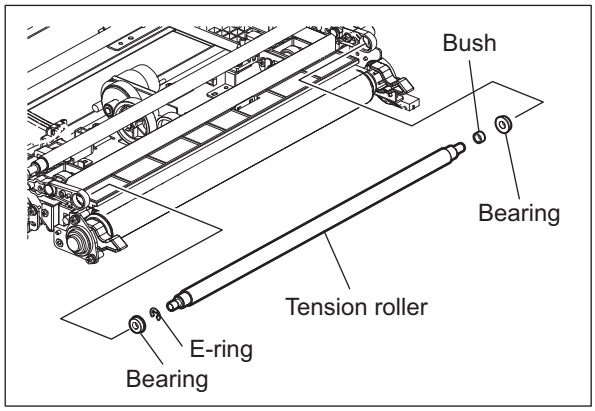


Fig. 14-34

14.6.9 1st transfer roller cam motor (M8)

(1) Take off the transfer belt.
📖 P.14-16 "14.6.4 Transfer belt"

(2) Remove 2 E-rings, and then take off the idler roller. Then take off the 2 bushings and 2 bearings.

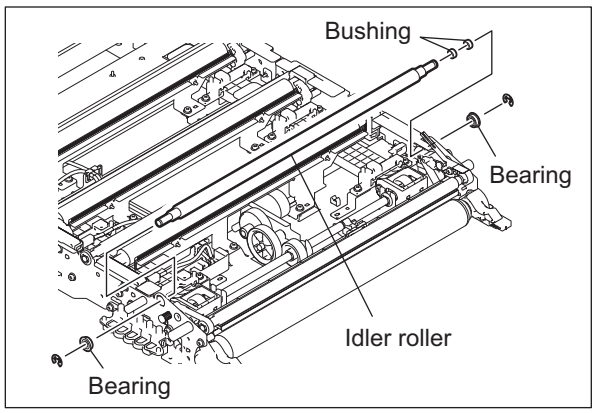


Fig. 14-35

(3) Remove 3 E-rings, and then slide the 3 bushings of the cam shaft.

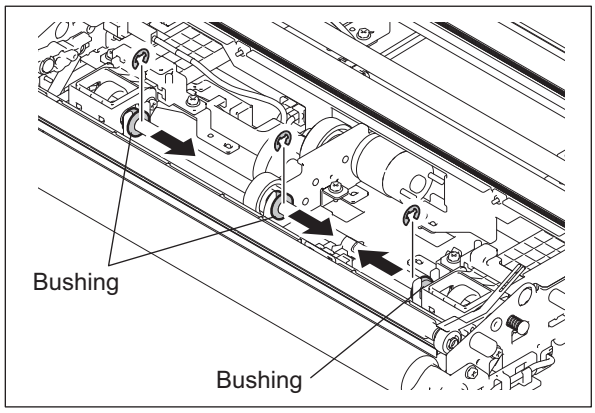


Fig. 14-36

(4) Remove 2 screws, and then take off the TBU brush bracket.

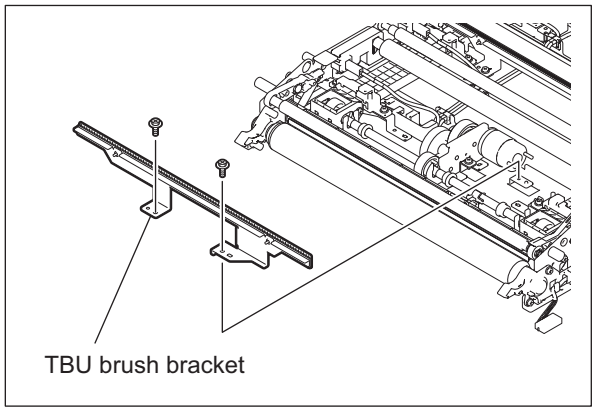


Fig. 14-37

(5) Remove 1 screw and then disconnect 1 relay connector to take off the 1st transfer roller cam motor assembly.

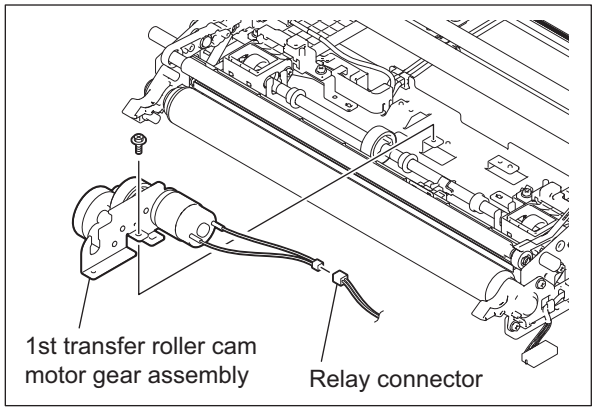


Fig. 14-38

(6) Release the 1 latch and take off the 3 gears.

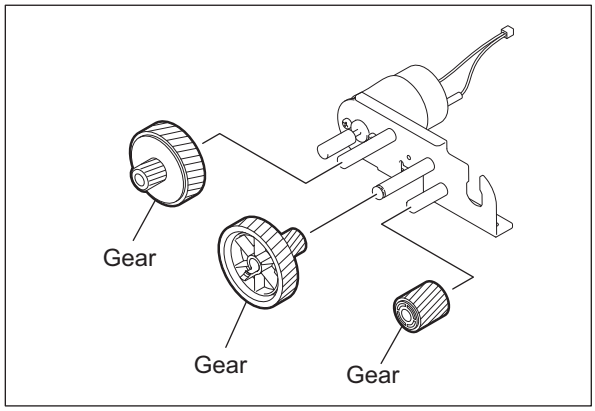


Fig. 14-39

(7) Remove 2 screws, and then take off the 1st transfer roller cam motor.

Note:
Pay attention to the size (length) of the screws. If incorrect ones are used, the motor could be damaged.

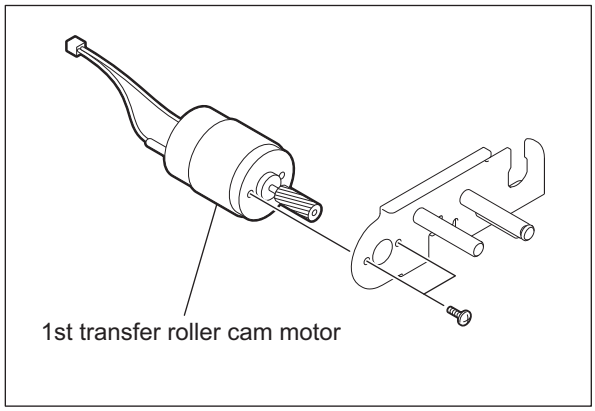


Fig. 14-40

14

14.6.10 1st transfer roller status detection sensor (S15)

(1) Take off the 2nd transfer facing roller.
P.14-20 "14.6.7 2nd transfer facing roller / 2nd transfer facing roller cleaning Mylar"
(2) Remove 2 screws, and then take off the 2nd transfer facing roller cleaning holder.

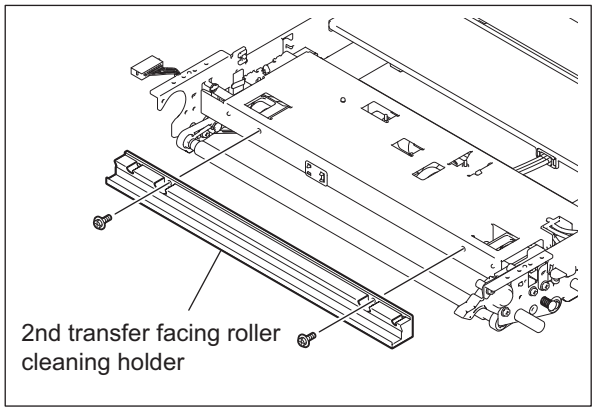


Fig. 14-41

(3) Remove the seal.
(4) Release the latch and disconnect the connector to take off the 1st transfer roller status detection sensor.

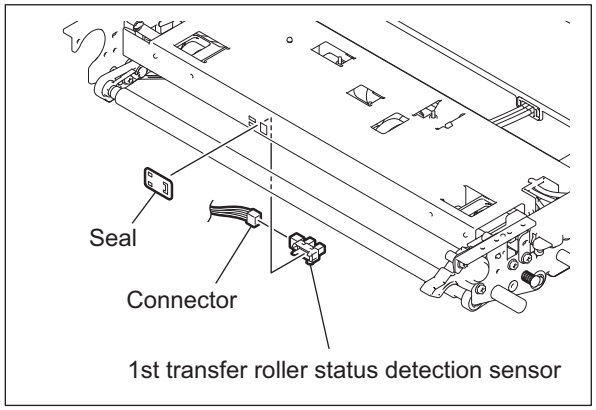


Fig. 14-42

14.6.11 2nd transfer unit (TRU)

(1) Move the automatic duplexing unit to its maintenance position.
📖 P.17-13 "17.7.1 ADU maintenance position"
(2) Take off the right front hinge cover.
📖 P.3-31 "3.5.14 Right front hinge cover"
(3) Remove 1 screw and take off the connector cover.

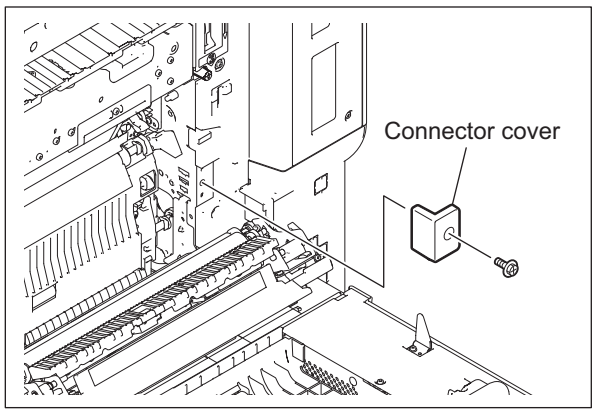


Fig. 14-43

(4) Disconnect 1 connector, and then remove 2 clamps.

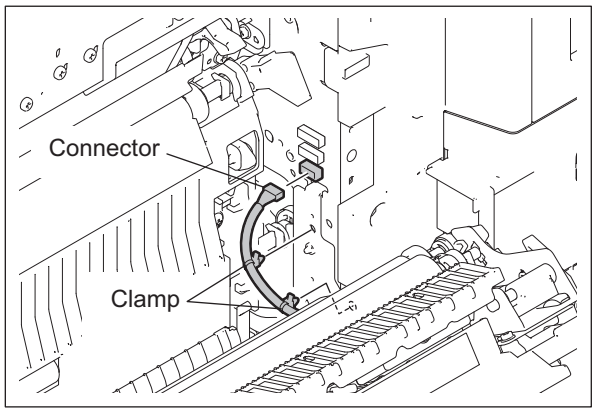


Fig. 14-44

(5) Remove 1 screw, and then take off the 2nd transfer unit hinge stay.

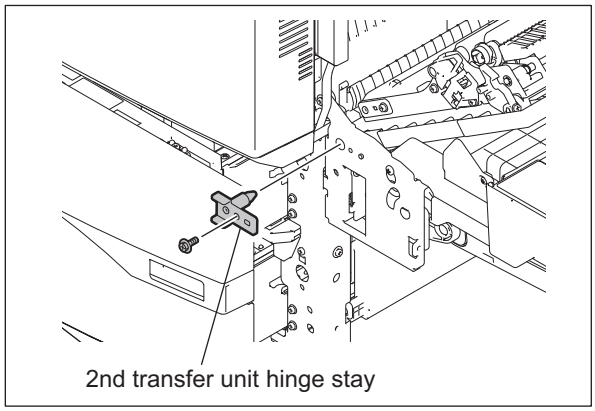


Fig. 14-45

14

(6) Lift up the 2nd transfer unit slightly, and then take it off by sliding it to the front side.

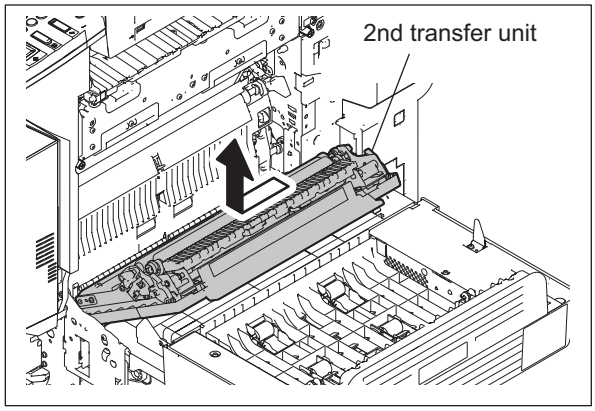


Fig. 14-46

14.6.12 2nd transfer roller PM

(1) Open the 2nd transfer unit.
(2) Remove 1 clip, 1 bearing and 1 bushing (with bearing) on the front side of the 2nd transfer roller.
(3) Remove 1 clip, 1 bearing and 1 bushing (with bearing) on the rear side of the 2nd transfer roller.
(4) Take off the 2nd transfer roller.

Note:
Be careful not to drop the clip, bearing and bushing into the inside of the 2nd transfer unit.

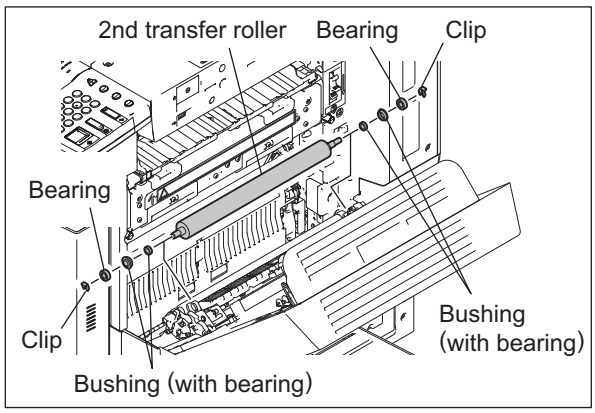


Fig. 14-47

14.6.13 TRU cover

(1) Take off the 2nd transfer unit.
📖 P.14-25 "14.6.11 2nd transfer unit (TRU)"
(2) Remove 4 screws and take off the TRU cover.

Note:
When installing the TRU cover, be sure not to damage the Mylar.

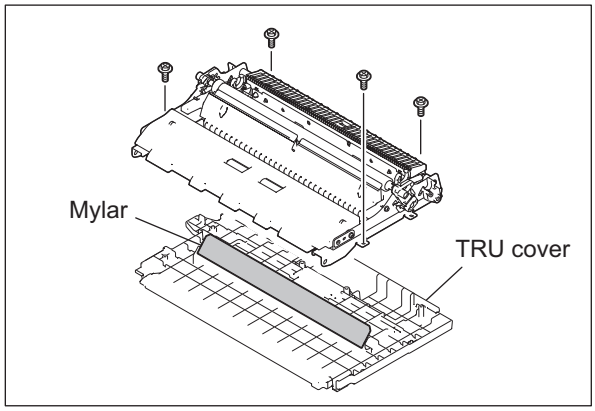


Fig. 14-48

14.6.14 Paper clinging detection sensor (S27)

(1) Take off the TRU cover.
P.14-26 "14.6.13 TRU cover"
(2) Remove 1 screw, and then disconnect the connector to take off the sensor bracket.

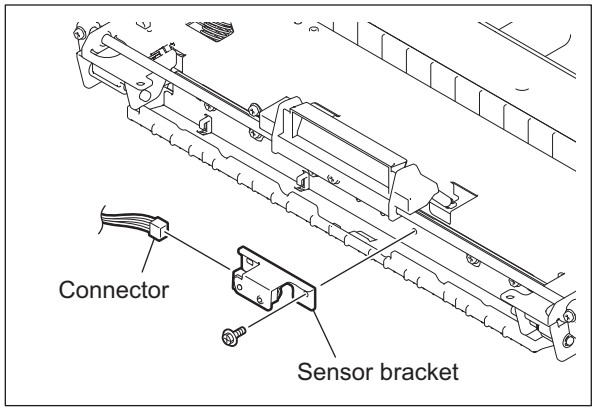


Fig. 14-49

(3) Remove 1 screw and take off the paper clinging detection sensor.

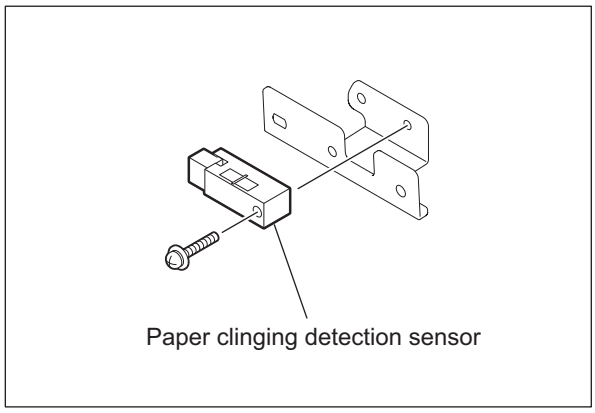


Fig. 14-50

14.6.15 2nd transfer roller position detection sensor (S29)

(1) Take off the paper dust holder.
P.11-39 "11.6.36 Paper dust holder"
(2) Disconnect the connector, release the latch and take off the 2nd transfer roller position detection sensor.

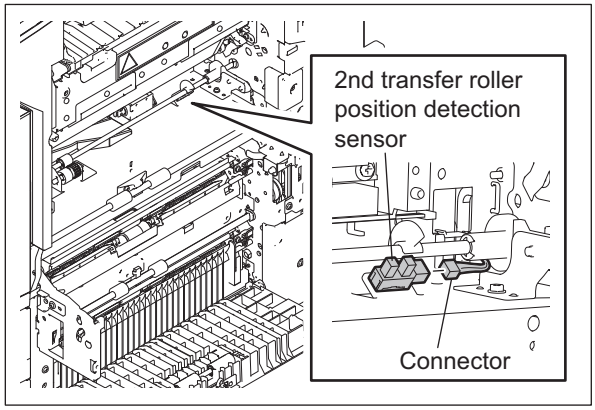


Fig. 14-51

14.6.16 Transfer belt motor (M7)

Note:

Never remove the damper fixed on the transfer belt motor unit with 2 screws (red).
When the transfer belt motor is replaced, discard the dumper attached to the new motor and install it to the existing dumper on the frame instead.

(1) Take off the ozone exhaust fan.
P.13-35 "13.5.24 Ozone exhaust fan (M24)"
(2) Remove 1 spring.
(3) Remove 3 screws, and then disconnect the connector to take off the transfer belt motor.

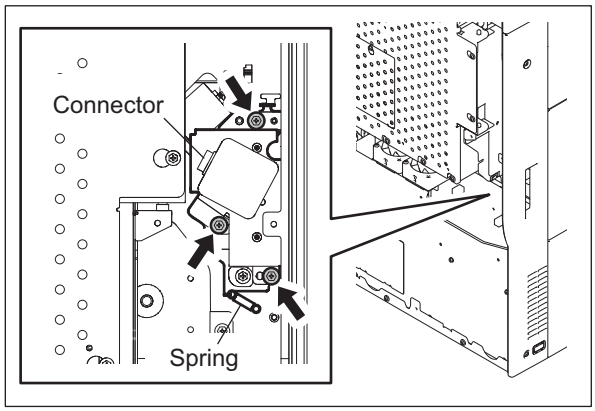


Fig. 14-52

(4) Release the upper hook to take off the transfer belt motor unit.

Note:

When installing the transfer belt motor, make sure that the TBU separation lever is at the fixed position (horizontal position) with the transfer belt unit installed. Secure the hook of the transfer belt motor unit onto the equipment and fix it with 3 screws temporarily. Attach the spring to apply tension and tighten the 3 screws.

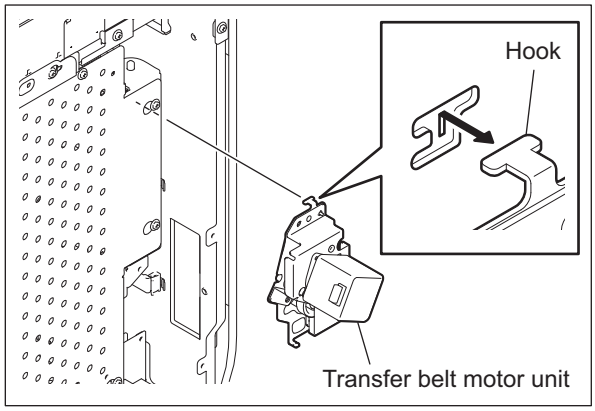


Fig. 14-53

(5) Remove 2 screws and take off the transfer belt motor.

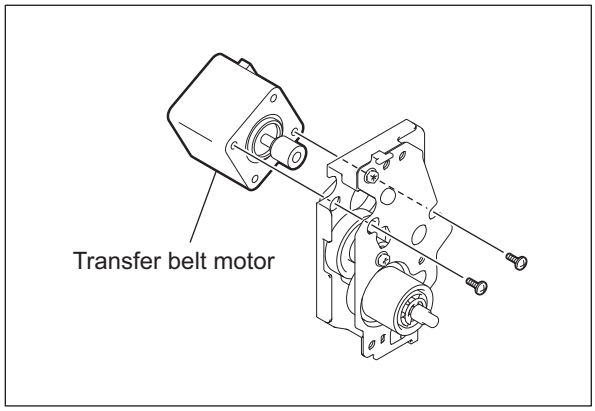


Fig. 14-54

14.6.17 Transfer cover switch (SW3)

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Take off the right inner cover.
📖 P.3-32 "3.5.16 Right inner cover"
(3) Release the 2 latches, and then disconnect the connector to take off the transfer cover switch.

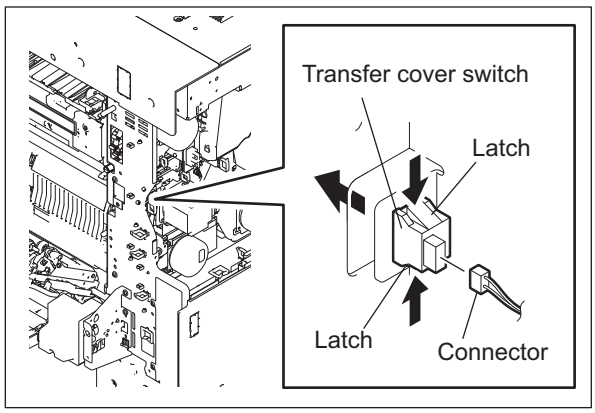


Fig. 14-55

14

14.7 Adjustment of the Transfer Unit

14.7.1 Adjustment of the transfer belt due to environmental factors

The length of the transfer belt may change depending on the environmental temperature and humidity, and this will cause change to the leading edge position of the image.
Although image position adjustment has been performed at factory shipment, when the equipment is installed or any part is replaced, it is necessary to check the difference between the “05-4732-0: Reference value” and “05-4732-1: actual value” of the “Displaying corrected values of leading edge adjustment”, because there may be a difference between the environment of the factory and that of the installation location. If the difference between the reference value and actual value is 10 bits or more, be sure to perform “Image location adjustment of secondary scanning direction (05-408)”.

- The equipment automatically corrects the change in the leading edge position caused by any environmental change. However, readjustment for the leading edge position in the installation environment (i.e. obtaining the reference value) can make the automatic correction even more precise, since it can suppress inconsistency caused by the dispersion of units, parts and sensors.

- A difference between the reference value and actual value may occur even if the equipment has not been moved. However, you do not have to perform “05-408” every time a difference is found, if it has already been performed after installation of the equipment or replacement of parts.

Code	Adjustment item	Remarks
4732-0	Displaying corrected values of leading edge adjustment Absolute humidity reference value	Displays the absolute value of the corrected value of the leading edge adjustment
4732-1	Displaying corrected values of leading edge adjustment Absolute humidity actual value	Displays the actual value of the corrected value of the leading edge adjustment
408	Image location adjustment of secondary scanning direction	Performs the image location adjustment of the secondary scanning direction (laser writing start position adjustment)

Note:
When checking “Displaying corrected values of leading edge adjustment (05-4732-0), (05-4732-1)” and “Image location adjustment of secondary scanning direction (05-408)”, be sure to do this in a few hours after the equipment has been installed or any part has been replaced.
The length of the transfer belt changes slowly according to the environment, so the larger the environmental change is, the longer it takes the belt length to become stable. And if you perform this adjustment immediately after installation or replacement work, the adjustment value may not be proper, and therefore, deviation in the leading edge position is likely to occur when the equipment becomes stable.

<Procedure>

(1) While pressing [0] and [5] simultaneously, turn the power ON.

(2) Perform paper selection for the drawer, key in [98], and then press the [FAX] button to output the grid pattern (to update the actual value).

(3) Key in [4732] and press the [START] button.

(4) Key in [0] and press the [START] button.

(5) Record the displayed “Reference value (A)” and press the [ENTER] button.

(6) Key in [4732] and press the [START] button.

(7) Key in [1] and press the [START] button.

(8) Record the displayed “actual value (B)” and press the [ENTER] button.

(9) Calculate the difference between “Reference value (A)” and “actual value (B)” to obtain “Difference (C)”.

Range of difference (C)	Remarks
$C \leq -10$	Perform the image location adjustment of the secondary scanning direction. Proceed to step (10).
$-10 < C < 10$	The image location of the secondary scanning direction is set properly. Proceed to step (12).
$10 \leq C$	Perform the image location adjustment of the secondary scanning direction. Proceed to step (10).

* When the difference between “05-4732-0: Reference value” and “05-4732-1: actual value” is 10 bits, the equipment has already performed automatic correction by approx. 1 mm.

(10) Key in [408] and press the [START] button.

(11) Enter the adjustment value by means of the following procedure.
In order to enter the adjustment value, it is necessary to key in a value other than the current one to clear the previously stored one. Then enter the value which has been displayed as the current one after keying in the code [408] again.

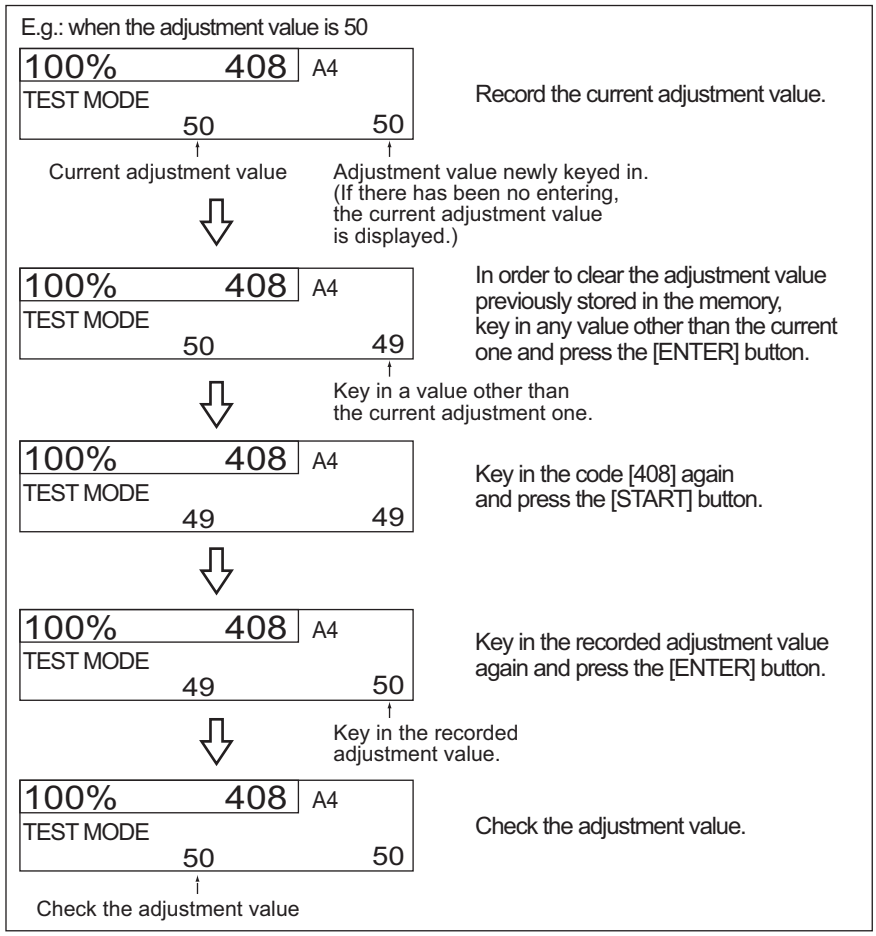


Fig. 14-56

(12) Turn the power OFF.

14.7.2 Adjustment of Gap between Transfer Belt Unit (TBU) Drive Gears

Perform this adjustment for setting the gap between the shafts of the TBU drive transmission gear and the TBU drive gear.
Since the gap can be adjusted only by the tension of the spring, no jig is required.
Perform this adjustment after replacing or disassembling any of the parts described below. (If this adjustment is not performed, image problems or abnormal noise may occur.)

A. When the TBU drive unit was replaced
   (It is limited to the case the unit includes brackets. The adjustment is not required when only the gear or the motor itself was replaced.)
B. When the TBU drive transmission gear was replaced
C. When the TBU was replaced
D. When the frame of the TBU was disassembled for parts replacement
   (The adjustment is not required when only the transfer belt or only the TBU drive gear was replaced.)

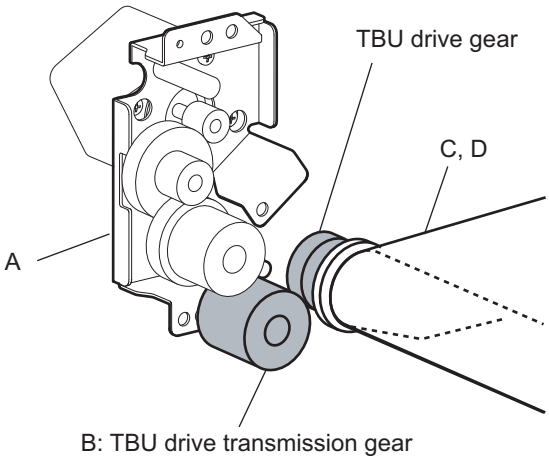


Fig. 14-57

<Procedure>

Note:
Perform the adjustment while the TBU releasing lever is being pressed down after the installation of the TBU.

(1) Take off 1 ozone filter, 2 rear covers and the ozone exhausting duct.

(2) Loosen 3 screws shown in the figure. (Tension is applied by the spring.)

(3) Tighten the 3 screws loosened in step 2.

(4) Reinstall the parts taken off in step 1.

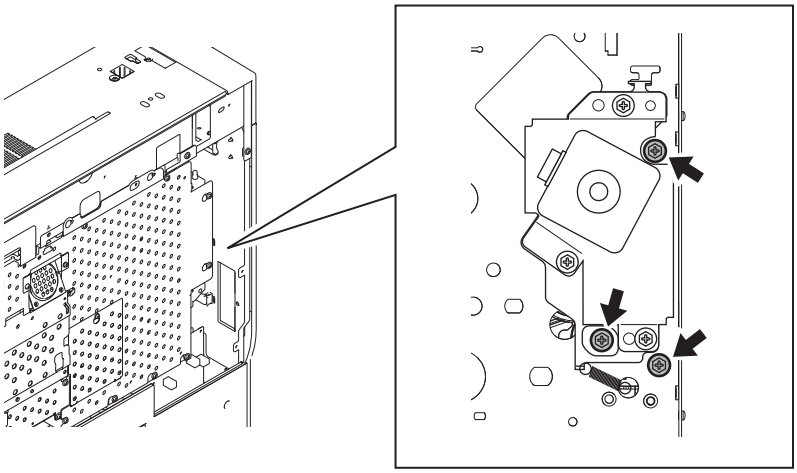


Fig. 14-58

15. IMAGE QUALITY CONTROL

15.1 General Description

In this equipment, image quality is controlled by the image quality sensor (S18). At this control, image forming conditions are automatically adjusted so as to minimize the change in the image density or tone reproduction caused by the fluctuation of working environment or life of supply items.
At first, the image quality sensor (S18) operates to output reflected light amount voltage when no toner image is formed on the transfer belt. The output voltage is then converted analog-to-digital to be output as the reflected light amount signal. The light source amount voltage of the sensor is adjusted to correspond with the value set in advance and the output value of reflected light amount signal at this adjustment is stored. This output value is considered as the reading of the belt surface. Next, the sensor outputs the reflected light amount signal when a test pattern is developed on the transfer belt. This output value is considered as the reading of the toner image.
The difference between the reading of the transfer belt and that of the toner image is defined as toner adhesion amount. Image forming conditions are determined in approximating this toner adhesion amount to the value set in advance.
In addition, a shutter operated by the sensor shutter solenoid (SOL2) is equipped on the light receiving/ emitting surfaces to prevent stain to the sensor.

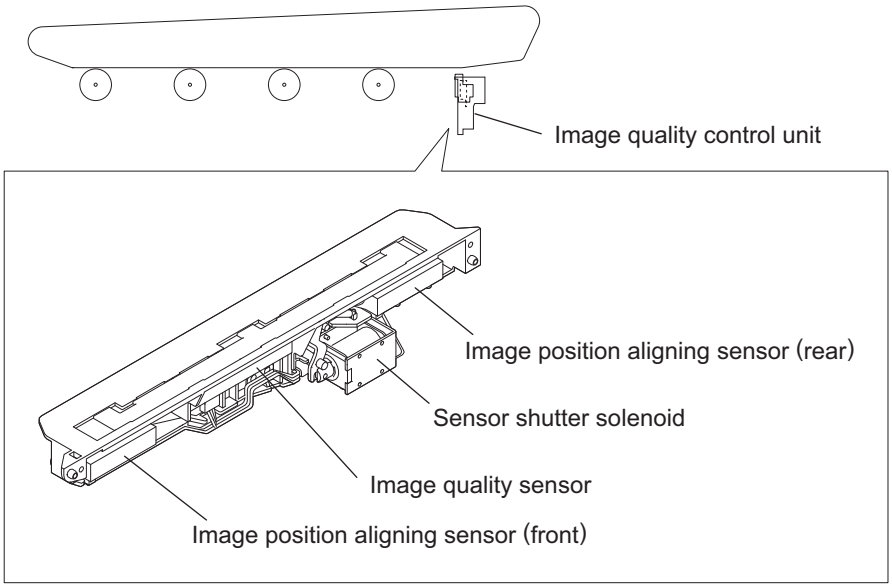


Fig. 15-1

15.2 Composition

Image quality sensor:	Projects the amount of light on the transfer belt and outputs the voltage corresponding to the reflected light amount from the transfer belt or the toner image on the transfer belt.
Image quality sensor:	Projects the amount of light on the transfer belt and outputs the voltage.
D/A converter:	Converts light source amount signal into the voltage to the sensor.
Laser optical system:	Performs test pattern exposure (for toner image formation).
A/D converter:	Converts the output voltage from the sensor into digital values and outputs them to the CPU.
Image forming process:	Performs charging, laser exposing and developing processes.
ASIC:	Performs steps [1] to [10] described in chapter 14.4.

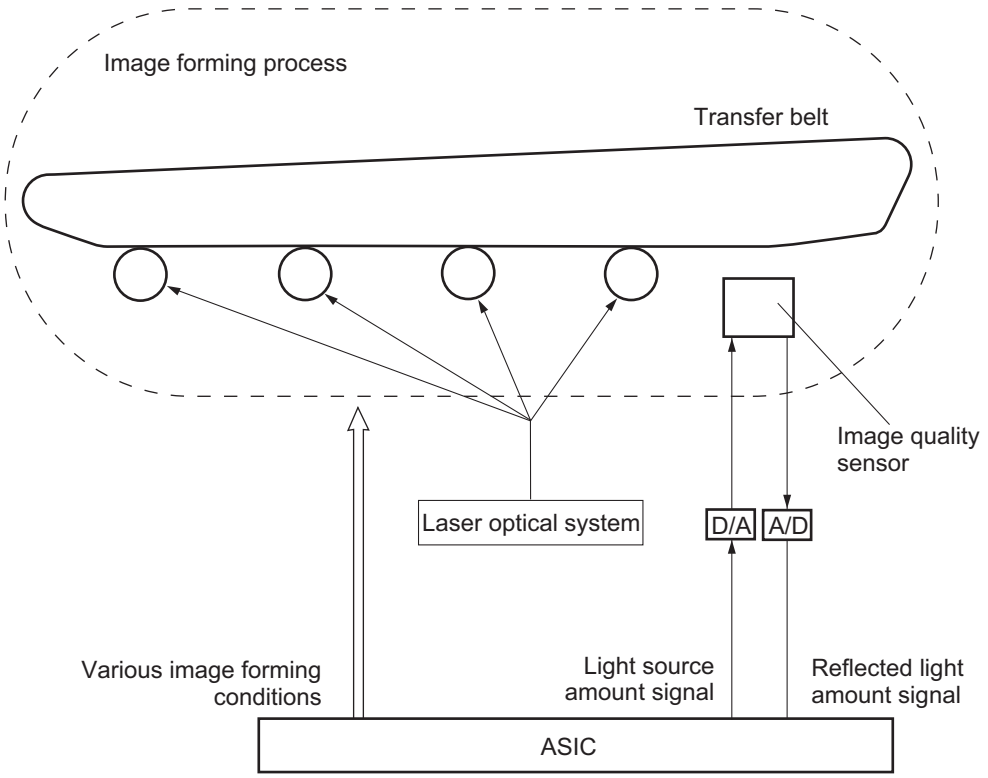


Fig. 15-2

15.3 Principle of the Sensor

Image quality sensor (S18) projects light onto the transfer belt and the toner image (test pattern) developed on the transfer belt to output a voltage corresponding to the reflected light amount. The output voltage is then converted analog-to-digital into reflected light amount signal. The engine ASIC calculates the toner adhesion amount to control the image forming conditions.

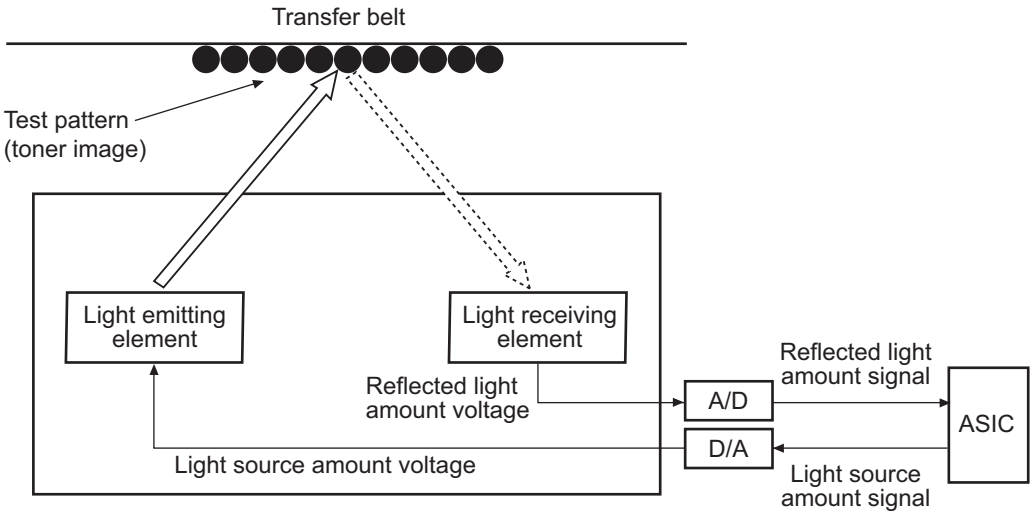
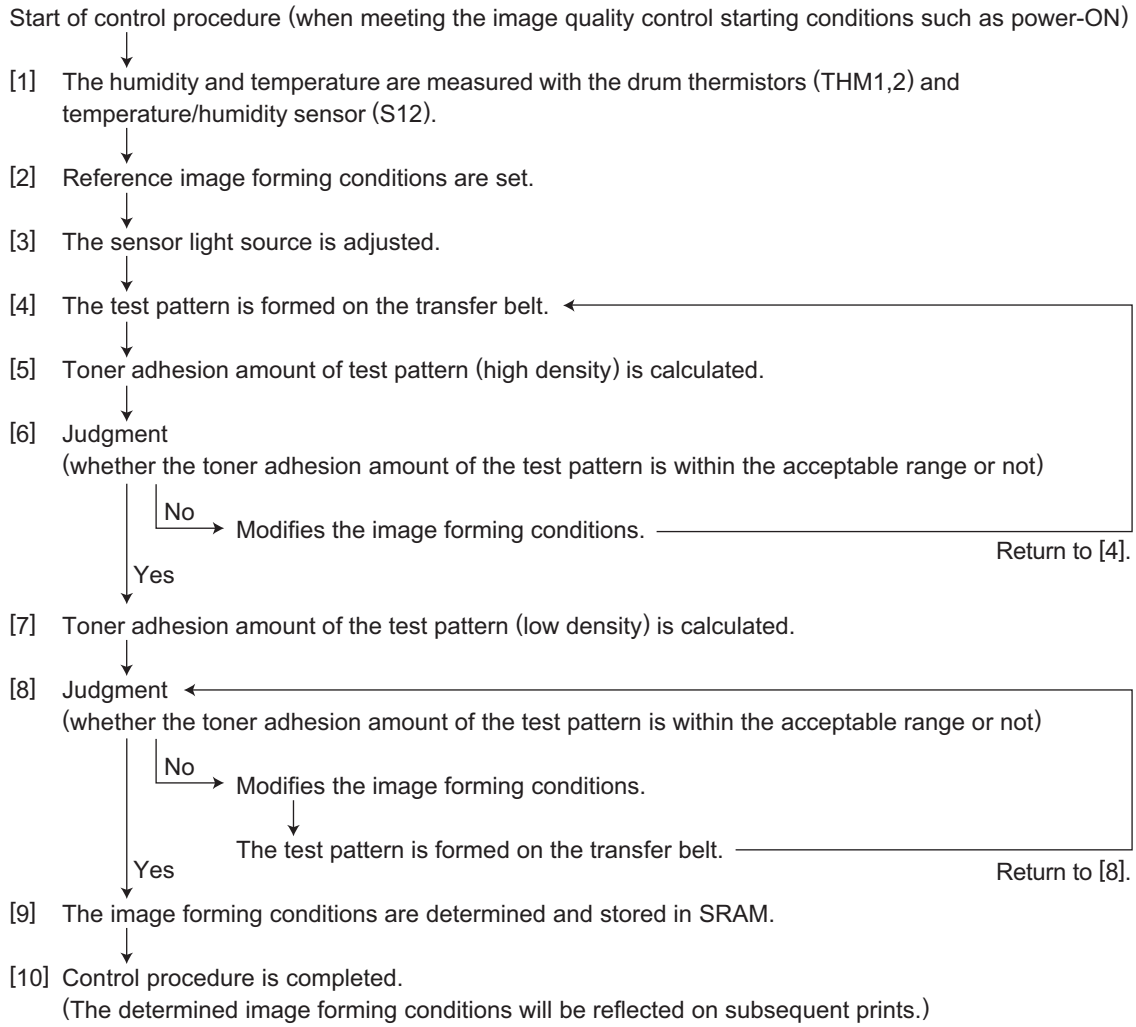


Fig. 15-3

15.4 Flow Chart of Control Procedure



15.5 Disassembly and Replacement

15.5.1 Image quality control unit

(1) Take off the paper dust holder.
📖 P.11-39 "11.6.36 Paper dust holder"
(2) Remove 3 screws.
(3) Disconnect 3 connectors and 1 relay connector. Then take off the image quality control unit.

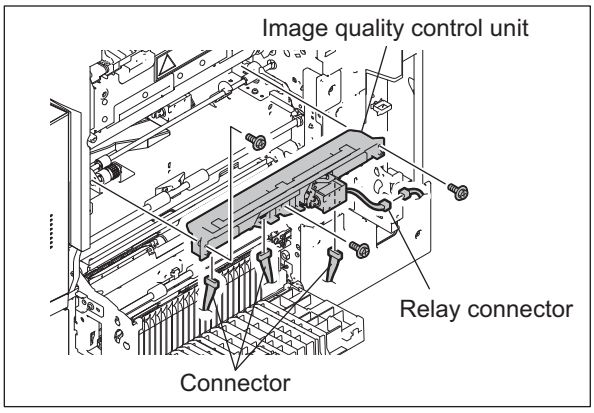


Fig. 15-4

15.5.2 Image position aligning sensor (front) (S16)

(1) Take off the image quality control unit
📖 P.15-5 "15.5.1 Image quality control unit"
(2) Remove 2 screws and take off the image position aligning sensor (front).

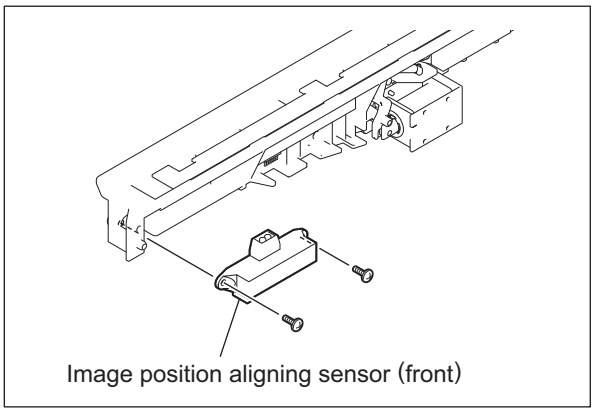


Fig. 15-5

15.5.3 Image position aligning sensor (rear) (S17)

(1) Take off the image quality control unit
📖 P.15-5 "15.5.1 Image quality control unit"
(2) Remove 2 screws and take off the image position aligning sensor (rear).

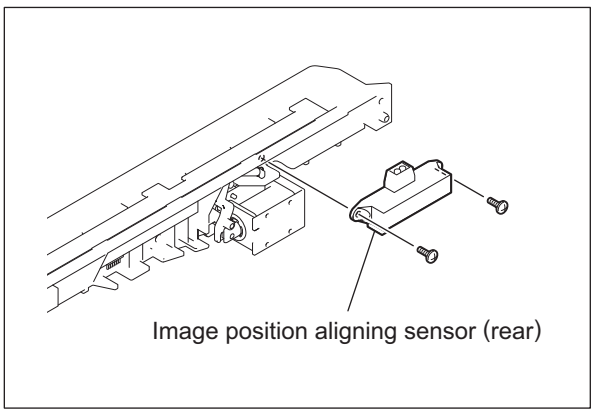


Fig. 15-6

15.5.4 Image quality sensor (S18)

(1) Take off the image quality control unit
📖 P.15-5 "15.5.1 Image quality control unit"
(2) Remove 2 screws and take off the image quality sensor.

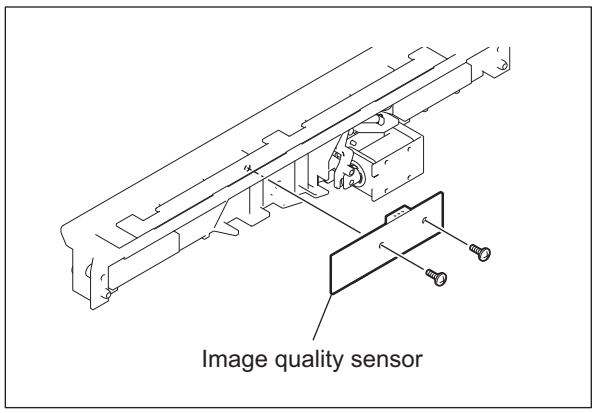


Fig. 15-7

15.5.5 Sensor shutter solenoid (SOL2)

(1) Take off the image quality control unit
📖 P.15-5 "15.5.1 Image quality control unit"
(2) Remove 2 screws and take off the sensor shutter solenoid.

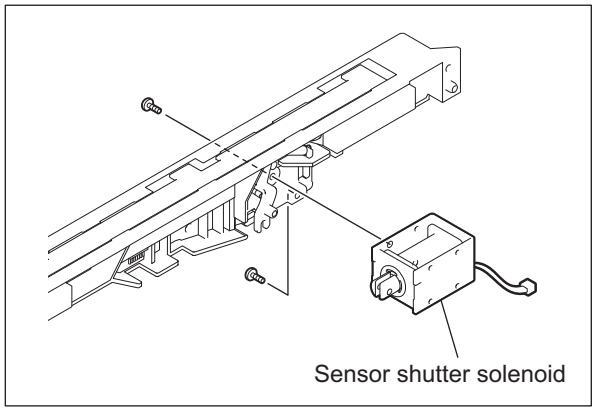


Fig. 15-8

15.6 Adjustment of the Image Quality Control

15.6.1 Performing Image Quality Control

When the image quality sensor is replaced, perform the automatic initialization of the image quality control.

📖 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)"

16. FUSER UNIT / PAPER EXIT SECTION

16.1 General Description

Toner is fused by applying heat and pressure on the transferred image on the paper which is transported to the fuser unit. The paper is then transported to the inner tray, paper exiting options or ADU. The fuser unit consists of the heater lamps, heat roller, fuser roller, fuser belt, pressure roller, separation fingers, separation plate, thermopiles, thermistors, thermostats, etc.
The heat roller, fuser roller and pressure roller in the fuser unit are driven by the fuser motor, and the exit roller is driven by the exit motor.

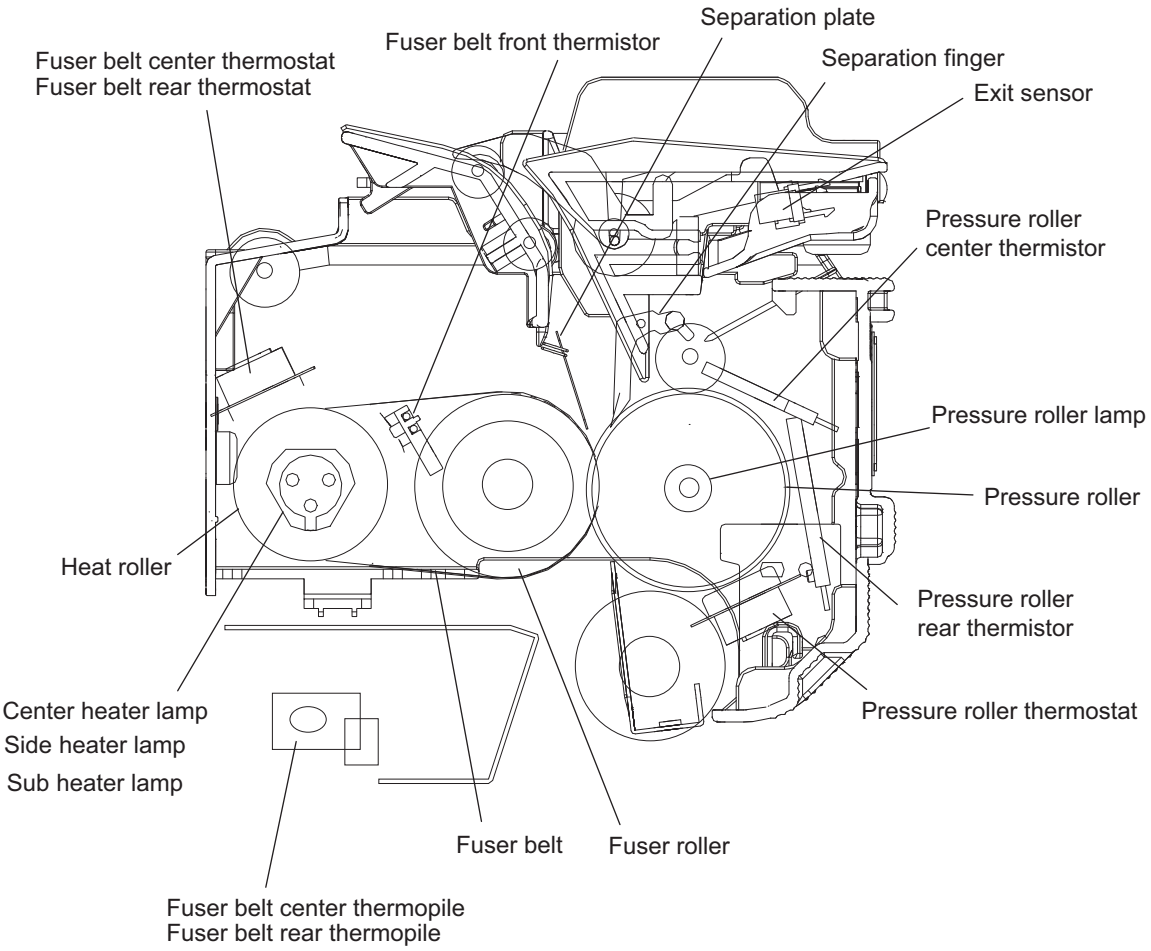


Fig. 16-1

16

16.2 Composition

Fuser belt unit	Fuser belt	PM parts
	Fuser belt guide	PM parts
	Fuser roller	PM parts
	Heat roller	
Center heater lamp		LAMP1 (600 W)
Side heater lamp		LAMP2 (600 W)
Sub heater lamp (e-STUDIO4520C only)		LAMP4 (280 W)
Fuser belt center thermopile		THMP1
Fuser belt rear thermopile		THMP2
Fuser belt front thermistor		THM3
Fuser belt center thermostat		THMO1
Fuser belt rear thermostat		THMO2
Pressure roller		PM parts
Pressure roller lamp		LAMP3 (MJD: 350 W) (except MJD: 280 W)
Pressure roller center thermistor		THM4
Pressure roller rear thermistor		THM5
Pressure roller thermostat		THMO3
Separation finger		PM parts
Separation plate		
Fuser motor		M17
Exit sensor		S26
Exit roller		
Exit motor		M18

16.3 Functions

1. Center heater lamp (LAMP1) / Side heater lamp (LAMP2) / Sub heater lamp (LAMP4)
   These halogen lamps heat the heat roller. The center heater lamp (LAMP1) and the side heater lamp (LAMP2) are lit alternately to heat the heat roller. The sub heater lamp (LAMP4), which is installed only in the e-STUDIO4520C, heats the heat roller when this equipment starts printing immediately after its power has been turned ON in order to prevent a fall in temperature on the fuser belt surface.
   Each heater lamp has its coil in a different location. The coil of the center heater lamp (LAMP1) is in its center, those of the side heater lamp (LAMP2) are on both sides, and that of the sub heater lamp (LAMP4) is wound over its entire surface. The heater lamps are fixed inside of the heat roller so that they will not be separately rotated during its rotation.

2. Heat roller
   The heat roller is an aluminum roller which conducts heat generated by the heater lamp to the fuser belt. The heat roller in this equipment is a thin roller which enhances heat conduction, and thus the warming-up time is shortened.

3. Fuser belt
   The fuser belt couples the heat roller with the fuser roller, and it conducts heat from the heat roller to the fuser roller and paper to melt toner on the paper.
   The thin fuser belt enables to reduce warming up time and mode changing time. To prevent the fuser belt from adhering toner, the surface of the fuser belt is fluorinated.

4. Fuser roller
   The fuser roller is pressed against the pressure roller with the fuser belt in-between. By this pressure between the fuser roller and pressure roller, the heat conduction to the paper is enhanced so that toner becomes easier to be melted, and melted toner is soaked into the paper. In order to improve the fusing ability, the fuser roller with sponge surface is employed to expand the nip width.

5. Pressure roller
   The pressure roller is a rubber roller which ensures proper nip width between the pressure roller and fuser roller / fuser belt, and it is pressed on the fuser roller / fuser belt by springs in order to fuse toner effectively to the paper.
   Also, a heater lamp is fixed on the inside of the pressure roller to stabilize the surface temperature of the pressure roller. The heater lamp does not rotate even when the pressure roller is rotating.

6. Pressure roller lamp (LAMP3)
   The pressure roller lamp is a halogen lamp which is turned ON/OFF constantly to maintain the preset temperature in order to stabilize the surface temperature of the pressure roller, reduce warming up time and enhance fusing ability. Unlike the center heater lamp / side heater lamp, the whole part of the pressure roller lamp generates heat.

7. Fuser belt center thermopile (THMP1) / Fuser belt rear thermopile (THMP2)
   The thermopiles are high-sensitivity infrared thermistors to detect the surface temperature of the fuser belt. Non-contact type thermistors are used in order not to damage the paper contact surface of the fuser belt. One thermopile fixed each on the center and rear-side of the frame detects the temperature of the center and edge of the fuser belt, and controls the center heater lamp / side heater lamp.
   These thermopiles detect the temperature of the fuser belt to maintain it in a certain temperature range (actually around 155°C) between the lower limit causing the poor fusing and the upper limit causing the high temperature offsetting. When the temperature of the fuser belt is lower than the preset temperature, it turns ON the power supply to the heater lamps, and when it is higher than the preset temperature, it cuts off the supply.

8. Fuser belt front thermistor (THM3)
   It detects the temperature abnormality at the both ends of the fuser belt. This area may be overheated without heat absorption by paper since paper does not pass through this area. This thermistor is not related to the temperature control of the fuser belt.

9. Fuser belt center thermostat (THMO1) / Fuser belt rear thermostat (THMO2)
   These thermostats cuts off the power supply to the heater lamps by opening itself if the fuser belt becomes abnormally hot as a result of the problem such as thermistor malfunction.
   These thermostats for the equipment are used to prevent abnormal operation. When the thermostat detects any abnormality, it must be replaced as well as the other damaged parts in the fuser unit.

10. Pressure roller center thermistor (THM4)
    This thermistor detects the surface temperature of the center of the pressure roller and controls the pressure roller lamp.

11. Pressure roller rear thermistor (THM5)
    This thermistor detects the surface temperature of the pressure roller ends. It detects the temperature abnormality at the both ends of the pressure roller. This area may be overheated without heat absorption by paper since paper does not pass through this area. This thermistor is not related to the temperature control of the pressure roller.

12. Pressure roller thermostat (THMO3)
    The thermostat cuts off the power supply to the pressure roller lamp by opening itself if the pressure roller becomes abnormally hot as a result of the problem such as thermistor malfunction. The thermostat for this equipment is used to prevent abnormal operation.
    When the thermostat detects any abnormality, it must be replaced as well as the other damaged parts in the fuser unit.

13. Separation fingers
    Five separation fingers are installed above the pressure roller to separate the paper stuck on the pressure roller.

14. Separation plate
    The separation plate is installed above the fuser belt (heat roller) to cover the insufficient separation often occurs at color printing the mode that the toner is much adhered.

15. Exit sensor (S26)
    This sensor detects the arrival of the leading or trailing edge of the paper at the exit roller. It also detects paper jams in the fuser unit paper exit section and trailing edge of paper turned over for duplex printing.

16. Exit roller
    This roller transports the paper from the fusing section to the inner tray, paper exiting options or the ADU and is driven by the exit motor.

17. Fuser motor (M17)
    This motor drives the fuser unit and the optional bridge unit.

18. Exit motor (M18)
    This motor drives the exit roller. It rotates reversely to switch back paper when the equipment is in the reverse operation.

16.4 Description of Operation

The fuser belt is located between the fuser roller and pressure roller. The fuser roller is pressed with the spring force from the pressure roller side, and it is rotated by the fuser motor (M17) drive. The fuser belt also rotates simultaneously. Then the paper transported to the fuser unit is held between the fuser belt and pressure roller and the toner is fused on the paper with heat and pressure. After this, the separation fingers and separation plate separate the paper from the fuser belt. Then the paper is transported to the inner tray, paper exiting options or ADU through the exit roller.

The fuser belt center thermopile (THMP1) and the fuser belt rear thermopile (THMP2) control the temperature of the heat roller. If any temperature abnormality is detected, these thermopiles shut off the power supply relay within the power supply unit. This in turn shuts off the power supply to all the heater lamps, as well as that over all the parts, except for the control panel.
If the temperature abnormality is still not resolved due to such problems as thermopile malfunction, the fuser belt center thermostat (THMO1) and the fuser belt rear thermostat (THMO2) are opened to shut off the power supply to the center heater lamp (LAMP1), the side heater lamp (LAMP2) and the sub heater lamp (LAMP4).
In the same manner, the pressure roller center thermistor (THM4) and the pressure roller rear thermistor (THM5) control the temperature of the pressure roller. If any temperature abnormality is detected, these thermistors shut off the power supply relay within the power supply unit. This in turn shuts off the power supply to all the heater lamps, as well as that over all the parts, except for the control panel.
If the temperature abnormality is still not resolved due to such problems as thermistor malfunction, the pressure roller thermostat (THMO3) is opened to shut off the power supply to the to the pressure roller lamp (LAMP3).

When OHP film or thick paper is being transported, the transport speed is halved in order to improve fusing efficiency.

16.5 Electric Circuit Description

16.5.1 Fuser unit control circuit

[1] Configuration

In this equipment, 3 heater lamps (center, side, and sub*) which have different heat-generating positions are installed in the heat roller to heat up the fuser belt. Also, one heater lamp (pressure roller lamp) is installed in the pressure roller. The fusing temperature is controlled by turning ON/OFF these heater lamps with the command from the ASIC on the LGC board.
The surface temperature of the fuser belt is detected by a thermistor (fuser belt front thermistor) and 2 thermopiles (fuser belt center and rear thermopiles: non-contact type sensors), and the surface temperature of the pressure roller is detected by 2 thermistors (pressure roller center and rear thermistors). And then the information of these temperatures is input to the ASIC through an A/D converter.
Based on the detected temperature, the ASIC transmits the control signal of the heater lamp to the drive circuit (TRC: Triac) of each heater lamp on the switching regulator via the heater lamp control circuit. The power supply to each heater lamp is thus controlled by driving TRC.
The forcible power-OFF circuit detects the overheating of the fuser belt and pressure roller by each thermistor/thermopile. In case that the surface temperature of the fuser belt or the pressure roller has exceeded the specified temperature, the forcible power-OFF circuit transmits an overheat detection signal to the ASIC and the heater lamp control circuit and transmits a reset signal to the relay in the power supply unit to turn the relay OFF forcibly.
In addition, if these control circuits do not function due to thermistor abnormality or for other reasons and the fuser belt or the pressure roller is abnormally overheated as the result, 3 thermostats (fuser belt center and rear thermostats, pressure roller thermostat) shut off the power supply to the heater lamps to protect the equipment.

*: e-STUDIO4520C only

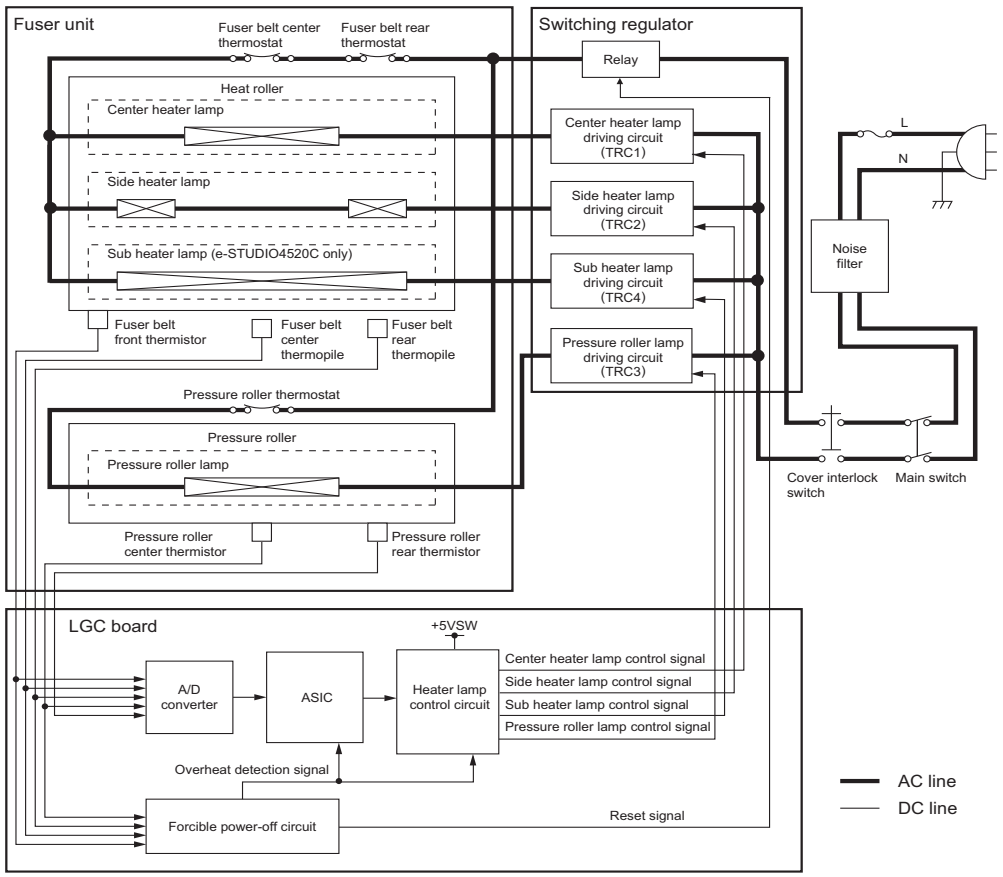


Fig. 16-2

[2] Temperature detection section

[2-1] Relation between the thermistor/thermopile output voltage and the surface temperature of the fuser belt

Output voltages (V)		Surface temperatures of fuser belt (°C)
Fuser belt front thermistor	Fuser belt center/ rear thermopile	
Approx. 0.3	Approx. 1.3	40
Approx. 2.6	Approx. 1.9	120
Approx. 3.6	Approx. 2.4	160

[2-2] Relation between the thermistor output voltage and the surface temperature of the pressure roller

Output voltages (V)	Surface temperatures of pressure roller (°C)
Pressure roller center/ rear thermistor	
Approx. 0.3	40
Approx. 1.2	80
Approx. 3.0	130

[2-3] Surface temperature control for the fuser belt and pressure roller

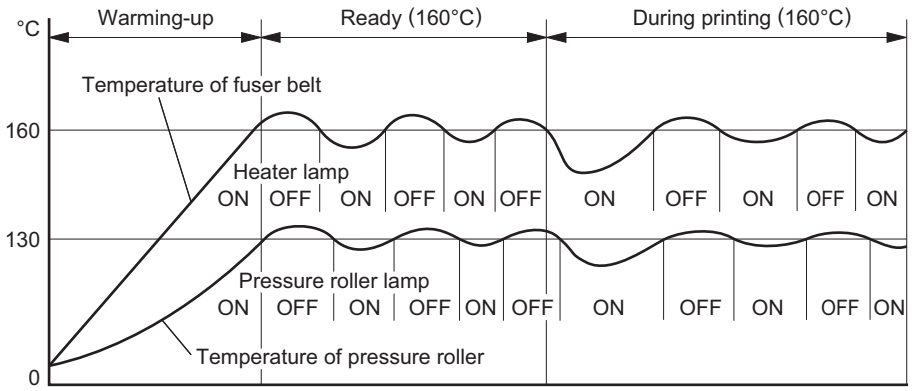


Fig. 16-3

Remark:

During warming-up before the pressure roller lamp is turned ON, the center and side heater lamps are turned ON to raise the surface temperature of the fuser belt. When the pressure roller lamp is ON, the equipment is in ready or printing status, each heater lamp is turned ON/OFF alternately to maintain the surface temperature of the fuser belt at a certain level (setting temperature of each status).

[2-4] Temperature control for the ends of the fuser belt and pressure roller

During continuous printing, the temperature of the end of the fuser belt or the pressure roller (area where the paper does not pass on) generally tends to be higher than that of other areas where the paper passes on. For this reason, the fuser belt front thermistor detects the temperature of the end of the fuser belt, and the pressure roller rear thermistor detects the temperature of the end of the pressure roller. When these thermistors detect the abnormal temperature (250ºC for the end of the fuser belt, 210ºC for the end of the pressure roller), the heater lamps are turned OFF regardless of the temperature of the area where the paper passes on.

[2-5] Temperature control at energy saving mode

This equipment has the following two types of temperature control for saving energy and returns to ready status to perform printing in each mode upon printing request.
The period of time from the printing request to this mode can be set in the Setting Mode (08) or by an from administrator.

Administrator setting procedure:
[USER FUNCTIONS] button → [ADMIN] (input of administrator's password) → [GENERAL] → [ENERGY SAVER]

Auto Power Save Mode (Setting Mode (08-205)):
When the printing is not performed in a specified period of time (default setting: 3 min.) after the previous printing is completed, the equipment enters to Auto Power Save Mode. ON/OFF of heater lamp is controlled to maintain the fuser belt surface temperature at 50°C.

Auto Shut Off Mode (Setting Mode (08-206)):
When the printing is not performed in a specified period of time (default setting: 10 min.) after the equipment entered to Auto Power Save Mode, the equipment then enters to Auto Shut Off Mode to turn OFF the heater lamp.

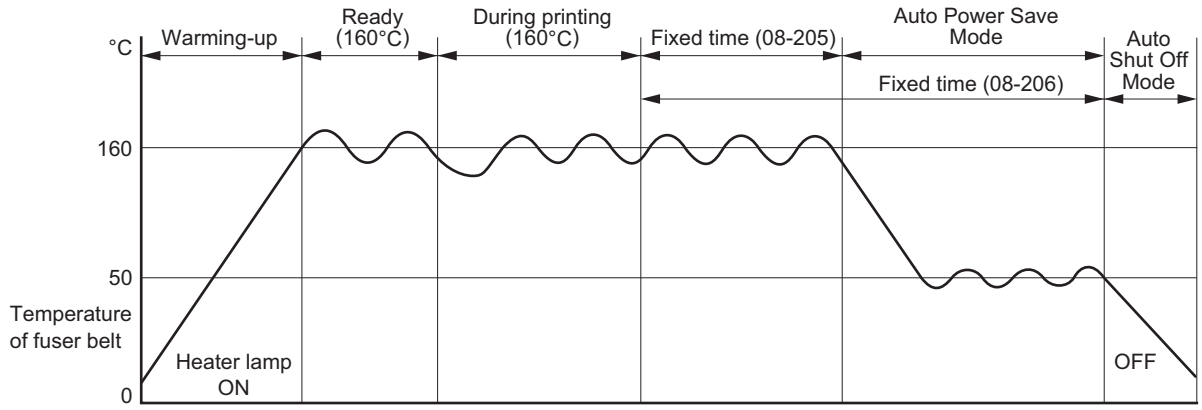


Fig. 16-4

[2-6] Fuser unit error status counter control

- To enhance the safety of the fusing section unit, engine CPU provides the following protection: When the third [C411] error has occurred after two consecutive [C411] errors, the heater lamp is not turned ON and error [C412] is displayed immediately even if an operator turns OFF the power and back ON. However, if the equipment goes into a ready state normally with the fuser unit error status counter “1” or below, the counter is cleared to “0”.

- If the error codes [C411] to [C468] are displayed and still not cleared even though the thermistor, thermopile, thermostat and heater lamp have been repaired (and the power ON/OFF does not clear the error), check the Setting Mode (08-400) to set the fuser unit error status counter to “0”.

  Remark:
  The fuser unit error status counter (Setting Mode (08-400)) never has values other than 0 to 51.

- The error [C450] is not determined at its first occurrence. When it occurred for the first time, turn the power of the equipment OFF and then back ON and if temperature abnormality is resolved, the fuser unit error status counter is reset to “0”. When it occurred twice or more consecutively, the error [C411] or [C412] is determined. When it occurred three times or more consecutively, the error [C451] or [C452] is determined and the error code is displayed. In this case heater lamps are not turned ON even after the power is turned OFF and then back ON.

  Remark:
  Any value other than 1 to 9, 18 to 29, 31 to 39, 41, 42, 45, 48 to 51 will not be written for the code “fuser unit error status counter (08-400)

- If the heater lamps do not turn ON and the service call [C411] or [C412] is displayed immediately after the power is ON, ensure the fuser unit error status counter is “2” or over. If it is “2” or over, be sure to check the thermistor, thermopile, thermostat and heater lamp. Reset the counter to “0” after repairing them, then turn ON the power.

- If the fuser unit error status counter is “52” or over (e.g., 60), the data in SRAM or SRAM itself may possibly have been ruined due to causes such as leakage from the chargers.
  Check the bias, high-voltage transformers and needle electrodes to see if any of them is defective, and also look through all the data in the SRAM.

- When the thermistors detect overheating, the engine CPU decides the error code and counter value of the fuser unit error status. After turning OFF each output (the heater lamp, exposure lamp, control panel display, motors and so on), the engine CPU turns OFF the power to protect the fuser unit.

  Error code: C449, C468 ([C] and [8])
  Counter value of the fuser unit error status: 8, 9, 18 to 23, 25 to 29 (08-400)

  Thermistors and thermopiles continue detecting the abnormal temperature even after the error codes and counter values are decided. Even if the power is turned ON immediately, it is automatically turned OFF again when the surface temperature of the fuser belt is still higher than the abnormal temperature detected.
  Wait until the surface temperature of the fuser belt is lowered enough, and turn ON the power to check the counter value while it is turned OFF again. After confirming that it is the fuser unit abnormality, correct the abnormality and reset the counter value (08-400) to “0” to start up the equipment normally.

[2-7] Temperature detection circuit

The thermistor is a device whose resistance varies according to the detected temperature, and the thermopile is a device whose output voltage varies according to the detected temperature. The ASIC detects voltages output from these devices, and judges whether the operation of the fuser unit is normal or abnormal from the changes in voltages.

If one of the thermistors and thermopiles is broken, the control circuit judges that the temperature of the fuser belt or pressure roller is extremely low and keeps turning the heater lamps ON. As a result, the temperature of the fuser belt or pressure roller rises, and possibly activates the thermostat which is a safety protection device. To prevent this in advance, the ASIC works to detect whether each thermistor and thermopile is broken or not.

Also, the control circuit constantly checks the temperature of the heat roller and the pressure roller to prevent them from excessive heating by circuit abnormality or thermistor abnormality, and automatically shuts OFF the power when one of these temperatures exceeds the specified temperature.

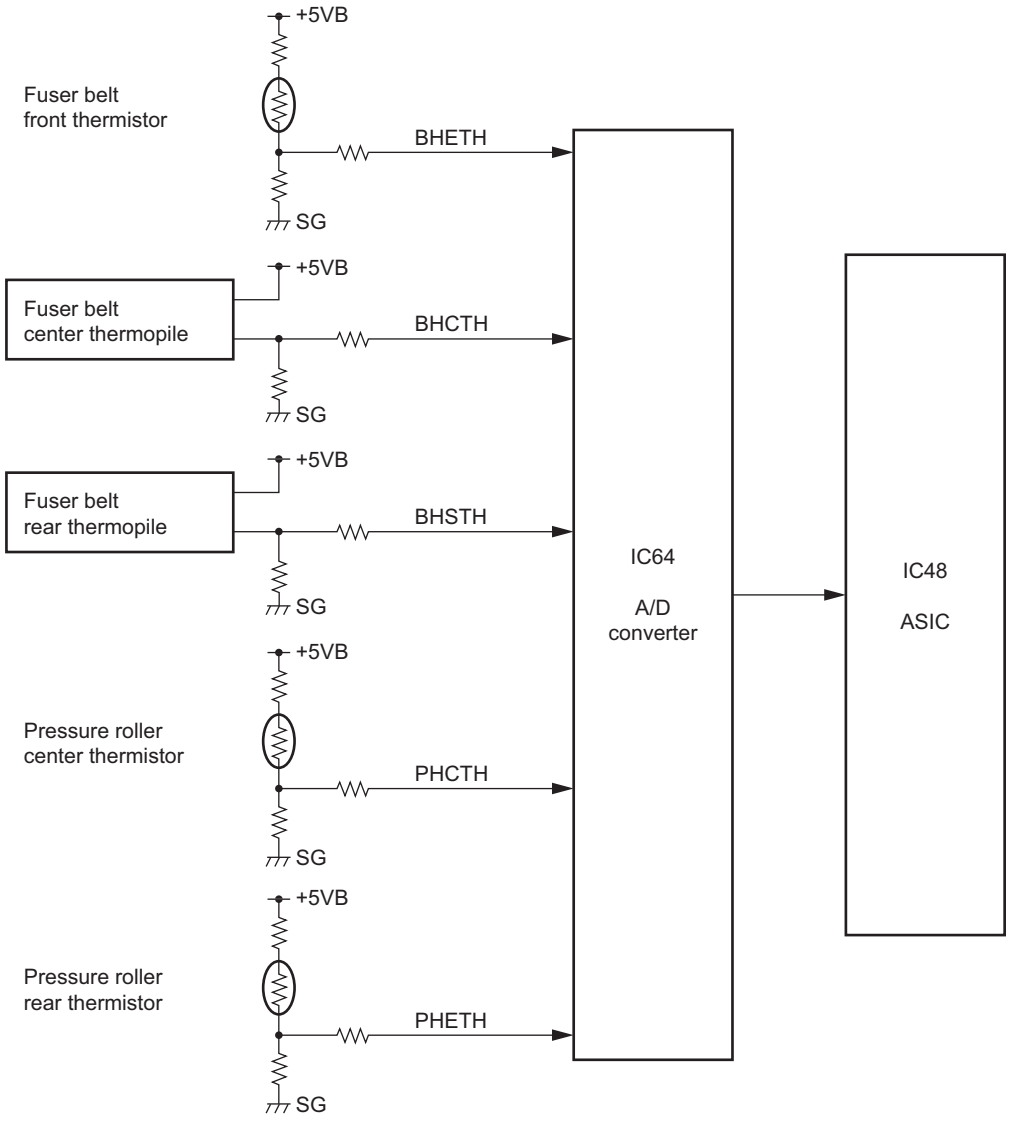


Fig. 16-5

[2-8] Abnormality detection by the thermistors and thermopiles

The following table shows the conditions for judging the temperature abnormality of the fuser belt and pressure roller, and the detecting timing.

Check timing	Condition	Temperature judged					Error code	Counter (08-400)	Error judging timing
		Fuser belt thermistor / thermopile			Pressure roller thermistor				
		Front	Center	Rear	Center	Rear			
Power ON	1	250°C or above	---	---	---	---	C449	9	Power ON
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	8	
		---	---	---	---	200°C or above			
	2	---	40°C or below	150°C or above	---	---	C412	2	
		---	150°C or above	40°C or below	---	---			
Detecting 40°C	1	250°C or above	---	---	---	---	C449	19	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	18	
		---	---	---	---	200°C or above			
	2	---	40°C or below	---	---	---	C412 (C411)	2 (1)	Fixed time
		---	---	40°C or below	---	---			
		The temperature of the fuser unit front section is 50°C higher or more than that of the fuser unit center section for more than 2 seconds.			---	---	C451 (C450)	41 (38)	
		---	The temperature of the fuser unit front section is 50°C higher or more than that of the fuser unit center section for more than 2 seconds.		---	---	C452 (C450)	50 (48)	

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Check timing	Condition	Temperature judged					Error code	Counter (08-400)	Error judging timing
		Fuser belt thermistor / thermopile			Pressure roller thermistor				
		Front	Center	Rear	Center	Rear			
Detecting 120°C	1	250°C or above	---	---	---	---	C449	21	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	20	
		---	---	---	---	200°C or above			
	2	---	120°C or below	---	---	---	C446 (C443)	6 (3)	Fixed time
		---	---	120°C or below	---	---			
		The temperature of the fuser unit front section is 50°C higher or more than that of the fuser unit center section for more than 2 seconds.			---	---	C451 (C450)	42 (39)	
		---	The temperature of the fuser unit front section is 50°C higher or more than that of the fuser unit center section for more than 2 seconds.		---	---	C452 (C450)	51 (49)	
When pre-running end temperature or ready temperature is detected	1	250°C or above	---	---	---	---	C449	22	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	20	
		---	---	---	---	200°C or above			
	2	---	Ready temperature or below	---	---	---	C446 (C445)	6 (5)	Fixed time
		---	---	Ready temperature or below	---	---			
		---	---	---	Ready temperature or below	---	C466 (C465)	6 (5)	Fixed time
		---	---	---	---	Ready temperature or below			

Check timing	Condition	Temperature judged					Error code	Counter (08-400)	Error judging timing
		Fuser belt thermistor / thermopile			Pressure roller thermistor				
		Front	Center	Rear	Center	Rear			
During ready	1	---	BHCON or BHSON signal is ON for more than 40 seconds while temperature detected by the pressure roller center thermistor is 80°C or higher.				C448	32	On usual
		250°C or above	---	---	---	---	C449	23	
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	26	
		---	---	---	---	200°C or above			
	2	40°C or below	---	---	---	---	C447	7	
		---	40°C or below	---	---	---			
		---	---	40°C or below	---	---			
		---	---	---	40°C or below	---	C467	33	
		---	---	---	---	40°C or below			
During printing	1	250°C or above	---	---	---	---	C449	25	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	26	
		---	---	---	---	200°C or above			
	2	40°C or below	---	---	---	---	C447	24	
		---	40°C or below	---	---	---			
		---	---	40°C or below	---	---			
		---	---	---	40°C or below	---	C467	34	
		---	---	---	---	40°C or below			

Check timing	Condition	Temperature judged					Error code	Counter (08-400)	Error judging timing
		Fuser belt thermistor / thermopile			Pressure roller thermistor				
		Front	Center	Rear	Center	Rear			
At energy saving mode	1	250°C or above	---	---	---	---	C449	27	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	26	
		---	---	---	---	200°C or above			
At paper jam	1	250°C or above	---	---	---	---	C449	29	On usual
		---	220°C or above	---	---	---			
		---	---	230°C or above	---	---			
		---	---	---	210°C or above	---	C468	28	
		---	---	---	---	200°C or above			

* The figures in the “Condition” field denote the priority of error checking.

* The figures in the “Error code” and “Counter” fields with parentheses denote that an error status has not yet been determined (= error status is detected only once).

16.5.2 Fuser motor control circuit

The fuser motor, which is a brush-less DC motor driven by control signals from the ASIC on the LGC board, drives the pressure roller.

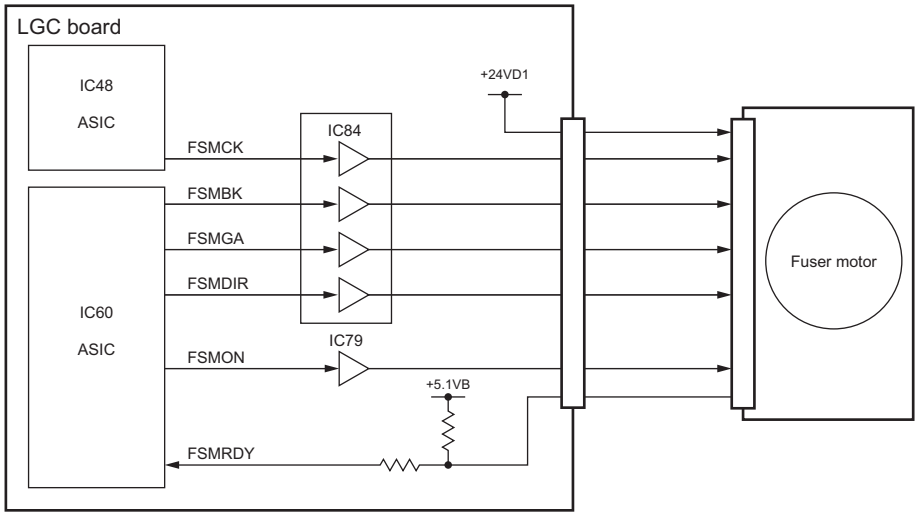


Fig. 16-6

Control signal

Signal	Function	Status	
		High level	Low level
FSMON	Motor ON signal	OFF	ON
FSMDIR	Rotation direction signal	CCW	CW
FSMGA	Speed switching signal	High speed	Low speed
FSMCK	Reference clock	---	---
FSMRDY	Rotation lock detection signal	Unlocked	Locked (Rotating at a constant speed)
FSMSK	Motor brake signal	OFF	ON

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis
* FSMDIR signal is fixed at a high level and rotates only counter clockwise.
* When thick paper or OHP sheet is used, FSMGA signal moves to a low level to reduce the motor speed in half and lower the paper transport speed so that the fusibility of toner is improved.

16.5.3 Exit motor control circuit

The exit motor is a stepping motor driven by the control signal output from the engine CPU and ASIC on the LGC board and rotates the exit roller.
The exit motor is driven by the pulse signal (EXTMA, EXTMB, EXTMC, EXTMD) output from the motor driver. These pulse signals are formed based on the reference clock (EXMCK) and output only when the enable signal (EXMEN) is a high level. Also, the rotation speed or direction of the motor can be switched by changing the output timing of each pulse signal.

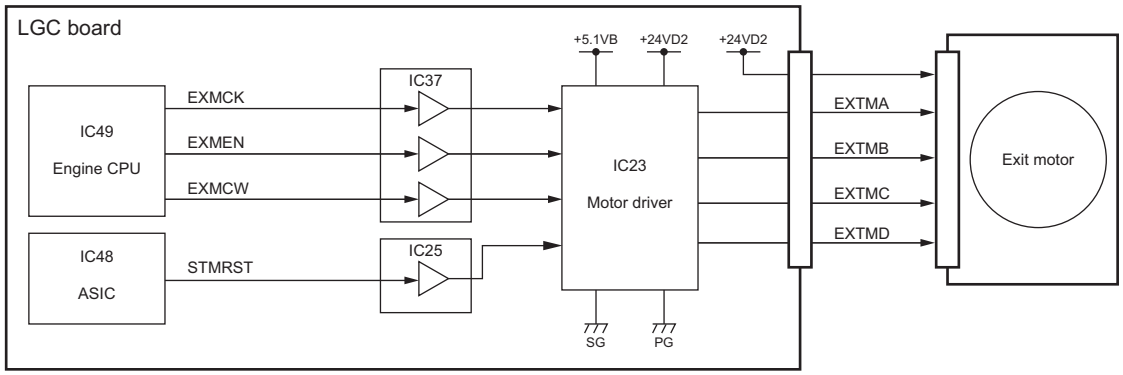


Fig. 16-7

Signal	Function	Status	
		High level	Low level
EXMCK	Reference clock	---	---
EXMEN	Enable signal	ON	OFF
EXMCW	Rotation direction signal	CCW	CW
STMRST	Reset signal	Normal operation	Reset

* CW: Clockwise rotation, CCW: Counter clockwise rotation viewing from the axis

16.6 Disassembly and Replacement

16.6.1 Fuser unit

Notes:

- Be sure that the temperature of the fuser unit has lowered enough before taking it off. If the unit still heated should be taken off, wear a pair of gloves before working.
- When a new fuser unit is installed, be sure to check whether the fuser-related life counter values have been cleared in the list printing mode, PM supporting mode or the setting mode (08).

(1) Open the automatic duplexing unit (ADU) and 2nd transfer unit (TRU).
(2) Loosen 2 screws, and then take off the fuser unit.

Note:

The fuser unit is extremely hot. When taking off the fuser unit, hold the handles of the unit to avoid a direct touch on the unit.

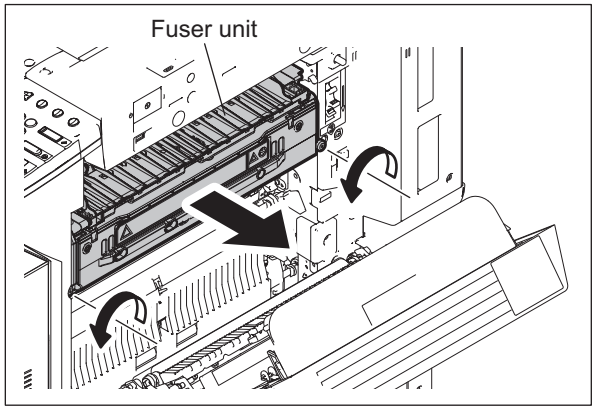


Fig. 16-8

Notes:

Follow the procedure below for the installation.

1. Insert the fuser unit into the equipment and tighten the screws. At this time, turn the handle to engage the gears of the equipment and the fuser unit.
2. Fix the 2 screws securely.
3. Check that they are engaged properly by turning the handle.

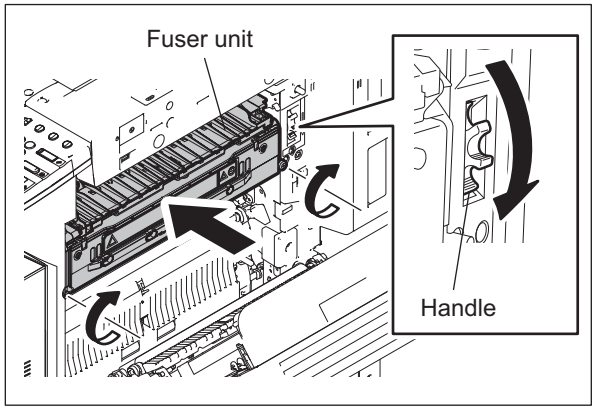


Fig. 16-9

16

16.6.2 Front side cover

(1) Take off the fuser unit.
🕮 P.16-17 "16.6.1 Fuser unit"
(2) Remove 2 screws, and then take off the front side cover.

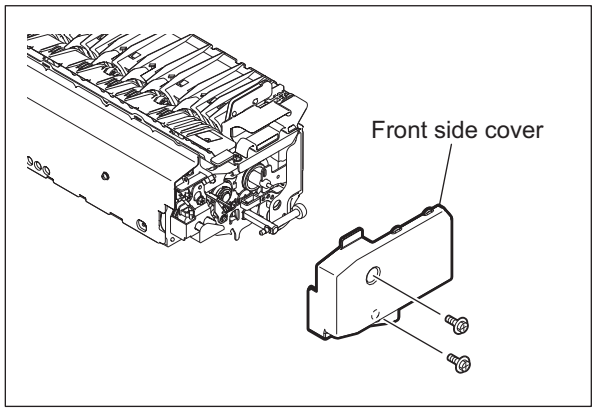


Fig. 16-10

16.6.3 Rear side cover

(1) Take off the fuser unit.
🕮 P.16-17 "16.6.1 Fuser unit"
(2) Remove 2 screws, and then take off the rear side cover.

Note:
When installing, put the harness into the harness guide so that it will not be caught by the cover.

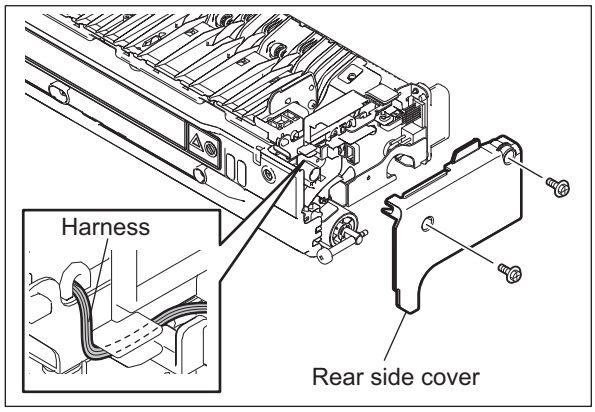


Fig. 16-11

16.6.4 Heat roller cover

(1) Take off the fuser unit.
🕮 P.16-17 "16.6.1 Fuser unit"
(2) Remove 2 screws (one on the rear side is a shoulder screw) and take off the heat roller roller cover.

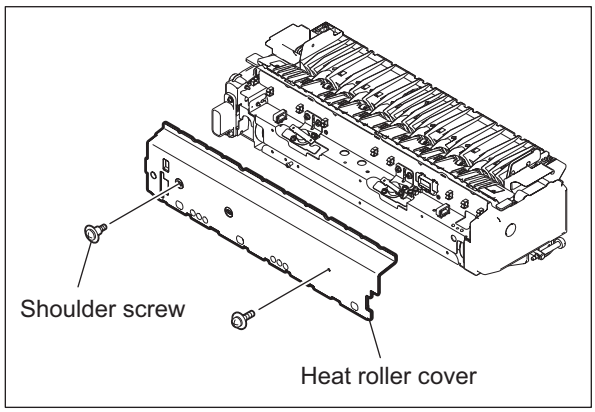


Fig. 16-12

16.6.5 Pressure roller cover

(1) Take off the fuser unit.
📖 P.16-17 "16.6.1 Fuser unit"
(2) Remove 3 screws (those on the center section and the rear section are shoulder screws), and then take off the pressure roller cover.

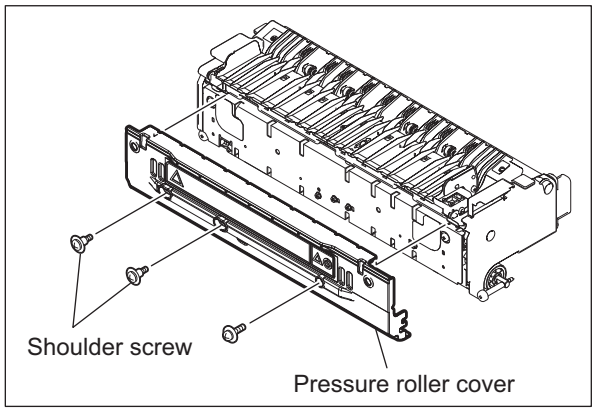


Fig. 16-13

Note:
When installing, be sure to push the harnesses in the direction of the arrows so that they do not get caught in the pressure roller cover.

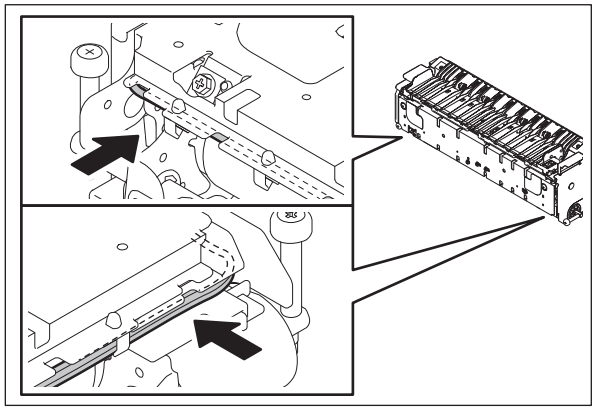


Fig. 16-14

16.6.6 Transport guide

(1) Take off the rear side cover.
📖 P.16-18 "16.6.3 Rear side cover"
(2) Release the harness out of the clamp, and then disconnect 1 relay connector.

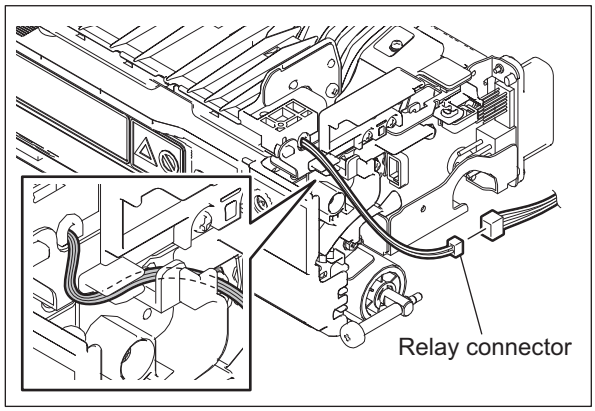


Fig. 16-15

(3) Remove 2 screws and take off the transport guide.

Note:
When installing the transport guide, hook the 3 latches of the transport guide onto the holes of the frame.

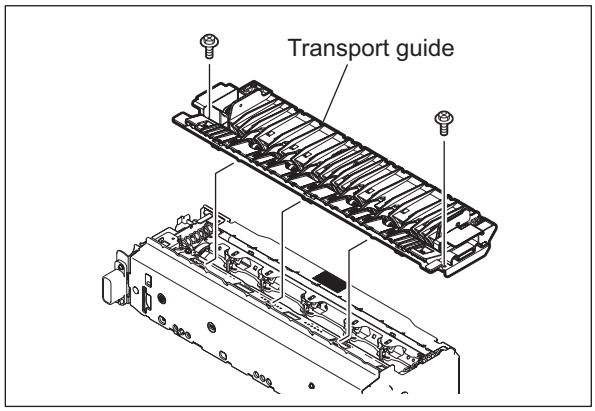


Fig. 16-16

16.6.7 Separation finger unit / Separation finger PM

(1) Take off the front side cover and transport guide.

📖 P.16-18 "16.6.2 Front side cover"
📖 P.16-19 "16.6.6 Transport guide"

(2) Remove 1 spring and then turn the separation finger unit upward.
(3) Lift up the front section of the separation finger unit and then slide the unit to the front side. Then take off the separation finger unit.

Note:
When installing the separation finger unit, slide the unit to the rear side of the equipment and fix it at that position.

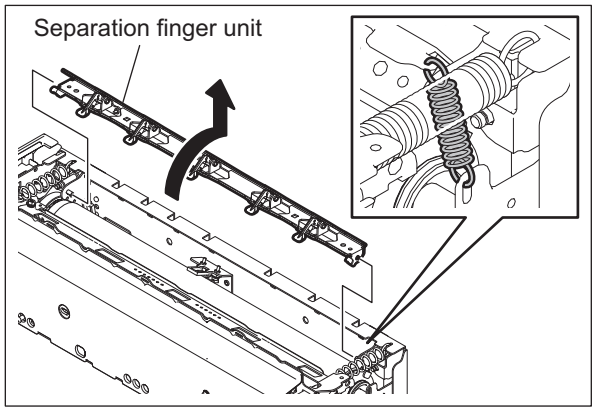


Fig. 16-17

(4) Remove 2 screws, and then take off the separation finger cover.

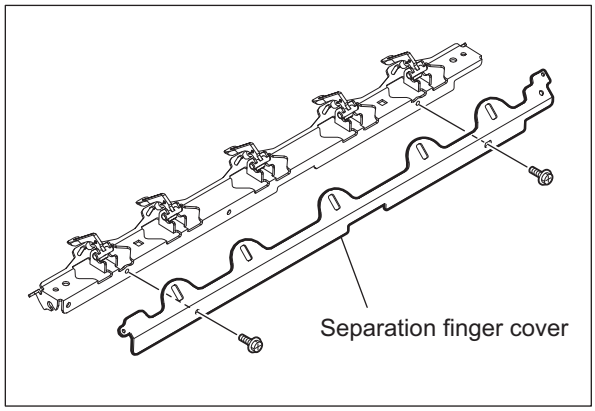


Fig. 16-18

(5) Remove the spring, and then take off the separation fingers.

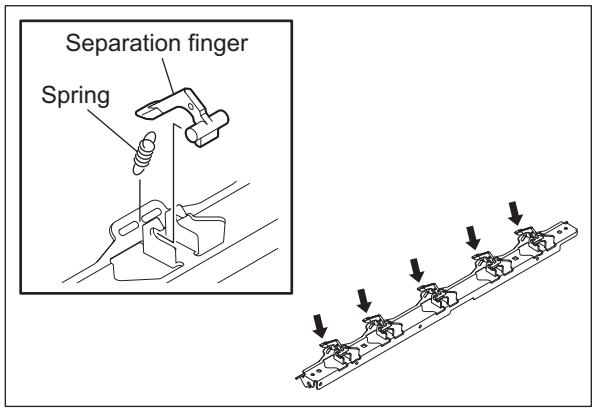


Fig. 16-19

16.6.8 Pressure roller PM / Pressure roller lamp (LAMP3)

(1) Take off the front side covert.
📖 P.16-18 "16.6.2 Front side cover"
(2) Take off the separation finger unit.
📖 P.16-20 "16.6.7 Separation finger unit / Separation finger"
(3) Release the harness on the front side out of 1 clamp, and then disconnect 1 relay connector.

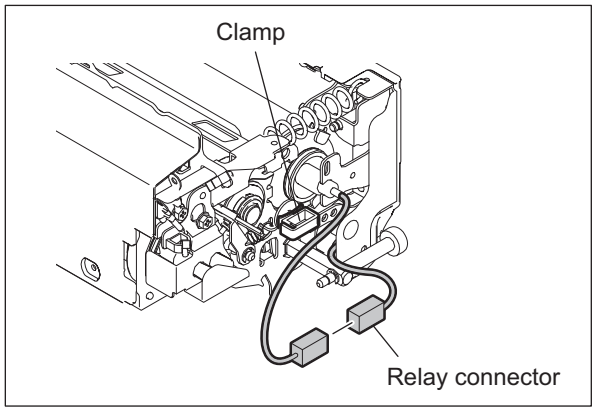


Fig. 16-20

(4) Release 2 harnesses from the 2 clamps indicated in the figure, and then disconnect the relay connector (black).

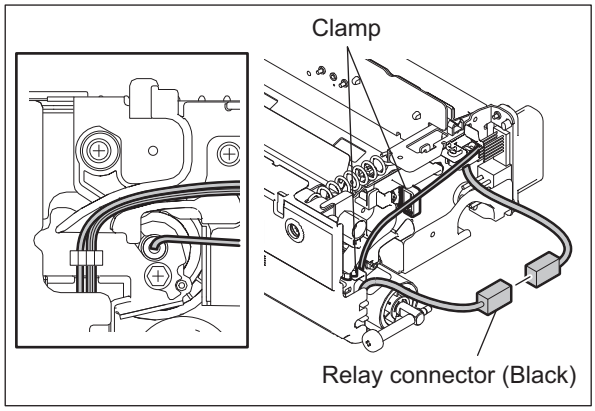


Fig. 16-21

(5) Release the harness of the pressure roller lamp from the harness guide, and then disconnect the replay connector (white).

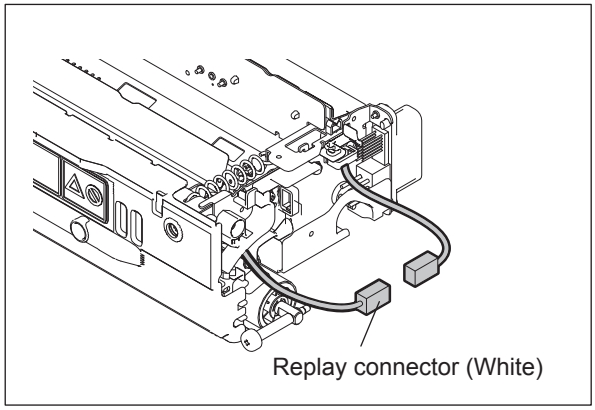


Fig. 16-22

(6) Loosen 2 pressure screws, and then remove 2 springs.

Note:
When installing, tighten the 2 pressure screws securely until they are no longer moved.

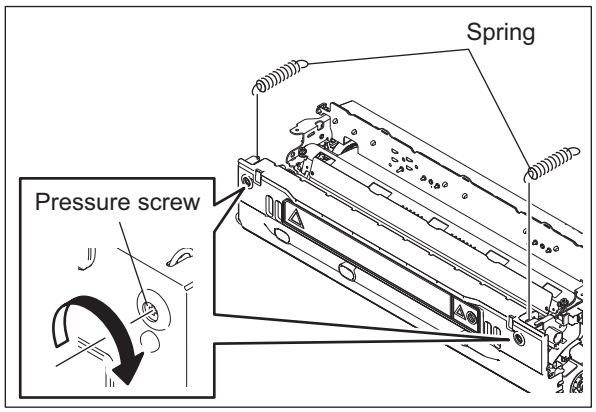


Fig. 16-23

(7) Loosen 1 screw, and then slide the bracket to unfix the pressure roller lamp.

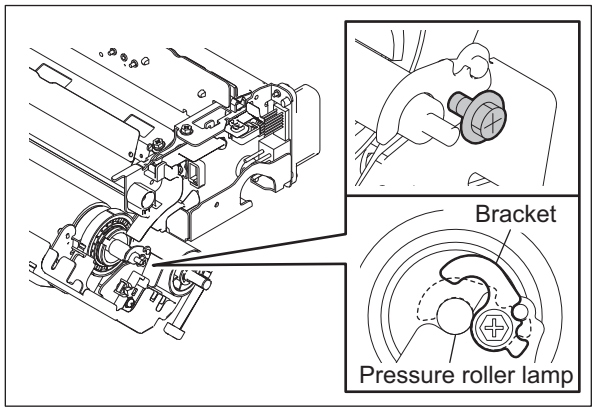


Fig. 16-24

(8) Slide the pressure roller lamp to the rear side to take it off from the front bracket. Then take off the pressure roller by lifting it up.

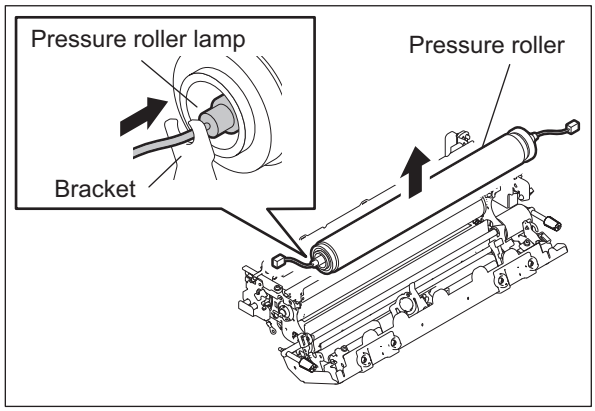


Fig. 16-25

(9) Take off the pressure roller lamp, bearing, and bush from the pressure roller.

Notes:

Follow the notes below to handle the pressure roller lamp.

- When holding the lamp, grasp the glass tube with gloved hands, but not the lead wire and the edge.
- When installing the lamp, be careful not to hit the protrusions on it or its edge against the pressure roller. Do not forcibly pull or move the lamp when its edge is fixed.
- Do not treat the lamp roughly, such as letting it fall on the floor.

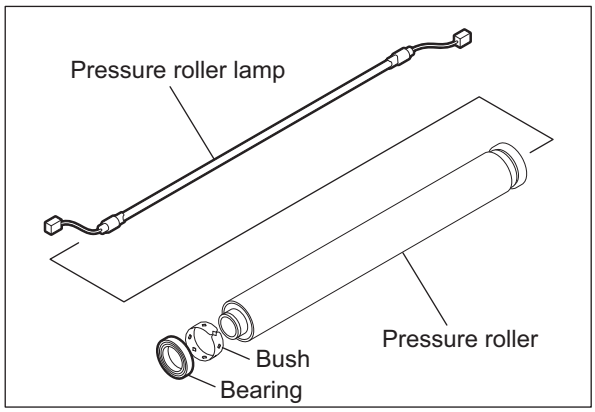


Fig. 16-26

(10) Remove the C-ring, and then take off the gear, bearing, and bush from the pressure roller.

Note:

When installing the pressure roller, check if the C-ring is securely engaged into the groove of the pressure roller.

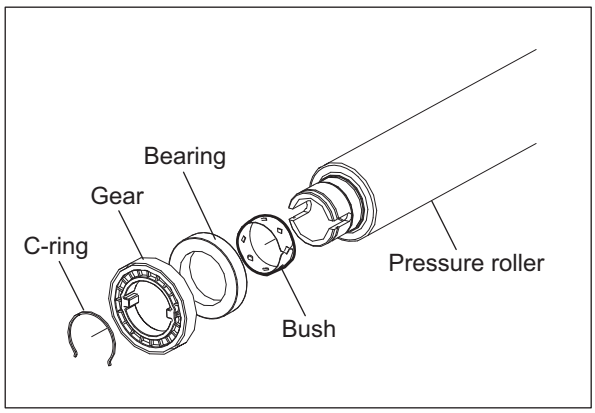


Fig. 16-27

16

16.6.9 Separation plate / Fuser belt unit / Heater lamp (center / side / sub)

(1) Take off the front side cover, heat roller cover and transport guide.

🕮 P.16-18 "16.6.2 Front side cover"
🕮 P.16-18 "16.6.4 Heat roller cover"
🕮 P.16-19 "16.6.6 Transport guide"

(2) Release the harness on the rear side out of 2 clamps and the harness guide, and then disconnect 1 relay connector.

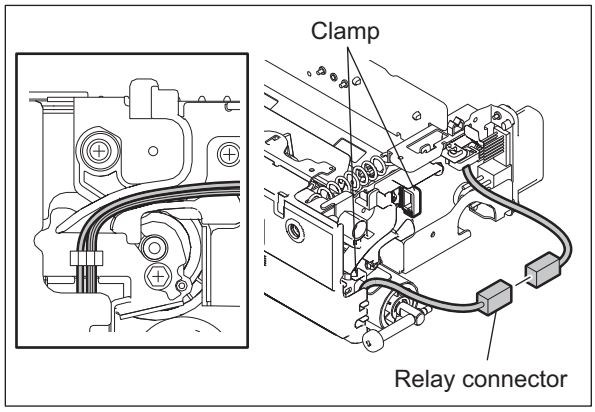


Fig. 16-28

(3) Loosen 2 pressure screws, and then remove 2 springs.

Note:
When installing, tighten the 2 pressure screws securely until they are no longer moved.

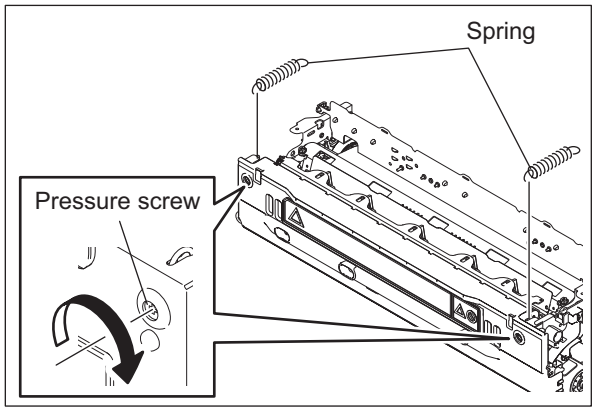


Fig. 16-29

(4) Remove 2 screws and take off the 2 leaf springs.

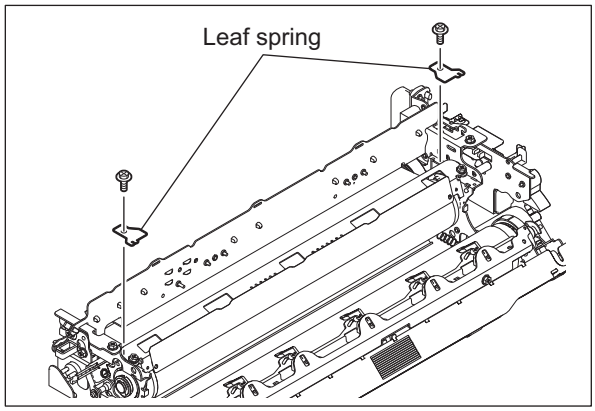


Fig. 16-30

(5) Raise the separation plate, and then take it off upward.

Note:

When installing, check that the gap between the pressure roller and separation plate is within the range of 0.6 mm to 1 mm when the fuser unit temperature is in the normal state. If the gap is out of the specified value, be sure to adjust it.

📖 P.16-45 "16.7 Adjustment of the Separation Plate Gap"

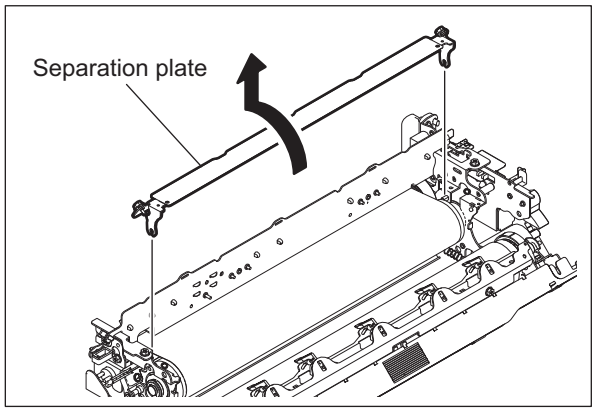


Fig. 16-31

(6) Release the harness on the rear side out of 3 clamps, and then disconnect 4 relay connectors.

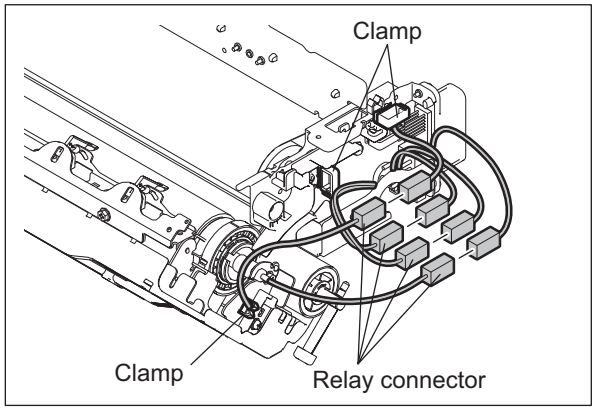


Fig. 16-32

Note:

In e-STUDIO4520C, disconnect 5 relay connectors.

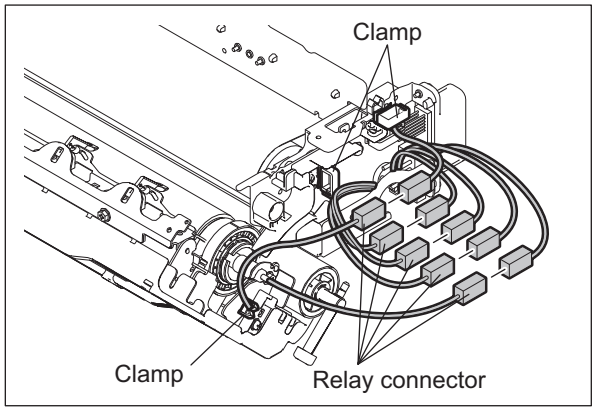


Fig. 16-33

16

(7) Remove 2 screws, and then release the harness out of 4 clamps.

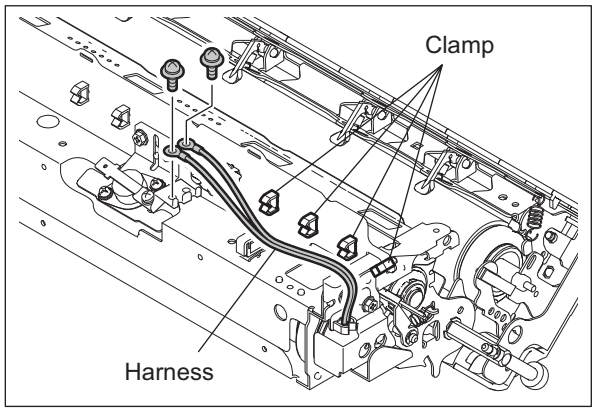


Fig. 16-34

Note:
In e-STUDIO4520C, remove 3 screws.

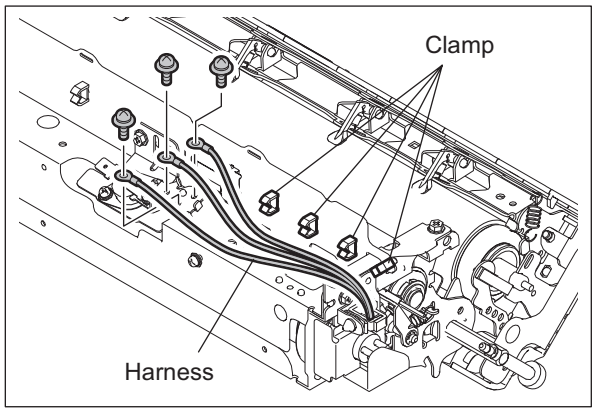


Fig. 16-35

(8) Release 2 harnesses from the clamp, and then take off the lamp front bracket by loosening 1 screw.

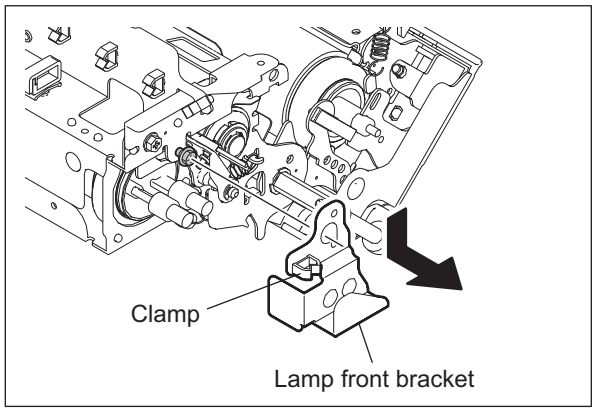


Fig. 16-36

Note:
In e-STUDIO4520C, the shape of the bracket is different.

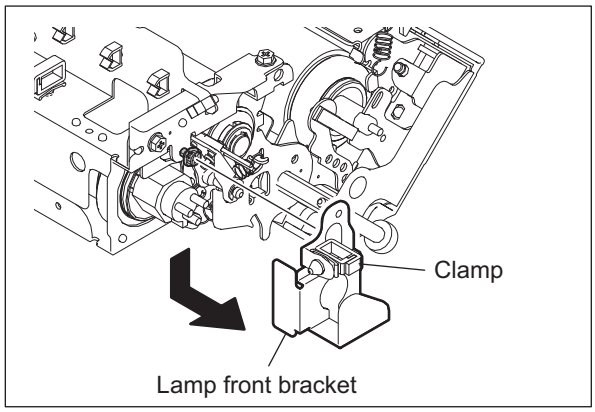


Fig. 16-37

(9) Take off the center heater lamp and the side heater lamp.

Notes:

Follow the notes below to handle the heater roller lamp.

- When holding the lamp, grasp the glass tube with gloved hands, but not the lead wire and the edge.
- When installing the lamp, be careful not to hit the protrusions on it or its edge against the pressure roller. Do not forcibly pull or move the lamp when its edge is fixed.
- Do not treat the lamp roughly, such as letting it fall on the floor.

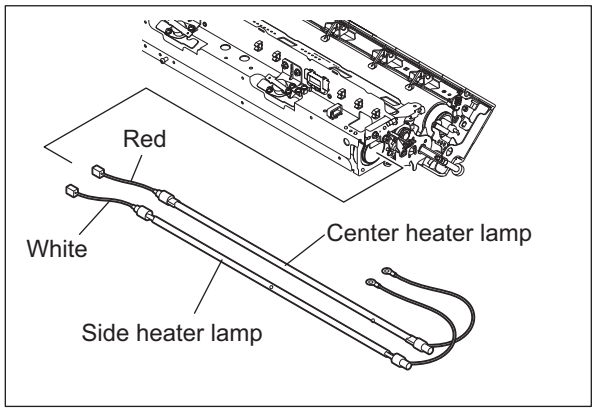


Fig. 16-38

Note:

In e-STUDIO4520C, the center heater lamp, side heater lamp and sub heater lamp are unified.

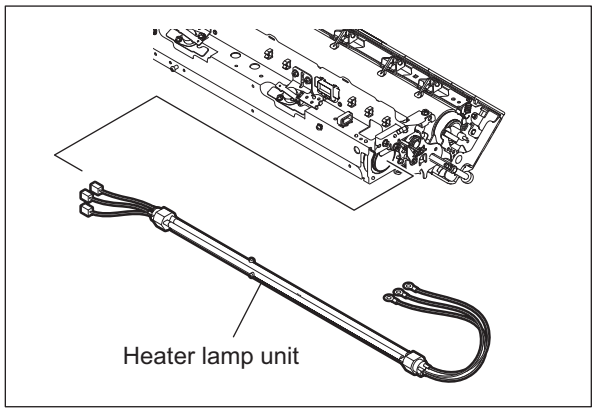


Fig. 16-39

(10) Remove a spring and an E-ring, and then take off the fuser belt front thermistor bracket.

Notes:

Pay attention to the following points when installing the fuser belt front thermistor.

- The fuser belt and the temperature sensor in the fuser belt front thermistor are not damaged.
- The temperature sensor in the fuser belt front thermistor contacts with the heat roller.
- The fuser belt front thermistor bracket moves smoothly.

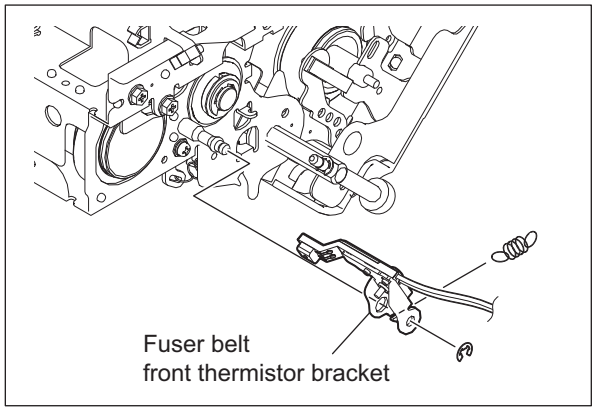


Fig. 16-40

(11) Disconnect 2 connectors.

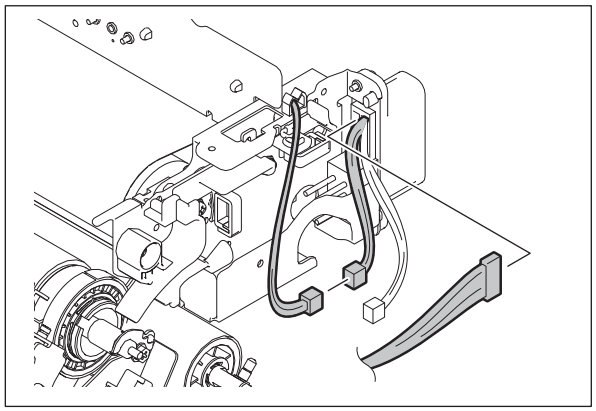


Fig. 16-41

(12) Release the harness out of 3 clamps.
(13) Remove the harness from the fuser belt rear thermostat.

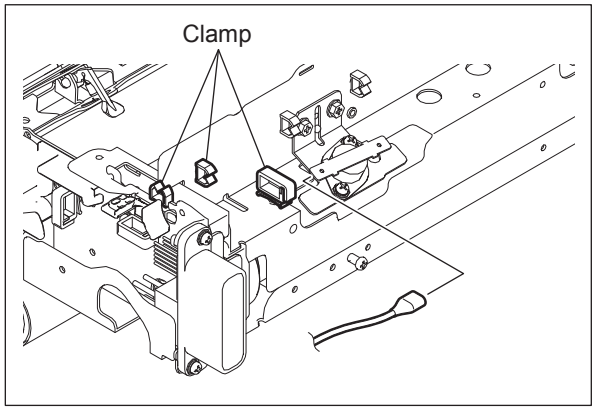


Fig. 16-42

(14) Remove 4 screws, and then release the harness out of 1 clamp to take off the fuser belt sensor bracket and the lamp rear bracket.

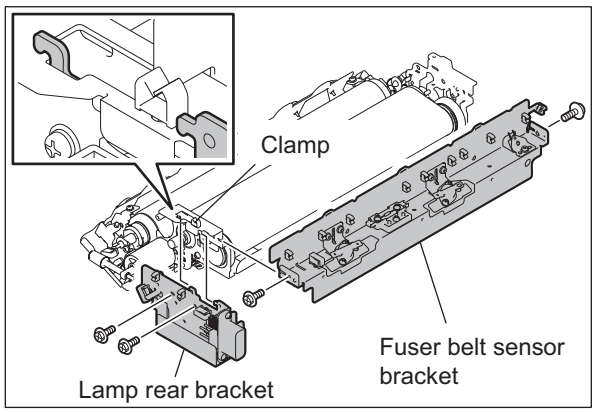


Fig. 16-43

(15) Remove 2 E-rings from the fuser roller. Then remove 2 washers, 2 bushings and 2 bearings.

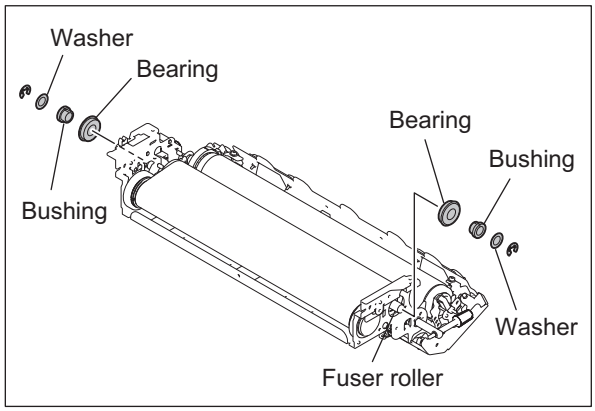


Fig. 16-44

(16) Raise the fuser roller, and then take off the fuser belt unit by lifting it up.

Notes:

- Be careful not to scratch the fuser belt unit. Lay the fuser belt on the clean place to prevent the belt from the dust.
- When installing the fuser belt unit, place the longer shaft of the fuser roller on the rear side.

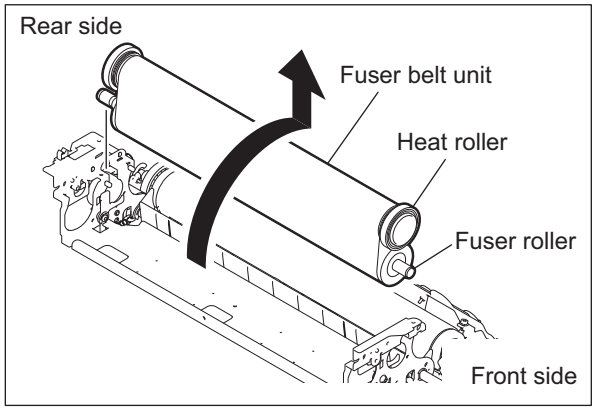


Fig. 16-45

16.6.10 Fuser belt PM / Heat roller / Fuser belt guide PM/ Fuser roller PM

(1) Take off the fuser belt unit.
📖 P.16-24 "16.6.9 Separation plate / Fuser belt unit / Heater lamp (center / side / sub)"
(2) Remove 2 bearings from each side of the heat roller.

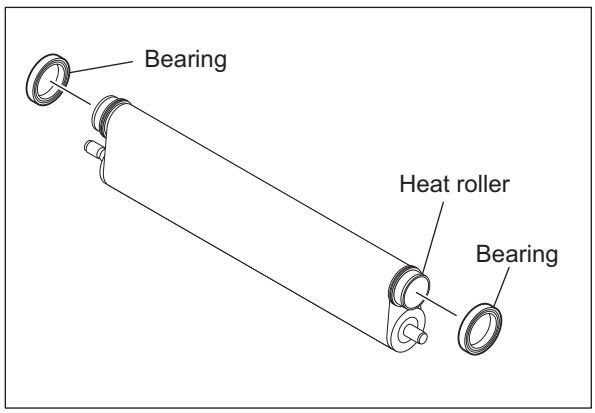


Fig. 16-46

(3) Take off the heat roller and fuser roller from the fuser belt.

Note:
Be careful not to scratch the fuser belt. Lay the fuser belt on the clean place to prevent the belt from the dust.

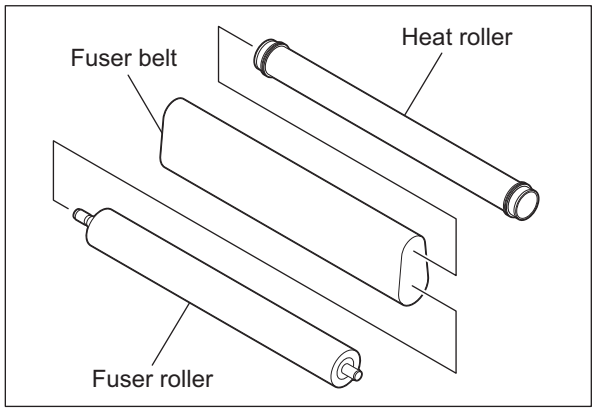


Fig. 16-47

(4) Remove 2 C-rings and 2 fuser belt guides from the heat roller.

Notes:
When installing the fuser belt guide and C-ring, be sure of the following.
- Be sure that the fuser belt guide is placed with its flat face inside contacting the fuser belt (with the mold mark outside).
- Check that the fuser belt guide is securely fitted in the groove of the heat roller.
- Check that the C-ring is also securely fitted in the groove of the fuser belt guide and avoid the convex portion.

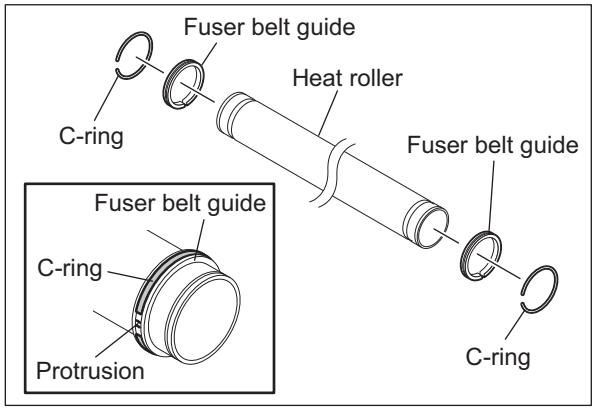


Fig. 16-48

16.6.11 Pressure roller thermostat (THMO3)

(1) Take off the pressure roller cover and pressure roller.

📖 P.16-19 "16.6.5 Pressure roller cover"
📖 P.16-21 "16.6.8 Pressure roller / Pressure roller lamp (LAMP3)"

(2) Remove 1 screw and release the harness out of 7 clamps. Then take off the pressure roller thermostat bracket.

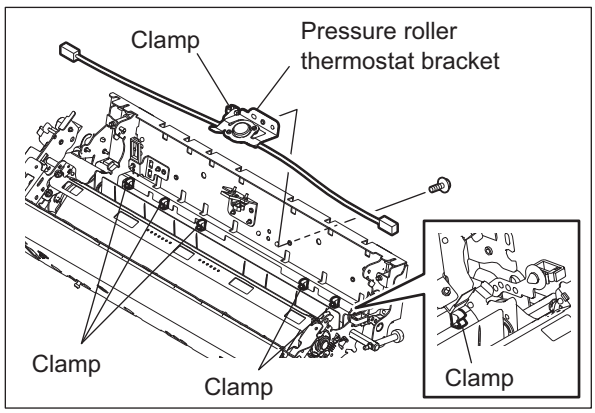


Fig. 16-49

(3) Remove 2 screws, and then take off the pressure roller thermostat from its bracket by releasing the harness out of the 2 terminals.

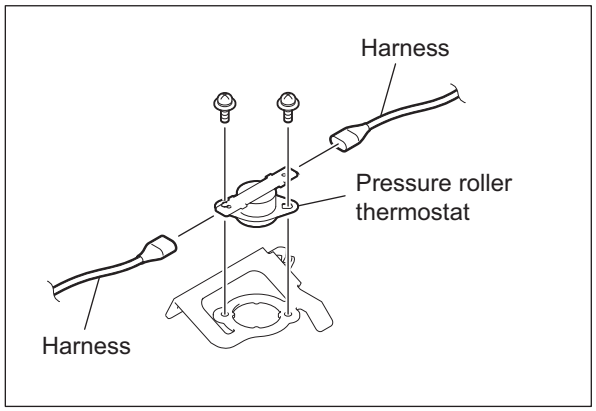


Fig. 16-50

Notes:

When installing the pressure roller thermostat, check the gap between the pressure roller thermostat and the pressure roller while they are being pushed each other.

1. Remove 2 screws, and take off the entry guide.

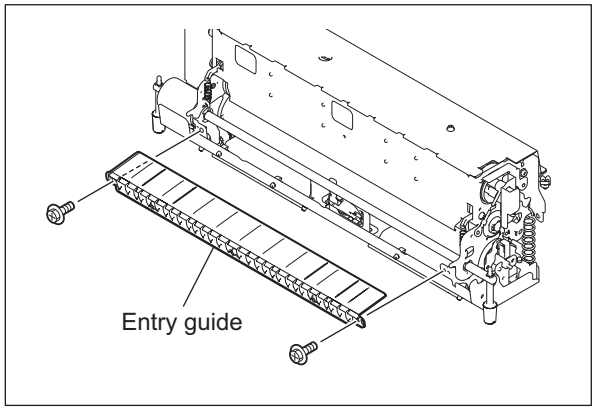
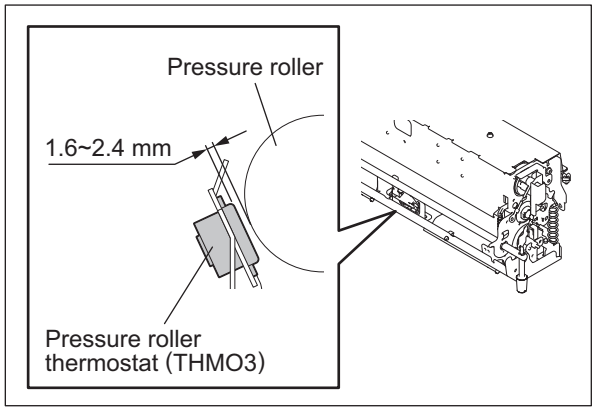


Fig. 16-51

2. Check that the gap between the pressure roller thermostat and the pressure roller is 1.6 - 2.4 mm through the opening.



Note:

When installing, be careful not to insert the tab terminal between the insulating tube and the terminal.

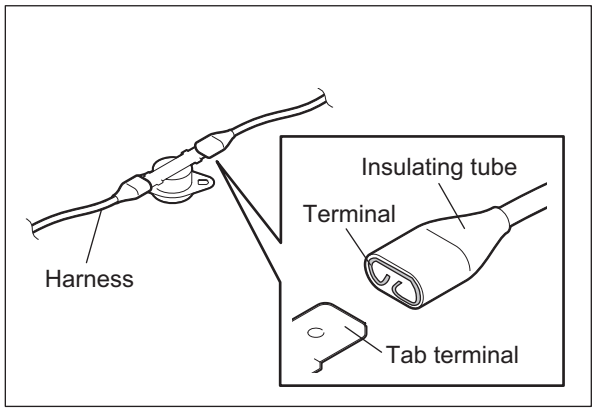


Fig. 16-52

16.6.12 Pressure roller center thermistor (THM4) / Pressure roller rear thermistor (THM5)

(1) Take off the pressure roller and pressure roller.
📖 P.16-19 "16.6.5 Pressure roller cover"
📖 P.16-21 "16.6.8 Pressure roller / Pressure roller lamp (LAMP3)"
(2) Release the harness out of the 4 clamps.
(3) Remove 1 screw and then take off the pressure roller rear thermistor bracket.
(4) Remove 2 screws and then take off the pressure roller center thermistor bracket.

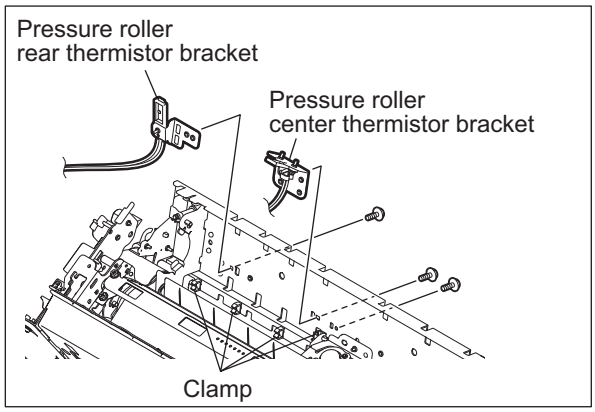


Fig. 16-53

(5) Remove 1 screw and take off the pressure roller rear thermistor.
(6) Remove 2 screws, and then release the harness out of 1 clamp to take off the pressure roller center thermistor.

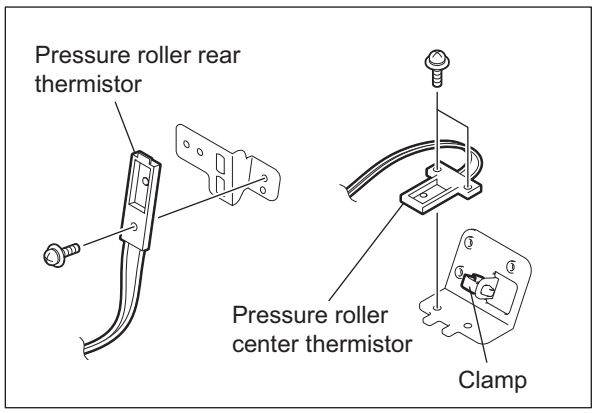


Fig. 16-54

16

Notes:

When installing the thermistors, be sure not to deform them. Check the gap between the thermistors and the pressure roller while they are being pushed each other in the following procedure:

1. Take off the separation finger unit.
   P.16-20 "16.6.7 Separation finger unit / Separation finger"
2. Check that the gap between the pressure roller center thermistor and the pressure roller is 1.5 - 2.5 mm through the opening.

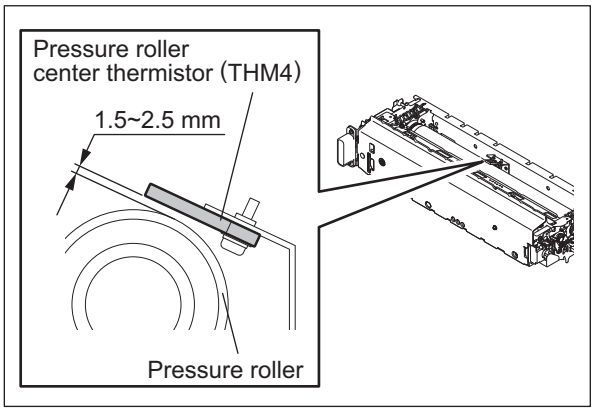


Fig. 16-55

3. Check that the gap between the pressure roller rear thermistor and the pressure roller is 1.5 - 2.5 mm through the opening.

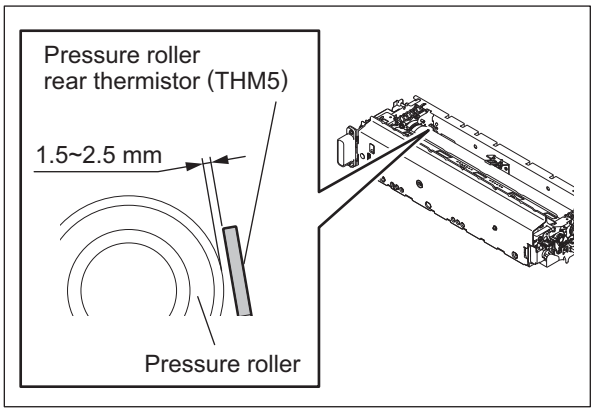


Fig. 16-56

16.6.13 Fuser belt center thermostat (THMO1)

(1) Take off the front side cover, pressure roller cover and transport guide.
   P.16-18 "16.6.2 Front side cover"
   P.16-18 "16.6.4 Heat roller cover"
   P.16-19 "16.6.6 Transport guide"
(2) Release the harness out of 1 terminals of the fuser belt center thermostat.

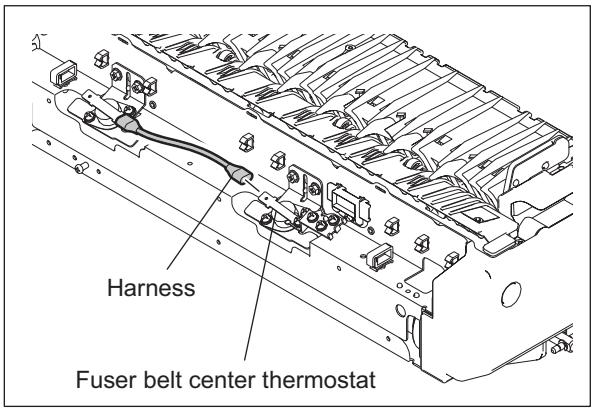


Fig. 16-57

(3) Remove 3 screws and take off the fuser belt center thermostat.

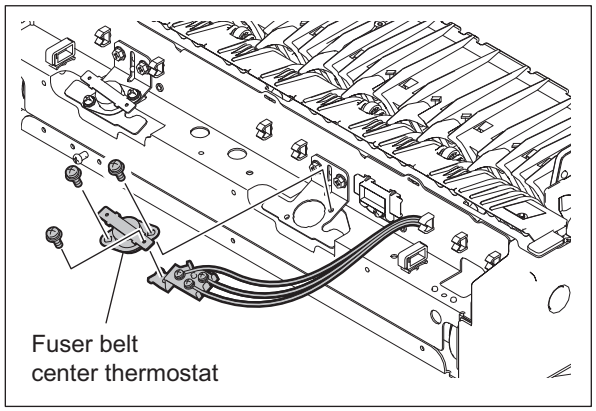


Fig. 16-58

Notes:

- When installing them, fix the thermostat, and then fix the terminal of the harness.
- Check that the gap between the fuser belt center thermostat and the fuser belt is 1.6 - 2.2 mm while they are being pushed each other, through the opening.

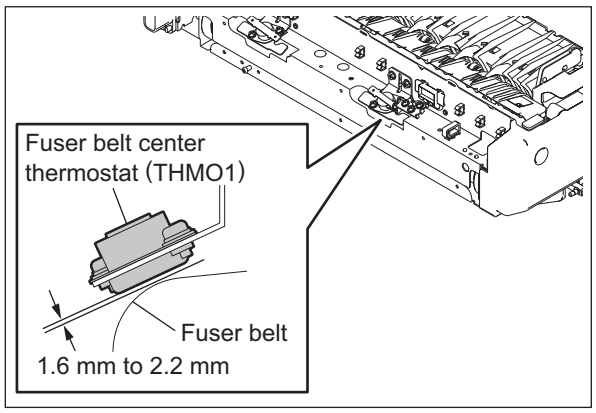


Fig. 16-59

Note:

When installing, be careful not to insert the tab terminal between the insulating tube and the terminal.

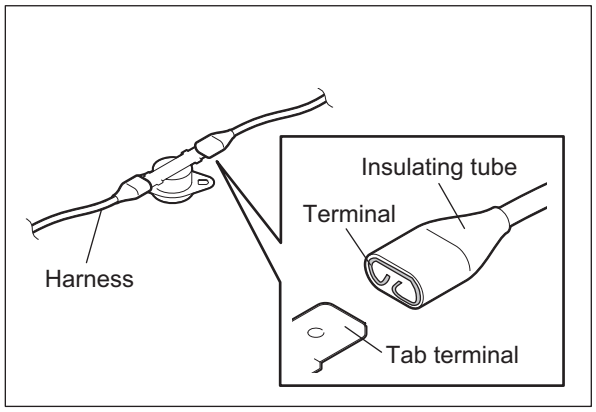


Fig. 16-60

16

16.6.14 Fuser belt rear thermostat (THMO2)

(1) Take off the heat roller cover.
📖 P.16-18 "16.6.4 Heat roller cover"

(2) Release the harness out of 2 clamps, and then remove the harness from 2 terminals of the fuser belt rear thermostat.

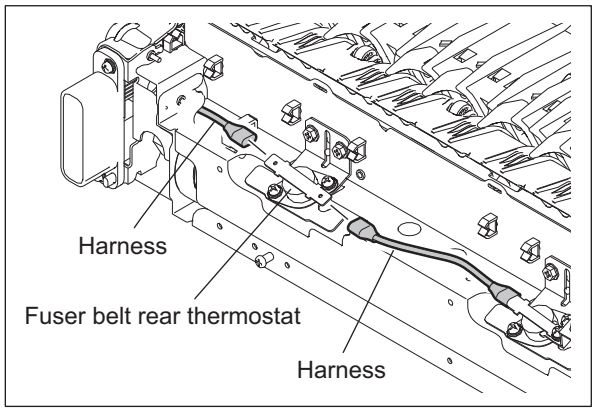


Fig. 16-61

(3) Remove 2 screws and take off the fuser belt rear thermostat.

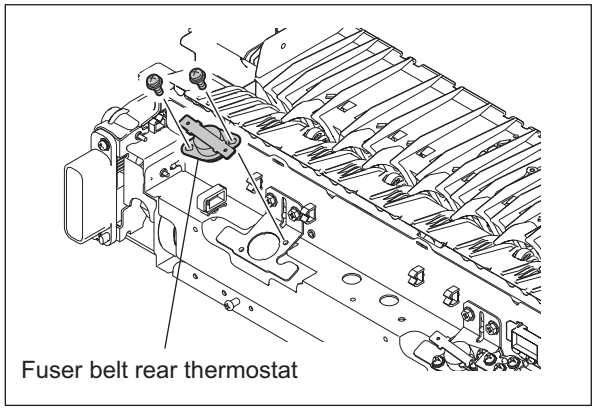


Fig. 16-62

Notes:

- When installing them, fix the thermostat, and then fix the terminal of the harness.
- Check that the gap between the fuser belt rear thermostat and the fuser belt is 1.6 mm - 2.2 mm while they are being pushed each other, through the opening.

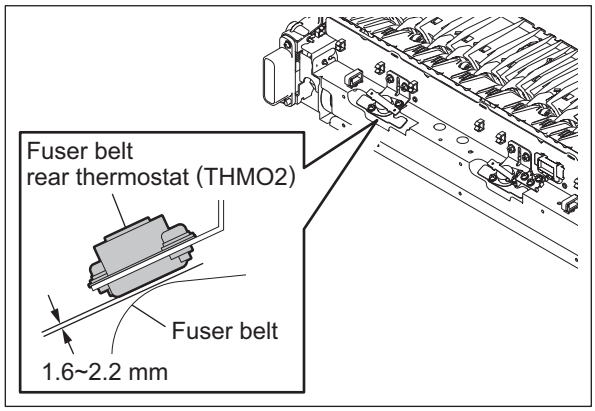


Fig. 16-63

Note:

When installing, be careful not to insert the tab terminal between the insulating tube and the terminal.

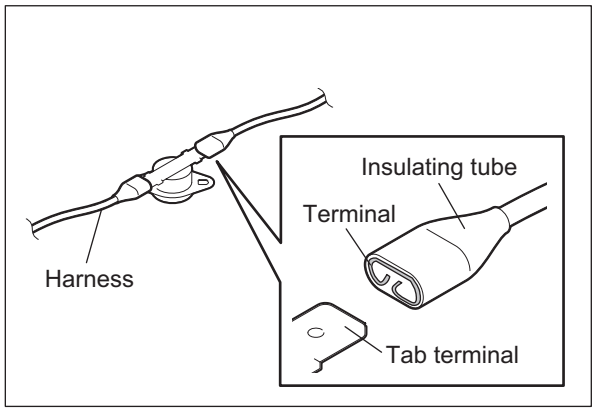


Fig. 16-64

16.6.15 Fuser belt front thermistor (THM3)

(1) Take off the front side cover, rear side cover and heat roller cover.

- 🕮 P.16-18 "16.6.2 Front side cover"
- 🕮 P.16-18 "16.6.3 Rear side cover"
- 🕮 P.16-18 "16.6.4 Heat roller cover"

(2) Release the harness out of clamps, and then disconnect the relay connector.

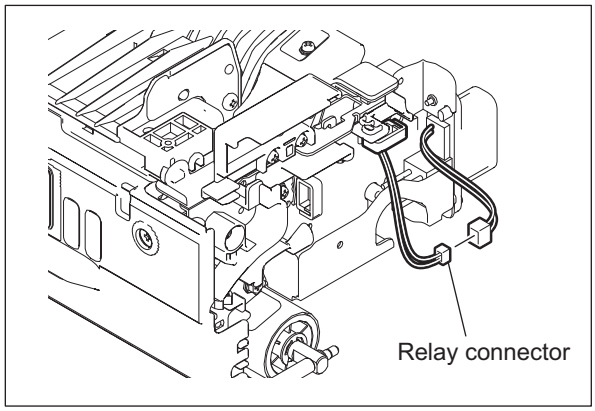


Fig. 16-65

(3) Remove 1 screw and take off the harness cover.

(4) Release the harness out of 10 clamps.

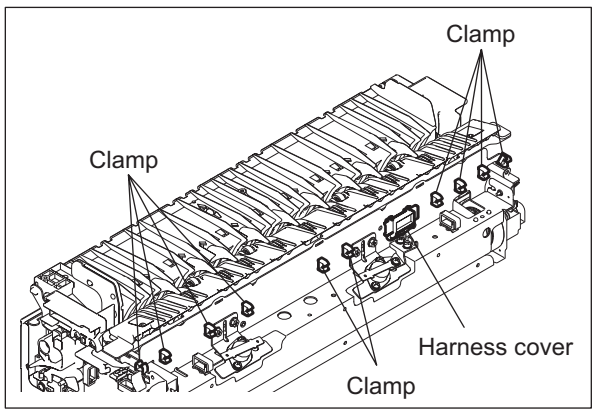


Fig. 16-66

(5) Remove a spring and an E-ring, and then take off the fuser belt front thermistor bracket.

Notes:

Pay attention to the following points when installing the fuser belt front thermistor bracket.

- The fuser belt and the temperature sensor in the fuser belt front thermistor are not damaged.
- The temperature sensor in the fuser belt front thermistor contacts with the heat roller.
- The fuser belt front thermistor bracket moves smoothly.

(6) Remove 1 screw and take off the fuser belt front thermistor.

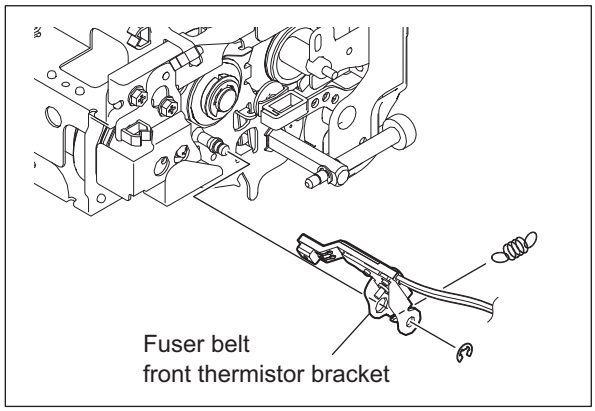


Fig. 16-67

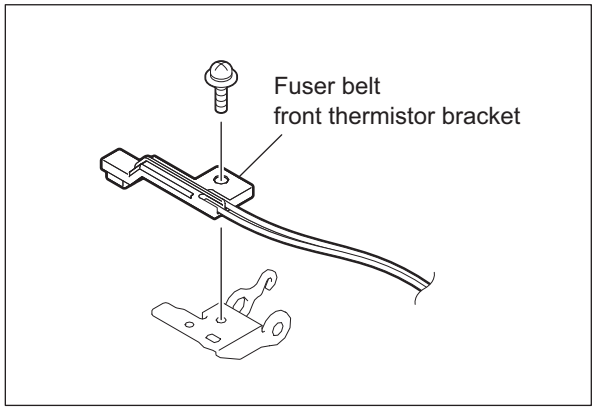


Fig. 16-68

16.6.16 Exit sensor (S26)

(1) Take off the fuser unit.
📖 P.16-17 "16.6.1 Fuser unit"
(2) Open the jam access cover.

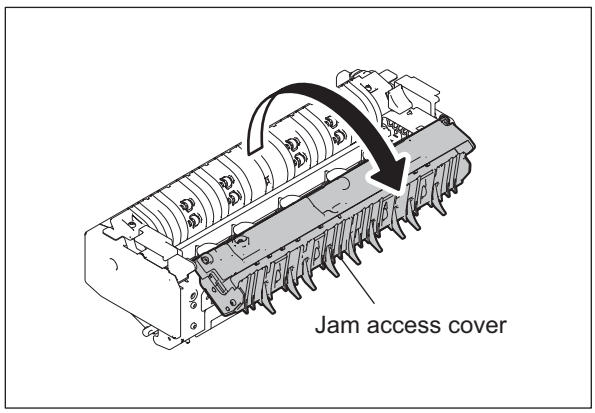


Fig. 16-69

(3) Remove 3 screws and take off the cover (A).

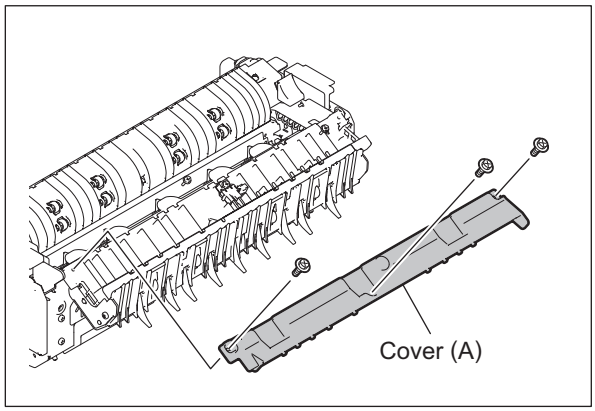


Fig. 16-70

(4) Remove 1 screw and bracket.
(5) Disconnect 1 connector and take off the exit sensor.

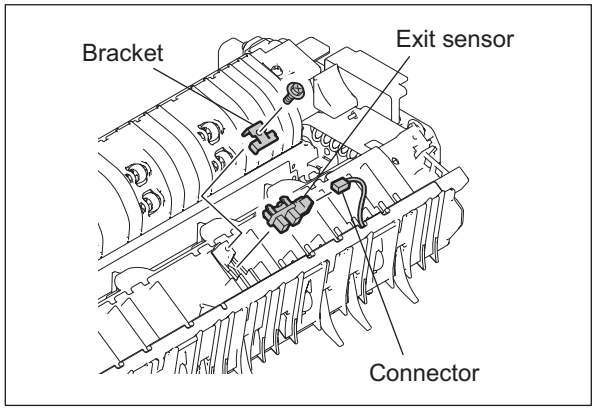


Fig. 16-71

16.6.17 Exit unit

(1) Take off the fuser unit.
📖 P.16-17 "16.6.1 Fuser unit"
(2) Remove 2 screws and take off the exit duct.

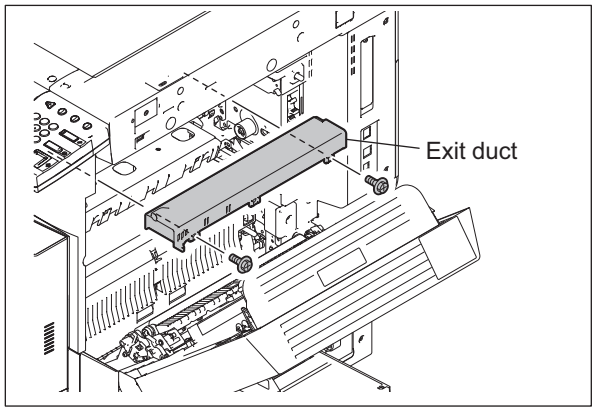


Fig. 16-72

16

(3) Loosen 2 screws and take off the exit unit.

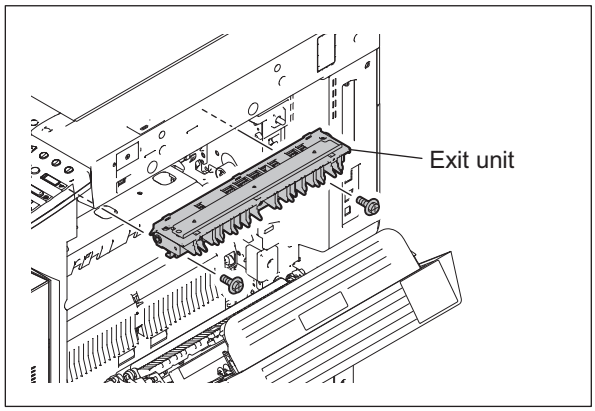


Fig. 16-73

16.6.18 Upper exit roller / Lower exit roller

(1) Take off the exit unit.
📖 P.16-39 "16.6.17 Exit unit"
(2) Remove 2 screws.
(3) Remove the exit flame from the exit duct base.

Note:
When installing the exit flame, hook the flame of the exit flame onto the 2 hooks of the exit duct base.

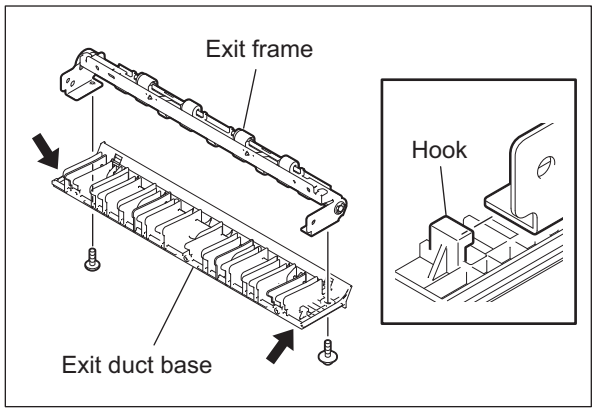


Fig. 16-74

(4) Remove 2 screws and take off the 2 leaf springs.

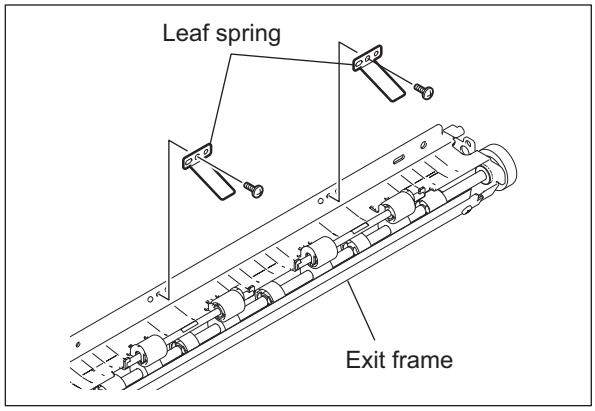


Fig. 16-75

(5) Remove 1 E-ring and take off the gear.
(6) Remove 2 E-rings and take off the 2 bushing and upper exit roller.

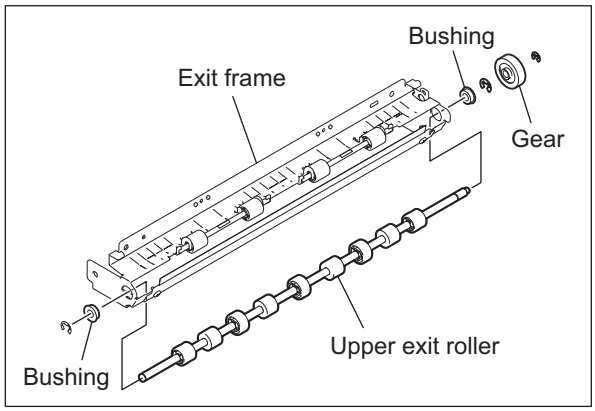


Fig. 16-76

(7) Remove the lower exit roller from the exit flame. Slide the 4 lower exit rollers to separate it from the 2 shafts.

Note:
When installing, be sure that the groove of the shaft comes to the top.

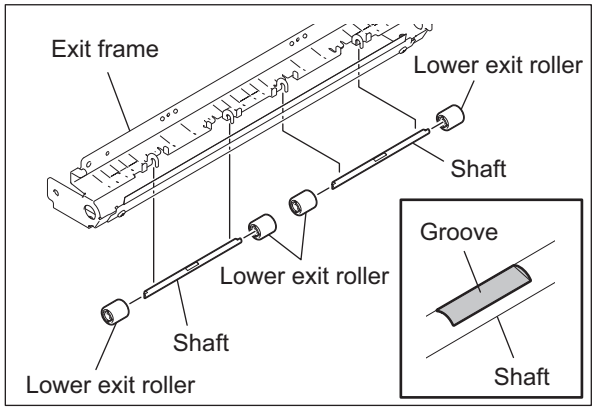


Fig. 16-77

16.6.19 Fuser belt center thermopile(THMP1) / Fuser belt rear thermopile(THMP2)

Note:
Be sure not to touch the lens of the thermopile. If it is dirty, use a cloth with a small amount of alcohol to clean it.

(1) Take off the fuser unit.
📖 P.16-17 "16.6.1 Fuser unit"
(2) Loosen 2 screws and take off the Fuser belt thermopile cover.

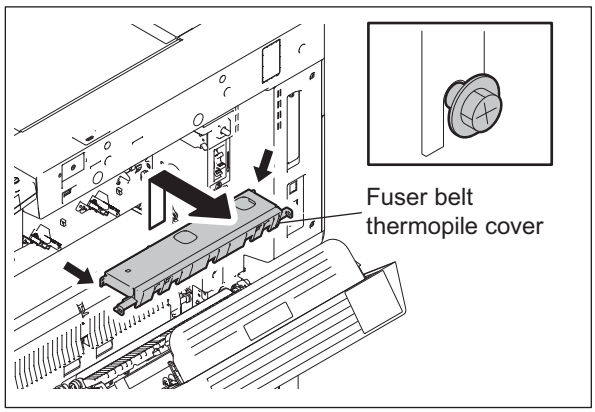


Fig. 16-78

(3) Loosen 1 screw of each thermopile. Then disconnect the connector to take off the thermopile bracket.

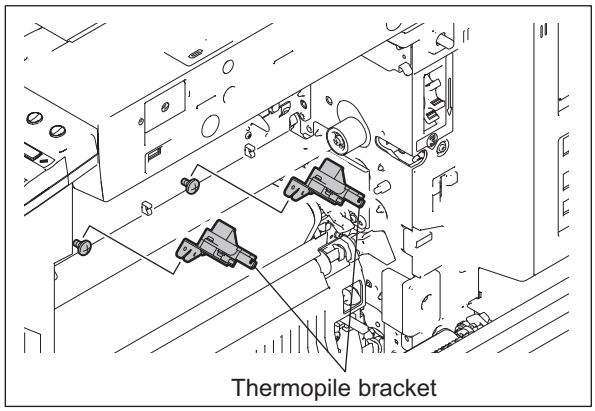


Fig. 16-79

(4) Remove 1 screw of each thermopile. Then take off the thermopiles from their brackets and covers.

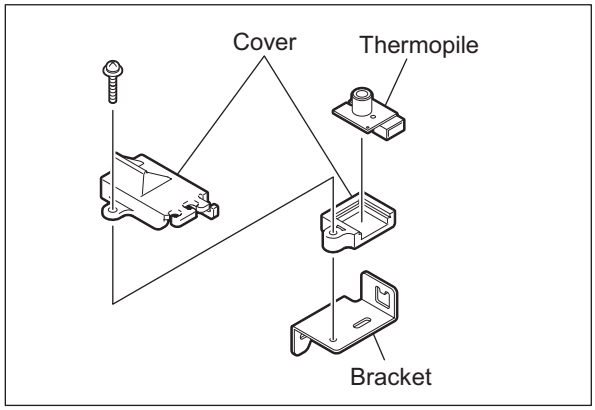


Fig. 16-80

16.6.20 Fuser motor (M17)

(1) Take off the fuser unit.
📖 P.16-17 "16.6.1 Fuser unit"
(2) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(3) Disconnect the connector.
(4) Remove 2 screws and take off the fuser motor.

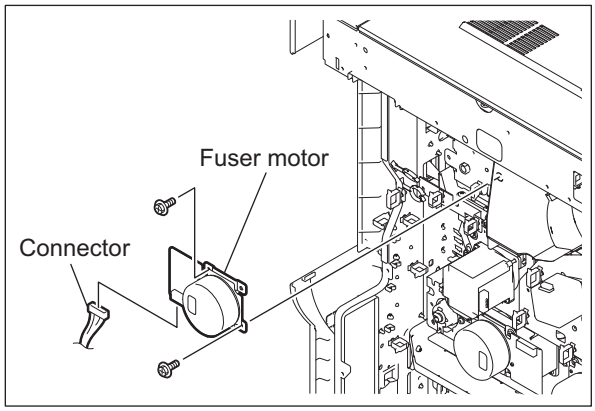


Fig. 16-81

16.6.21 Exit section drive unit

(1) Open the board case.
🕮 P.21-10 "21.1.11 Board case"
(2) Release the harness out of the clamp, and then disconnect the 2 connectors.
(3) Remove 2 screws and take off the exit section drive unit.

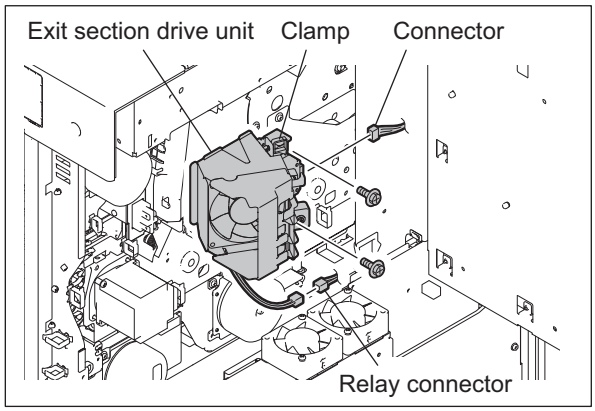


Fig. 16-82

16.6.22 Fuser drive unit

(1) Take off the fuser unit, exit section drive unit, fuser motor and internal cooling fan.
🕮 P.16-17 "16.6.1 Fuser unit"
🕮 P.16-43 "16.6.21 Exit section drive unit"
🕮 P.16-42 "16.6.20 Fuser motor (M17)"
🕮 P.13-35 "13.5.25 Internal cooling fan (M23)"
(2) Remove 3 screws and take off the harness from 3 harness clamps. Slide the fuser drive unit in the upper right direction to take it off.

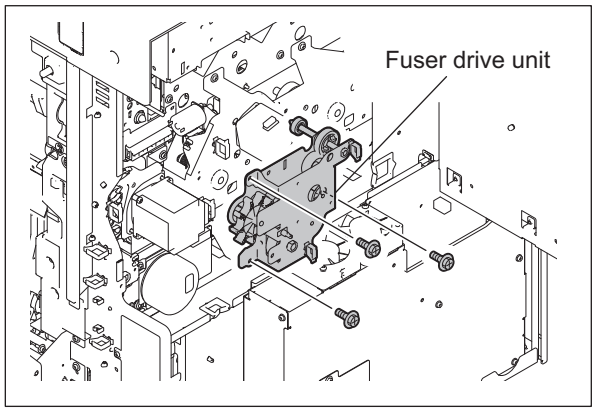


Fig. 16-83

16.6.23 Fuser/exit section cooling fan (M25) / Exit motor (M18)

(1) Take off the exit section drive unit.
🕮 P.16-43 "16.6.21 Exit section drive unit"
(2) Remove 1 screw and take off the cover.
(3) Remove 2 screws and take off the fuser/exit section cooling fan.

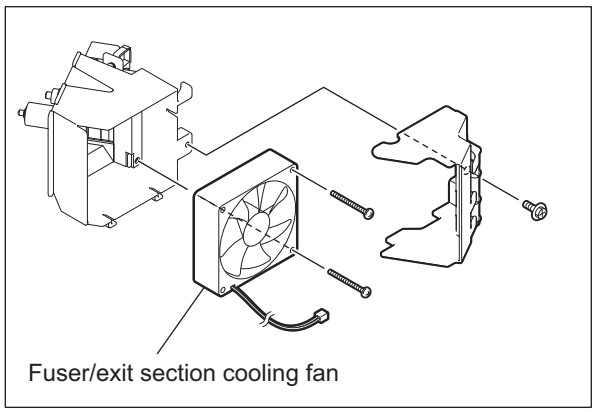


Fig. 16-84

(4) Remove 2 E-rings 1 pulley and 1 belt and take off the exit motor.

Notes:

- Replace the exit motor with the bracket installed.
- Never attempt to loosen 2 screws fixing exit motor.

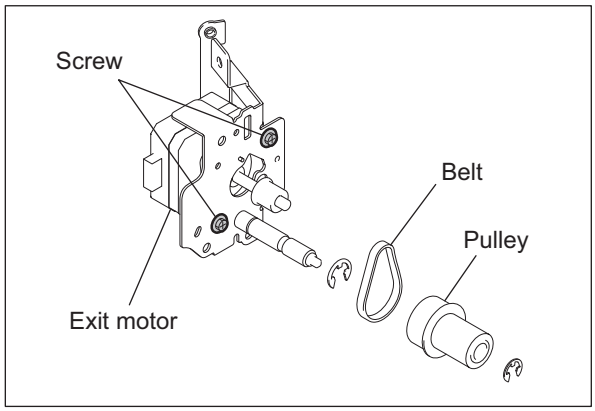


Fig. 16-85

16.7 Adjustment of the Separation Plate Gap

Perform this adjustment when the following parts are replaced or disassembled.

Separation plate	Fuser belt	Fuser roller
Frame of fuser unit	Heat roller	

Adjustment tool to use: Separation plate gap jig

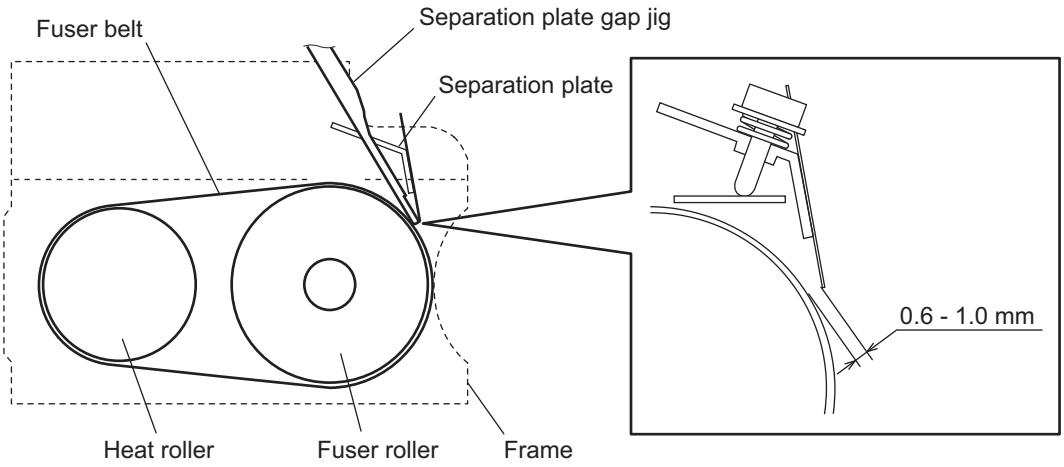


Fig. 16-86

Notes:

- Perform gap adjustment when the fuser unit is at a normal temperature.
- Make sure that the pressure roller is released.
- Be careful not to damage the fuser belt and jig (to protect the fuser belt, the jig is made from ABS).

<Adjustment procedure>

(1) Take off the front side cover, heat roller cover, and transport guide.

P.16-18 "16.6.2 Front side cover"
P.16-18 "16.6.4 Heat roller cover"
P.16-19 "16.6.6 Transport guide"

(2) Insert the jig end (with a hole) into the first window on the separation plate viewed from the front. Adjust it with a screw so that the 0.6 mm jig can be inserted between the separation plate and the fuser belt, but the 1.0 mm jig cannot.

(3) Insert the jig into the last window on the separation plate viewed from the front, and then adjust it in the same manner.

(4) Insert the jig into the remaining three windows on the separation plate, and then adjust them in the same manner.
   * If the 0.6 mm jig cannot be inserted, the gap is too narrow. Adjust it again.
   * If the 1.0 mm jig can be inserted, the gap is too wide. Adjust it again.

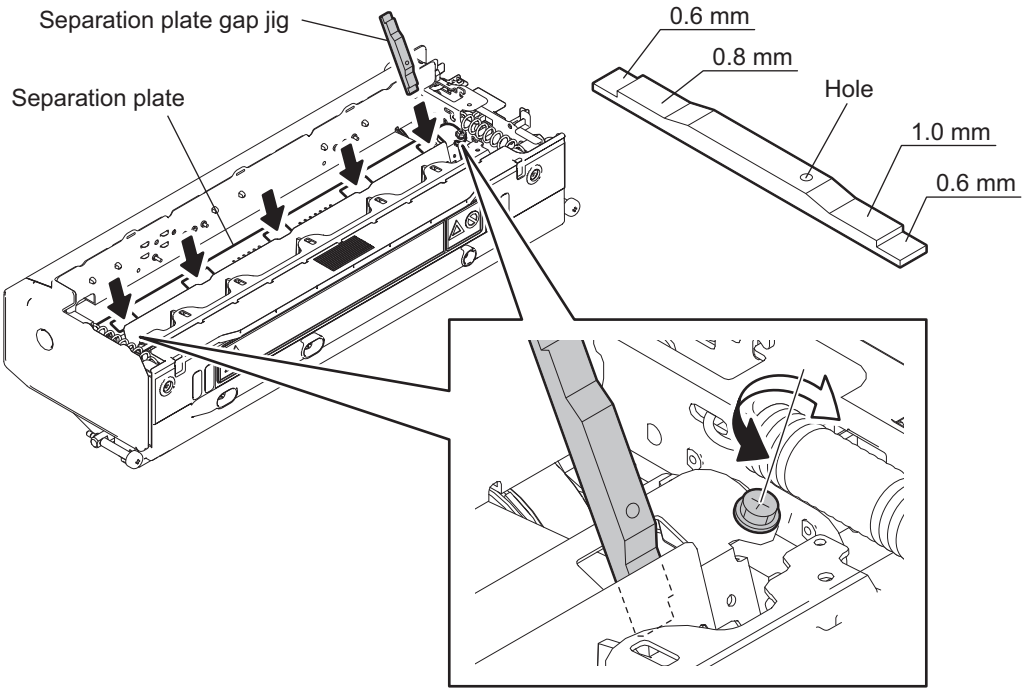


Fig. 16-87

Notes:

- When thin paper or paper with a small leading edge margin is used, the gap needs to be narrower. In this case, use the jig end (without a hole). (The procedure is the same.)
  - Using the jig end (with a hole): The gap is between 0.6 mm and 1.0 mm.
  - Using the jig end (without a hole): The gap is between 0.6 mm and 0.8 mm.
- Paper jams tend to occur in equipment in which thin paper such as 64g/m^2 (17lb. Bond) paper is used or a large amount of high density images such as pictures are output. For this equipment, we recommend that you adjust the gap of the separation plate within the range of 0.6 mm to 0.8 mm in order to prevent paper jamming.

17. AUTOMATIC DUPLEXING UNIT (ADU)

17.1 General Description

The Automatic Duplexing Unit (ADU) is a unit to automatically print on both sides of paper. A switchback method using the exit roller is adopted for the ADU of this equipment.
A sheet of paper is switchbacked by the exit roller right after the printing operation (fusing operation) on one side is completed, and the reversed sheet is transported to the registration section for the other side of the sheet to be printed.
The ADU mainly consists of the transport rollers and their drive system, paper guide and ADU entrance / exit sensor.

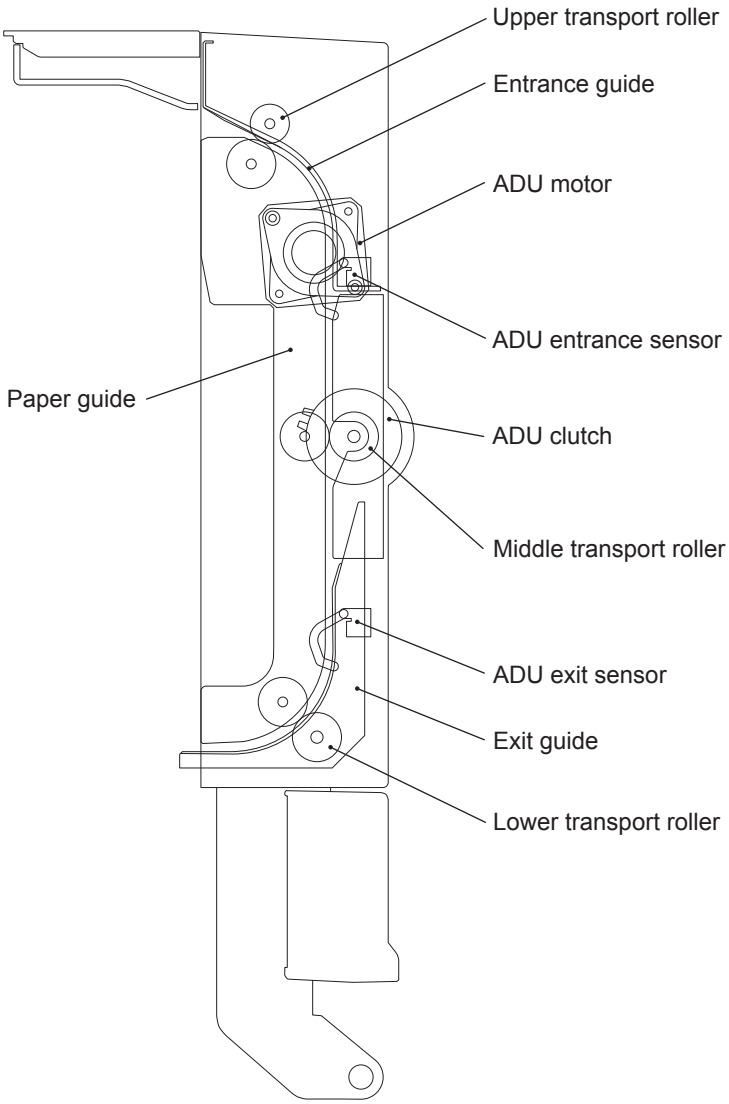


Fig. 17-1

17.2 Composition

Automatic Duplexing Unit (ADU)	
ADU motor	M22: Stepping motor
ADU clutch	CLT7
ADU entrance sensor	S38
ADU exit sensor	S39
ADU opening/closing switch	SW7
ADU driving PC board	ADU
Upper transport roller	
Middle transport roller	
Lower transport roller	

17.3 Functions

1. ADU motor (M22)
   This motor drives the ADU upper, middle and lower transport roller.

2. ADU clutch (CLT7)
   This clutch transfers the drive of the ADU motor (M22) to the upper and middle transport roller.
   When the ADU clutch (CLT7) is turned ON, the upper and middle transport roller starts rotating.

3. ADU entrance sensor (S38)
   This sensor detects input paper of the ADU transportation.

4. ADU exit sensor (S39)
   This sensor detects output paper of the ADU transportation.

5. ADU opening/closing switch (SW37)
   This switch detects whether the ADU is open or not.

6. Upper transport roller / Middle transport roller / Lower transport roller
   This roller transports paper into the ADU.

17.4 Drive of ADU

When the ADU motor (M22) rotates to the direction A, the upper transport roller is rotated driven by the gears and belt. The ADU clutch (CLT7) is then turned ON and the middle transport roller and lower transport roller are rotated.

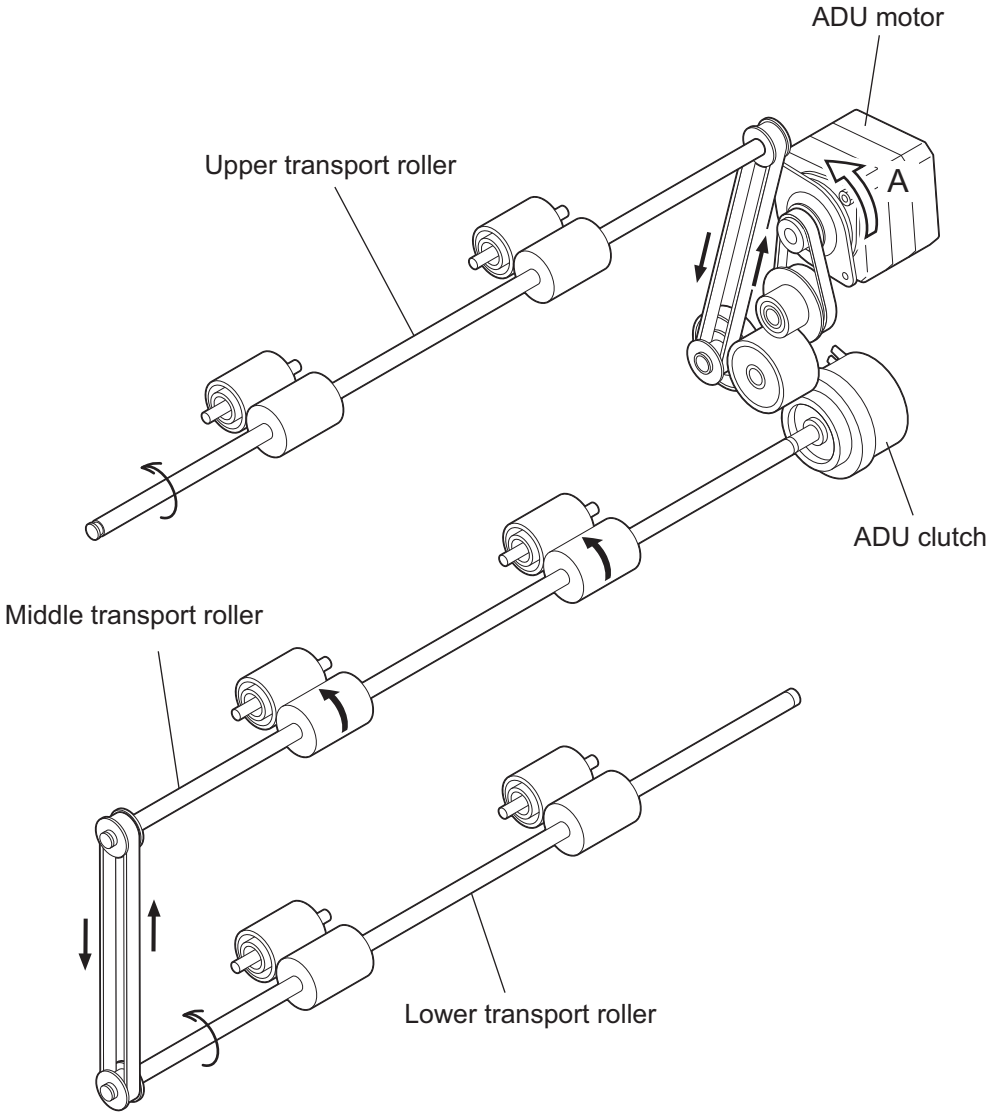


Fig. 17-2

17.5 Description of Operations

The back side printing (recording data of the back side of paper) is performed first by selecting duplex printing mode and pressing the [START] button. When the trailing edge of the paper passes the exit gate, the paper is switchbacked by the exit roller and transported into the ADU (the exit gate is closed with its own weight), and then the switchbacked paper is transported with acceleration. The transportation decelerates when the ADU exit sensor (S39) detects the paper. The front side printing (recording data of the front side of paper) is performed at the registration section. The paper passes through the exit gate again and is transported to the inner tray to complete duplex printing.

There are three methods of judging a paper jam: (1) whether the ADU entrance sensor (S38) is turned ON or not in a specified period of time after the switchback to the ADU started (E510). (2) whether the ADU exit sensor (S39) is turned ON or not in a specified period of time after the ADU entrance sensor (S38) is turned ON (E520). (3) whether the registration sensor (S28) is turned ON or not in a specified period of time after the paper feeding from the ADU to the equipment (E110).

If the ADU is opened during duplex printing, the ADU motor (M22) and ADU clutch (CLT7) are stopped, namely, ADU open jam occurs (E430).

The equipment is never to be stopped during printing by interruption in any case except paper jam or service call, if paper remains in the ADU.

The operation of the duplex printing differs depending on the size of the paper; single-paper circulation and alternateness circulation. The figures in the following pages show the circulating operations during duplex copying. The numbers in the figures indicate the page numbers.

1. Single-paper circulation
   With the paper larger than A4/LT size, duplex printing (back-side printing→front-side printing) is performed for one sheet at a time as shown below.

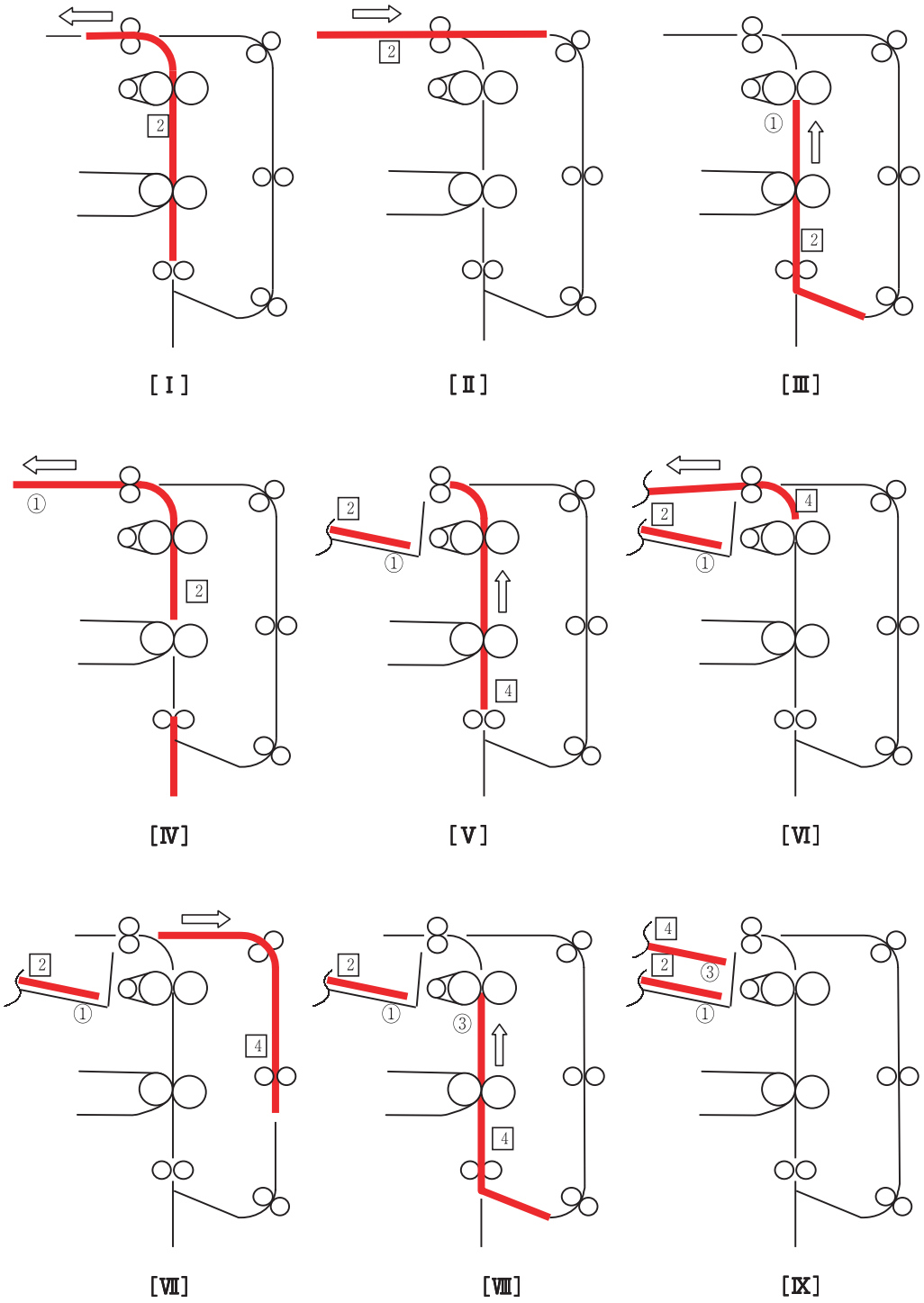


Fig. 17-3

2. Double-paper alternateness circulation
With A4/LT size paper or smaller, duplex printing is performed for two sheets at a time as shown below.
Back side of the 1st sheet→Back side of the 2nd sheet→Front side of the 1st sheet→Front side of the 2nd sheet

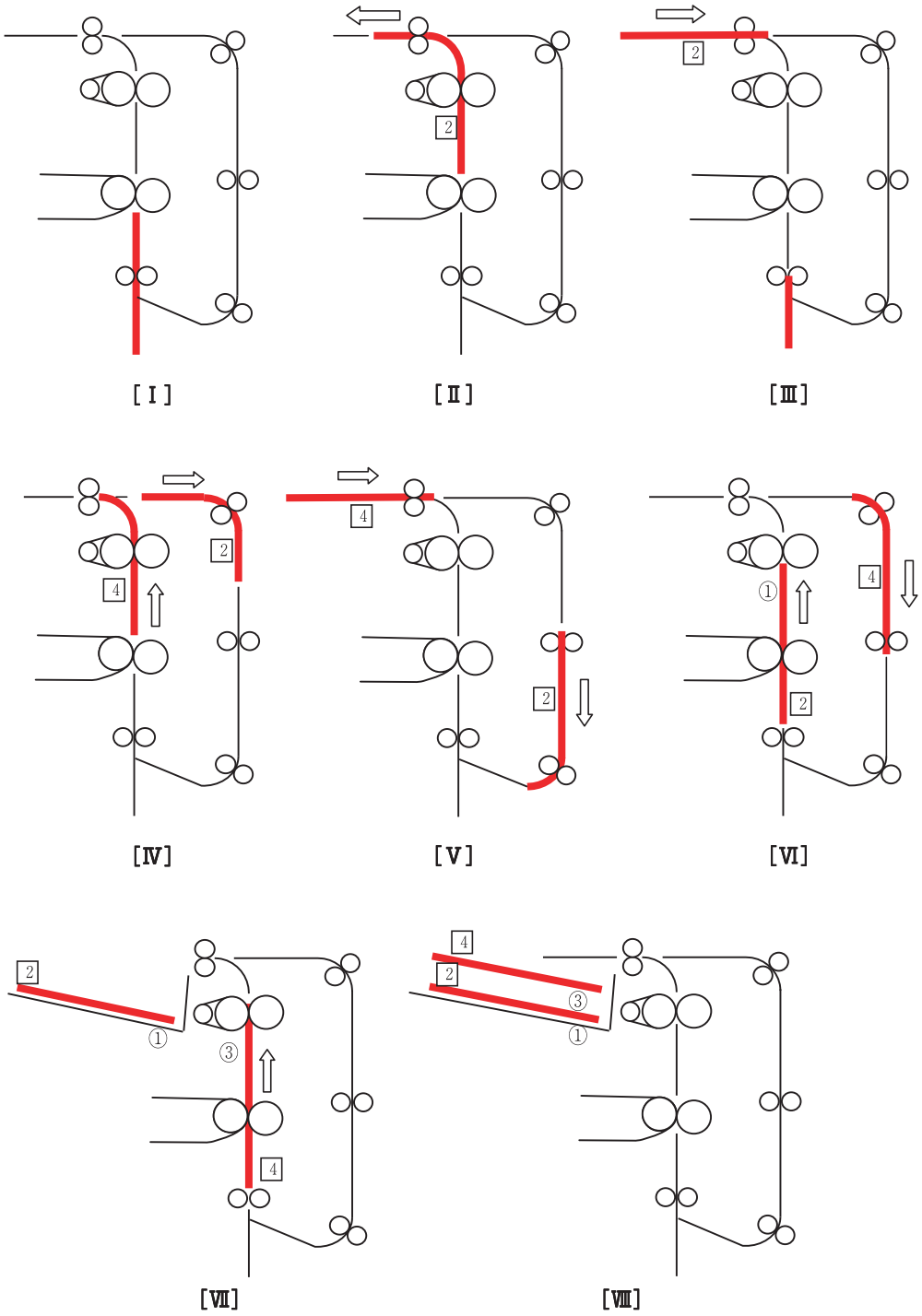


Fig. 17-4

3. Multiple-paper circulation
With more than one sheet of A4/LT size paper or smaller, duplex printing is performed as shown below in a following order:
(In case of 5 sheets)
Back side of the 1st sheet (2) → Back side of the 2nd sheet (4) → Front side of the 1st sheet (1) → Back side of the 3rd sheet (6) → Front side of the 2nd sheet (3) → Back side of the 4th sheet (8) → Front side of the 3rd sheet (5) → Back side of the 5th sheet (10) → Front side of the 4th sheet (7) → Front side of the 5th sheet (9)

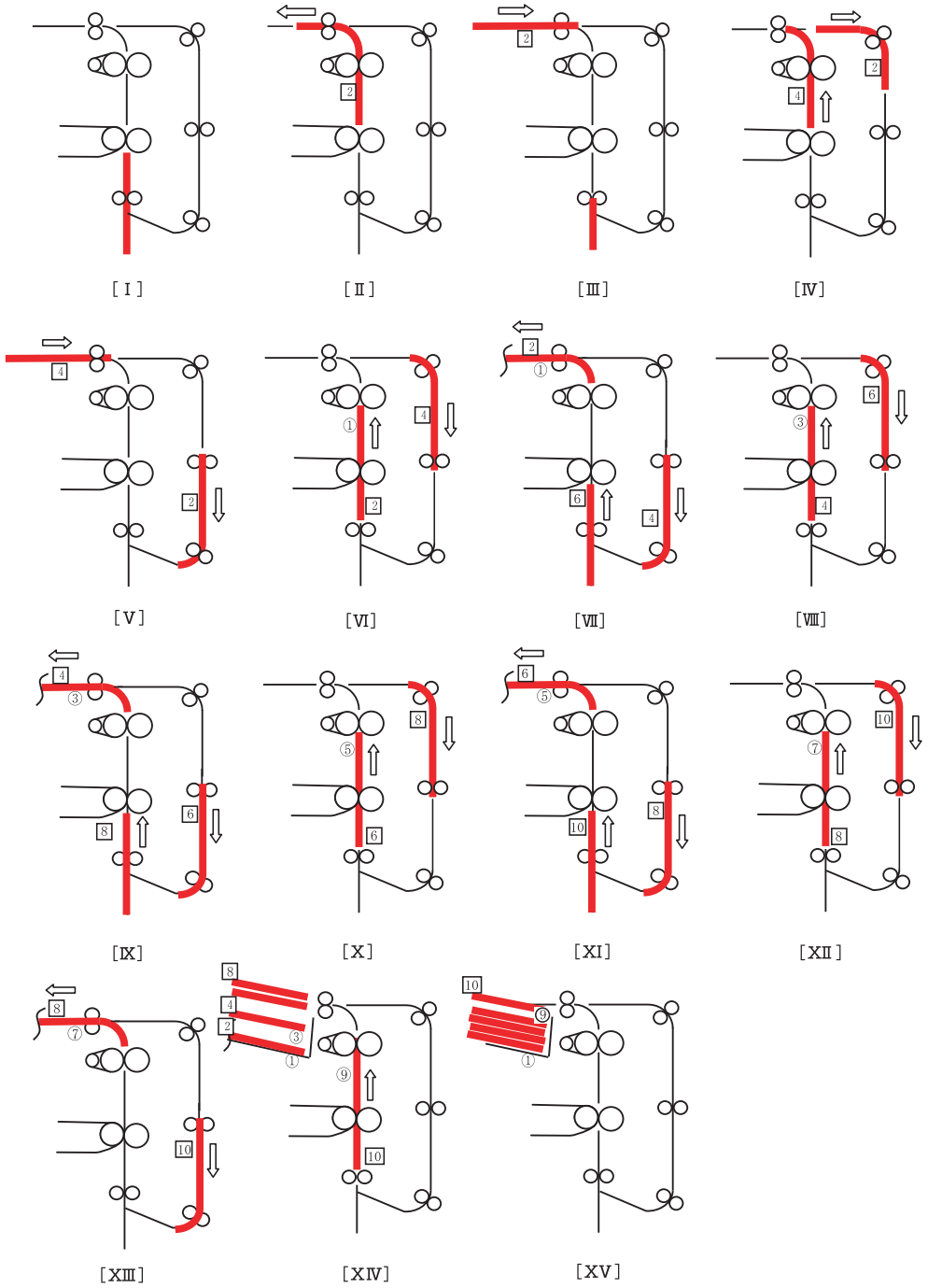


Fig. 17-5

Timing chart for duplex copying from 1st drawer (A4, 3 sheets)

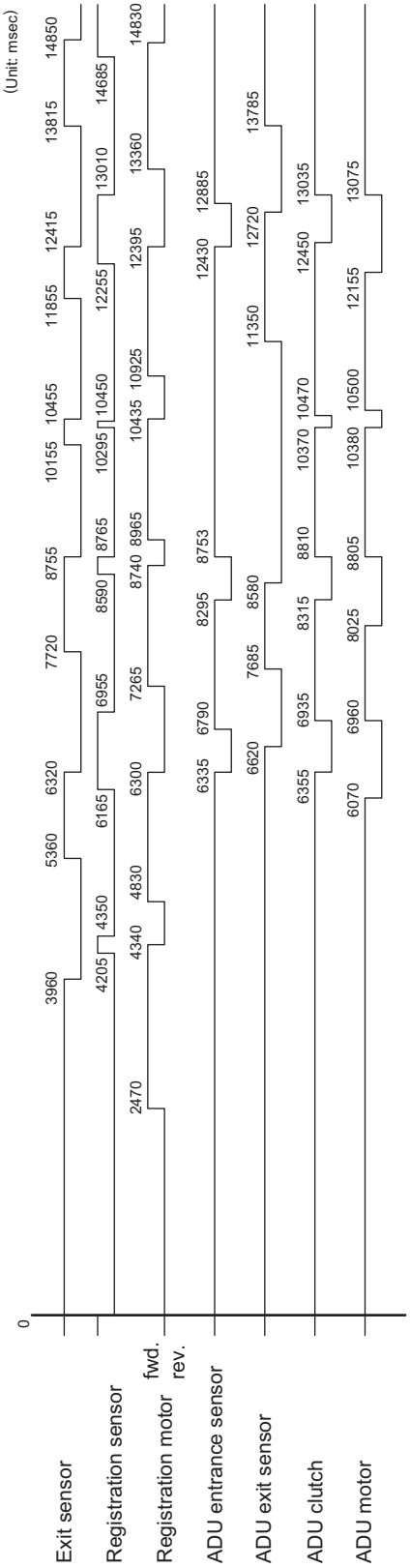


Fig. 17-6

17

Timing chart for duplex copying from 1st drawer (A3, 1 sheet)

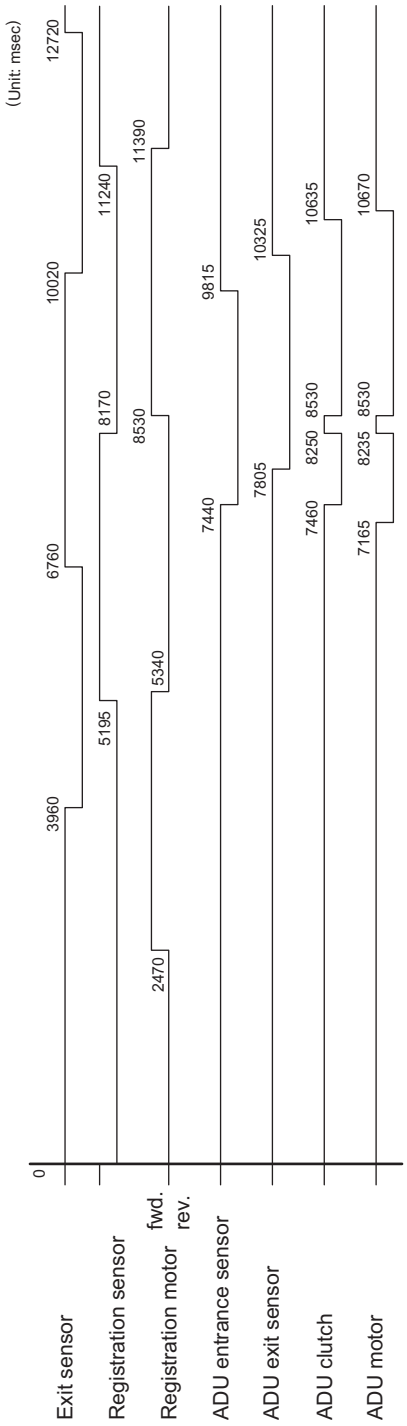
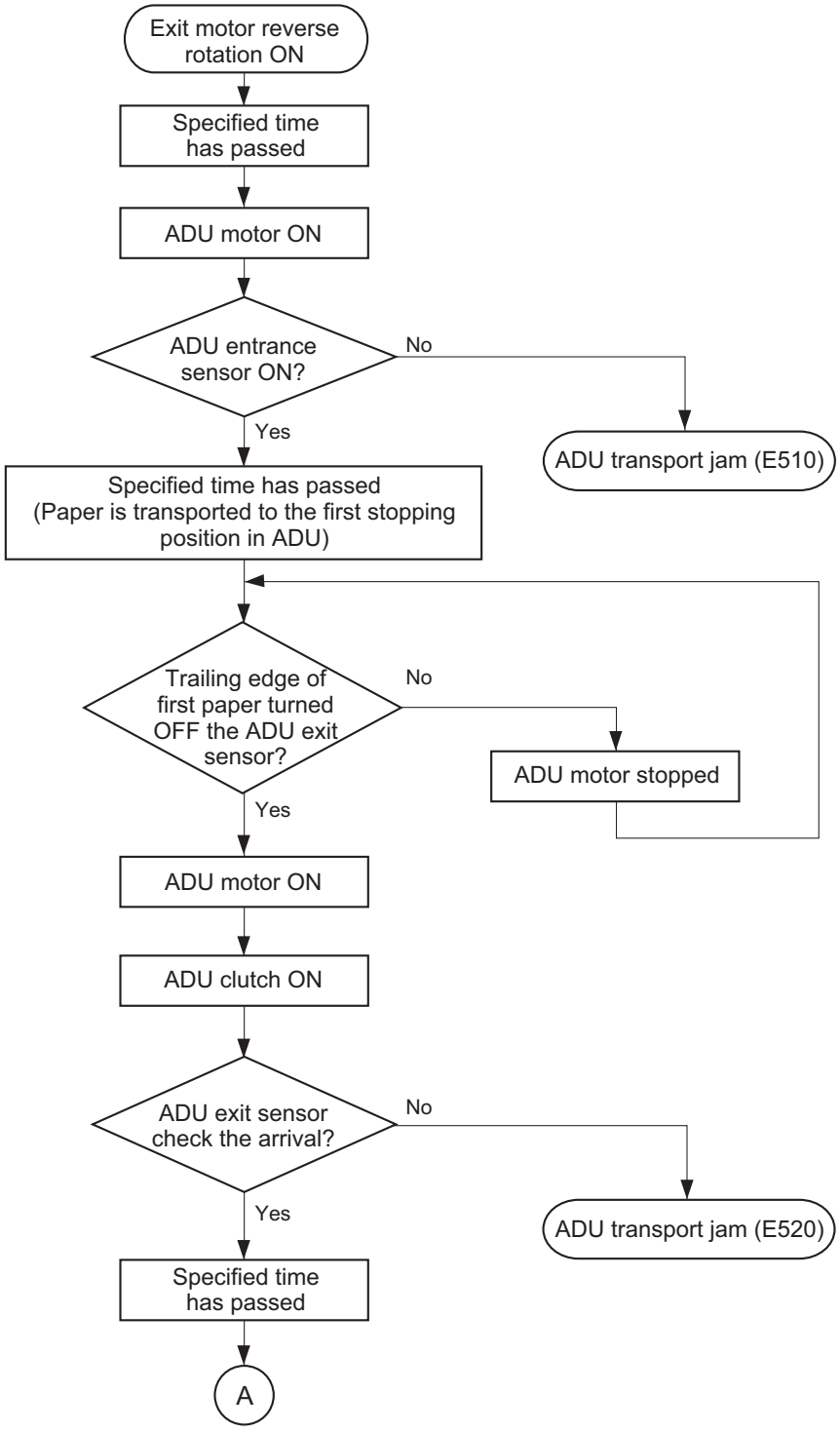
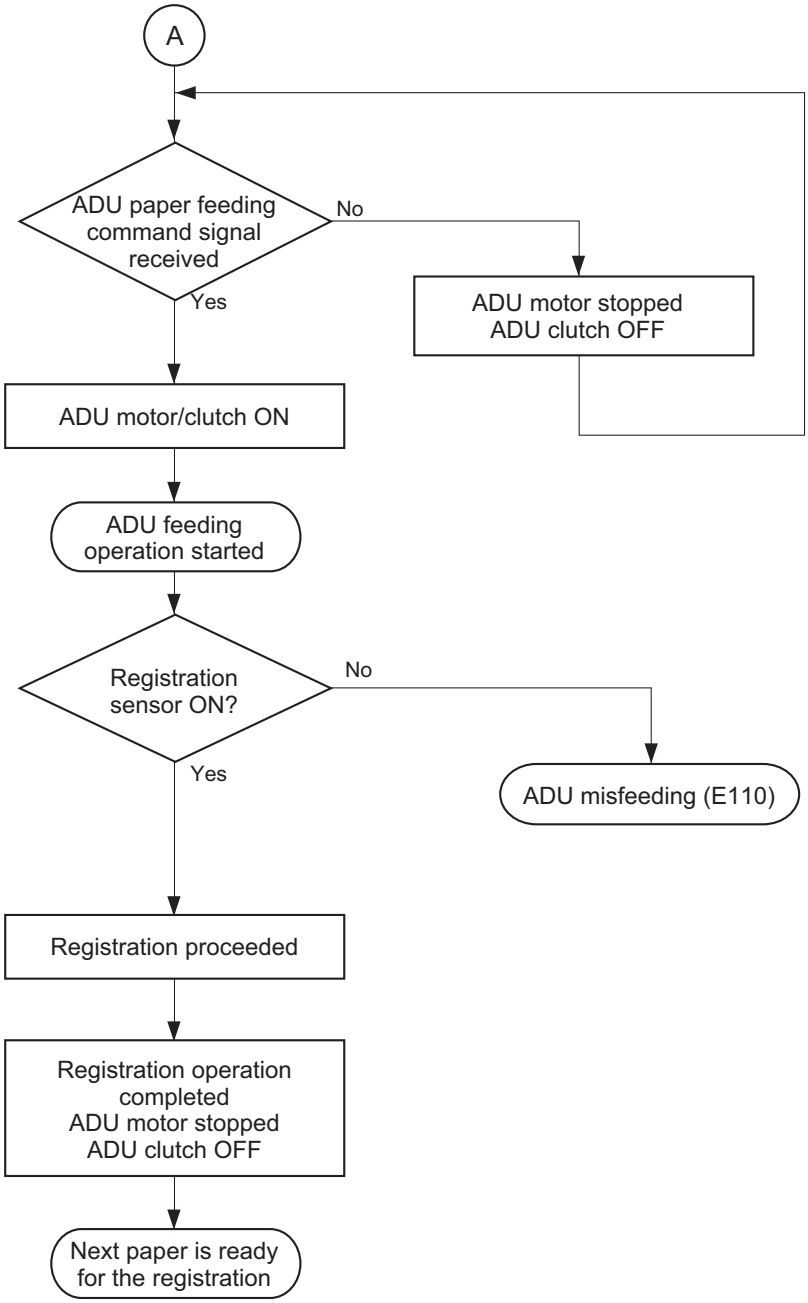


Fig. 17-7

17.6 Flow Chart





17.7 Disassembly and Replacement

17.7.1 ADU maintenance position

Note:

The removal of the transfer belt unit or the 2nd transfer unit can be easily performed at the ADU maintenance position without taking off the automatic duplexing unit (ADU). When the ADU is at its maintenance position, do not close the ADU because it may be damaged.

(1) Open the automatic duplexing unit.
(2) Remove 1 screw of the front hinge, and then take off the automatic duplexing unit by lifting it up slightly and sliding it to the rear side.

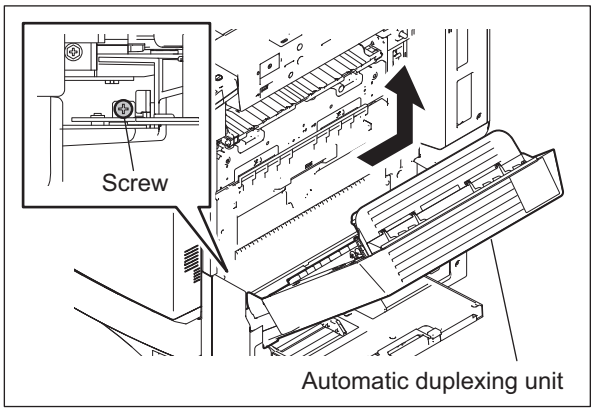


Fig. 17-8

(3) When installing, match the front and rear hinge holes of the equipment and the right and left hinge bosses of the ADU.

Notes:

Be sure to check the following points after moving the ADU to its maintenance position.

- Check that the connector is not disconnected.
- Check that duplex printing on A4 or LT sized paper is performed properly.

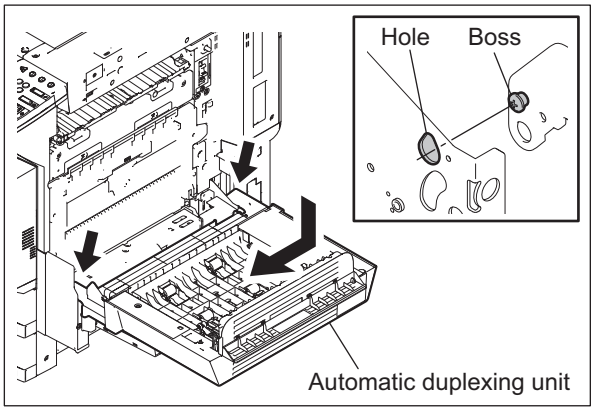


Fig. 17-9

17.7.2 Automatic Duplexing Unit (ADU)

(1) Take off the right rear hinge cover.
📖 P.3-31 "3.5.12 Right rear hinge cover"
(2) Disconnect 1 connector and remove 1 screw fixing the ground wires.

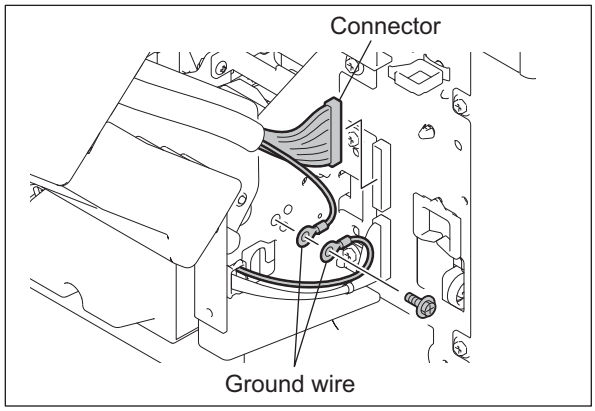


Fig. 17-10

(3) Remove 1 screw of the front hinge, and then take off the automatic duplexing unit by lifting it up slightly and sliding it to the rear side.

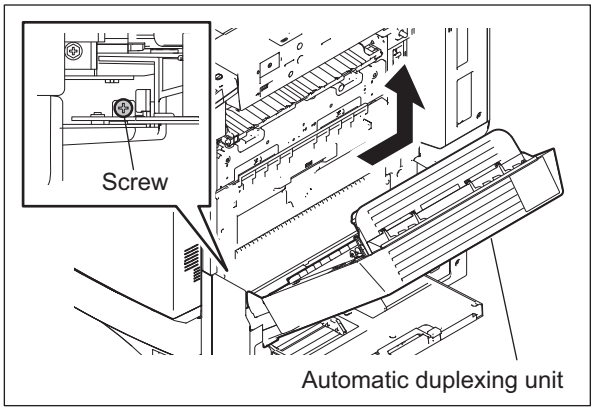


Fig. 17-11

Note:
When installing the ADU, match the front and rear hinge bosses of the equipment and the hinge holes of the ADU.

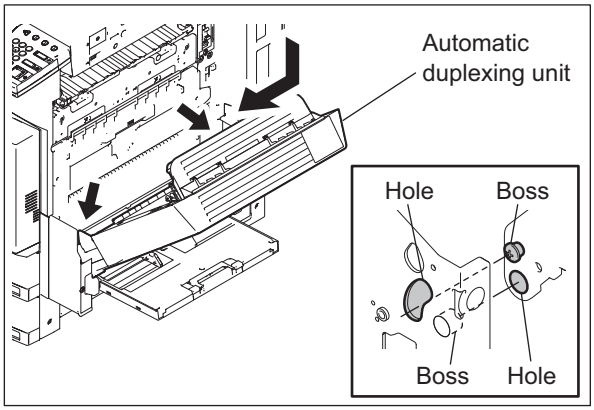


Fig. 17-12

17.7.3 ADU inside rear cover

(1) Open the automatic duplexing unit.
(2) Remove 2 screws and take off the ADU inside rear cover.

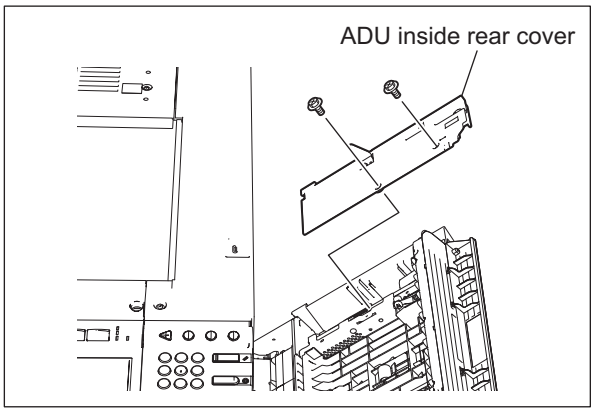


Fig. 17-13

17.7.4 ADU opening/closing switch (SW7)

(1) Take off the ADU inside rear cover.
📖 P.17-14 "17.7.3 ADU inside rear cover"
(2) Disconnect the connector and release the latch to take off the ADU opening/closing switch.

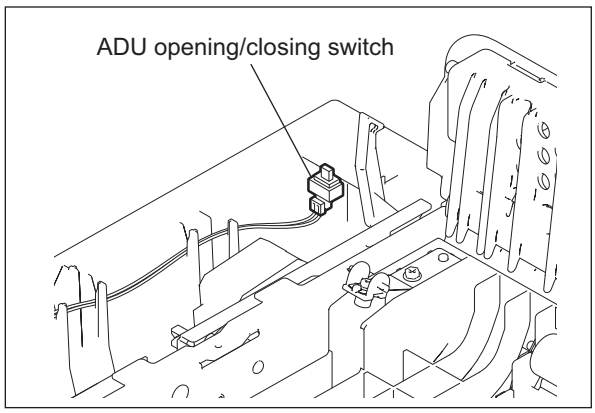


Fig. 17-14

17.7.5 ADU board (ADU)

(1) Take off the automatic duplexing unit and ADU inside rear cover.
📖 P.17-13 "17.7.2 Automatic Duplexing Unit (ADU)"
📖 P.17-14 "17.7.3 ADU inside rear cover"
(2) Disconnect 6 connectors from the ADU board. Release 3 lock supports and take off the ADU board.

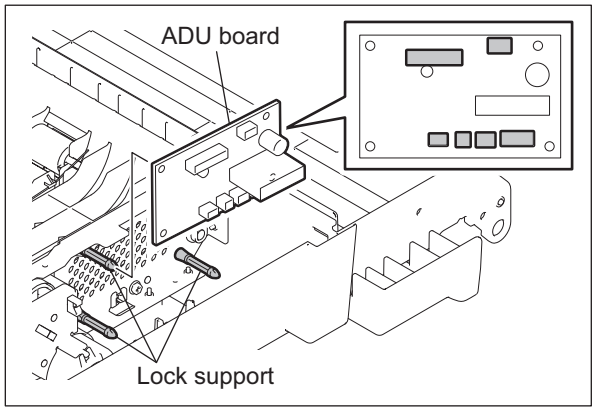


Fig. 17-15

17.7.6 ADU cover

(1) Take off the ADU opening/closing switch.
📖 P.17-15 "17.7.4 ADU opening/closing switch (SW7)"
(2) Remove 4 screws and take off the ADU cover.

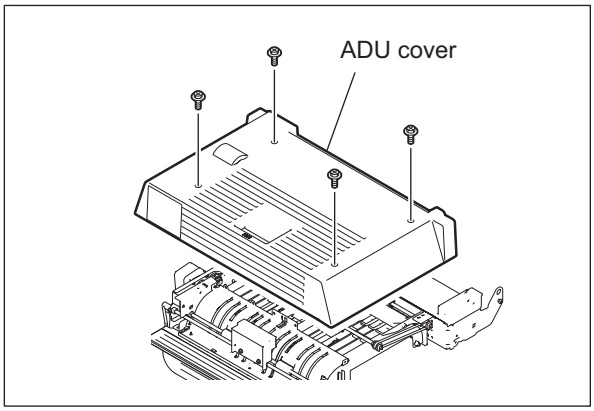


Fig. 17-16

17.7.7 Paper guide

(1) Open the automatic duplexing unit.
(2) Open the paper guide.
(3) Release the fulcrum on the front side and take off the paper guide.

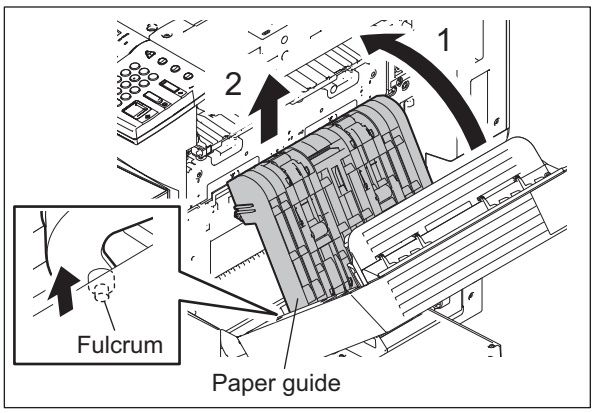


Fig. 17-17

17.7.8 ADU clutch (CLT7)

(1) Take off the automatic duplexing unit and ADU cover.
📖 P.17-13 "17.7.2 Automatic Duplexing Unit (ADU)"
📖 P.17-15 "17.7.6 ADU cover"
(2) Remove 1 E-ring. Cut off a binding band and disconnect 1 connector. Then take off the ADU clutch.

Notes:
- When installing the ADU clutch, attach a rotation protection.
- When installing the E-ring, make sure that the latches of both ends of E-ring are on the flat part of the shaft.

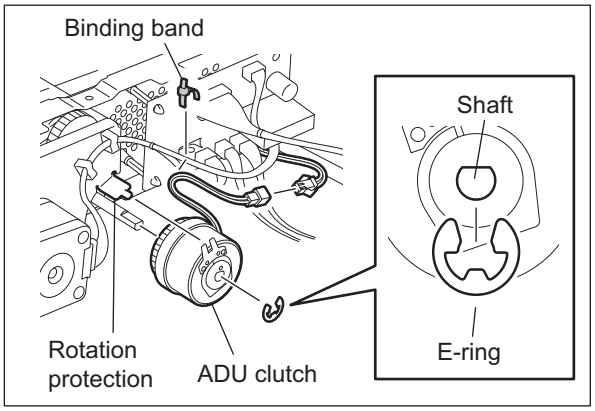


Fig. 17-18

17.7.9 ADU drive unit / ADU motor (M22)

(1) Take off the ADU clutch.
📖 P.17-16 "17.7.8 ADU clutch (CLT7)"
(2) Remove the spring.

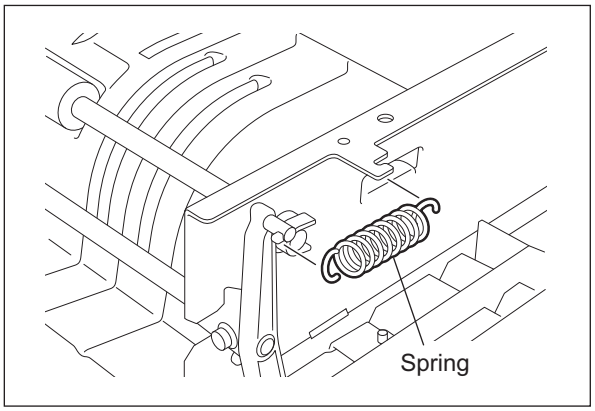


Fig. 17-19

(3) Remove 1 screw and take off the ADU rear latch.

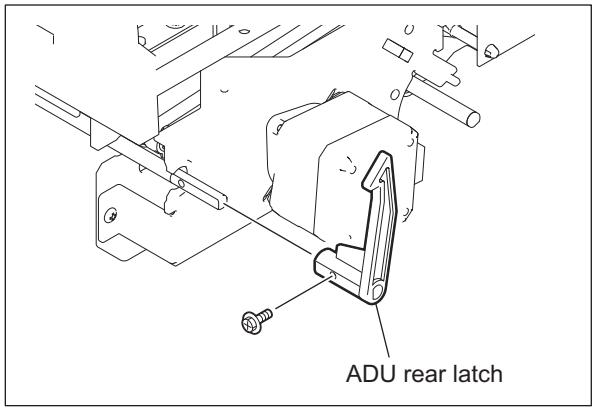


Fig. 17-20

(4) Disconnect 1 connector. Release the harness from 2 harness clamps. Remove 2 screws and take off the ADU drive unit.

Note:
Be sure not to lose the belt.

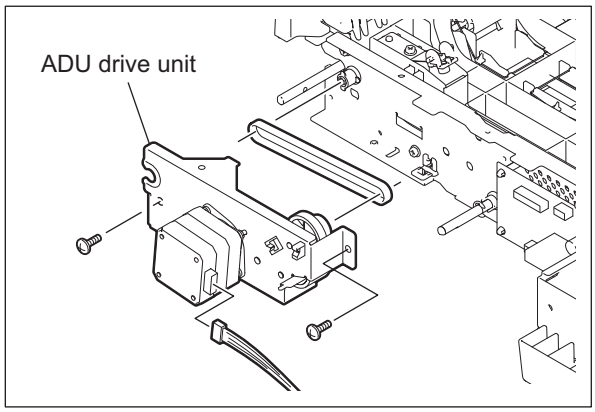


Fig. 17-21

(5) Remove 2 screws and take off the ADU motor.

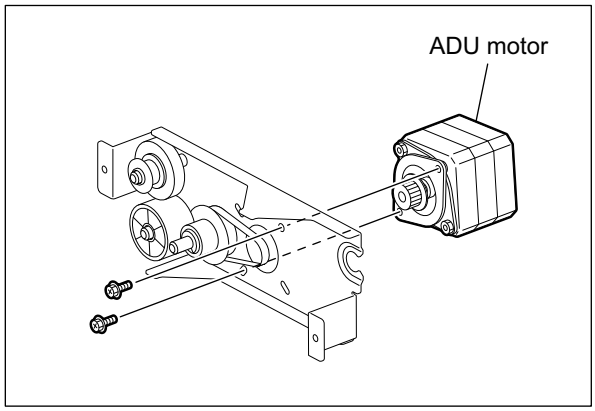


Fig. 17-22

(6) Take off the 1 E-ring. Then take off the 3 gears and timing belt from the ADU drive unit.

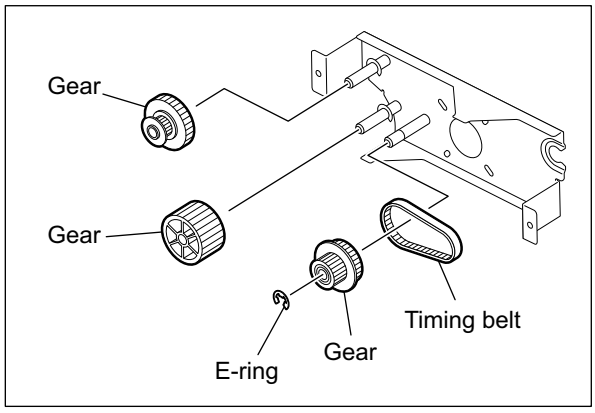


Fig. 17-23

17.7.10 Upper transport roller

(1) Take off the ADU drive unit.
📖 P.17-16 "17.7.9 ADU drive unit / ADU motor (M22)"
(2) Remove 1 E-ring on the rear side. Then take off 1 pulley.

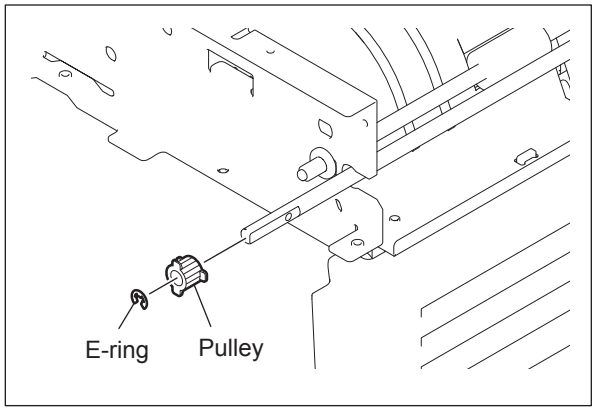


Fig. 17-24

(3) Remove 1 clip on the front side.
(4) Remove 2 bushings and take off the upper transport roller.

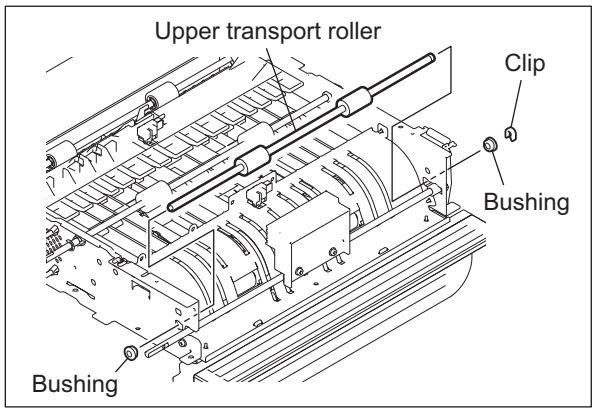


Fig. 17-25

17.7.11 Middle transport roller

(1) Take off the ADU drive unit.
📖 P.17-16 "17.7.9 ADU drive unit / ADU motor (M22)"
(2) Remove 2 clips, 2 pulleys and 2 pins on the front side. Then take off the belt.

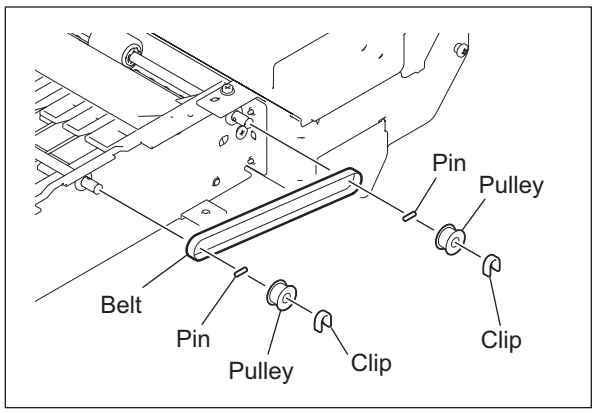


Fig. 17-26

(3) Remove 1 E-ring, 1 clip and 1 bushing on the rear side.
(4) Take off 1 bushing on the front side. Then take off the middle transport roller.

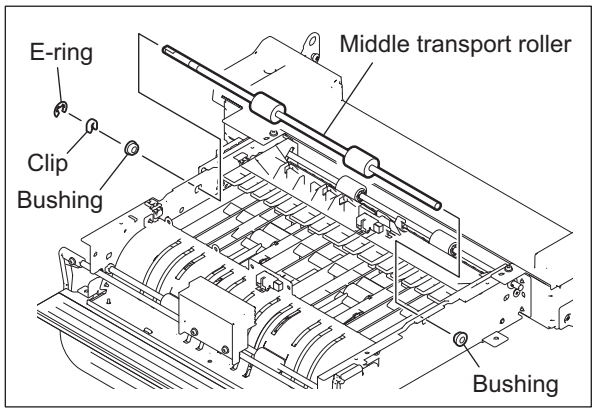


Fig. 17-27

17

17.7.12 Lower transport roller

(1) Take off the ADU board and ADU cover.
🕮 P.17-15 "17.7.5 ADU board (ADU)"
🕮 P.17-15 "17.7.6 ADU cover"
(2) Remove 2 clips, 2 pulleys and 2 pins on the front side. Then take off the belt.

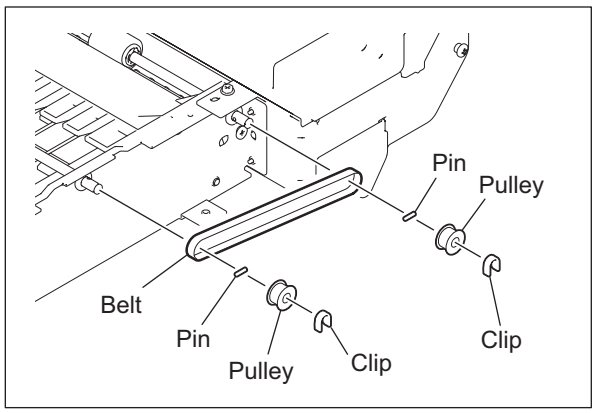


Fig. 17-28

(3) Remove 1 clip and 1 bushing on the rear side.
(4) Remove 1 bushing on the front side. Then take off the lower transport roller.

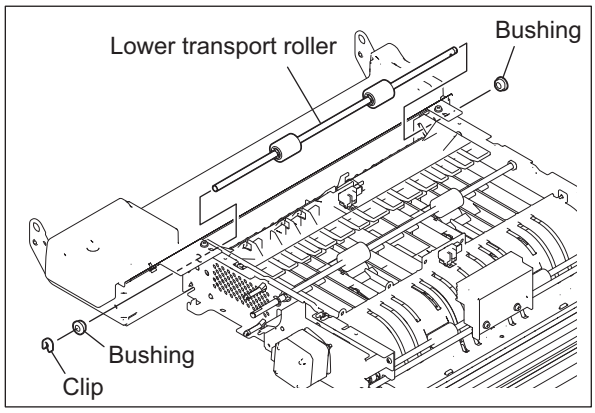


Fig. 17-29

17.7.13 ADU entrance sensor (S38)

(1) Take off the ADU cover.
🕮 P.17-15 "17.7.6 ADU cover"
(2) Disconnect 1 connector. Release the latches and take off the ADU entrance sensor.

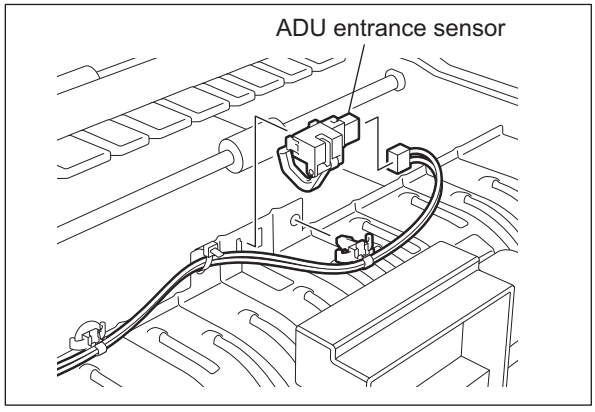


Fig. 17-30

17.7.14 ADU exit sensor (S39)

(1) Take off the ADU cover.
📖 P.17-15 "17.7.6 ADU cover"
(2) Disconnect 1 connector. Release the latches and take off the ADU exit sensor.

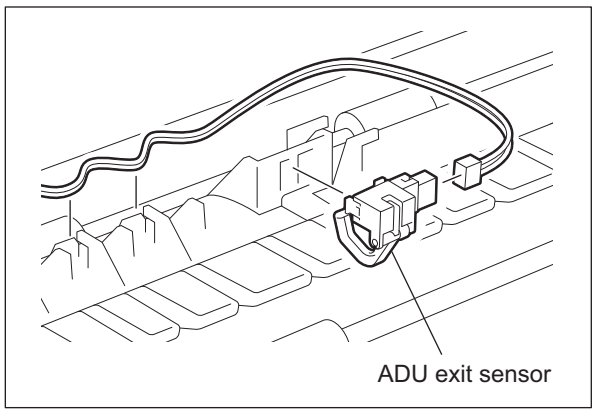


Fig. 17-31

17.7.15 ADU lower cover

(1) Open the bypass unit.
(2) Remove 2 screws and take off the ADU lower cover.

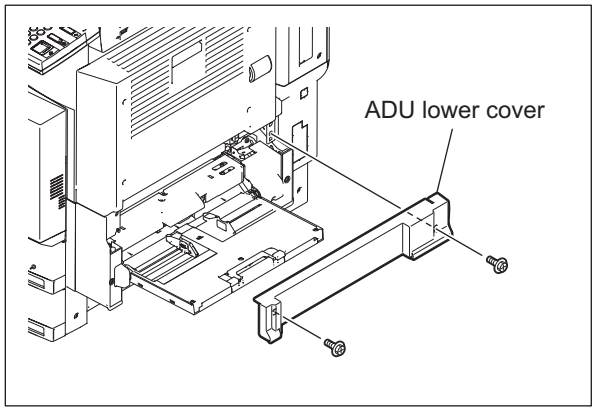


Fig. 17-32

17.7.16 ADU upper cover assembly

(1) Open the automatic duplexing unit.
(2) Remove 2 screws and take off the ADU upper cover assembly.

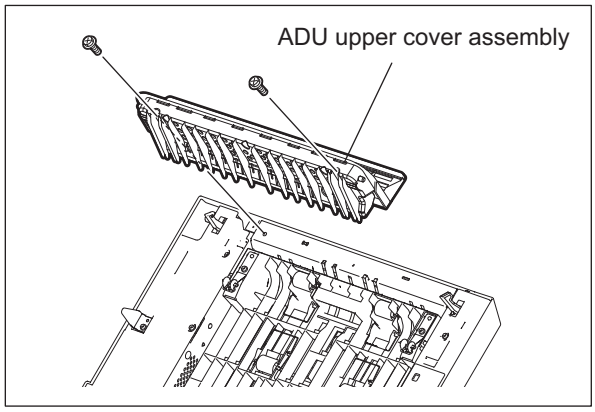


Fig. 17-33

17.7.17 Cover interlock switch (SW2)

(1) Open the board case.
📖 P.21-10 "21.1.11 Board case"
(2) Take off the right inner cover.
📖 P.3-32 "3.5.16 Right inner cover"
(3) Release the harness out of the 2 clamps, and then disconnect 1 connector.
(4) Remove 1 clamp.
(5) Remove 3 screws, and then take off the bracket.

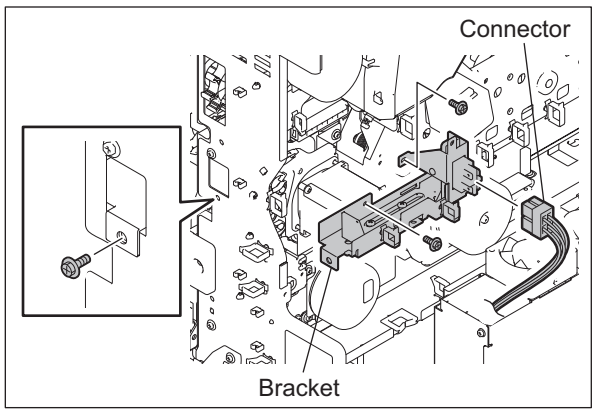


Fig. 17-34

(6) Remove 1 E-ring, and take off the shaft and switch guide.

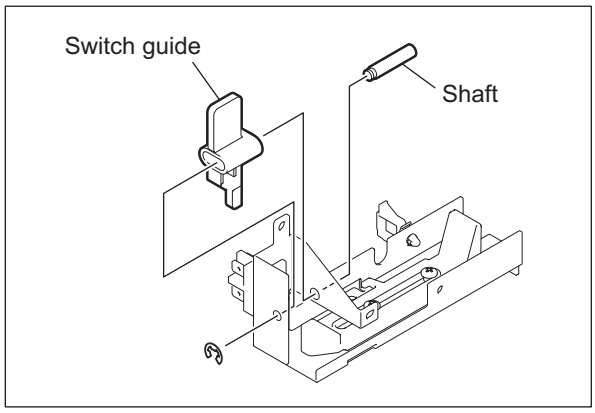


Fig. 17-35

(7) Release the latch, and then take off the Cover interlock switch.

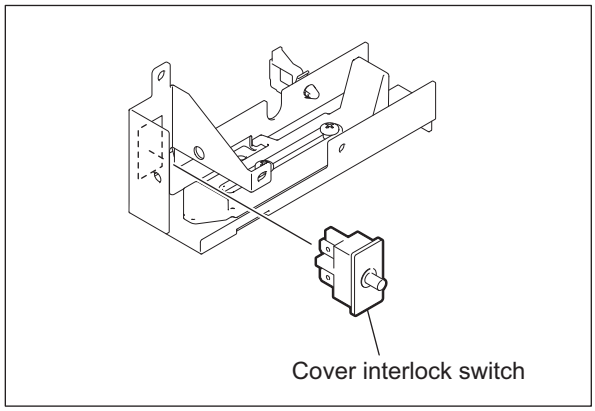


Fig. 17-36

18. POWER SUPPLY UNIT

18.1 General description

The power supply unit consists of AC filters, insulation-type DC output circuits and heater lamp control circuits in order to supply stable DC and AC voltage to each electric part of this equipment.

18.2 Construction

The power supply unit consists of the AC filter, insulation type DC output circuits and heater lamp control circuit.

1. AC filter
   Eliminates noise from the outside and prevents the noise generated by the equipment from leaking to the outside.

2. DC output circuits
   Converts AC voltage input from outside to DC voltage and supplies it to each electric part. The DC voltage is divided into the following two lines.

   a. Main switch line: Power supply used in the entire equipment during image forming process. Two kinds of voltage (+5.1 V and +12 V) are output when the main switch of the equipment is turned ON.

   b. Cover switch line: Power supply used in the entire equipment during image forming process, being supplied via the cover switch. Two kinds of voltage (+5.1 VD and +24 VD) are output only when the main switch of the equipment is turned ON and two covers (front cover and automatic duplexing unit) are closed.

3. Heater lamp control circuit
   TRC (Triac) is driven by the heater control signal (BHCON, BHSON, PHON, SUBON) from the LGC board and then AC power is supplied to each heater lamp (center heater lamp, side heater lamp, pressure roller lamp) in the fuser unit.

18.3 Operation of DC Output Circuits

1. Starting operation of the equipment
   When the main switch of the equipment is turned ON, power starts supplying to all the lines only when two covers (front cover and automatic duplexing unit) are closed.

2. Stopping operation of the equipment
   When the main switch of the equipment is turned OFF, PER-DN signal is output after the instantaneous outage insurance time (20 ms or more) elapses and then the supply of each voltage stops. If the supply of voltage of the main switch line (+5.1 VS, +5.1 VA, +12 VA) stops earlier than the 24 V line does, it may cause the damage of the electron device on each control circuit. To prevent this, the supply of these voltages stops after the PWR-DN signal is output and the minimum retaining time (50 ms) elapses.

3. Normal stopping (shifting to auto shut off mode)
   When the [ON/OFF] button on the control panel is pressed for 1 second or more while the main switch of the equipment is toggled ON, an auto shut off mode shifting signal (SYS-EN) is output and then all lines for output voltage except +5.1 VS are closed.

4. Normal starting (recovering from auto shut off mode)
   When the [ON/OFF] button on the control panel is pressed for 1 second or more during the auto shut off mode, an auto shut off mode recovery signal (PWR-SW) is output and then voltage starts supplying to all the lines, if no error was detected.

5. Output protection
   Each output system includes an overcurrent and overvoltage protection circuits (a fuse and internal protection circuit). This is to prevent the defectives (damage or abnormal operation of the secondary circuit) which may be caused by an overcurrent due to a short circuit or an overvoltage due to a short circuit between different voltages. If the protection circuit is activated (except the case the fuse is blown out), remove the causes such as short-circuit. Turn ON the power again 1 minute later to clear the overcurrent protection.

6. State of the power supply
   - Power OFF
     The main power switch of the equipment is turned OFF. Since DC voltage is not supplied to each board, the equipment is not operable.

   - Normal state
     The main power switch of the equipment is turned ON and DC voltage is supplied to each board. When the cover of the equipment is closed, 24 V DC voltage is supplied and the equipment enters into the ready/printing state.

   - Sleep mode
     Since 24V DC voltage is not supplied but 5 V DC voltage only, the equipment does not enter into the ready state.

   - Off mode
     Only DC voltage and 5 VS are output from the power supply unit. The [POWER] button is monitored and the LED of the main power switch is lit.

18.4 Output Channel

The following are 2 output channels for the main switch line.

- +5.1 V
  - +5.1 VS: CN402 Pin 6
    Output to the SYS board
  - +5.1 VA: CN402 Pins 8, 9 and 10
    Output to the SYS board
  - +5.1 VB: CN402 Pins 19 and 20
    Output to the SYS board
  - +5.1 VB: CN403 Pins 2 and 3
    Output to the IMG board
  - +5.1 VB: CN404 Pin 1
    Output to the LGC board
  - +5.1 VB: CN405 Pin 1
    Output to the LGC board, PFP/LCF board (via LGC board)
  - +5.1 VB: CN406 Pin 4
    Output to the Finisher
  - +5.1 VB: CN407 Pin 1 and 2
    Output to the SLG board, RADF
  - +5.1 VB: CN410 Pin 1
    Output to the FIL board

- +12 V
  - +12 VA: CN402 Pins 13 and 14
    Output to the SYS board
  - +12 VB: CN402 Pin 18
    Output to the SYS board
  - +12 VB: CN404 Pin 7
    Output to the LGC board
  - +12 VB: CN407 Pin 14
    Output to the SLG unit

The following are 2 output channels for the cover switch line.

- +5.1 V
  - +5.1 VD: CN405 Pin 4
    Output to the LGC board

- +24 V
  - +24 VD1: CN405 Pin 5
    Output to the LGC board
  - +24 VD2: CN405 Pin 6
    Output to the LGC board
  - +24 VD3: CN405 Pin 7
    Output to the LGC board, PFP/LCF (via LGC board)
    High-voltage transformer (via LGC board)
  - +24 VD4: CN406 Pin 2
    Output to the Finisher
  - +24 VD4: CN407 Pins 9, 10, 11 and 12
    Output to the Finisher

Output voltage by the type of connector

Main switch line

Connector	Destination	Voltage
CN402	For the SYS board	+5.1 VA, +5.1 VB, +5 VS, +12 VA, +12 VB
CN403	For the IMG board	+5.1 VB
CN404	For the LGC, PFP/LCF (via LGC board)	+5.1 VB, +12 VB
CN405	For the LGC board	+5.1 VB
CN406	For the finisher	+5.1 VB
CN407	For the SLG board, RADF	+5.1 VB, +12 VB
CN410	For the FIL board	+5.1 VB

Cover switch line

Connector	Destination	Voltage
CN405	For the LGC board, PFP/LCF (via LGC board, high-voltage transformer (via LGC board)	+5.1 VD, +24 VD1, +24 VD2, +24 VD3
CN406	For the finisher	+24 VD4
CN407	For the SLG board, RADF	+24 VD

18.5 Fuse

When the power supply secondary fuse is blown out, confirm that there is no abnormality with each part using the following table.

Voltage	Board/Unit	Part		Fuse type
+24 VD1	LGC board	Developer motor	M9	F201: 6.3 A (Semi time-lag)
		Polygonal motor	M13	
		Mirror motor-M	M14	
		Mirror motor-C	M15	
		Mirror motor-K	M16	
		Fuser motor	M17	
		Feed/transport motor	M20	
	PFP/LCF			
+24 VD2	LGC board	Transfer belt motor	M7	F202: 6.3 A (Semi time-lag)
		Drum motor	M10	
		Exit motor	M18	
		Registration motor	M19	
+24 VD3	LGC board	Toner motor-Y	M2	F203: 6.3 A (Semi time-lag)
		Toner motor-M	M3	
		Toner motor-C	M4	
		Toner motor-K	M5	
		Used toner paddle motor	M6	
		Shutter motor	M12	
		ADU motor	M22	
		Internal cooling fan	M23	
		Ozone exhaust fan	M24	
		Fuser/exit section cooling fan	M25	
		Laser unit cooling fan	M29	
		Waste toner transport motor	M31	
		EPU cooling fan	M33	
		Auto-toner sensor-Y	S22	
		Auto toner sensor-M	S23	
		Auto toner sensor-C	S24	
		Auto toner sensor-K	S25	
		1st drawer transport clutch (High speed)	CLT1	
		1st drawer transport clutch (Low speed)	CLT2	
		1st drawer feed clutch	CLT3	
		2nd drawer transport clutch (Low speed)	CLT4	
		2nd drawer transport clutch (High speed)	CLT5	
		2nd drawer feed clutch	CLT6	
		ADU clutch	CLT7	
		Bypass feed clutch	CLT8	
		Bypass pickup solenoid	SOL1	
		Discharge LED-Y	ERS-Y	
		Discharge LED-M	ERS-M	
		Discharge LED-C	ERS-C	
		Discharge LED-K	ERS-K	
		High-voltage transformer	HVT	
	Bridge unit			
	Key copy counter, copy key card, coin controller			
+24 VD4	SLG board	Scan motor	M1	F204: 6.3 A (Semi time-lag)
		Lamp inverter board	INV	
	RADF			
	Finisher			
+5 VB	LGC board	LGC board		F205: 5 A (Semi time-lag)
		PFP/LCF (via LGC board)		

18.6 Configuration of Power Supply Unit

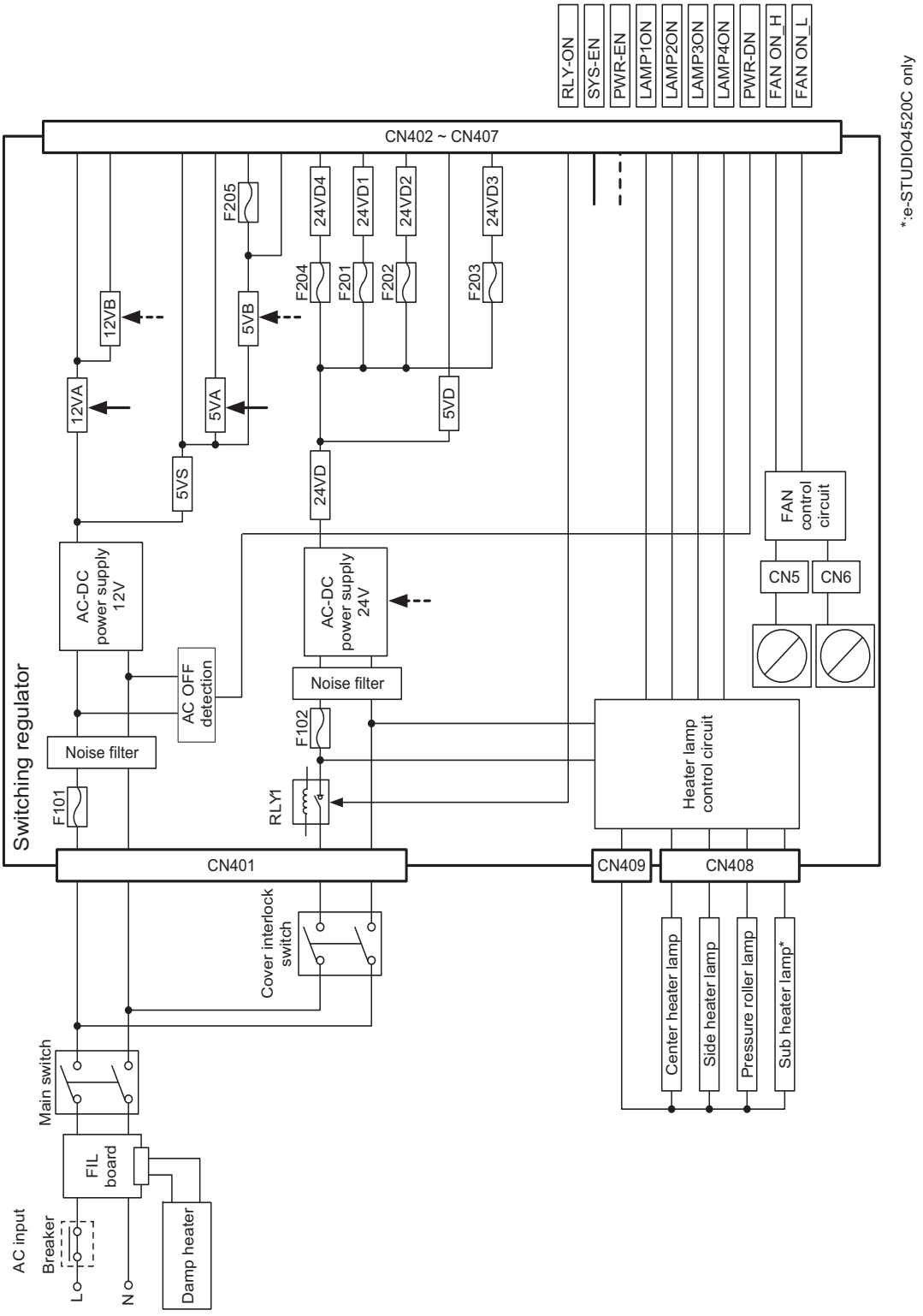


Fig. 18-1

18.7 Sequence of Power Supply

- Power ON, Power failure, Power OFF

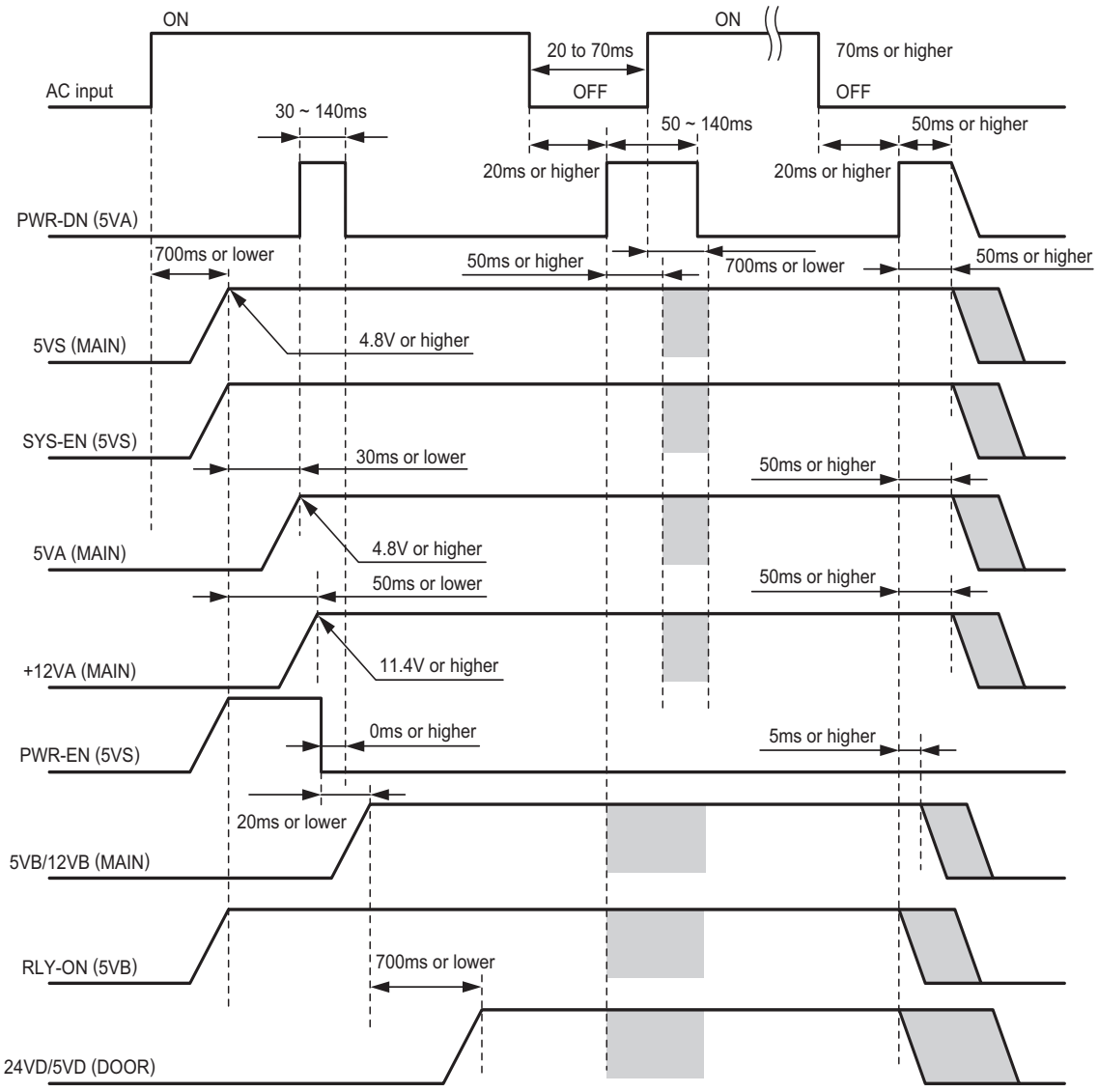


Fig. 18-2

- Sleep mode, OFF mode

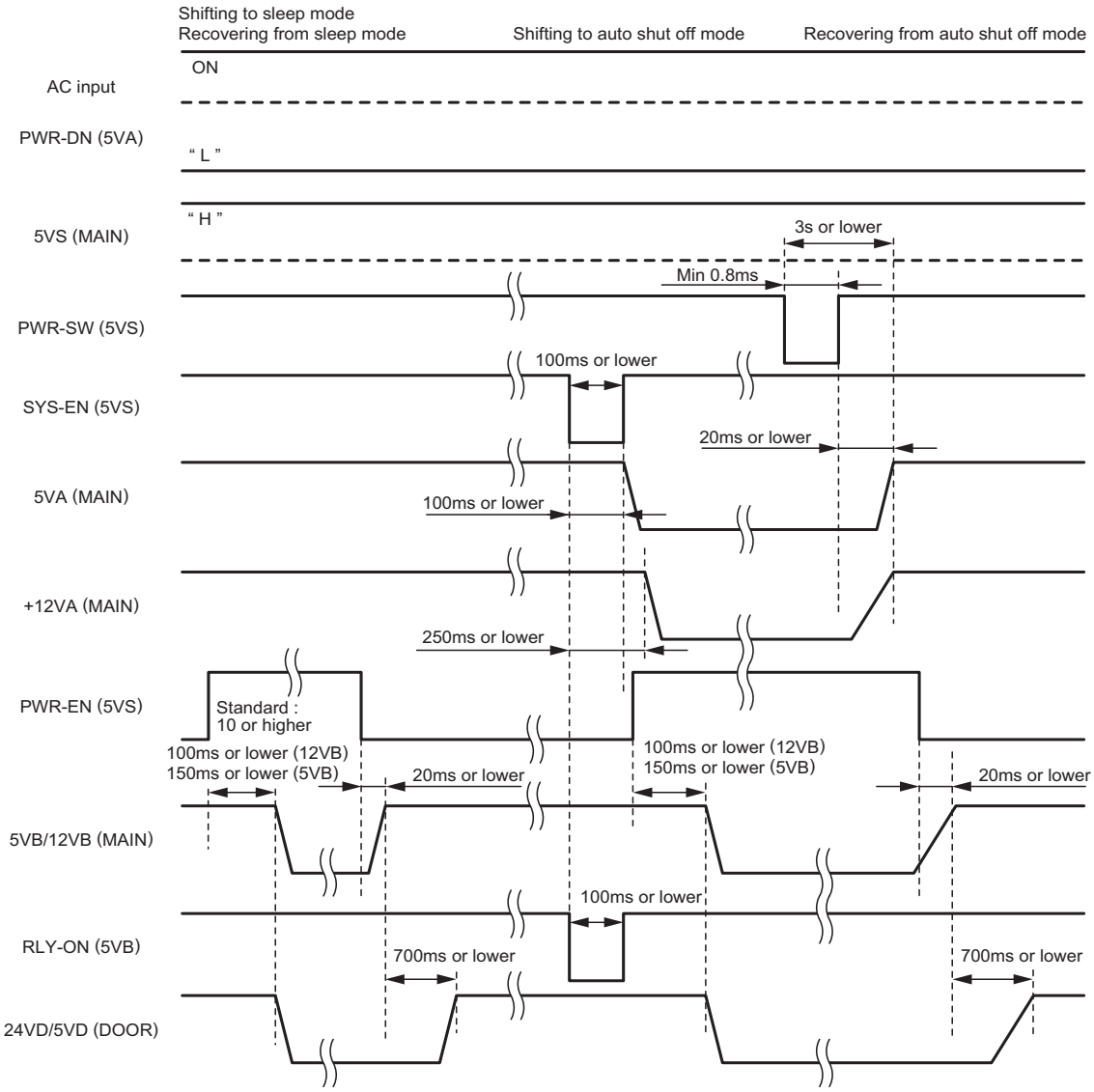


Fig. 18-3

18.8 AC Wire Harness

- e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C

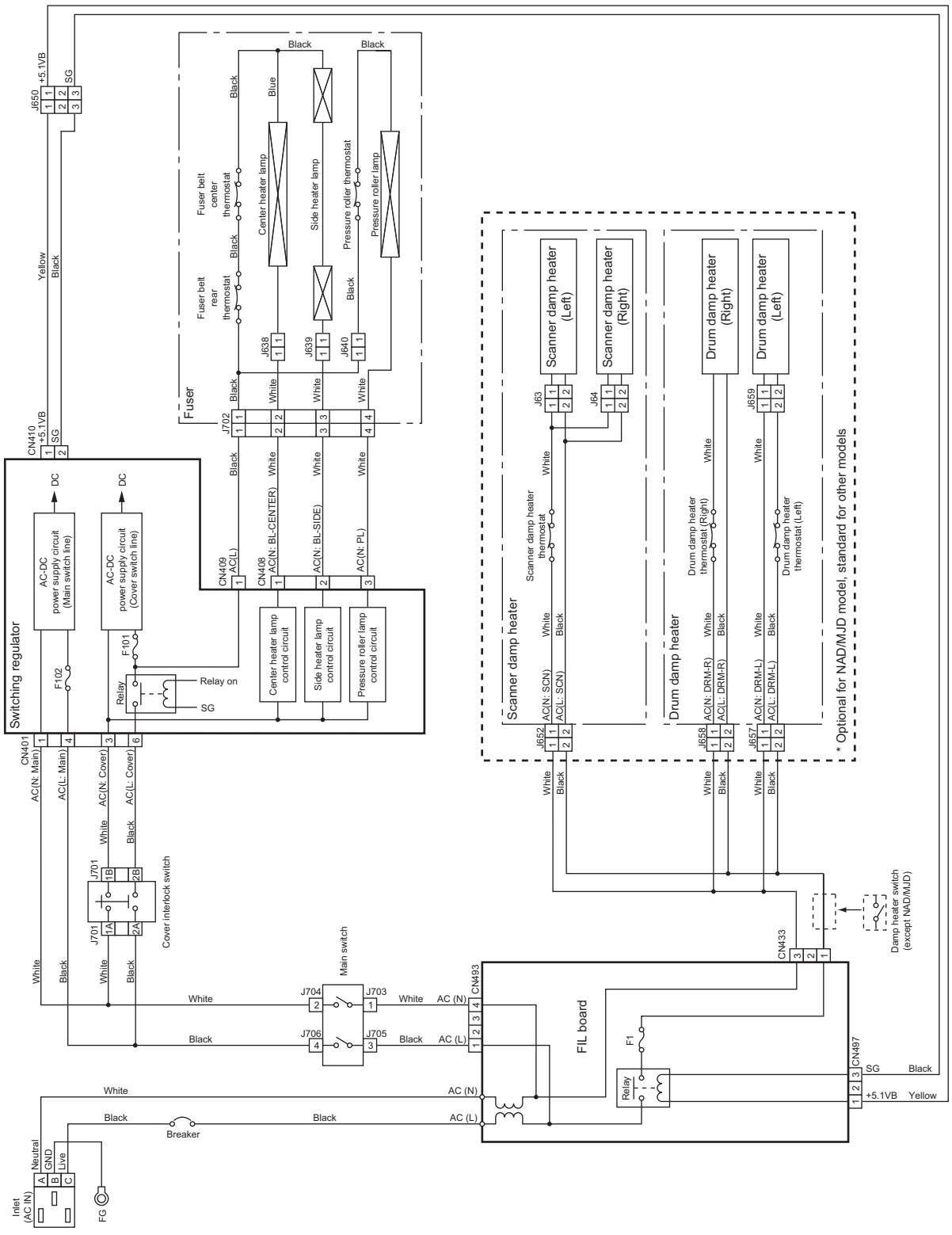


Fig. 18-4

- e-STUDIO4520C

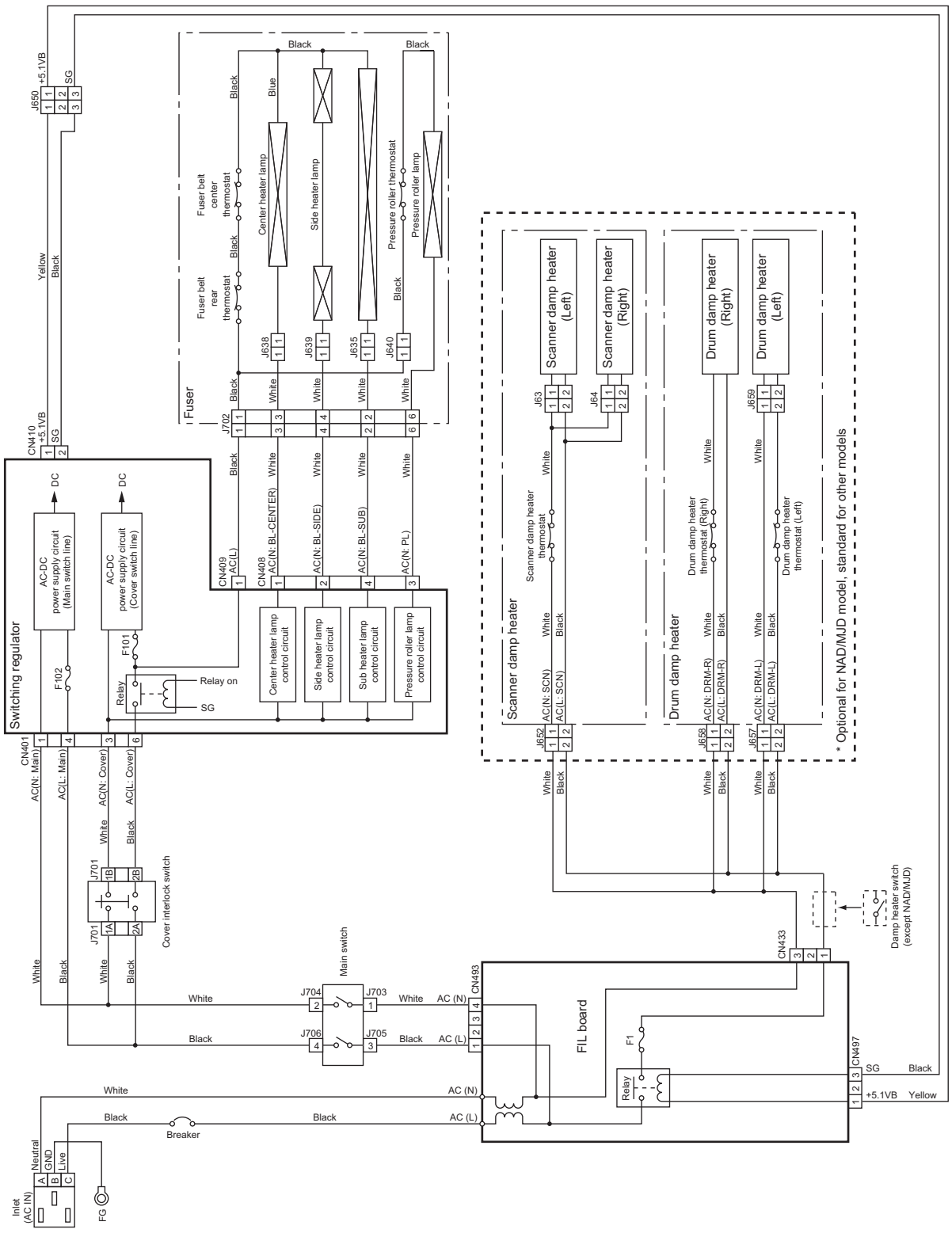


Fig. 18-5

19. PREVENTIVE MAINTENANCE (PM)

19.1 General Description

The purpose of preventive maintenance (PM) is to maintain the quality level of this equipment by periodically inspecting and cleaning this equipment and also replacing the parts whose replacement timing has come according to the maintenance contract. There are PM kits packaged for each unit or a group of parts with the same replacement number of output pages, allowing you to carry out efficient parts replacement.
Also to maintain the quality level of the equipment, overhauling is required when a specified number of pages has been printed or when a specified period of time has passed, regardless of the number of output pages.

19.2 PM Display

19.2.1 General Description

The maintenance timing for the PM parts of the process unit, such as the drum and developer material, and the PM parts of the units other than the process unit, such as the 2nd transfer roller and fuser belt varies depending on the conditions of the use, such as the ratio of color/black printing. Therefore, this equipment shows the appropriate maintenance timing of each part on the control panel LCD.

19.2.2 PM Display Conditions

The conditions of the PM display consist of the codes of the setting mode (08) for “the setting value treated as a threshold of the PM display”, “the counter indicating the current number of prints and driving time” and “the setting value which determines the display conditions”.
The PM timing is displayed when the counter exceeds the setting value according to the display condition based on “the setting value which determines the display conditions”.

- Setting value treated as a threshold of the PM display

  Note:
  When “0” is entered as the setting value, PM timing is not displayed.

  08-251 : Setting value of PM sheet counter [process unit (K)]
  08-375 : Setting value of PM driving counter [process unit (K)]
  08-6192 : Setting value of PM sheet counter [process unit (Y)]
  08-6193 : Setting value of PM driving counter [process unit (Y)]
  08-5550 : Setting value of PM sheet counter [process unit (M)]
  08-5551 : Setting value of PM driving counter [process unit (M)]
  08-5552 : Setting value of PM sheet counter [process unit (C)]
  08-5553 : Setting value of PM driving counter [process unit (C)]
  08-5554 : Setting value of PM sheet counter [developer material (K)]
  08-5555 : Setting value of PM driving counter [developer material (K)]
  08-5556 : Setting value of PM sheet counter [developer material (Y)]
  08-5557 : Setting value of PM driving counter [developer material (Y)]
  08-5558 : Setting value of PM sheet counter [developer material (M)]
  08-5559 : Setting value of PM driving counter [developer material (M)]
  08-5560 : Setting value of PM sheet counter [developer material (C)]
  08-5561 : Setting value of PM driving counter [developer material (C)]
  08-5562 : Setting value of PM sheet counter [parts other than the PM parts of the process unit]
  08-5563 : Setting value of PM driving counter [parts other than the PM parts of the process unit]

- Counter indicating the current number of prints and driving time

  08-252 : Current value of PM sheet counter [process unit (K)]
  08-376 : Current value of PM driving counter [process unit (K)]
  08-6196 : Current value of PM sheet counter [process unit (Y)]

08-6197 : Current value of PM driving counter [process unit (Y)]
08-5564 : Current value of PM sheet counter [process unit (M)]
08-5565 : Current value of PM driving counter [process unit (M)]
08-5566 : Current value of PM sheet counter [process unit (C)]
08-5567 : Current value of PM driving counter [process unit (C)]
08-5568 : Current value of PM sheet counter [developer material (K)]
08-5569 : Current value of PM driving counter [developer material (K)]
08-5570 : Current value of PM sheet counter [developer material (Y)]
08-5571 : Current value of PM driving counter [developer material (Y)]
08-5572 : Current value of PM sheet counter [developer material (M)]
08-5573 : Current value of PM driving counter [developer material (M)]
08-5574 : Current value of PM sheet counter [developer material (C)]
08-5575 : Current value of PM driving counter [developer material (C)]
08-5576 : Current value of PM sheet counter [parts other than the PM parts of the process unit]
08-5577 : Current value of PM driving counter [parts other than the PM parts of the process unit]

- Setting value which determines the display conditions
  08-223 : Switching of output pages/driving counts at PM [process unit (K)]
  08-5578 : Switching of output pages/driving counts at PM [process unit (Y)]
  08-5579 : Switching of output pages/driving counts at PM [process unit (M)]
  08-5580 : Switching of output pages/driving counts at PM [process unit (C)]
  08-5581 : Switching of output pages/driving counts at PM [developer material (K)]
  08-5582 : Switching of output pages/driving counts at PM [developer material (Y)]
  08-5583 : Switching of output pages/driving counts at PM [developer material (M)]
  08-5584 : Switching of output pages/driving counts at PM [developer material (C)]
  08-5585 : Switching of output pages/driving counts at PM [parts other than the PM parts of the process unit]

19.2.3 PM Display Contents

When the counter value exceeds the setting value, the equipment notifies you of when the maintenance time has come by displaying the message “Time for periodic maintenance ****” on the control panel LCD. “****” in the message is a 4-digit hexadecimal number code. This number is allocated in the following manner, therefore the parts needing maintenance can be identified.

PM parts of the process unit (K)	: 0008
PM parts of the process unit (Y)	: 0001
PM parts of the process unit (M)	: 0002
PM parts of the process unit (C)	: 0004
Developer material (K)	: 0080
Developer material (Y)	: 0010
Developer material (M)	: 0020
Developer material (C)	: 0040
Parts other than the PM parts of the process unit	: 0100

If multiple parts have reached the maintenance time, the sum of the corresponding code values listed above is displayed in hexadecimal numbers.
For example, if the PM parts of the process units (K) and (C) and the developer materials (K) and (C) reach the maintenance time, the 4-digit hexadecimal number code will be “00CC” in hexadecimal numbers: 0008+0004+0080+0040=00CC.

4th digit	3rd digit		2nd digit		1st digit	
None	Part (transfer roller)		Developer material		Photoconductive drum	
	Hexadecimal number code	Explanation	Hexadecimal number code	Explanation	Hexadecimal number code	Explanation
Always “0”	0	No maintenance required	0	No maintenance required	0	No maintenance required
	1	Maintenance required	1	Y	1	Y
			2	M	2	M
			3	M+Y	3	M+Y
			4	C	4	C
			5	Y+C	5	Y+C
			6	C+M	6	C+M
			7	Y+M+C	7	Y+M+C
			8	K	8	K
			9	K+Y	9	K+Y
			A	K+M	A	K+M
			B	K+M+Y	B	K+M+Y
			C	K+C	C	K+C
			D	K+Y+C	D	K+Y+C
			E	K+C+M	E	K+C+M
			F	K+Y+M+C	F	K+Y+M+C

19.2.4 Counter Clearing

The counter indicating “current number of prints and driving time” used for the PM display function is reset by entering “0” in it or clearing it in the PM support mode.

Note:
Even if “0” is entered in the PM management setting value of the setting mode (08), the corresponding counter for the PM display is not reset. Be sure to clear the counter in the PM support mode when the maintenance is finished.

The reset condition of each counter is as follows:

- 08-252: Current value of PM sheet counter [process unit (K)]
- 08-376: Current value of PM driving counter [process unit (K)]
  When the current value of “CLEANER/DRUM/CHARGER (K)” on the main screen or “DRUM (K)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-6196: Current value of PM sheet counter [process unit (Y)]
- 08-6197: Current value of PM driving counter [process unit (Y)]
  When the current value of “CLEANER/DRUM/CHARGER (Y)” on the main screen or “DRUM (Y)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5564: Current value of PM sheet counter [process unit (M)]
- 08-5565: Current value of PM driving counter [process unit (M)]
  When the current value of “CLEANER/DRUM/CHARGER (M)” on the main screen or “DRUM (M)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5566: Current value of PM sheet counter [process unit (C)]
- 08-5567: Current value of PM driving counter [process unit (C)]
  When the current value of “CLEANER/DRUM/CHARGER (C)” on the main screen or “DRUM (C)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5568: Current value of PM sheet counter [developer material (K)]
- 08-5569: Current value of PM driving counter [developer material (K)]
  When the current value of “DEVELOPMENT UNIT” on the main screen or “BLACK DEVELOPER (K)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5570: Current value of PM sheet counter [developer material (Y)]
- 08-5571: Current value of PM driving counter [developer material (Y)]
  When the current value of “DEVELOPMENT UNIT” on the main screen or “YELLOW DEVELOPER (Y)” on the sub-screen in the PM support mode is cleared, the counter is reset.

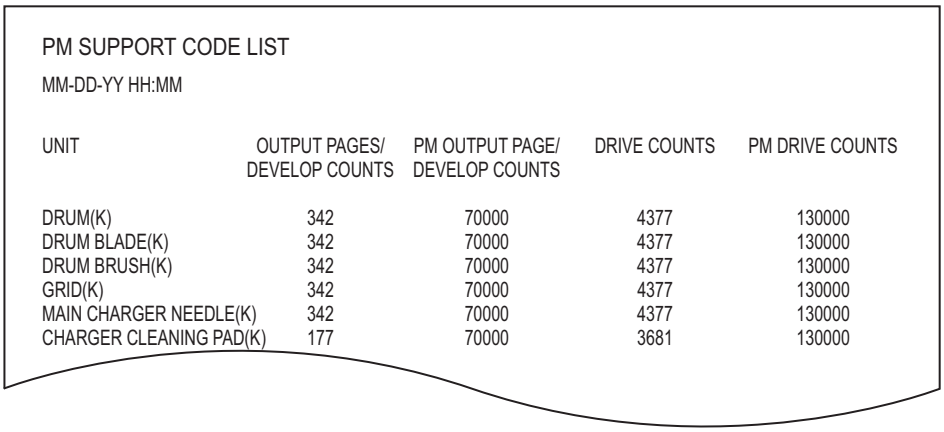
- 08-5572: Current value of PM sheet counter [developer material (M)]
- 08-5573: Current value of PM driving counter [developer material (M)]
  When the current value of “DEVELOPMENT UNIT (M)” on the main screen or “MAGENTA DEVELOPER (M)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5574: Current value of PM sheet counter [developer material (C)]
- 08-5575: Current value of PM driving counter [developer material (C)]
  When the current value of “DEVELOPMENT UNIT” on the main screen or “CYAN DEVELOPER (C)” on the sub-screen in the PM support mode is cleared, the counter is reset.

- 08-5576: Current value of PM sheet counter [parts other than the PM parts of the process unit]
- 08-5577: Current value of PM driving counter [parts other than the PM parts of the process unit]
  When the current value of “2nd TRANSFER” on the main screen or “2nd TRANSFER ROLLER” on the sub screen in the PM support mode is cleared, the counter is reset.

19.3 General Descriptions for PM Procedure

(1) Preparation
- Ask the user about the current conditions of the equipment and note them down.
- Before starting maintenance, make some sample copies and store them.
- See the replacement record and check the parts to be replaced in the PM support mode (6S-2) or list printing mode (9S-103).
  6S-2 : [6] + [START] + [POWER] ON → [2] → [START]
  9S-103 : [9] + [START] + [POWER] ON → [103] → [START]



PM SUPPORT CODE LIST

MM-DD-YY HH:MM

UNIT	OUTPUT PAGES/ DEVELOP COUNTS	PM OUTPUT PAGE/ DEVELOP COUNTS	DRIVE COUNTS	PM DRIVE COUNTS
DRUM(K)	342	70000	4377	130000
DRUM BLADE(K)	342	70000	4377	130000
DRUM BRUSH(K)	342	70000	4377	130000
GRID(K)	342	70000	4377	130000
MAIN CHARGER NEEDLE(K)	342	70000	4377	130000
CHARGER CLEANING PAD(K)	177	70000	3681	130000

Fig. 19-1

- Turn OFF the power and make sure to unplug the equipment.

(2) Perform a preventive maintenance using the following checklist and illustrations. Refer to the Service Manual if necessary.

(3) Plug in the equipment after the maintenance has been finished. Then turn ON the power and make some copies to confirm that the equipment is working properly.

19.4 PM Support Mode

19.4.1 General Description

This equipment has a PM support mode which enables you to confirm the use status of each part (the number of output pages or developed pages, and drive counts) requiring periodic replacement and also the replacement record, as well as resetting counter values efficiently. This record can be printed out in the list print mode.

19.4.2 Operational flow

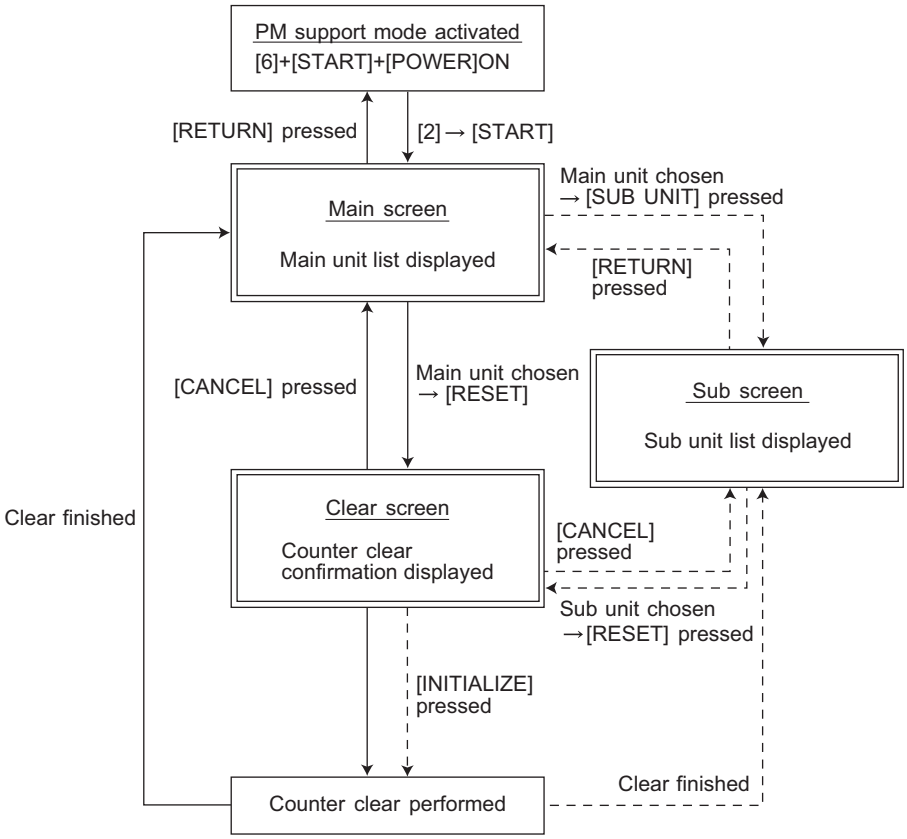


Fig. 19-2

* The screen goes back to the main screen when the counter clear is performed or the [CANCEL] button is pressed after moving from the main screen, while it goes back to the sub screen after moving from the sub screen.

19.4.3 Operational screen

The description of the display (including the function of each button) on the LCD screen is shown below.

1. Main screen

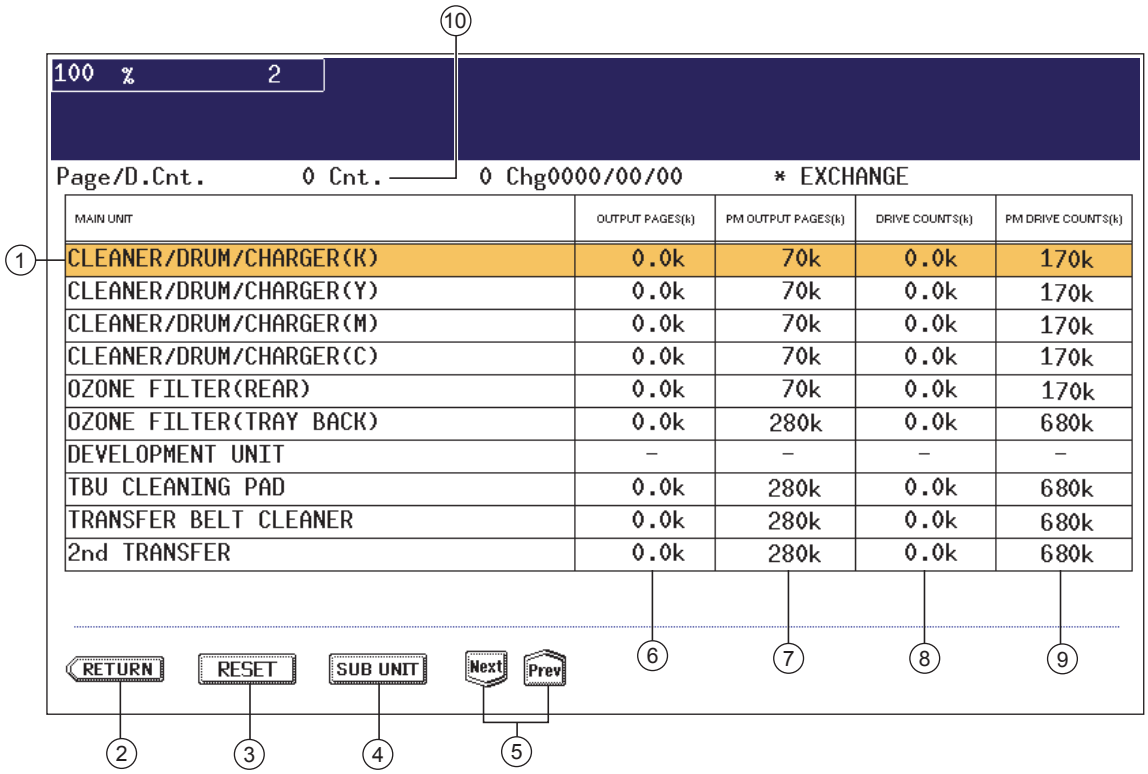


Fig. 19-3

① Displaying of the main unit name

② Back to the PM support mode activation screen

③ Moving to the clear screen to clear the selected unit counters ⑥ and ⑧, including all sub unit (parts) counters belonging to that unit When the unit is not selected, all counters are cleared.

④ Moving to the sub screen of the selected unit

⑤ Moving to the next/previous page

⑥ Displaying of the present number of print / develop pages
When there are differences among the sub units (parts), "_" is displayed and "CHECK SUBUNIT" is displayed at the top
"*" is displayed next to the present number when the number of print / develop pages has exceeded its PM standard number.

⑦ Displaying of the standard number of print / develop pages to replace the unit parts

⑧ Displaying of the present drive counts
"*" is displayed next to the present number when the number of drive counts has exceeded its PM standard number.

⑨ Displaying of the standard number of drive counts to replace the unit parts

⑩ Displaying of the number of print / develop pages (Page/D. cnt), drive counts (Cnt.) and previous replacement date (Chg.) for a chosen unit
When the replacement date for the sub unit is different, press the [SUB UNIT] button to move to the sub screen and see each information, otherwise information is not displayed

Notes:

1. "—" is always displayed at the drive counts section for the reversing automatic document feeder (RADF) and feed unit.
2. "—" is displayed at the numeric section for the paper source which is not installed since the paper source is different depending on the structure of options.
3. The number of output pages printed only in the full color mode is given in the pm output pages section.

2. Sub screen

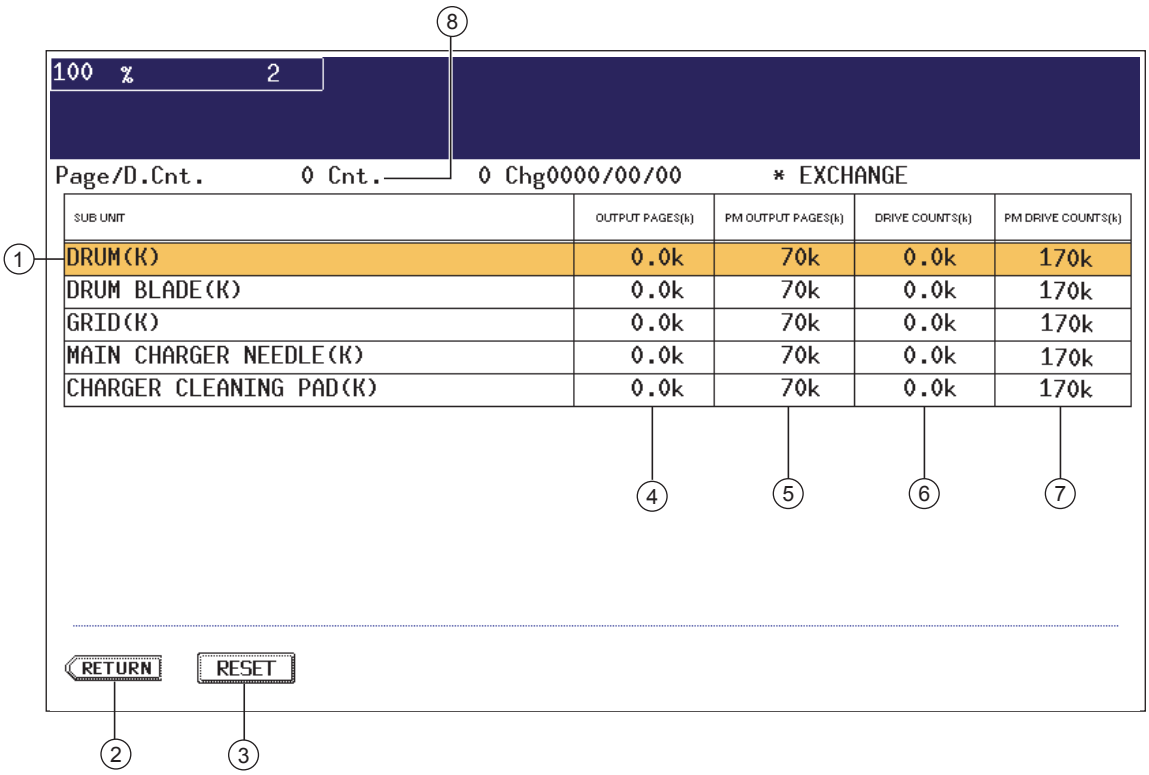


Fig. 19-4

① Displaying of the sub unit (parts) name

② Back to the main screen

③ Moving to the clear screen to clear the selected unit (parts) counters

④ Displaying of the present number of print / develop pages
"*" is displayed next to the present number when the number of print / develop pages has exceeded its PM standard number.

⑤ Displaying of the standard number of print / develop pages to replace the sub unit (parts)

⑥ Displaying of the present drive counts
"*" is displayed next to the present number when the number of drive counts has exceeded its PM standard number.

⑦ Displaying of the standard number of drive counts to replace the sub unit (parts)

⑧ Displaying of the number of print / develop pages and drive counts and previous replacement date for a chosen sub unit

3. Clear screen

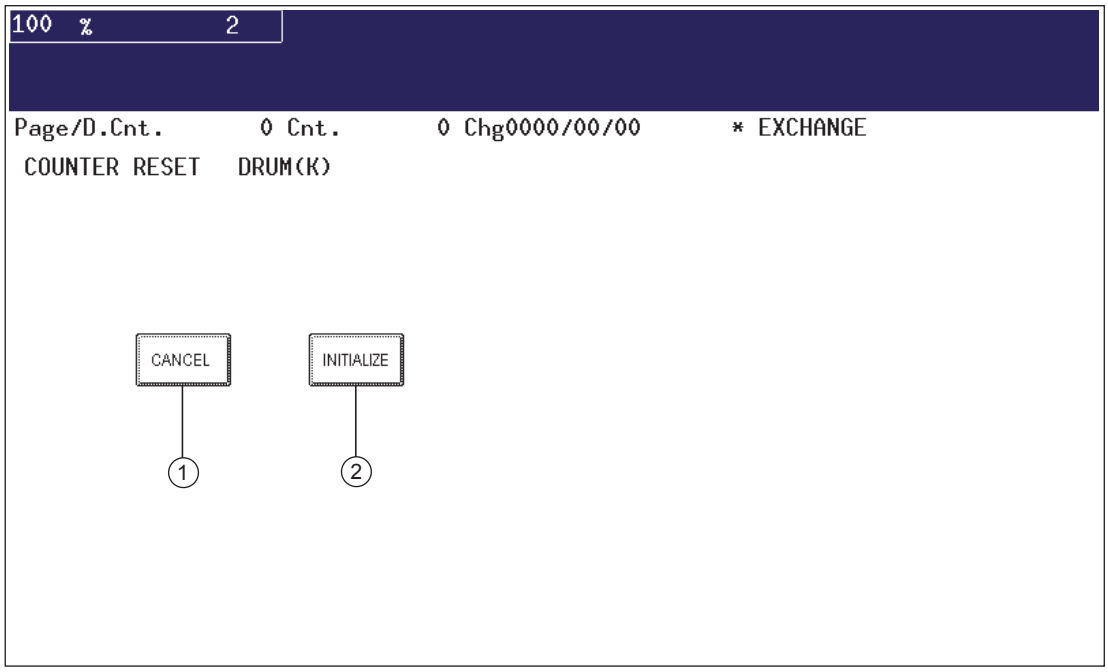


Fig. 19-5

① When the [CANCEL] button is pressed, the counter is not cleared and the display returns to the main or sub screen.

② When the [INITIALIZE] button is pressed, “Present number of print / develop pages” and Present driving counts” are cleared and “Previous replacement date” is updated.

19.4.4 Access tree

The relation between the main unit and the sub unit is shown below.

Note:

Some parts in this manual are described with different names on the LCD screen. In this case, the name in this manual is indicated in square brackets [ ].

Main screen	Sub-screen
CLEANER/DRUM/CHARGER (K) [Process unit (K)]	DRUM (K) DRUM BLADE (K) [Drum cleaning blade] GRID (K) [Main charger grid] MAIN CHARGER NEEDLE (K) [Needle electrode] CHARGER CLEANING PAD (K) [Main charger cleaner]
CLEANER/DRUM/CHARGER (Y) [Process unit (Y)]	DRUM (Y) DRUM BLADE (Y) [Drum cleaning blade] GRID (Y) [Main charger grid] MAIN CHARGER NEEDLE (Y) [Needle electrode] CHARGER CLEANING PAD (Y) [Main charger cleaner]
CLEANER/DRUM/CHARGER (M) [Process unit (M)]	DRUM (M) DRUM BLADE (M) [Drum cleaning blade] GRID (M) [Main charger grid] MAIN CHARGER NEEDLE (M) [Needle electrode] CHARGER CLEANING PAD (M) [Main charger cleaner]
CLEANER/DRUM/CHARGER (C) [Process unit (C)]	DRUM (C) DRUM BLADE (C) [Drum cleaning blade] GRID (C) [Main charger grid] MAIN CHARGER NEEDLE (C) [Needle electrode] CHARGER CLEANING PAD (C) [Main charger cleaner]
OZONE FILTER (REAR) [Ozone filter-1]	-----
OZONE FILTER (TRAY BACK) [Ozone filter-2]	-----
DEVELOPER UNIT	BLACK DEVELOPER [Developer material K] YELLOW DEVELOPER [Developer material Y] MAGENTA DEVELOPER [Developer material M] CYAN DEVELOPER [Developer material C] DEVELOPER FILTER (K) DEVELOPER FILTER (Y) DEVELOPER FILTER (M) DEVELOPER FILTER (C)
TBU CLEANING PAD [Transfer belt cleaning mylar]	CLEANING PAD (FACING ROLLER) [2nd transfer facing roller cleaning mylar]
TRANSFER BELT CLEANER [Transfer belt cleaning unit]	BELT BLADE [Transfer belt cleaning blade]
2nd TRANSFER	2nd TRANSFER ROLLER
FUSER	FUSER BELT PRESS ROLLER FUSER ROLLER PRESS ROLLER FINGER [Separation finger] FUSER BELT GUIDE
1st CST. [1st drawer]	PICK UP ROLLER (1st CST.) FEED ROLLER SEP ROLLER (1st CST.) [Separation roller]
2nd CST. [2nd drawer]	PICK UP ROLLER (2nd CST.) FEED ROLLER (2nd CST.) SEP ROLLER (2nd CST.) [Separation roller]

Main screen	Sub-screen
SFB [Bypass unit]	PICK UP ROLLER (SFB) FEED ROLLER (SFB) SEP ROLLER (SFB) [Separation roller]
RADF	PICK UP ROLLER (RADF) FEED ROLLER (RADF) SEP ROLLER (RADF) [Separation roller]
LCF	PICK UP ROLLER (LCF) FEED ROLLER (LCF) SEP ROLLER (LCF) [Separation roller]
3rd CST. [PFP upper drawer]	PICK UP ROLLER (3rd CST.) FEED ROLLER (3rd CST.) SEP ROLLER (3rd CST.) [Separation roller]
4th CST. [PFP lower drawer]	PICK UP ROLLER (4th CST.) FEED ROLLER (4th CST.) SEP ROLLER (4th CST.) [Separation roller]

Note:

When the counter value of any of the pickup roller, feed roller and separation roller in each unit is reset, the value of the feeding retry counter is also reset simultaneously. When the [RESET] button is pressed after selecting the feed unit in the Main Screen, the value of the feeding retry counter is also reset simultaneously.

The feeding retry counter:

- 1st drawer Reset the feeding retry counter (08-1390)
- 2nd drawer Reset the feeding retry counter (08-1391)
- PFP upper drawer Reset the feeding retry counter (08-1392)
- PFP lower drawer Reset the feeding retry counter (08-1393)
- Bypass unit Reset the feeding retry counter (08-1394)
- LCF Reset the feeding retry counter (08-1395)

19.5 Work flow of parts replacement

The life span of the parts changes depending on their general use, such as the ratio of the color/black printing or the adjustment for keeping the printing quality. Therefore, it is necessary to consider not only the number of printed/developed pages but also the drive counts when deciding the timing for parts replacement. Even if the number of print / develop pages has reached the level of replacement, for instance, the part may still be usable with its drive counts not reaching the specified drive counts. On the other hand, the part may need replacement even if the number of print / develop pages has not reached the level of replacement with its driving time exceeding the specified drive counts. The life span of some parts such as feed roller is heavily dependent on the number of output pages rather than the drive counts.
The following work flow diagram shows how to judge the timing of replacement with the number of print / develop pages.

Example 1:
When the number of print / develop pages has reached the specified level

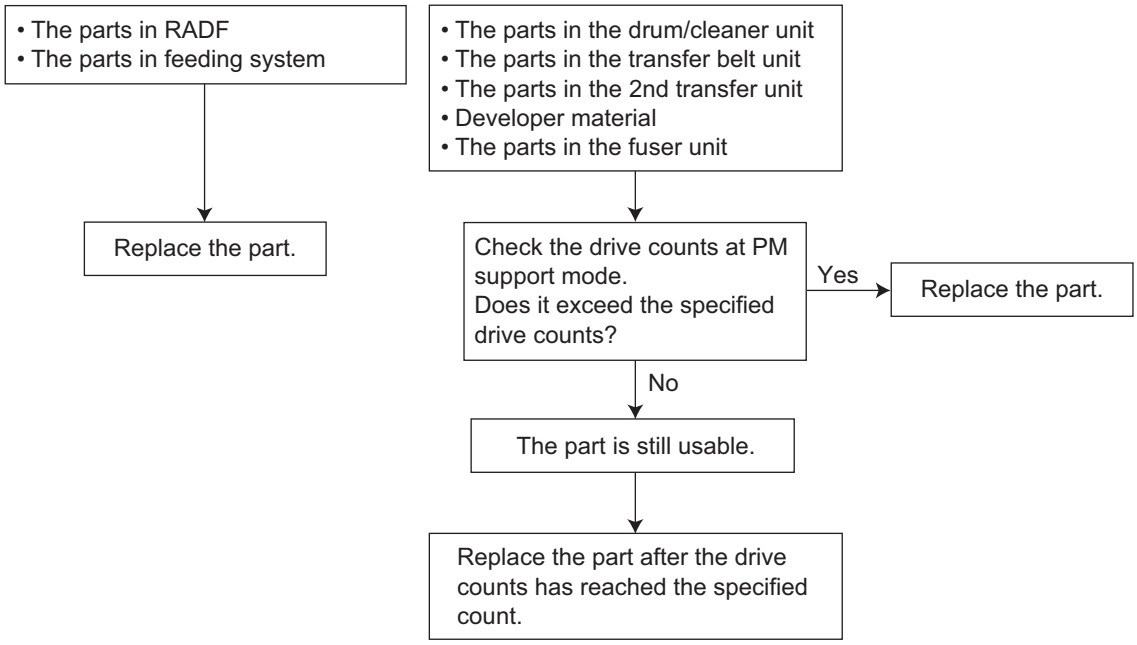


Fig. 19-6

Example 2:
When the image failure occurred before the number of print / develop pages has reached the specified level

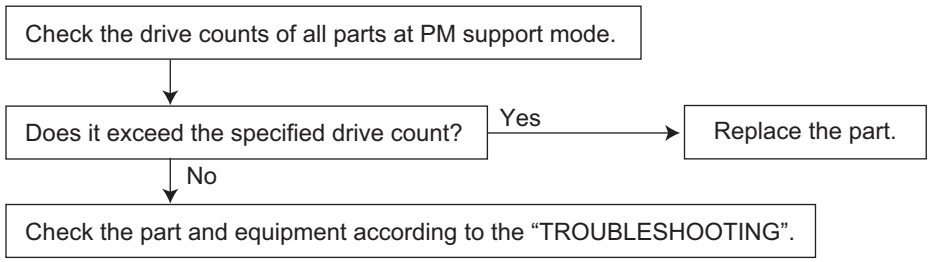


Fig. 19-7

19.6 Preventive Maintenance Checklist

Symbols/value used in the checklist

Cleaning	Lubrication/Coating	Replacement	Operation check
A: Clean with alcohol B: Clean with soft pad, cloth or vacuum cleaner	L: Launa 40 SI: Silicon oil W1: White grease (Molykote EM-30L) W2: White grease (Molykote HP-300) AV: Alvania No.2 FL: Floil (GE-334C)	Value: Replacement cycle R: Replace if deformed or damaged	O: After cleaning or replacement, confirm there is no problem.

[Preventive Maintenance Checklist]

Notes:

1. Perform cleaning and lubricating in the following timing. Lubricate the replacement parts according to the replacement cycle.

Model name	Black	Full color
e-STUDIO2020C	every 40,000 sheets	every 40,000 sheets
e-STUDIO2330C	every 56,000 sheets	every 46,000 sheets
e-STUDIO2820C	every 56,000 sheets	every 56,000 sheets
e-STUDIO2830C	every 70,000 sheets	every 56,000 sheets
e-STUDIO3520C e-STUDIO3530C e-STUDIO4520C	every 70,000 sheets	every 70,000 sheets

2. The value in the “Replacement” field of the table below indicates the replacement number of output pages in either the black or the full color mode. If the values are different, the one for the full color mode is indicated in parentheses ( ). If they differ according to the model, they are indicated in the order of the e-STUDIO2020C, e-STUDIO2330C, e-STUDIO2820C, e-STUDIO2830C and e-STUDIO3520C/3530C/4520C.
3. The replacement cycle of the parts in the feeding section equals to the number of sheets fed from each paper source.
4. Be careful not to put oil on the rollers, belts and belt pulleys when lubricating.
5. Parts list <P-I> represents the page item in “e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C Service Parts List”.

19.6.1 Scanner

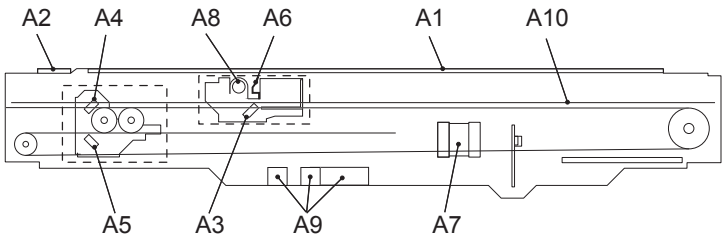


Fig. 19-8

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
A1	Original glass	B or A					28-1
A2	ADF original glass	B					28-2
A3	Mirror-1	B					
A4	Mirror-2	B					
A5	Mirror-3	B					
A6	Reflector	B					
A7	Lens	B					12-10
A8	Exposure lamp			R	R	O	29-6
A9	Automatic original detection sensor	B				O	12-12
A10	Slide sheet (front and rear)	B or A		R	R		

* A1: Original glass, A2: ADF original glass

Clean both sides of the original glass and ADF original. Make sure that there is no dust on the mirrors-1, -2, -3 and lens after cleaning. Then install the original glass and ADF original glass.

Note:

Make sure that there is no fingerprints or oil staining on part of the original glass on where the original scale is mounted since the shading correction plate is located below the scale to be scanned.

19.6.2 Laser unit

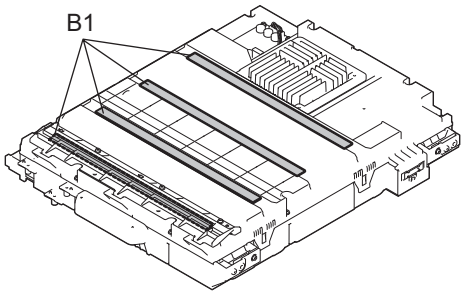


Fig. 19-9

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
B1	LSU slit glass	B or A					

19.6.3 Feed unit

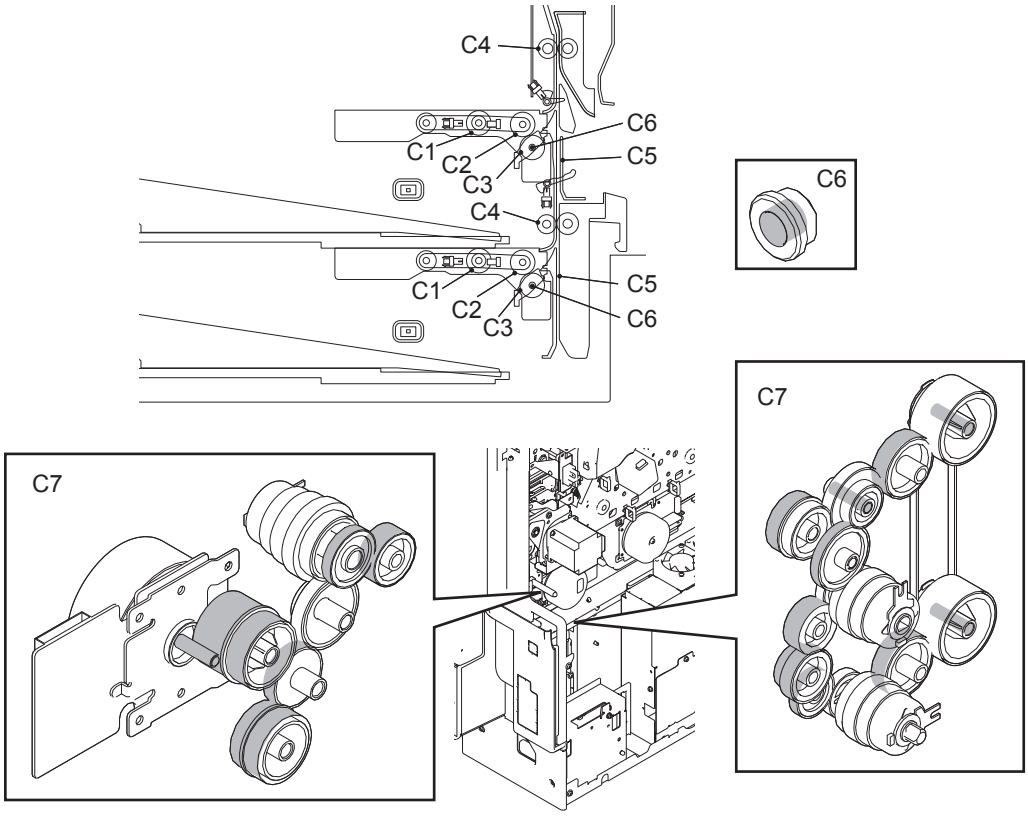


Fig. 19-10

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
C1	Pickup roller			80	-		20-20
C2	Feed roller			80	-		20-24
C3	Separation roller		AV, W2	80	-		20-5
C4	Transport roller	A		R	R		
C5	Paper guide	B					
C6	GCB bushing bearing		L				
C7	Drive gear (tooth face and shaft)		W1				
C8	One side of the plastic bushing to which the shaft is inserted		W1				
C9	Registration roller (metal)	A		R	R		25-19
C10	Middle guide	A					25-2

* C3: Separation roller
Apply an even coat of grease (Alvania No.2) to all round the inside of the spring.

When replacing the separation roller, apply 1 rice-sized grain of white grease (Molykote HP-300) on the places of the holder shown in the figure (4 places).

Note:

Make sure that the grease does not adhere to the roller surface. Wipe it off with alcohol if adhered.

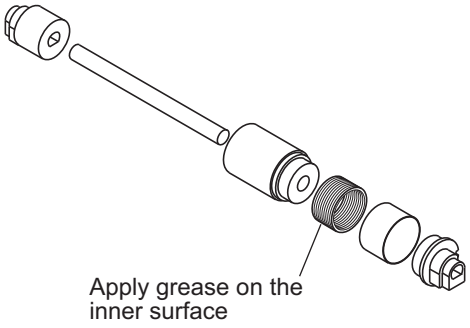


Fig. 19-11

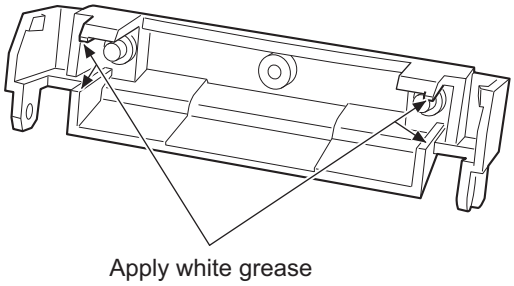


Fig. 19-12

* C7: Drive gear

Apply a blob of white grease (Molykoto EM-30L) onto the teeth (3 rice-sized grains) and onto the inner shaft (1 rice-sized grain) of the drive gears.

Note:

Make sure that oil is not running over or scattered around as the gear is rotated coming into the clutch after applying molykote to the gear which is located near the clutch. The quantity of molykote should be smaller than that to be applied to the other parts.

* C10: Middle guide

Open the 2nd transfer unit, and then open the middle guide by holding its knob to clean the entire surface of the Mylar with alcohol.

Note:

Do not hold the middle guide itself when opening and closing it.

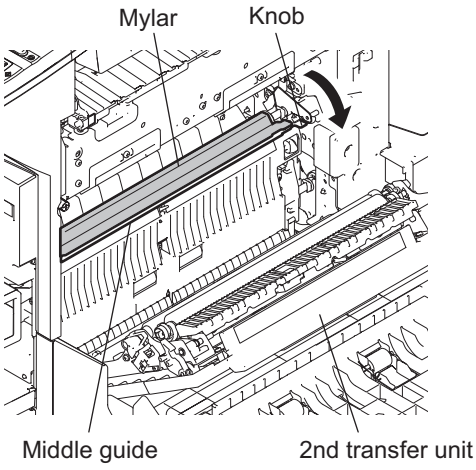


Fig. 19-13

19.6.4 Automatic duplexing unit

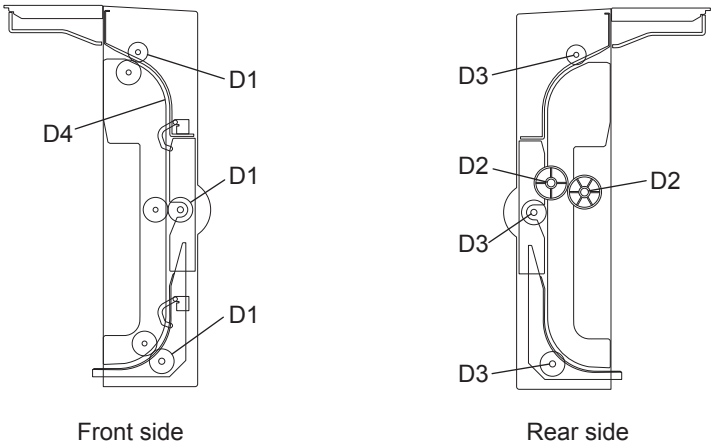


Fig. 19-14

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
D1	Transport roller (upper, middle and lower)	A		R	R		48-2 48-12
D2	One side of the GCB bushing to which the shaft is inserted		L				
D3	One side of the plastic bushing to which the shaft is inserted		W1				
D4	Paper guide	B					47-4

19.6.5 Bypass feed unit

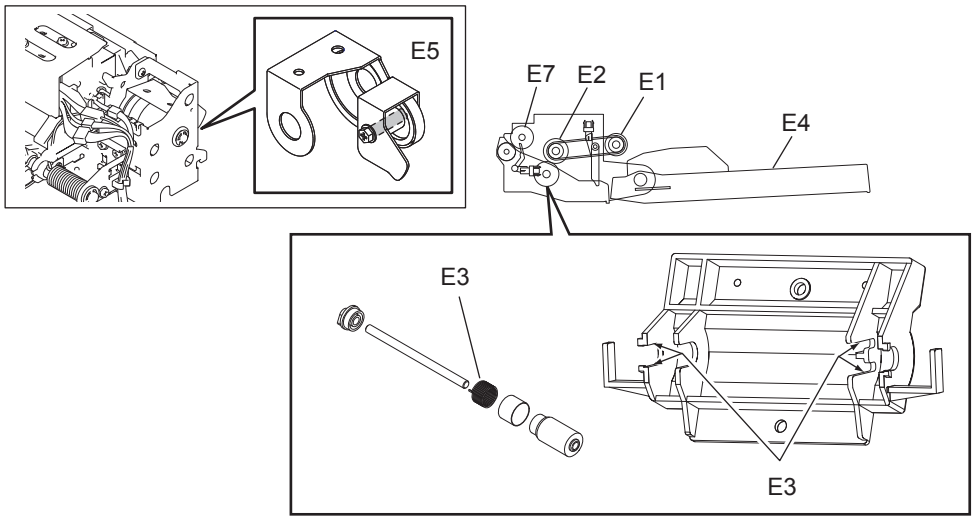


Fig. 19-15

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
E1	Pickup roller			80	-		24-26
E2	Feed roller			80	-		24-37
E3	Separation roller		AV, W2	80	-		23-1
E4	Bypass tray	B					
E5	Drive gear (shaft)		W1				
E6	GCB bushing bearing		L				
E7	Transport roller	A		R	R		24-40

* E3: Separation roller
Apply an even coat of grease (Alvania No.2) to all round the inside of the spring.
When replacing the separation roller, apply 1 rice-sized grain of white grease (Molykote HP-300) on the places of the holder shown in the figure (4 places).
Make sure that the grease does not adhere to the roller surface. Wipe it off with alcohol if adhered.

19.6.6 Main charger

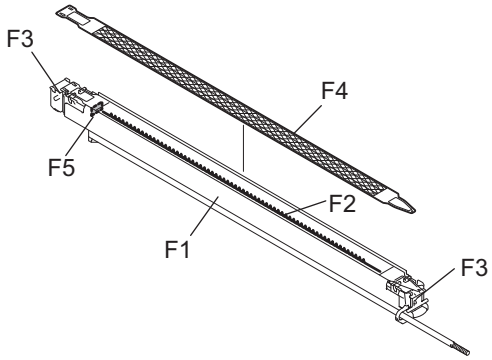


Fig. 19-16

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
F1	Main charger case	B					40-1
F2	Needle electrode			40/56/56/70/70 (40/46/56/56/70)	170	O	40-6
F3	Contact point of terminals	B					40-2 40-3
F4	Main charger grid			40/56/56/70/70 (40/46/56/56/70)	170		40-14
F5	Main charger cleaner			40/56/56/70/70 (40/46/56/56/70)	170		40-15

* F1: Main charger case
Clean the main charger case with a cloth soaked in water and squeezed tightly, and then wipe them with a dry cloth.

19.6.7 Drum/Cleaner unit, Cleaner related section

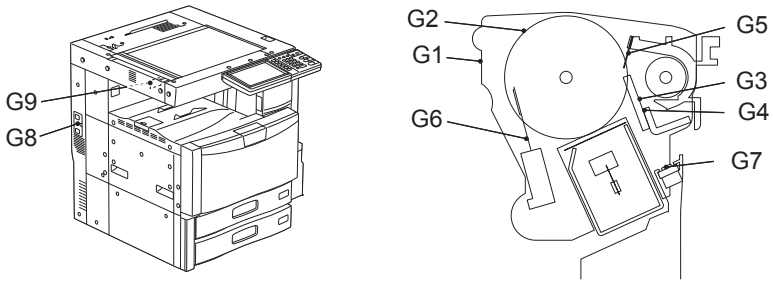


Fig. 19-17

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
G1	Whole cleaner unit	B					
G2	Drum			40/56/56/70/70 (40/46/56/56/70)	170		
G3	Drum cleaning blade			40/56/56/70/70 (40/46/56/56/70)	170		39-16
G4	Felt	B		R	R		39-19 39-20
G5	Recovery blade	B					39-21
G6	Drum thermistor	B					38-33
G7	Discharge LED	B					36-19
G8	Ozone filter-1			40/56/56/70/70 (40/46/56/56/70)	170		1-13
G9	Ozone filter-2			160/224/224/280/ 280 (160/184/224/224/ 280)	680		7-36

* G2: Drum

- Handling precautions
  If fingerprints or oil adhere to the surface of the drum, its properties may degrade, affecting the quality of the copy image. So, wear gloves to avoid touching the drum surface with your bare hands. Be sure to handle the drum carefully when installing and removing it so as not to damage its surface.

- Do not use “patting powder” (lubricant)
  Since “patting powder” may affect the initial image if it adheres to the OPC surface, do not apply it. The friction between the drum and cleaning blade is sufficiently small without it and no problem would occur even if it is not applied.

- Clearing the drum counter
  When the drum has been replaced with a new one, the drum counter for the new drum (K, Y, M, C) must be cleared to 0 (zero). This clearing can be performed in PM support mode.

  - Drum counter
  Drum (K): 08-1150-0, 3, 6, 7
  Drum (Y): 08-1152-0, 3, 6, 7
  Drum (M): 08-1154-0, 3, 6, 7
  Drum (C): 08-1156-0, 3, 6, 7

- Storage location of photoconductive drums
  The drum should be stored in a dark place where the ambient temperature is between 10°C to 35°C (no condensation). Be sure to avoid places where drums may be subjected to high humidity, chemicals and/or their fumes.
  Do not place the drum in a location where it is exposed to direct sunlight or high intensity light such as near a window. Otherwise the drum will fatigue, and will not produce sufficient image density immediately after being installed in the equipment.

- Cleaning the drum
  At periodic maintenance calls, wipe the entire surface of the drum clean using the designated cleaning cotton. Note that there is no need to clean the surface of the new drum unless there is a problem. Use sufficiently thick cleaning cotton (dry soft pad) so as not to scratch the drum surface inadvertently with your fingertips or nails. Also, remove your rings and wristwatch before starting cleaning work to prevent accidental damage to the drum.
  Do not use alcohol, selenium refresher and other organic solvents or silicon oil as they will have an adverse effect on the drum.

- Scratches on drum surface
  If the surface is scratched in such a way that the aluminum substrate is exposed, no copy image will be produced on this area. In addition, the cleaning blade will be damaged so replacement with a new drum will be necessary.

- Collecting used drums
  Regarding the recovery and disposal of used drums, we recommend following the relevant local regulations or rules.

* G3: Drum cleaning blade

- Handling precautions
  Pay attention to the following points as the cleaning blade life is determined by the condition of its edge. Since the edge of the blade is vulnerable and can be easily damaged by factors such as the adherence of paper dust.
  - Do not allow hard objects to hit or rub against blade edge.
  - Do not rub the edge with a cloth or soft pad.
  - Do not leave oil (or fingerprints, etc.) on the edge.
  - Do not apply solvents such as paint thinner to the blade.
  - Do not allow paper fibers or dirt to contact the blade edge.
  - Do not place the blade near a heat source.

- Cleaning procedure
  Clean the blade edge with a cloth moistened with water and squeezed lightly.
  Replace the cleaning blade with new ones if poor images are copied due to the damaged blade regardless of the number of output pages which have been made

* G4: Felt

When replacing the drum cleaning unit, check that there is no gap between the blade and felt on both ends. If there is, or when the felts put pressure to the cleaning blade, reattach the felts on the position shown in the figure (by slightly pushing them to the direction of the arrows).

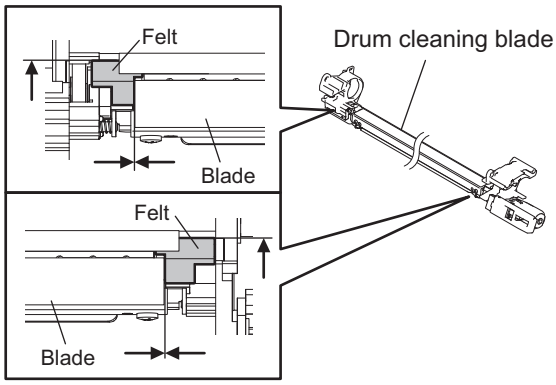


Fig. 19-18

* G5: Recovery blade

Clean the surface of the recovery blade with a soft pad or cloth, if dirt cannot be removed with a vacuum cleaner. If the edge of recovery blade is damaged, replace the blade regardless of the number of output pages.

Note:

Never use water or alcohol for cleaning the transfer belt recovery blade.

19.6.8 Developer unit (K, Y, M, and C)

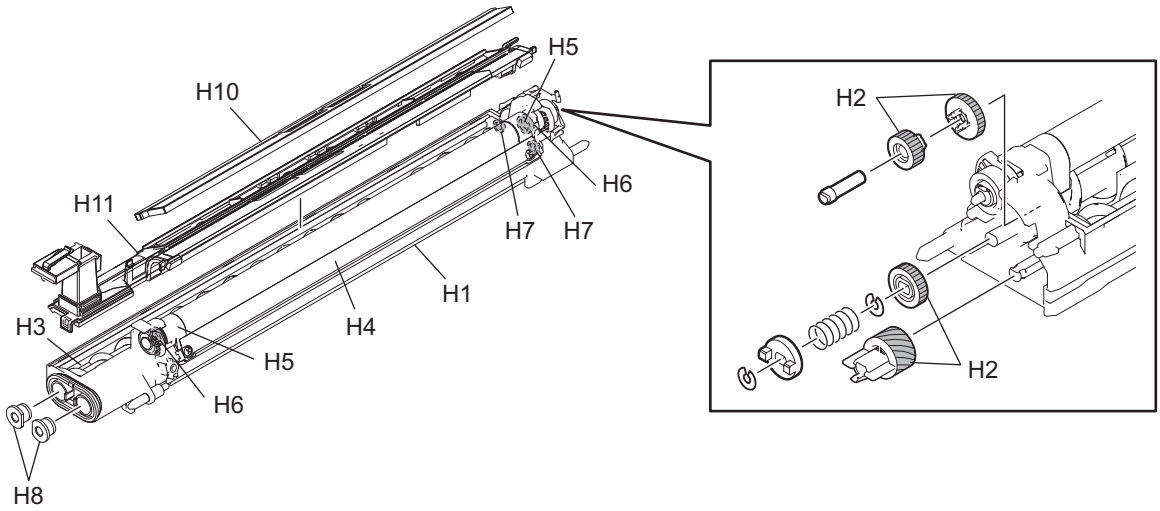


Fig. 19-19

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
H1	Whole developer unit	B					
H2	Developer unit drive section		W1				
H3	Developer material			40/56/56/70/70 (40/46/56/56/70)	125		103-2
H4	Front shield (unified with the doctor blade)	B		R	R		38-26
H5	Side seal (front, rear)	B		R	R		38-27 38-28
H6	Oil seal (Developer sleeve)		AV	R	R		38-2
H7	Oil seal (Rear side)			R	R		38-3
H8	Oil seal (Front side)			R	R		38-4 38-13
H9	Auto-toner sensor	B					38-31
H10	Developer filter			40/56/56/70/70 (40/46/56/56/70)	125		38-40
H11	Developer unit upper cover	B					38-25

* H1: Developer unit, H4: Front shield (unified with the doctor blade)

1. Cleaning
   Clean the doctor blade so as to prevent developer material from adhering to it when the drum is being replaced.
   Space the front shield from the developer sleeve and then insert a doctor blade cleaning jig into the doctor sleeve gap. Then clean the doctor blade by running the jig for 3 times to and from along with the edge of the blade.

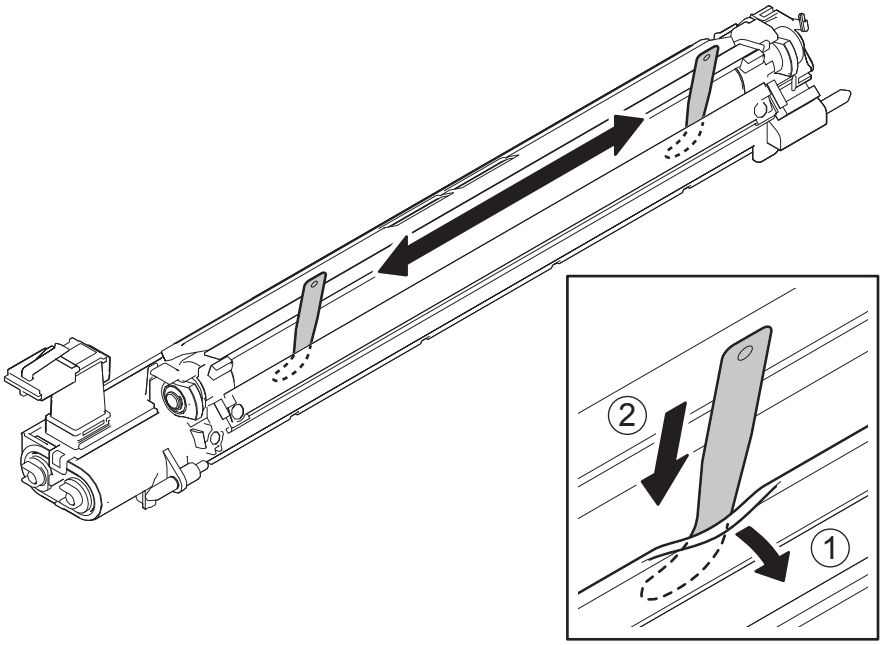


Fig. 19-20

2. Removal of foreign matter in the developer unit
   (1) Take off the process unit (EPU).
   (2) Space the front shield.
   (3) Insert the cleaning jig all the way in the developer unit at a position approx. 30 mm away from the white streak.

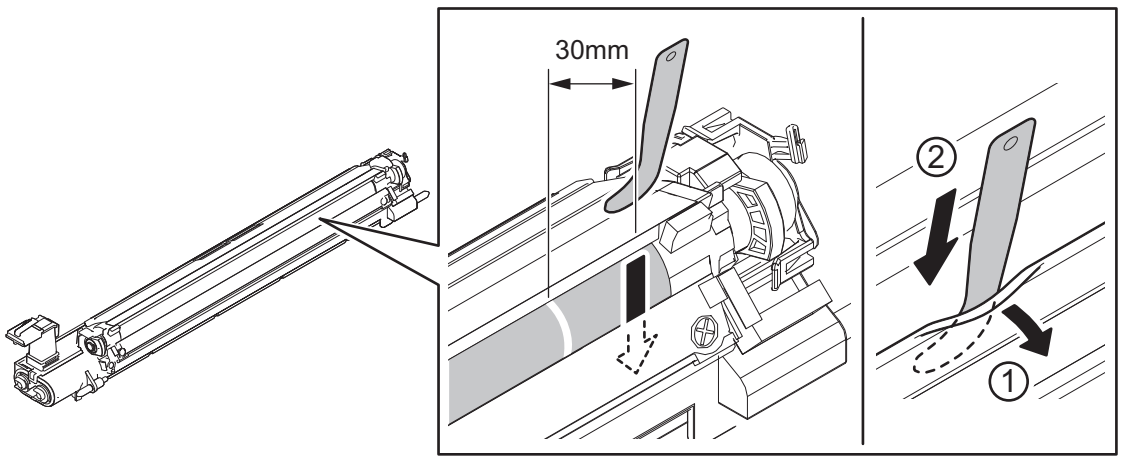


Fig. 19-21

19

(4) Slide the cleaning jig to where the white streak appears.
(5) Pull out the cleaning jig while manually turning the gear to rotate the developer sleeve.

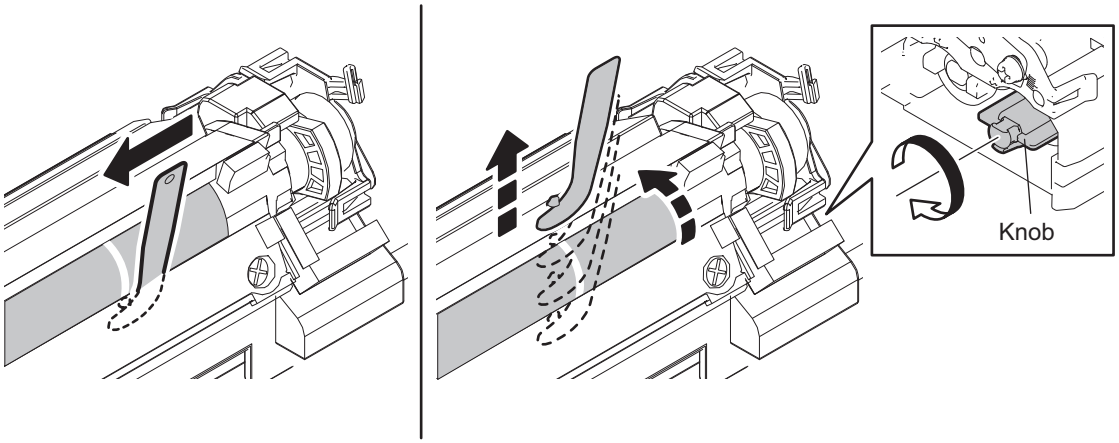


Fig. 19-22

Tip:
If foreign matter is not removed by the above procedure, take off the developer unit, discharge the developer material on to a sheet of clean paper and then remove any foreign matter found. If you cannot find any foreign matter, exchange the developer material.

3. Removal of foreign matter on the developer sleeve
(1) Apply a sheet of paper to the developer sleeve.
(2) Scrape off foreign matter and developer material on the developer sleeve using the jig.

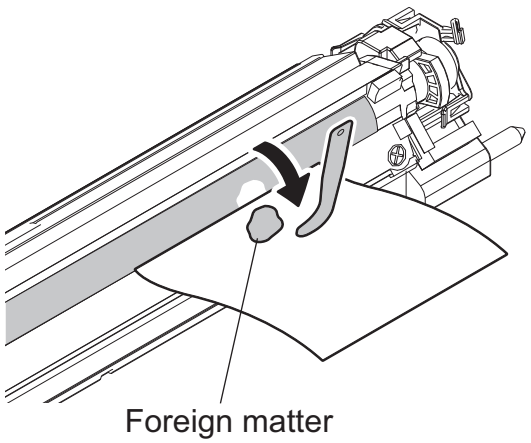


Fig. 19-23

* H3: Developer material
After replacing the developer material, be sure to perform the auto-toner adjustment and then image quality control initialization.
📖 P.8-9 "8.5.2 Adjustment of the Auto-Toner Sensor"
📖 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)"

* H6: Oil seal (Developer sleeve)

During replacement, coat the oil seal with grease (Alvania No.2) following the procedure below. Also, when the developer sleeve is disassembled, clean the shaft and oil seal before coating the oil seal with grease.

Developer sleeve	2 pc.

(1) Push in a new oil seal parallel to the mounting hole section of the developer frame.
   * Pay attention to the direction in which the oil seal is attached. (See figure on right.)

(2) Apply an even coat of grease to the inside of the oil seal.
   • Amount: a minute amount

(3) Wipe off any grease exuded from the inside.

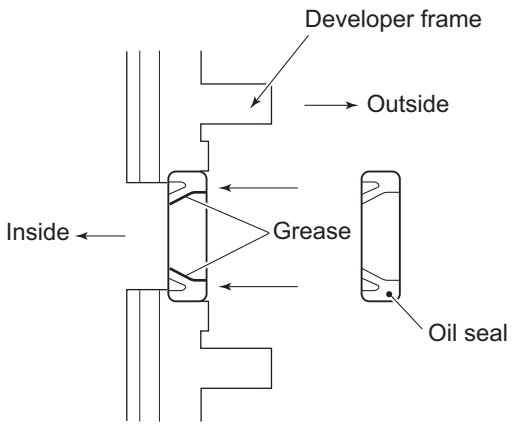


Fig. 19-24

* H9: Auto-toner sensor

Clean the surface of the auto-toner sensor with a cotton swab or soft cloth with sufficient alcohol filled in.

19.6.9 Waste Toner Box

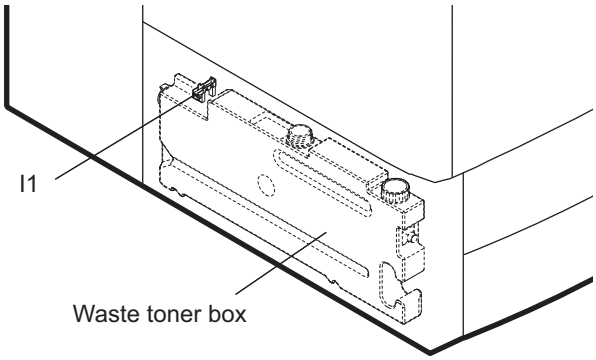


Fig. 19-25

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
I1	Waste toner box full detection sensor	B					42-104

19.6.10 Transfer belt unit / Transfer belt cleaning unit

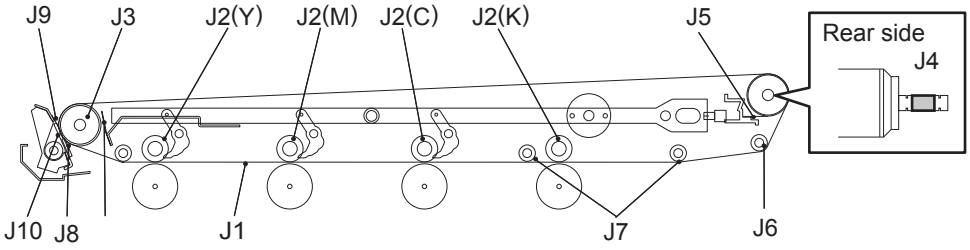


Fig. 19-26

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
J1	Transfer belt	A		R	R		33-1
J2	1st transfer roller			R	R		33-9
J3	Drive roller	A		R	R		33-5
J4	2nd transfer facing roller	A		R	R		33-10
J5	2nd transfer facing roller cleaning Mylar			160/224/224/280/280 (160/184/224/224/280)	680		31-14
J6	Tension roller	A		R	R		33-8
J7	Idling roller	A		R	R		33-7
J8	Transfer belt cleaning blade			160/224/224/280/280 (160/184/224/224/280)	680		35-4
J9	Recovery blade	B		R	R		35-3 35-15
J10	Blade seal			160/224/224/280/280 (160/184/224/224/280)	680		35-8 35-11

* J1: Transfer belt

- Handling precautions
  - Do not touch the front and rear surfaces of the transfer belt surface with bare hands.
  - Prevent oil or other foreign matter from adhering to both surfaces of the transfer belt.
  - Do not apply external pressure that might scratch the transfer belt.
  - When replacing the belt and transfer belt cleaning unit, apply patting powder sufficiently and evenly. Otherwise, it may reduce the cleaning efficiency.
  - When replacing the transfer belt, clean the drive roller, 2nd transfer facing roller, and tension roller with a solvent such as alcohol, and then attach the transfer belt.

- Cleaning procedure
  Fully clean up the toner and such adhering to the roller with alcohol, and then wipe it with a dry cloth until no trace remains. Take care not to have the transfer belt surface being damaged or dented. Replace the transfer belt with a new one regardless of the number of output pages, if any crack or major scar is found.

* J3: Drive roller, J4: 2nd transfer facing roller, J6: Tension roller, J7: Idling roller
  Fully clean up the toner and such adhering to the roller with alcohol when the transfer belt cleaning blade is replaced, since an image failure may occur if there is any dirt remaining on the roller. Also, remove dust and toner scattering adhering to the inside of the transfer belt unit in order to keep rollers clean.

* J4: 2nd transfer facing roller
  Apply Floil (GE-334C) all around the shaft of the 2nd transfer facing roller, which contacts the grounding plate inside the 2nd transfer facing roller rear holder.

* J8: Transfer belt cleaning blade
  - Handling precautions
    Pay attention to the following points as the cleaning blade life is determined by the condition of its edge.
    - Do not allow hard objects to hit or rub against blade edge.
    - Do not rub the edge with a cloth or soft pad.
    - Do not leave oil (or fingerprints, etc.) on the edge.
    - Do not apply solvents such as paint thinner to the blade.
    - Do not allow paper fibers or dirt to contact the blade edge.
    - Do not place the blade near a heat source.

  - Cleaning procedure
    Clean the blade edge with a cloth moistened with water and squeezed lightly.

19.6.11 Image quality control unit

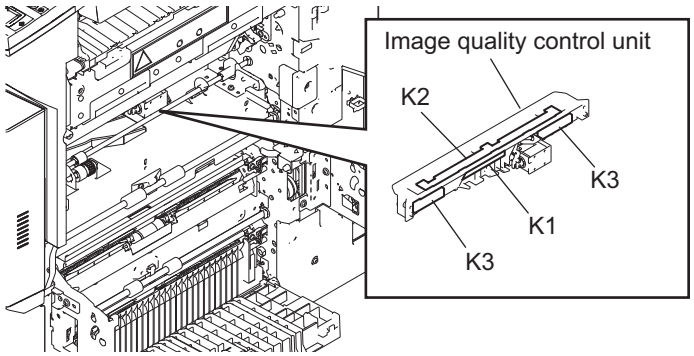


Fig. 19-27

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
K1	Image quality sensor	A		R	R		27-5
K2	Sensor shutter	B		R	R		27-2
K3	Image position aligning sensor (Front/Rear)	A					27-4

* K1: Image quality sensor, K2: Sensor shutter, K3: Image position aligning sensor
Clean the image quality sensor, image position aligning sensor (Front/Rear) and the sensor shutter when replacing the transfer belt cleaning blade and the blade seal, or the transfer belt itself.

19.6.12 2nd transfer roller unit

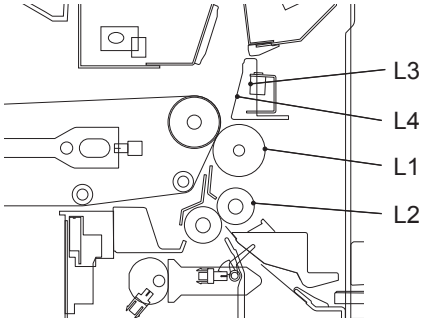


Fig. 19-28

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
L1	2nd transfer roller			160/224/224/280/280 (160/184/224/224/280)	680		13-10
L2	Registration roller (rubber)	A		R	R		14-1
L3	Paper clinging detection sensor	B					13-108
L4	2nd transfer roller paper guide	A					

* L3: Paper clinging detection sensor
Open the 2nd transfer unit and clean the paper clinging detection sensor with a cotton swab.

Note:
Be sure to clean the entire surface of the sensor.

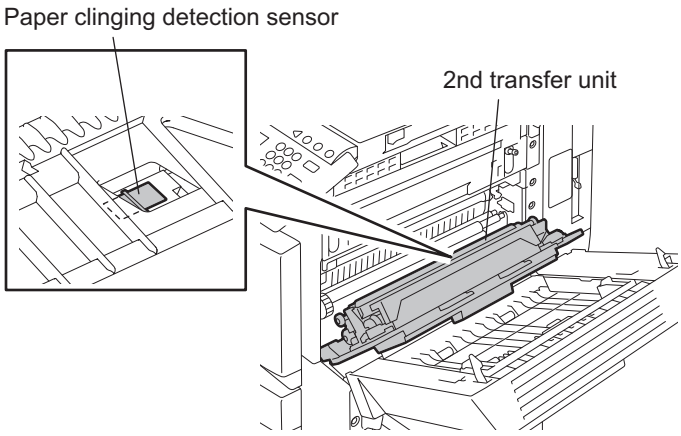


Fig. 19-29

* L3: 2nd transfer roller paper guide
If toner adheres to the ribs of the 2nd transfer roller paper guide, clean it with a soft pad, cloth or electric vacuum cleaner.

19.6.13 Fuser unit

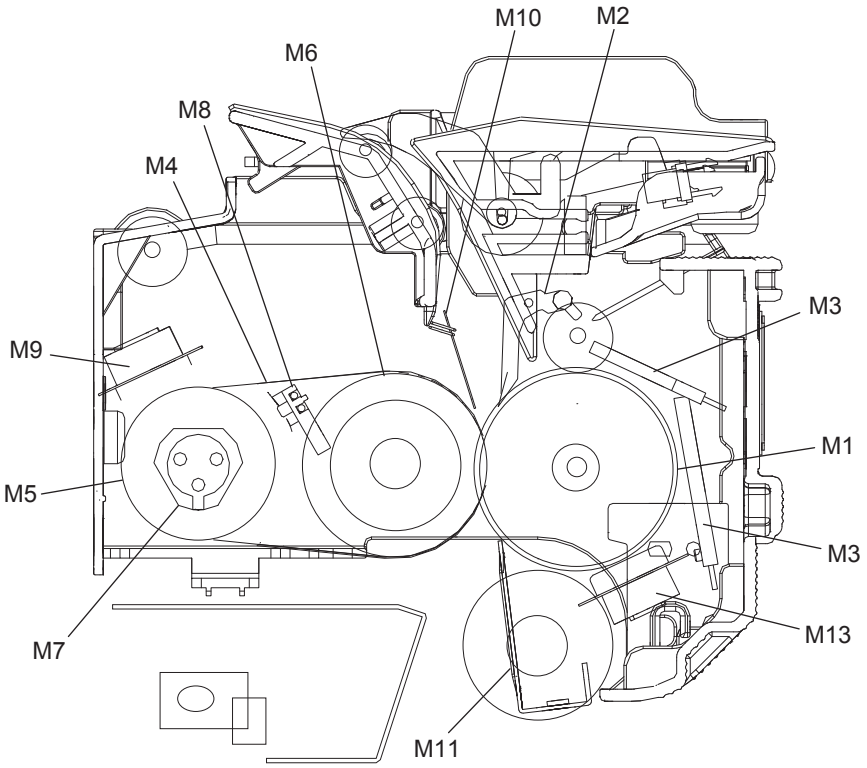


Fig. 19-30

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
M1	Pressure roller			80/112/112/140/140 (80/92/112/112/140)	340		44-1
M2	Pressure roller separation finger			80/112/112/140/140 (80/92/112/112/140)	340		44-18
M3	Pressure roller thermistor (center/rear)	A		R	R		44-14
M4	Fuser belt			80/112/112/140/140 (80/92/112/112/140)	340		43-3
M5	Heat roller			R	R		43-10
M6	Fuser roller			80/112/112/140/140 (80/92/112/112/140)	340		43-4
M7	Fuser belt guide			80/112/112/140/140 (80/92/112/112/140)	340		43-12

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
M8	Fuser belt front thermistor	A		R	R		43-21
M9	Fuser belt thermostat (center/rear)	A		R	R		43-19 43-20
M10	Separation plate	A					43-2
M11	Entry guide	A					44-27 44-28
M12	Fuser unit gear		W2	R	R		44-30
M13	Pressure roller cleaning pad	A		R	R		44-13
M14	Fuser belt thermopiles (center/rear)	A		R	R		46-4

* M1: Pressure roller, M4: Fuser belt

- Handling precautions
  Pressure roller
  - Do not leave any oil (fingerprints, etc.) on the pressure roller.
  - Be careful not to allow any hard object to hit or rub against the pressure roller, or it may be damaged, possibly resulting in poor cleaning.

  Fuser belt
  - Do not touch the fuser belt surface with bare hands.
  - Prevent oil or other foreign matter from staining the fuser belt surface.
  - Do not allow alcohol or any other organic solvent to contact with the fuser belt.
  - Do not apply external pressure that might scratch the fuser belt.

- Checking
  - Check for stain and damage on the fuser belt and pressure roller, and clean if necessary.
  - Check the separation plate and fingers and check for chipped tips.
  - Check the thermistors' contact and non-contact status.
  - Check the fused and fixed condition of the toner.
  - Check the gap between the inlet guide and pressure roller.
  - Check the fuser belt for proper transportation.
  - Check the pressure roller for proper rotation.

- Cleaning procedure
  When the fuser belt and pressure roller become dirty, they will cause jamming. If this happens, wipe the surface clean with a suitable cloth. For easier cleaning, clean the belt and roller while they are still warm.

Note:
Be careful not to rub the fuser belt and pressure roller surface with your nails or hard objects because it can be easily damaged. Do not use silicone oil on the fuser belt and pressure roller.

- Checking after the assembly of the fuser belt unit
  After the assembly, rotate the fuser belt for a round to confirm that the belt is neither folded nor scratched.
  A folded or scratched belt may be broken when it is in use.

* M2: Pressure roller separation finger
The paper jam may be caused if the tip of the finger is damaged or deformed. If there is any problem with it, replace the finger with a new one regardless of the number of output pages which have been made. Do not damage the tip of the finger during the cleaning. The finger may be damaged if the toner adhering to the tip of it is scraped off forcibly. Replace the finger if the toner is sticking to it heavily.

* M3: Pressure roller thermistor
  Clean the thermistor with alcohol if the toner or dirt is sticking to it when the pressure roller is replaced. Do not deform or damage the thermistor during the cleaning. Replace the thermistor with a new one if it is damaged or deformed regardless of degree.

* M4: Fuser belt, M5: Heat roller, M6: Fuser roller
  When any or all of fuser belt, heat roller and fuser roller is replaced or taken off from the fuser unit, perform adjustment for the separation plate gap.
  📖 P.16-45 "16.7 Adjustment of the Separation Plate Gap"

* M8: Fuser belt front thermistor
  Clean the thermistor with alcohol if the toner or dirt is sticking to it when the fuser belt is replaced. Do not deform or damage the thermistor during the cleaning. Replace the thermistor with a new one if it is damaged or deformed regardless of degree.

* M12: Fuser unit gear
  Wipe off any old grease, and then apply 3 to 4 rice-sized grains of white grease (Molykote HP-300) onto the gear teeth.

* M14: Fuser belt thermopiles (center/rear)
  Remove the thermopiles. Use a cloth with a small amount of alcohol to clean them.
  Be sure not to touch the lens of the thermopiles.
  Clean the equipment according to the following timing.

Model name	Black	Full color
e-STUDIO2020C	every 8,000 sheets	every 8,000 sheets
e-STUDIO2330C	every 112,000 sheets	every 92,000 sheets
e-STUDIO2820C	every 112,000 sheets	every 112,000 sheets
e-STUDIO2830C	every 140,000 sheets	every 112,000 sheets
e-STUDIO3520C e-STUDIO3530C e-STUDIO4520C	every 140,000 sheets	every 140,000 sheets

19.6.14 Exit unit

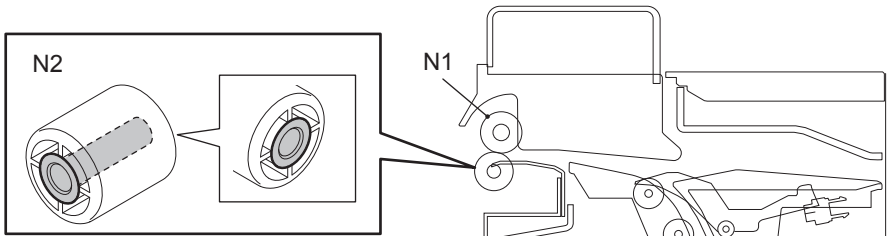


Fig. 19-31

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
N1	Upper exit roller	A					46-21
N2	Lower exit roller		W2				46-30

* N2: Lower exit roller
Wipe off any old grease, and then apply 0.5 to 1 rice-sized grains of white grease (Molykote HP-300) onto the inside of the roller and both end faces of the shaft hole.

19.6.15 RADF (MR-3018)

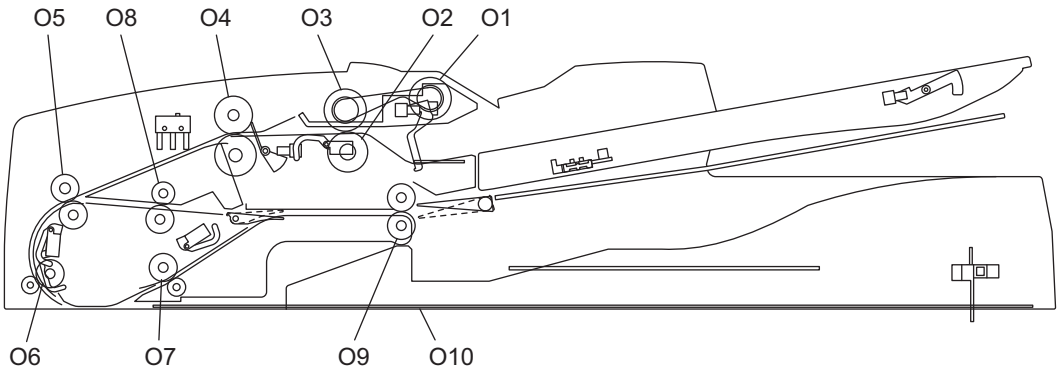


Fig. 19-32

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
O1	Pickup roller	A		120	-		5-1
O2	Separation roller	A		120	-		4-10
O3	Feed roller	A		120	-		5-1
O4	Registration roller	A					4-30
O5	Intermediate transfer roller	A					3-13
O6	Front read roller	A					3-14
O7	Rear read roller	A					3-1
O8	Reverse registration roller	A					3-10
O9	Exit/reverse roller	A					4-25
O10	Platen sheet	B or A					

19.6.16 PFP (KD-1023)

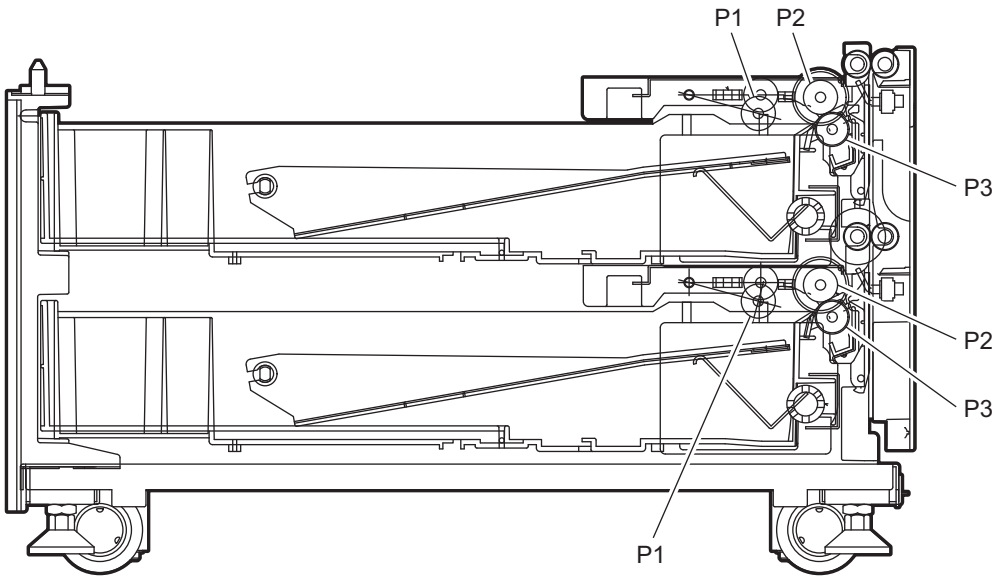


Fig. 19-33

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
P1	Pickup roller (upper/lower)	A		80	-		5-20
P2	Feed roller (upper/lower)	A		80	-		5-24
P3	Separation roller (upper/lower)	A	AV, W2	80	-		5-5
P4	Drive gear (tooth face)		W1				

19.6.17 LCF (KD-1024)

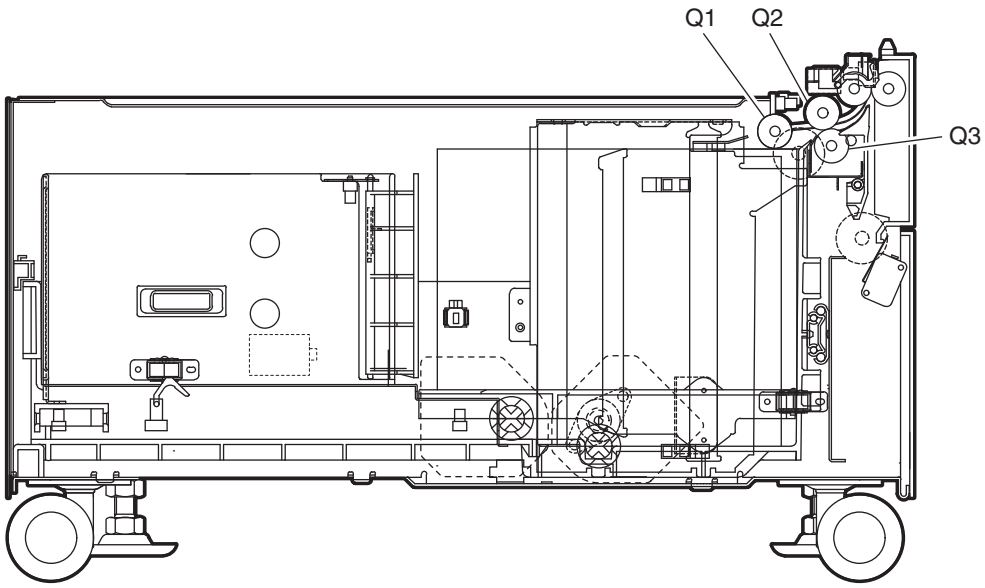


Fig. 19-34

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operation check	Parts list <P-I>
				(x 1,000 sheets)	(x 1,000 drive counts)		
Q1	Pickup roller	A		160	-		4-30
Q2	Feed roller	A		160	-		4-28
Q3	Separation roller	A		160	-		5-12
Q4	Drive gear (tooth face)		W1				

19.7 Storage of Supplies and Replacement Parts

Precautions for storing supplies and replacement parts are shown below.

1. Toner/Developer
   Toner and developer should be stored in a place where the ambient temperature is between 10°C to 35°C (no condensation), and should also be protected against direct sunlight during transportation.

2. Photoconductive drum
   Like the toner and developer, photoconductive drum should be stored in a dark place where the ambient temperature is between 10°C to 35°C (no condensation). Be sure to avoid places where drums may be subjected to high humidity, chemicals and/or their fumes.

3. Drum cleaning blade / Transfer belt cleaning blade
   This item should be stored in a flat place where the ambient temperature is between 10°C to 35°C, and should also be protected against high humidity, chemicals and/or their fumes.

4. Transfer belt / Transfer roller / Fuser belt / Pressure roller
   Avoid places where the rollers may be subjected to high humidity, chemicals and/or their fumes.

5. Paper
   Avoid storing copy paper in places where it may be subjected to high humidity.
   After a package is opened, be sure to place and store it in a storage bag.

19.8 PM KIT

A PM kit is a package for each unit of replacement parts requiring PM.

KIT name	Component	Part name	Qty.
DEV-KIT-FC28K-N	Drum cleaning blade	BL-FC28D	1
	Main charger grid	GRID-CHARGR-MAIN-F45X	1
	Needle electrode	ELCTRD-CHARGR-MAIN-380	1
	Main charger cleaner	FILM-CLNR-GRID-F45X	2
	Developer material	D-FC28-K	1
	Developer unit filter	ASYS-DUCT-DEV-COV	1
	Ozone filter 1	FLTR-OZON-45X-CBO-600M	1
	Slit glass cleaner pad	ASYS-CLNR-GLASS	1
DEV-KIT-FC28CLR-N	Drum cleaning blade	BL-FC28D	3
	Main charger grid	GRID-CHARGR-MAIN-F45X	3
	Needle electrode	ELCTRD-CHARGR-MAIN-380	3
	Main charger cleaner	FILM-CLNR-GRID-F45X	6
	Developer material (Y)	D-FC28-Y	1
	Developer material (M)	D-FC28-M	1
	Developer material (C)	D-FC28-C	1
	Developer filter	ASYS-DUCT-DEV-COV	3
TBU-KIT-FC28	Transfer belt cleaning blade	BL-FC35TR	1
	2nd transfer roller	CR-FC35TR2	1
	Blade seal (front side)	SEAL-BLADE-CLN-TBU-F	1
	Blade-seal (rear side)	SEAL-BLADE-CLN-TBU-R	1
	2nd transfer facing roller cleaning Mylar	MYLAR-CLN-TR2-WP-450	1
	Ozone filter 2	FLTR-OZ-50-TNR-EX-450	1
FR-KIT-FC28	Fuser belt	BT-FC35-FU	1
	Fuser roller	FR-FC28-U	1
	Press roller	HR-FC28-L	1
	Separation finger	SCRAPR-FUS-350	5
	Fuser belt guide	COLLAR-HR-T1	2
PM-KIT-ROLLER	Pick up roller	ROLLER-PICK-AT	1
	Feed roller	K-ROLL-FEED	1
	Separation roller	ASYS-ROLL-SPT	1
ROL-KIT-1010	Pick up roller	ROL-PICK-UP	1
	Feed roller	ROL-PAPER-FED-F	1
	Separation roller	ROL-PAPER-FED-S	1
DF-KIT-3018	Pick up roller	ASYS-ROL-FEED	1
	Feed roller	ASYS-ROL-FEED	1
	Separation roller	ASYS-ROL-RET	1

19.9 Maintenance Part List

The parts used for the maintenance of this equipment are as follows.

No.	Item	Purpose	Parts list <P-I>*
1	Cleaning brush	Cleaning inside of the equipment	101-2
2	Doctor blade cleaning jig	Cleaning the doctor blade	101-3
3	Wire holder jig	Fixing the wire at the assembly of the carriage wire	101-4
4	Developer material nozzle	Pouring the developer material (attached to the developer bottle)	101-5
5	Doctor-sleeve gap jig	Measuring the gap between the developer sleeve and the doctor blade (gauge 0.60, 0.65, 0.70)	101-6
6	Belt tension jig	Adjusting the belt tension at the installation of the scan motor	101-7
7	Separation plate gap jig	Measuring the gap between the separation plate and the fuser belt	101-8
8	Drum bag	Storing the drum	101-10
9	Download jig (DLM board)	Updating the scanner/options ROM	102-1
10	ROM	Installing the DLM board	102-10
11	Download jig-2 (6 Flash ROMs)	Updating the system/engine/scanner ROM	102-2
12	ROM writer adapter (For 1881)	Writing the data of PWA-DWNLD-350-JIG2	102-4
13	ROM writer adapter (For 1931)	Writing the data of PWA-DWNLD-350-JIG2	102-5
14	Harness jig	Updating the converter PC board	21-3
15	Doctor-sleeve gap jig	Measuring the gap between the developer sleeve and the doctor blade (gauge 0.75)	101-27

*: Part list <P-I> represents the page item in “e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C Service Parts List”.
No.1-13,15: Refer to “e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C Service Parts List”
No.14 : Refer to “MJ-1101 Service Parts List”

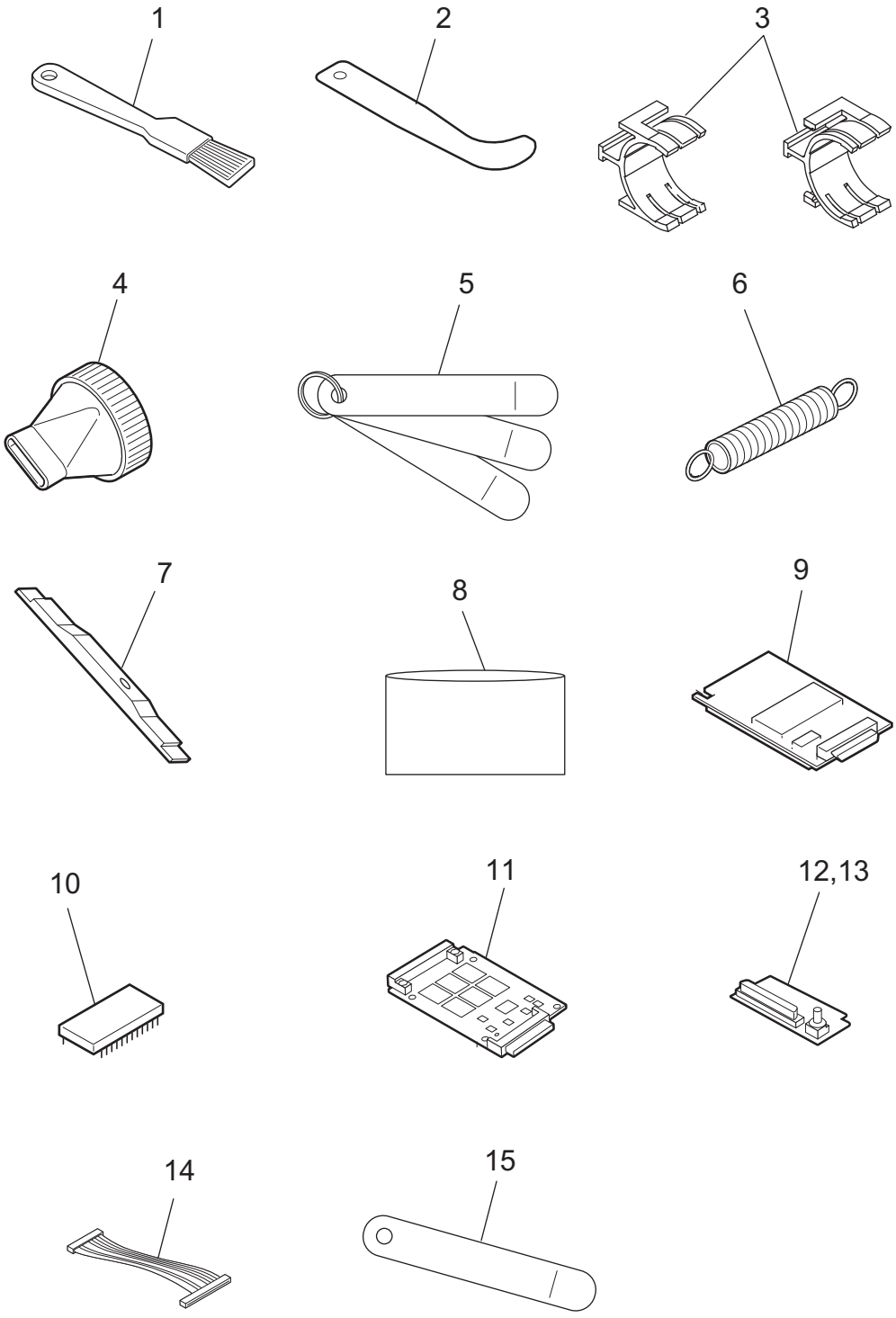


Fig. 19-35

19.10 Grease List

The parts used for the maintenance of this equipment are as follows.

Symbol	Grease name	Volume	Container	Parts list <P-I>*
L	Launa 40	100 cc	Oiler	101-21
W1	White grease (Molykote EM-30L)	100 g	Bottle	101-24
W2	White grease (Molykote HP-300)	100 g	Bottle	101-22
W2	White grease (Molykote HP-300)	10 g	Bottle	101-22
AV	Alvania No.2	100 g	Tube	101-23
FL	FLOIL (GE-334C)	20 g	Bottle	101-26

* : Part list <P-I> represents the page item in “e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C Service Parts List”.

19.11 Operational Items in Overhauling

Overhauling must be performed in order to maintain the quality level of this equipment at the following timing.

e-STUDIO2020C: When the number of output pages has reached 400,000 or 2.5 years have passed from the start of use (Whichever is earlier.)

e-STUDIO2330C: When the number of output pages has reached 490,000 or 2.5 years have passed from the start of use (Whichever is earlier.)

e-STUDIO2820C: When the number of output pages has reached 560,000 or 2.5 years have passed from the start of use (Whichever is earlier.)

e-STUDIO2830C: When the number of output pages has reached 602,000 or 2.5 years have passed from the start of use (Whichever is earlier.)

e-STUDIO3520C/3530C/4520C:
When the number of output pages has reached 700,000 or 2.5 years have passed from the start of use (Whichever is earlier.)

(1) Replace all the supplies.
(2) Check the components in the drive section (gears, pulleys, timing belts, etc.). Replace them with new ones if they are damaged.
(3) Check all the adhesives such as tape and Mylar if they are damaged or have become unstuck. Replace them with new ones if necessary.
(4) Check the performance of all the switches and sensors. Replace them with new ones if necessary.
(5) Clean inside the equipment thoroughly.

20. FIRMWARE UPDATING

When you want to update the firmware to the latest one or the equipment becomes inoperable due to some defect in the firmware, updating can be performed as follows.

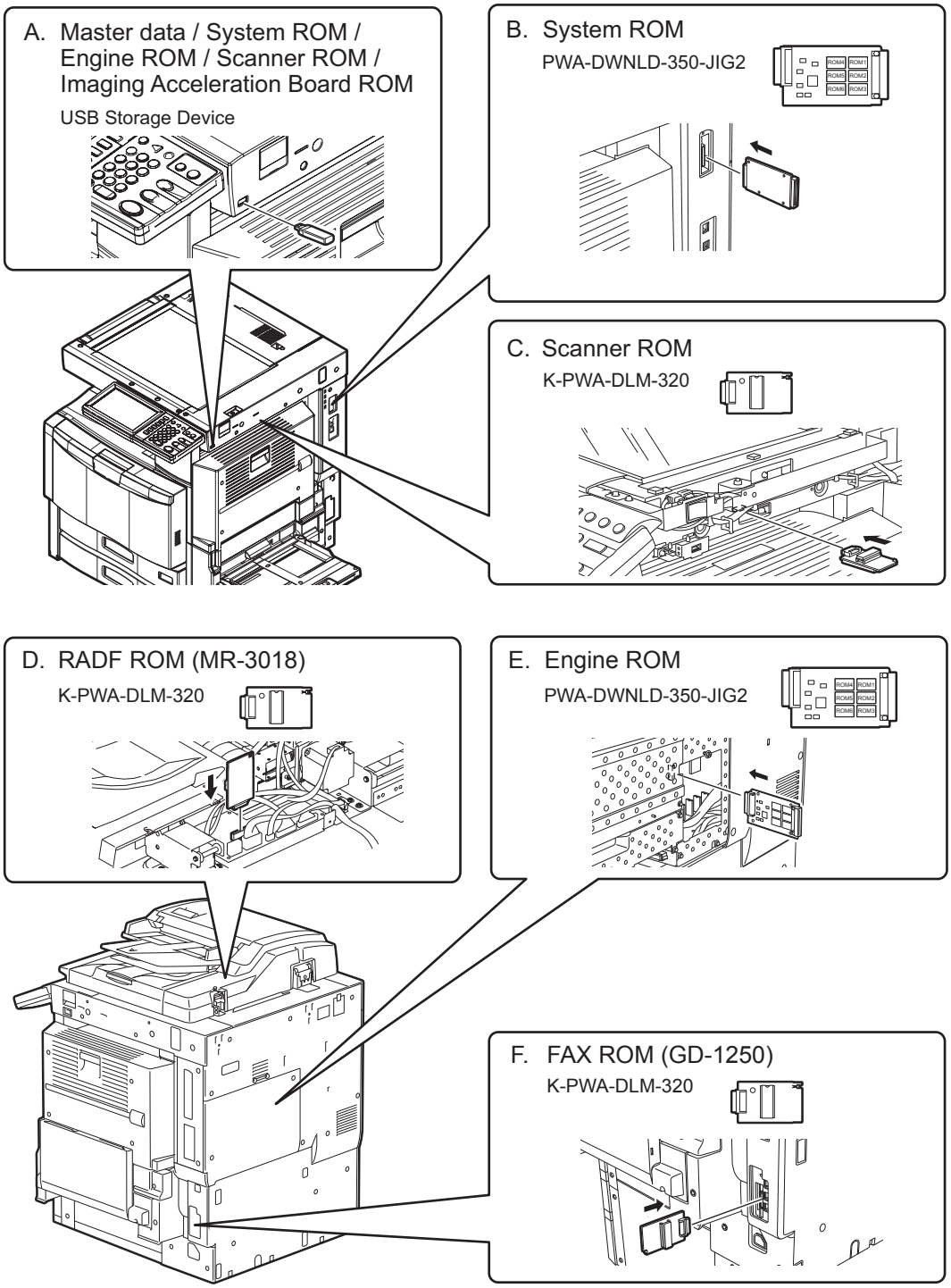
Equipment

Firmware	Updating method
Master data (HDD program data, System firmware, UI data)	USB media
System ROM (OS data)	USB media
	Download jig (PWA-DWNLD-350-JIG2)
Engine ROM (Main firmware)	USB media
	Download jig (PWA-DWNLD-350-JIG2)
Scanner ROM (Scanner firmware)	USB media
	Download jig (K-PWA-DLM-320)

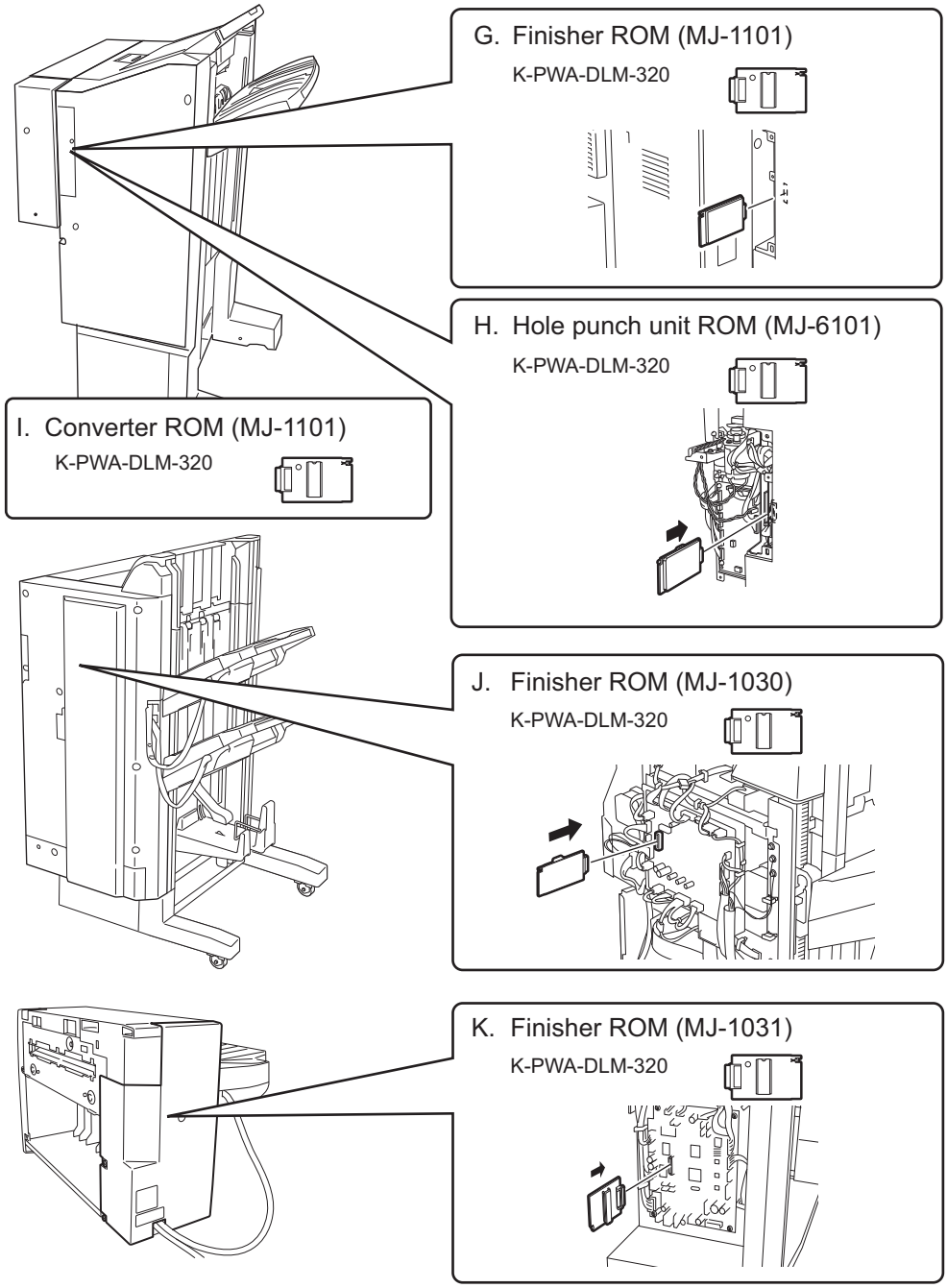
Options

Model name	Firmware	Updating method
Reversing Automatic Document Feeder (RADF) (MR-3018)	RADF firmware	Download jig (K-PWA-DLM-320)
Finisher (MJ-1101)	Finisher firmware	
	Converter firmware*	
Saddle Stitch Finisher (MJ-1030)	Finisher firmware	
	Saddle stitcher firmware	
Hanging Finisher (MJ-1031)	Finisher firmware	
Hole Punch Unit (MJ-6101)	Hole punch unit firmware	
Fax Unit (GD-1250)	FAX firmware	
Imaging Acceleration Board (GE-1170)	Imaging Acceleration Board firmware	USB media

* The harness jig for board connection (HRNS-CNV-DL-JIG) is necessary.



A	Master data, System ROM, Engine ROM, Scanner ROM	P. 20-7
	Imaging Acceleration Board ROM	P. 20-17
B	System ROM, Engine ROM, Scanner ROM	P. 20-27
C	Scanner ROM	P. 20-33
D	RADF ROM (MR-3018)	P. 20-35
E	Engine ROM	P. 20-29
F	FAX ROM (GD-1250)	P. 20-54



G	Finisher ROM (MJ-1101)	P. 20-37
H	Hole punch unit ROM (MJ-6101)	P. 20-43
I	Converter ROM(MJ-1101)	P. 20-39
J	Finisher ROM (MJ-1030)	P. 20-47
K	Finisher ROM (MJ-1031)	P. 20-51

Notes:

- Written firmware varies depending on the kinds of the boards provided as service parts. For updating, only the minimum firmware is installed on the system control PC board, logic PC board, and scanning section control PC board. No firmware is installed on the FAX board. The latest version of the firmware at the time of delivery is written on the RADF control PC board and finisher control PC board.
  When any of above boards is replaced with a new one in the field, check the other firmware version used and then update with a corresponding suitable version.
- The firmware (master data) is not installed on the hard disk provided as a service part. When the hard disk is replaced with a new one, check the other firmware version used and then write a corresponding suitable version.
- "Can't fetch Ver." is displayed in the Installed Version field when the version of the installed ROM cannot be acquired properly. If a normal power on is not performed after the firmware is updated and [POWER] + [4]+ [9] is performed a second time, "Can't fetch Ver." may be displayed on the control panel for some ROMS. A normal power on must be performed.

20.1 Firmware Updating with USB Media

Firmware can be updated by storing update programs and firmware data files in the USB media.

Note:
When the update is performed, use the latest program.

Program necessary for updating

Update program	Data file name	Remarks
Update program loader	mentusb2.o	An error occurs at a time of the [4] + [9] startup, unless this program is stored in the USB media. * Be sure to save this data file to the root directory of the USB media.
Model specific update program	dlFirmWare_2820C_3530C	An error occurs at a time of the [4] + [9] startup, unless this program is stored in the USB media.

Firmware type and data file name for updating

Equipment

Firmware	Stored	Data file name	Remarks
Master data	Hard disk	hdd.bin	HDD program data, System firmware, UI data
System ROM	System control PC board (SYS board)	firmImage0.bin	OS data
Engine ROM	Logic PC board (LGC board)	T450MWW.xxx * xxx is version.	Main firmware
Scanner ROM	Scanning section control PC board (SLG board)	T450SLGWW.xxx * xxx is version.	Scanner firmware

Options

Firmware	Stored	Data file name	Remarks
Imaging Acceleration Board ROM	Imaging Acceleration Board (MEP board)	T450IWW.xxx * xxx is version.	Imaging Acceleration Board firmware

Store the update program loader (mentusb2.o) in the root directory, and store the model specific update program (dlFirmWare_2820C_3530C) and the data file for updating in the model specific folder.

Model specific folder name	2820C_3530C

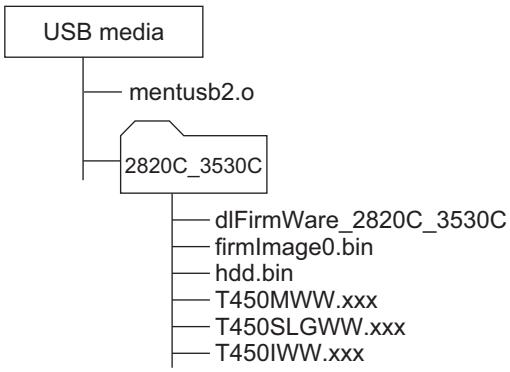


Fig. 20-1

Notes:

- Since the date and time set in the equipment are recorded in the firmware update log, make sure that they are correct before updating the firmware.
- Never change the model specific folder name, since it is used for identifying the data file when the data files used for updating multiple models are stored in the USB media.

Important:

- Only the USB media which meet the following conditions should be used for updating. Be careful since updating with any device other than the above is never guaranteed.
  - A combination USB media with a flash memory (to be connected directly to the USB port) and its capacity is between 256 MB and 512 MB (or 1 GB).
  - Operation of the USB media used for updating has been confirmed at the input check of this equipment (Test mode 03).
    (📖 P.23-4 "23.1 Input check (Test mode 03)")
  - USB media which comply with the following standards regulated by USB-IF (USB Implementers Forum)
    Class number: 8 (=08h) (Mass-storage class)
    Sub-class number: 6 (=06h) (SCSI transfer command set)
    Protocol number: 80 (=50h) (Bulk-Only)
    * Most common USB media comply with the specification above and can be used for updating. However, the operation in all the Multi Functional Digital Color Systems and Multi Functional Digital Systems is not necessarily guaranteed since the most of these devices are developed based on use in a PC environment (Windows or Macintosh). Therefore, check thoroughly that the device is operational in the equipment for which the updating will be performed when purchasing it.

- The USB media complying with USB1.1 and USB2.0 can be used for updating.

- Do not update the firmware by any storage device other than a flash memory (such as a USB connection type memory card reader, CD/DVD drive or hard disk), since it is never guaranteed.

- It is possible to store the model specific update program and the data file for updating directly in the root directory when you store the updating data file for one specific model in the USB media. However, if the model specific folder for the same model as that of the data file stored in the root directory already exists, this will have priority.

20.1.1 Master data/System ROM/Engine ROM/Scanner ROM

Important:

- The file system of USB media should be formatted in the FAT or FAT32 format. Be careful since the devices formatted in NTFS format will not be able to be operated. The file system can be confirmed on the properties in applications such as Explorer of Windows.
- Never shut down the equipment during the update. Firmware data and the following option data (if installed) could be damaged and may not be able to be operated properly.
  - Data Overwrite Enabler (GP-1070)
  - Meta Scan Enabler (GS-1010)
  - External Interface Enabler (GS-1020)
  - IPSec Enabler (GP-1080)

[A] Update procedure

(1) Connect the USB media to the PC and write the model specific folder in which the data file is stored.
Store the update program loader (mentusb2.o) in the root directory, and store the model specific update program (dlFirmWare_2820C_3530C) and the data file for updating in the model specific folder.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Connect the USB media to the USB port on the right upper cover.

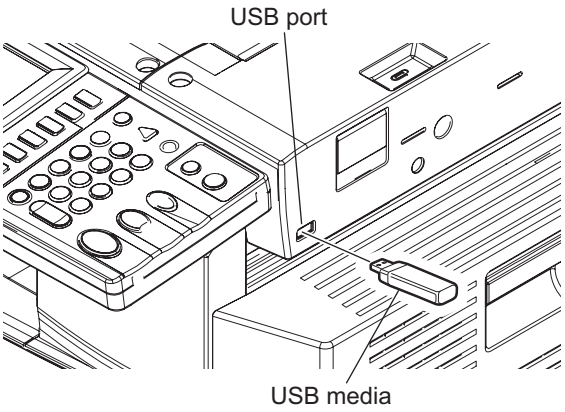


Fig. 20-2

Note:

Updating cannot be performed with multiple USB media connected at the same time.

(4) Press the [ON/OFF] button while simultaneously holding down the [4] and [9] buttons.
Data in the USB media are checked and the checking status is displayed on the screen.

The screen for selecting items to be updated is displayed after approx. 3 minutes.
On this screen, the current firmware version of this equipment and the firmware version of data to be updated are displayed.

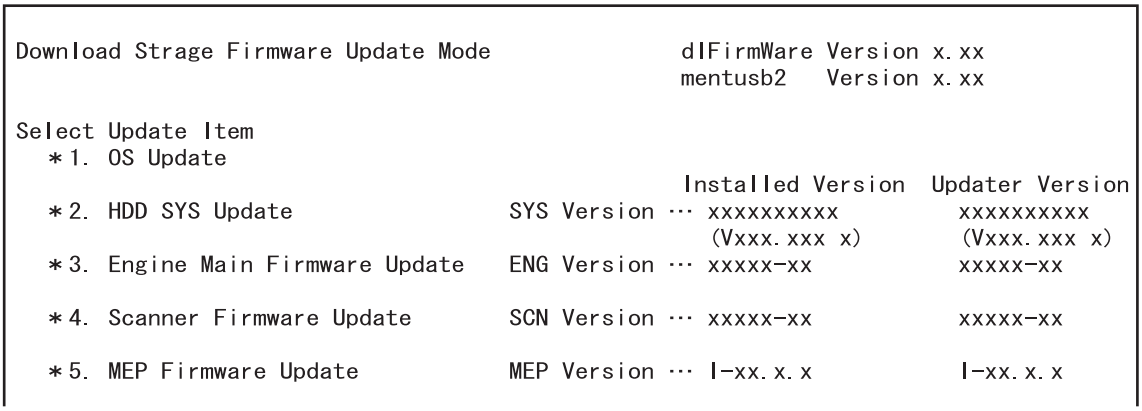


Fig. 20-3

Notes:

- The display of items on this screen varies depending on the types of data written on the USB media. Each item is displayed only when each data file is written on the USB media in the following conditions.

Item	Condition
1. OS Update	firmImage0.bin is written.
2. HDD SYS Update	hdd.bin is written.
3. Engine Main Firmware Update	T450MWW.xxx is written. * xxx is version.
4. Scanner Firmware Update	T450SLGWW.xxx is written. * xxx is version.
5. MEP Firmware Update	For the details, see the following page: 📖 P.20-17 "20.1.2 Imaging Acceleration Board ROM (GE-1170)"

- If the USB media are not recognized properly, “Set Correct USB Storage Device” message is displayed. In this case, disconnect the USB media and connect again within 3 minutes, or shut down the equipment and connect the device properly. Then repeat the procedure from (4).
- If any of the error messages below is displayed, confirm if the update program or the data file in the USB media is correct. Then repeat the procedure from (4).

Error number	Error message	Cause
-	There is no mentusb2.o	Update program loader (mentusb2.o) is not stored.
01	There is no dlFirmWare_2820C_3530C in the storage device.	Model specific update program (dlFirmWare_2820C_3530C) is not stored.
02	Error Loadmodule	Module loading failed.
03	Machine Model Get Error	Model information was not downloaded.
04	Please Change USB Storage or Please Check ROMDATA	Checking of data file failed.
05	Other models ROMDATA Vxxxx.xxx x * The version name comes at “xxxx.xxx.x”.	Master data of other model (hdd.bin) are stored.

(5) Select the item with the digital keys.
"*" is displayed next to the selected item. Display or delete the "*" by pressing the number of the item.

Item	Remarks
1. OS Update	Updating OS data
2. HDD SYS Update	Updating Master data and System data
3. Engine Main Firmware Update	Updating Engine ROM
4. Scanner Firmware Update	Updating Scanner ROM

(6) Press the [START] button.
Updating starts and the processing status is displayed on the LCD screen.

Status display during update	Status display when update is completed
OS Update..... FROM write	OS Update..... Completed
HDD SYS Update ..... Copy file	HDD SYS Update ..... Completed
Engine Firm Update..... Flash Update	Engine Firm Update..... Completed
Scanner Firm Update .....Flash Update	Scanner Firm Update .....Completed

(7) "Update Completed." is displayed at the bottom of the LCD screen after the updating is completed properly.

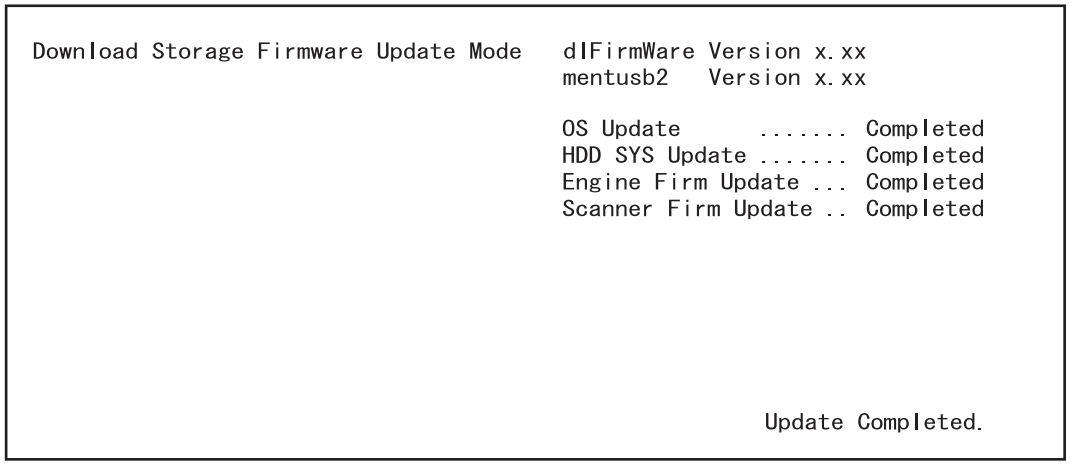


Fig. 20-4

Notes:

- “Update Failed.” is displayed at the bottom of the LCD screen when the updating is not completed properly. “Failed” appears next to the failed item on the status display. Even though an update fails, do not turn the power OFF until other updates are finished. If "Update Failed" appears at the bottom of the screen, turn OFF the power and then check the following items. After confirming and clearing the problems, restart updating from the beginning.
  - Do the USB media meet the conditions to be used for updating?
  - Is the data file written properly on the USB media?
  - Are the USB media installed properly?
  - Do the USB media and equipment operate properly?
- When an error occurred and the update failed, “Update Failed” or “Failed” appears on the screen and an error code appears next to the message. The content of each error code is shown below.

OS update Error	
Error number	**Error content**
O01	FROM writing failed
O02	FROM verification error
O03	File operation error
O04	SRAM flag set error
O05	Electronic key data backup error
O06	Device error

HDD update Error	
Error number	**Error content**
H01	File creation error
H02	File decompression error
H03	Partition mount error
H00	Other errors

Engine update Error		
Error number	**Error message**	**Error content**
M01	Time out (When the download is requested)	Communication timeout (When the download is requested)
M02	Time out (When the download is written)	Communication timeout (When the download is written)
M03	Time out (When the download is finished)	Communication timeout (When the download is finished)
M04	Reception failed (When the download is requested)	Downloading request was denied. (When the download is requested)
M05	Deletion error (When the download is written)	Deletion error (When the download is written)
M06	Writing error (When the download is written)	Writing error (When the download is written)
M07	Checksum error (When the download is finished)	Checksum error (When the download is finished)
M08	Reception status code abnormality (When the download is requested)	Reception status code abnormality (When the download is requested)
M09	Reception status code abnormality (When the download is written)	Reception status code abnormality (When the download is written)
M10	Reception status code abnormality (When the download is finished)	Reception status code abnormality (When the download is finished)

Engine update Error		
Error number	**Error message**	**Error content**
M00	Other error	Other error

Scanner update Error		
Error number	**Error message**	**Error content**
S01	Time out (When the download is requested)	Communication timeout (When the download is requested)
S02	Time out (When the download is written)	Communication timeout (When the download is written)
S03	Time out (When the download is finished)	Communication timeout (When the download is finished)
S05	Deletion error (When the download is written)	Deletion error (When the download is written)
S06	Writing error (When the download is written)	Writing error (When the download is written)
S08	Reception status code abnormality (When the download is requested)	Reception status code abnormality (When the download is requested)
S09	Reception status code abnormality (When the download is written)	Reception status code abnormality (When the download is written)
S10	Reception status code abnormality (When the download is finished)	Reception status code abnormality (When the download is finished)
S00	Other error	Other error

(8) Press the [ON/OFF] button to shut down the equipment, and then remove the USB media.

(9) Perform the initialization of the updating data.
- Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
- Key in “947”, and then press the [START] button.
- Press the [INITIALIZE] button.

[B] Confirmation of the updated data

After the updating is completed, check each data version in the Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

[C] Adjustment

Perform the adjustment of the equipment.

- Performing Image Quality Control (05-396):
  📖 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)"

- Adjustment of Color Registration Control (05-4719):
  📖 P.8-13 "8.5.4 Adjustment of Color Registration Control"

- Automatic gamma adjustment <PPC> (05-1642) (using [4][FAX] test pattern):
  📖 P.8-36 "8.6.1 Automatic gamma adjustment"

- Automatic gamma adjustment < PRT > (05-1008) (using [70][FAX] test pattern):
  📖 P.8-51 "8.7.1 Automatic gamma adjustment"

[D] Display during the update

Update is performed in parallel as shown in the transition diagram below.

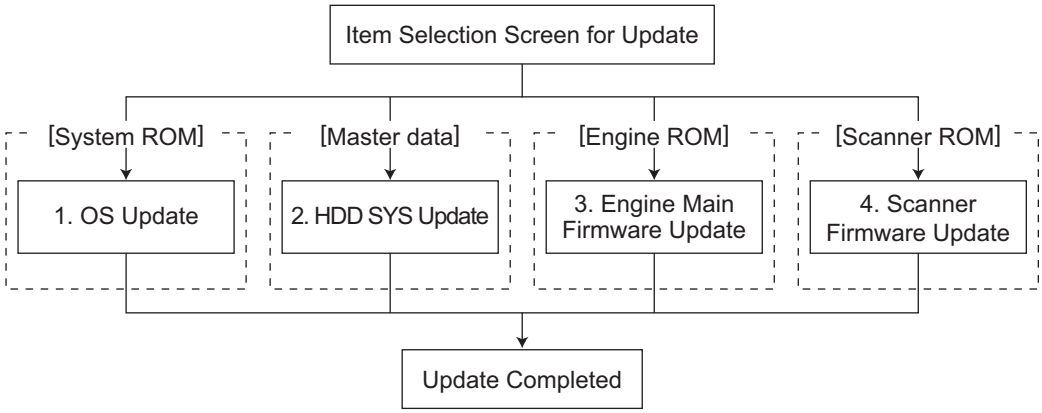


Fig. 20-5

Below is an example of the changes of the LCD screen during update.

System ROM

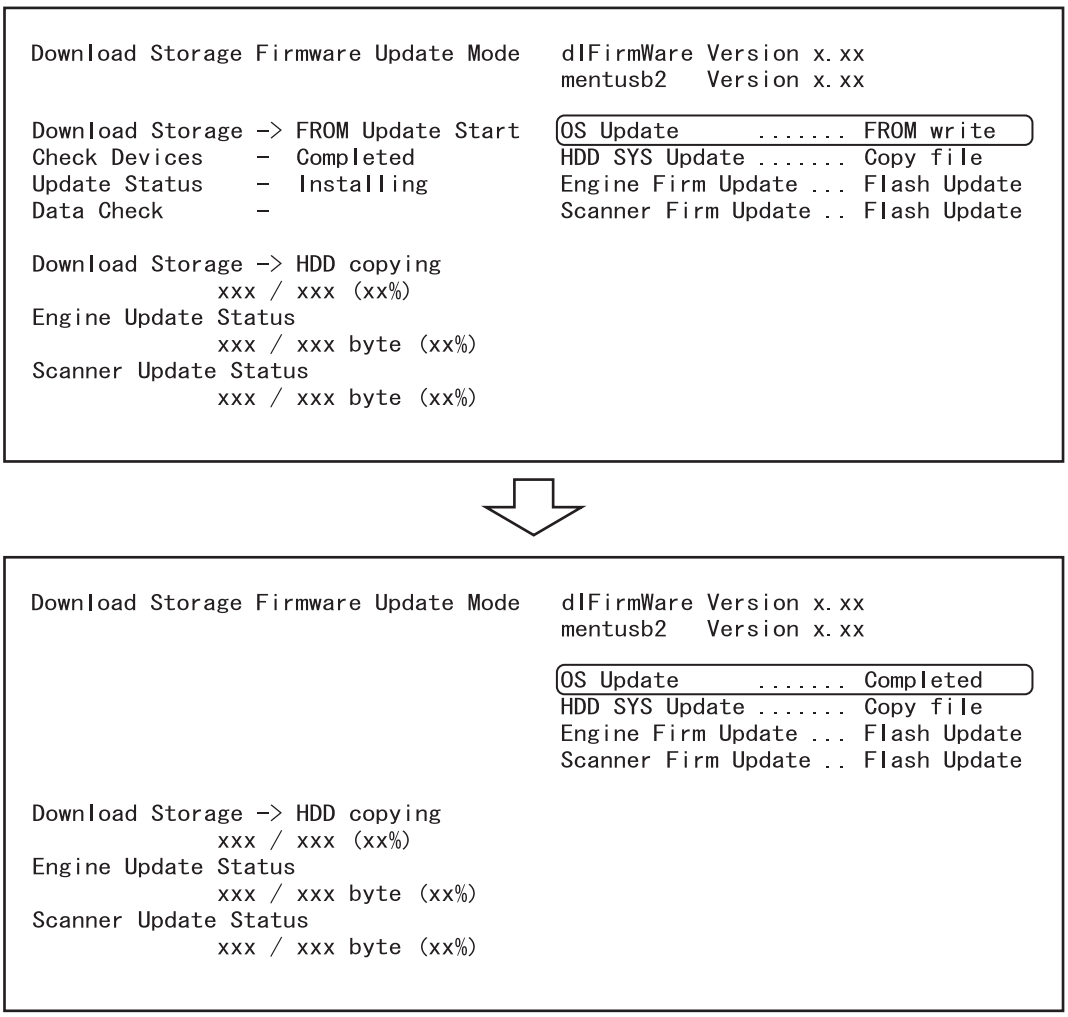


Fig. 20-6

Master data

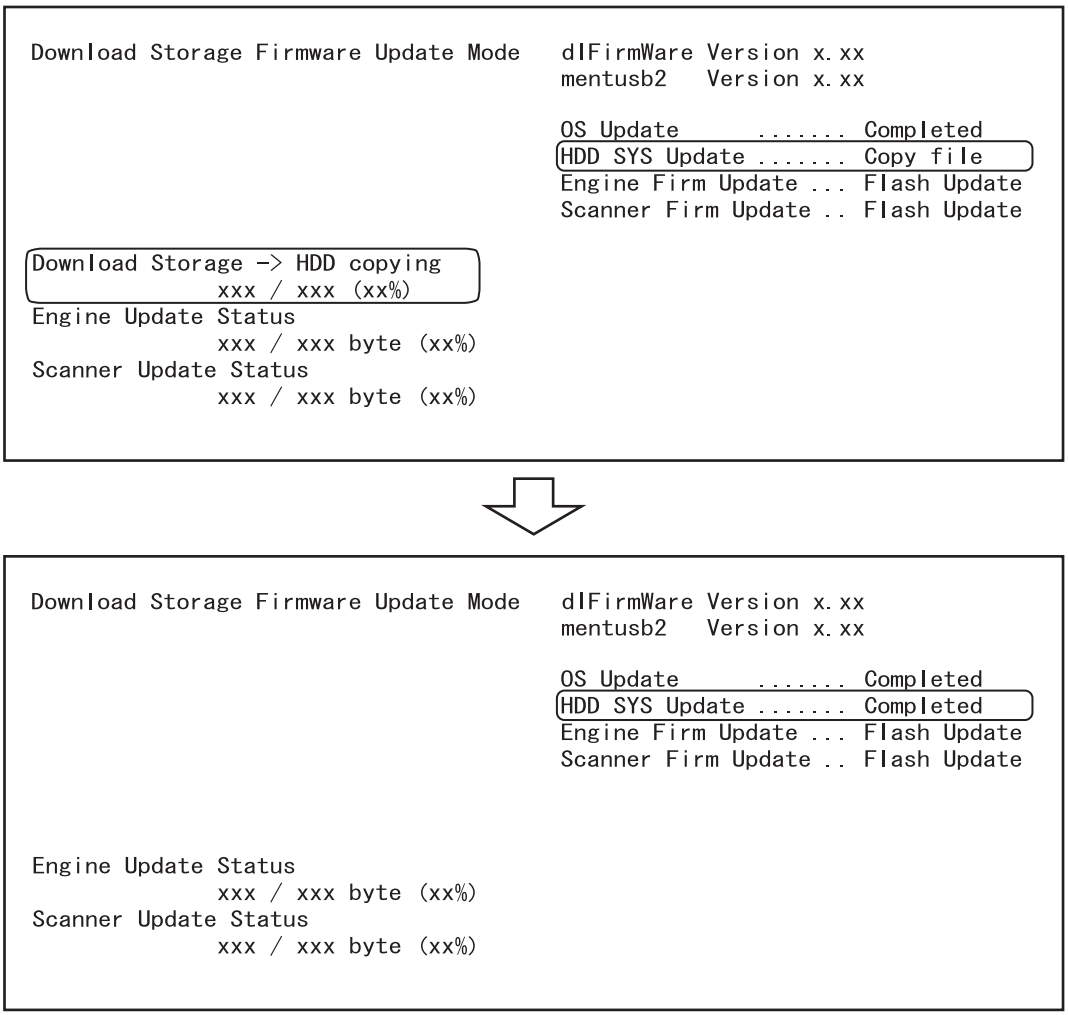


Fig. 20-7

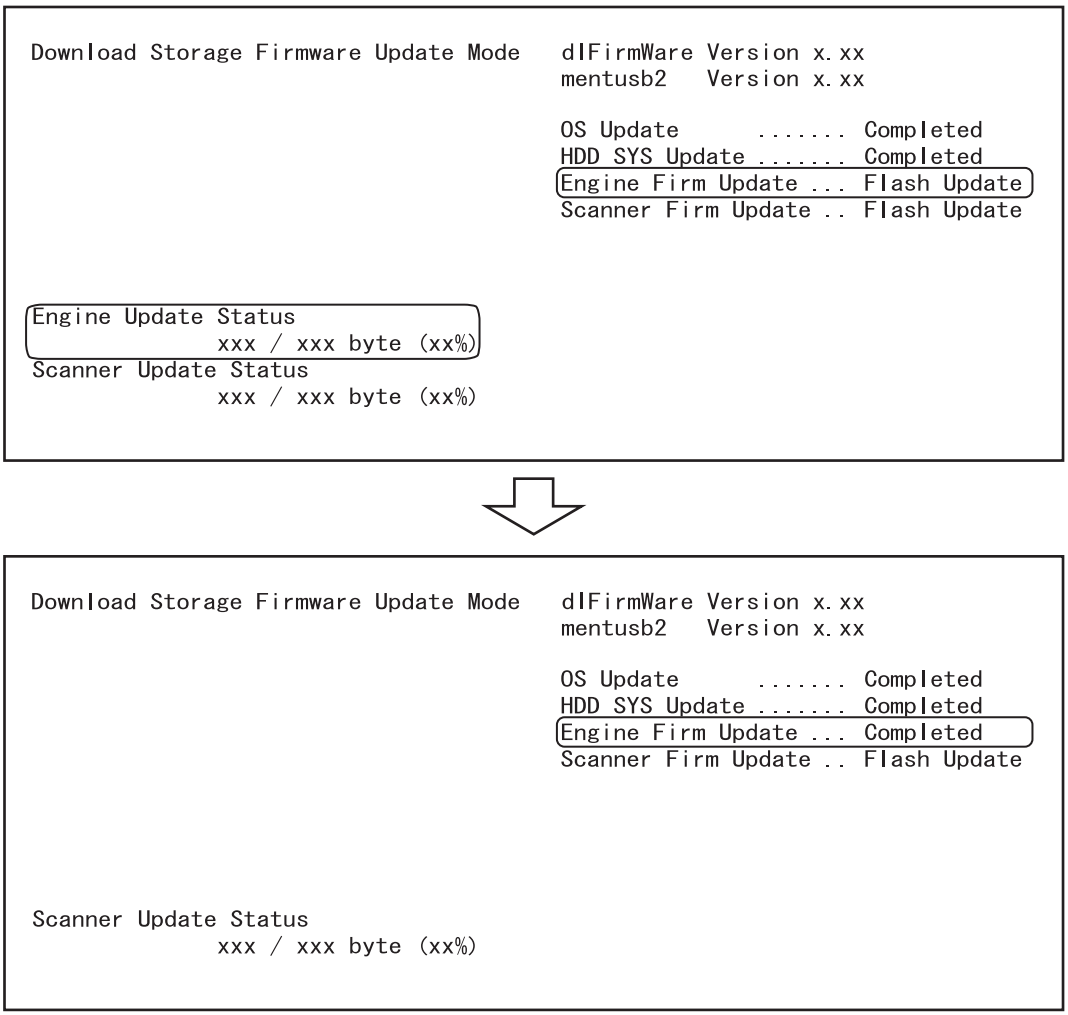


Fig. 20-8

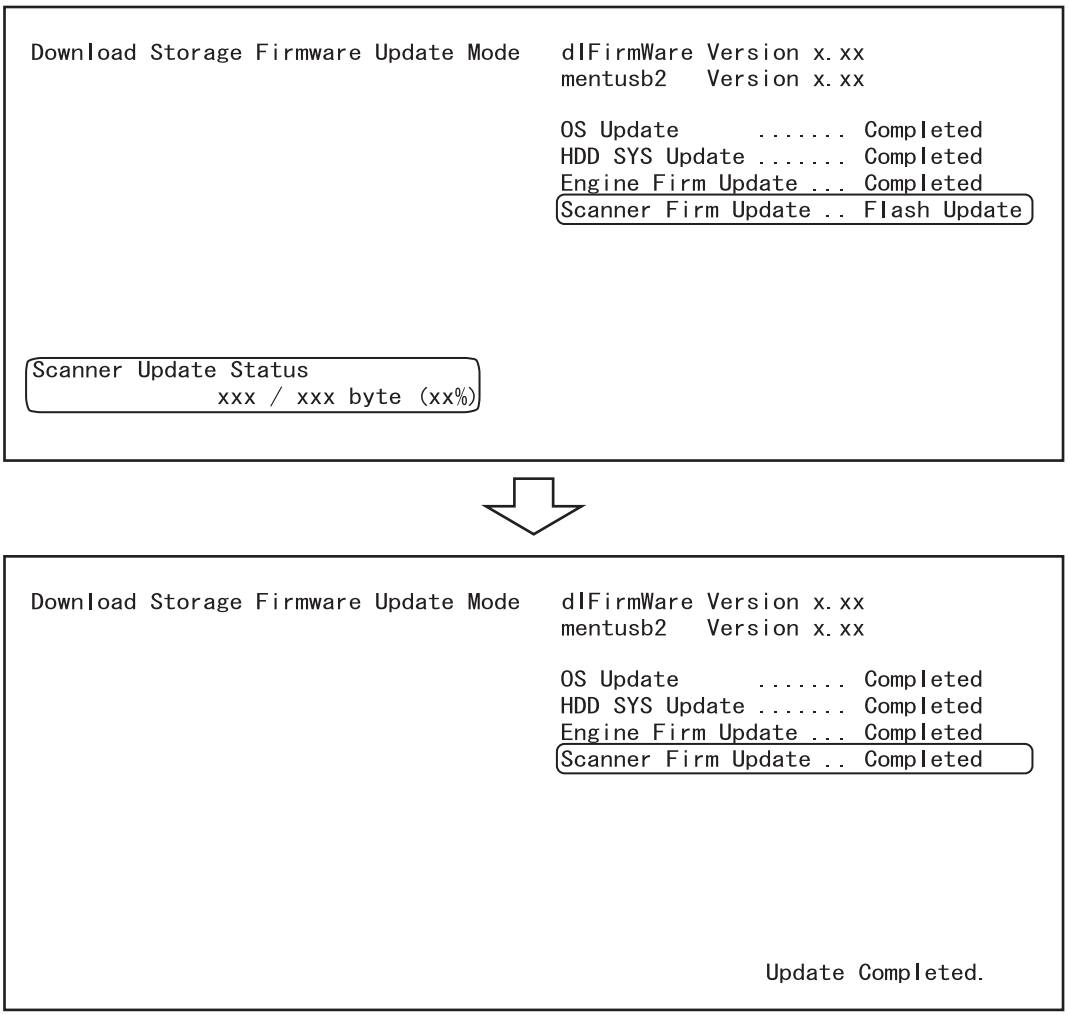


Fig. 20-9

20.1.2 Imaging Acceleration Board ROM (GE-1170)

Important:

- The file system of USB media should be formatted in the FAT or FAT32 format. Be careful since the devices formatted in NTFS format will not be able to be operated. The file system can be confirmed on the properties in applications such as Explorer of Windows.
- The firmware version of the Imaging Acceleration Board ROM differs depending on the version of the system firmware.
  Therefore confirm in advance that the version is the correct one before updating the Imaging Acceleration Board ROM.

[A] Update procedure

(1) Connect the USB media to the PC and write the model specific folder in which the data file is stored.
Store the update program loader (mentusb2.o) in the root directory, and store the model specific update program (dlFirmWare_2820C_3530C) and the data file for updating in the model specific folder.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Connect the USB media to the USB port on the right upper cover.

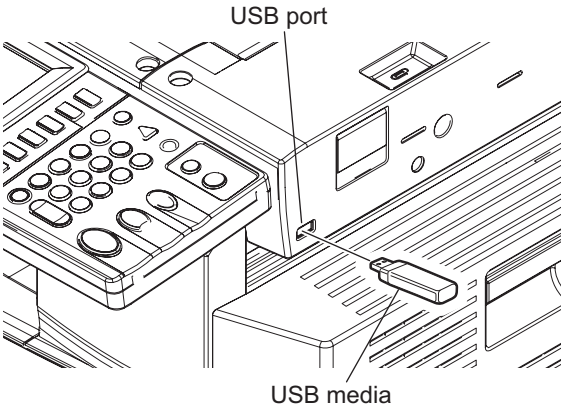


Fig. 20-10

Note:

Updating cannot be performed with multiple USB media connected at the same time.

(4) Press the [ON/OFF] button while simultaneously holding down the [4] and [9] buttons.
Data in the USB media are checked and the checking status is displayed on the screen.
The screen for selecting items to be updated is displayed after approx. 3 minutes.
On this screen, the current firmware version of this equipment and the firmware version of data to be updated are displayed.

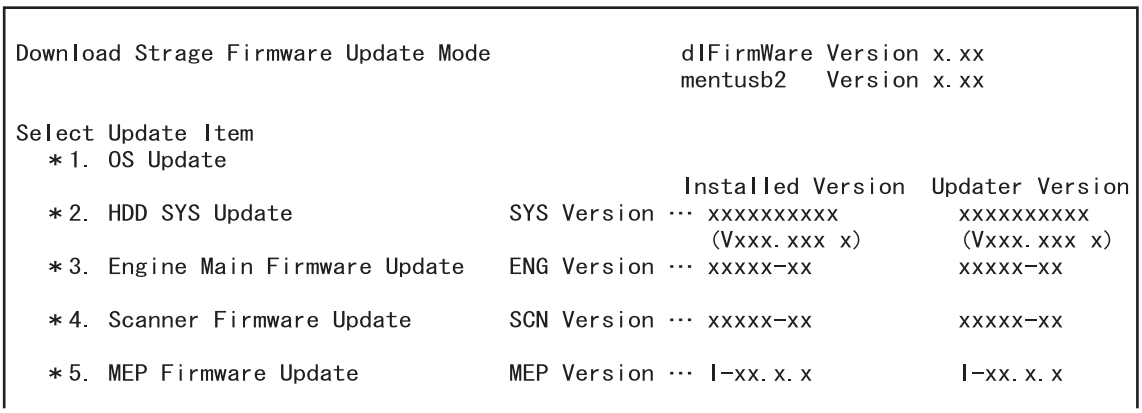


Fig. 20-11

Notes:

- The display of items on this screen varies depending on the types of data written on the USB media. Each item is displayed only when each data file is written on the USB media in the following conditions.

Item	Condition
1. OS Update	For the details, see the following page: 📖 P.20-7 "20.1.1 Master data/System ROM/Engine ROM/ Scanner ROM"
2. HDD SYS Update	
3. Engine Main Firmware Update	
4. Scanner Firmware Update	
5. MEP Firmware Update	• The Imaging Acceleration Board (GE-1170, optional) must be installed. • T450IWW.xxx is written. * xxx is version.

- If the USB media are not recognized properly, “Set Correct USB Storage Device” message is displayed. In this case, disconnect the USB media and connect again within 3 minutes, or shut down the equipment and connect the device properly. Then repeat the procedure from (4).
- If any of the error messages below is displayed, confirm if the update program or the data file in the USB media is correct. Then repeat the procedure from (4).

Error number	Error message	Cause
-	There is no mentusb2.o	Update program loader (mentusb2.o) is not stored.
01	There is no dlFirmWare_2820C_3530C in the storage device.	Model specific update program (dlFirmWare_2820C_3530C) is not stored.
02	Error Loadmodule	Module loading failed.
03	Machine Model Get Error	Model information was not downloaded.
04	Please Change USB Storage or Please Check ROMDATA	Checking of data file failed.
05	Other models ROMDATA Vxxxx.xxx x * The version name comes at “xxxx.xxx.x”.	Master data of other model (hdd.bin) are stored.

(5) Select “5. MEP Firmware Update” with the digital keys.
“*” is displayed next to the selected item. Display or delete the “*” by pressing the number of the item.

Item	Remarks
5. MEP Firmware Update	Updating the Imaging Acceleration Board ROM

(6) Press the [START] button.
Updating starts and the processing status is displayed on the LCD screen.

Status display during update	Status display when update is completed
MEP Firm Update ..... SROM Update	MEP Firm Update ..... Completed

(7) “Update Completed.” is displayed at the bottom of the LCD screen after the updating is completed properly.

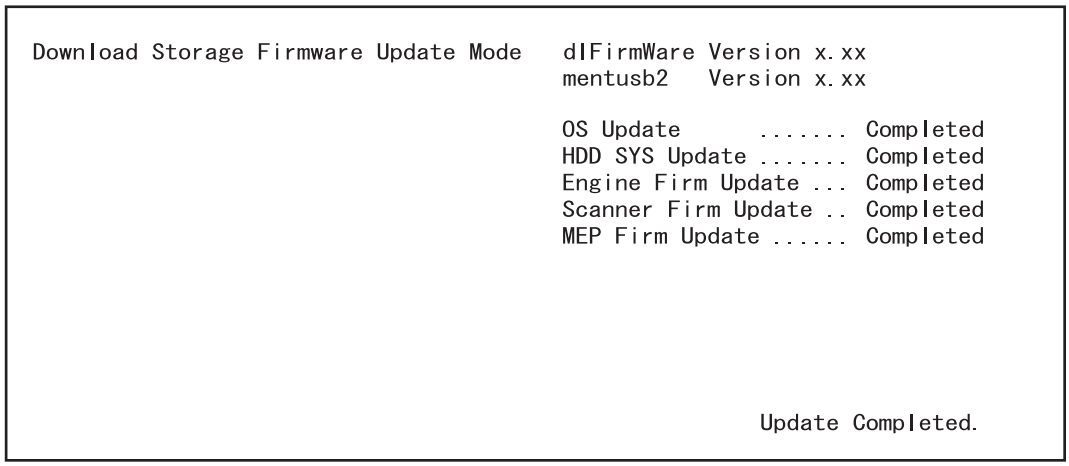


Fig. 20-12

Notes:

- “Update Failed.” is displayed at the bottom of the LCD screen when the updating is not completed properly. “Failed” appears next to the failed item on the status display. Even though an update fails, do not turn the power OFF until other updates are finished. If "Update Failed" appears at the bottom of the screen, turn OFF the power and then check the following items. After confirming and clearing the problems, restart updating from the beginning.
  - Do the USB media meet the conditions to be used for updating?
  - Is the data file written properly on the USB media?
  - Are the USB media installed properly?
  - Do the USB media and equipment operate properly?
- When an error occurred and the update failed, “Update Failed” or “Failed” appears on the screen and an error code appears next to the message. The content of each error code is shown below.

Imaging Acceleration Board update Error		
Error number	**Error message**	**Error content**
I01	Board Error	The MEP board is not operating properly.
I02	Parameter Error	The parameter for API function is incorrect.
I03	File Read Failed	An error occurred during a file input operation.
I04	Temporary File Error	An error occurred during a temporary file operation.
I05	File Format Error	The format of the input file is incorrect.
I06	Memory Allocation Failed	An error occurred during the memory allocation.
I00	Other error	Other error

(8) Press the [ON/OFF] button to shut down the equipment, and then remove the USB media.

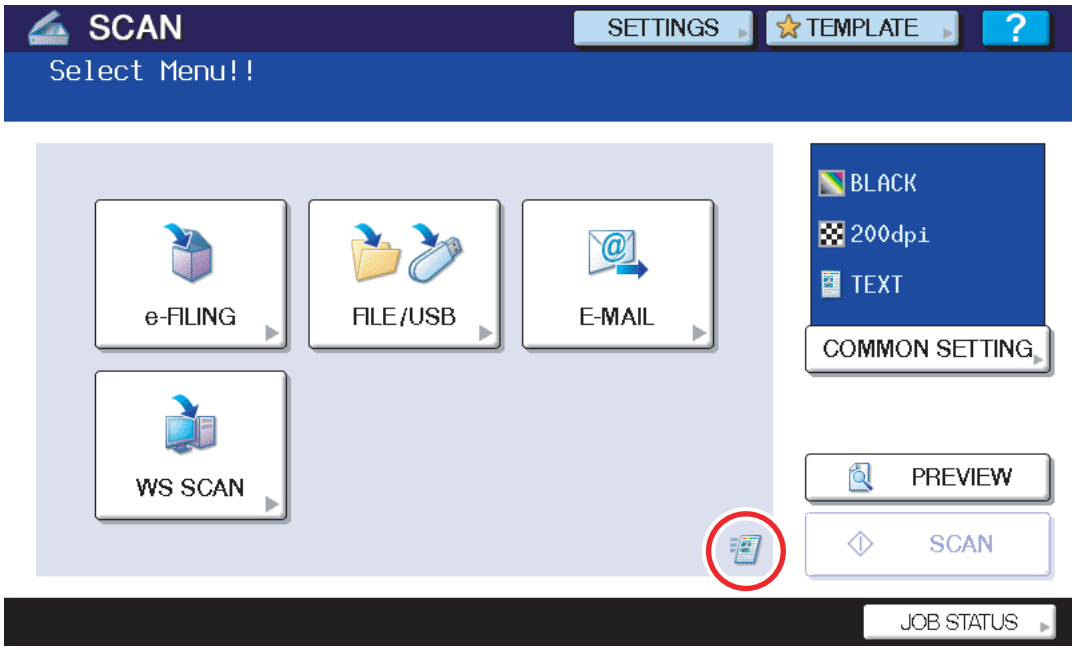
[B] Confirmation of the updated data

After the updating is completed, check each data version in the Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

Note:

Check that the icon of the Imaging Acceleration Board on the scan menu is displayed in color.



[C] Display during the update

Below is an example of the changes of the LCD screen during update.

Imaging Acceleration Board ROM

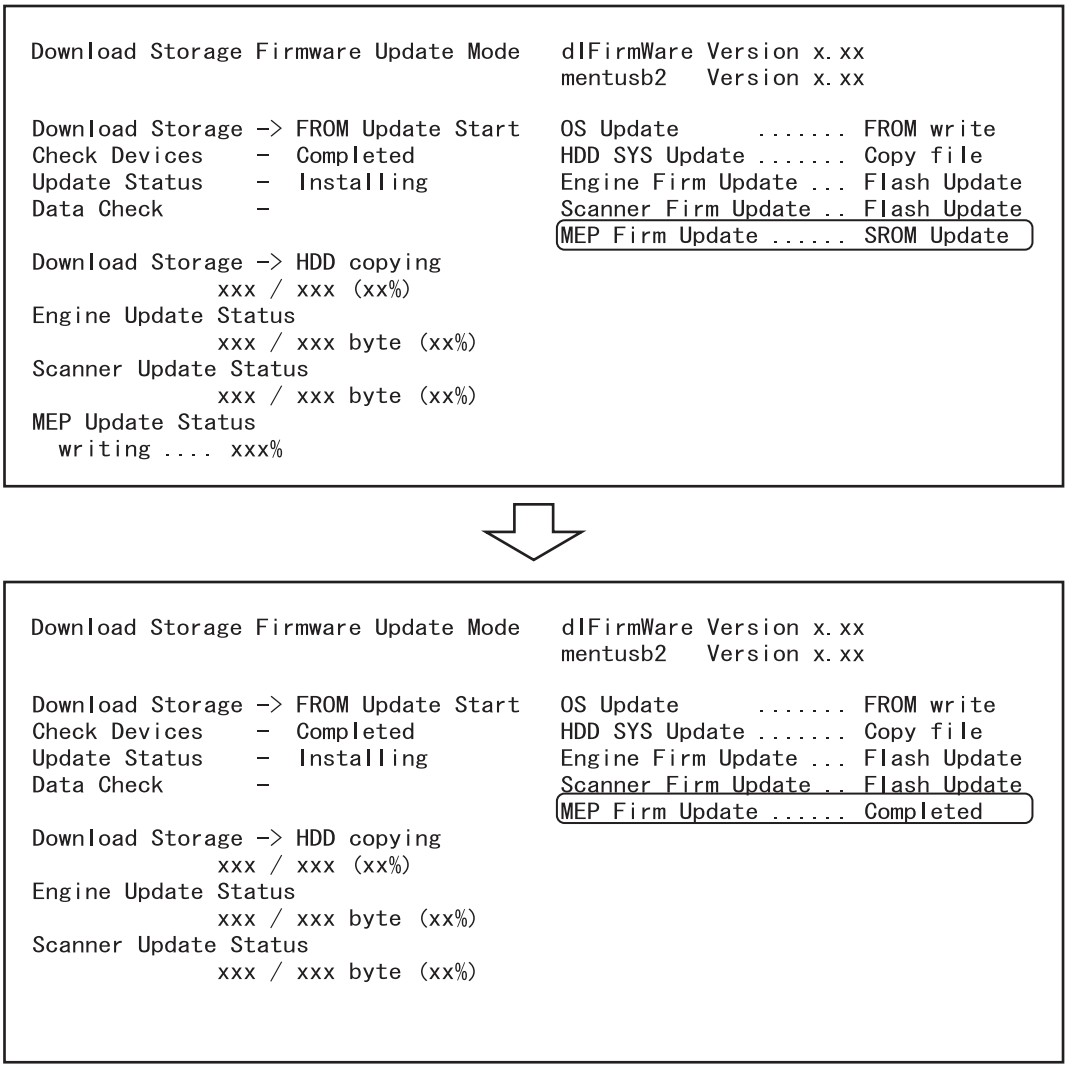


Fig. 20-13

20.2 Firmware Updating with PWA-DWNLD-350-JIG2

The data to be overwritten by this update are as follows.
Update the ROM data written on each board according to the need such as the case of replacing the system control PC board or logic PC board.

Equipment

Firmware	Stored
System ROM (OS data)	System control PC board (SYS board)
Engine ROM (Main firmware)	Logic PC board (LGC board)

PWA-DWNLD-350-JIG2 (48MB)

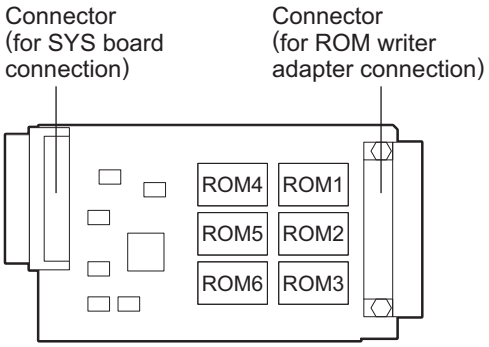


Fig. 20-14

Important:

The download jig (PWA-DWNLD-350-JIG2) is the jig in which the Flash ROM is mounted on the board directly. Therefore, ROM writer adapter (PWA-DL-ADP-350) is required to write the data to these Flash ROMs. Refer to the following to write the data.

20.2.1 Writing the data to the download jig (PWA-DWNLD-350-JIG2)

The download jig (PWA-DWNLD-350-JIG2) is that in which the Flash ROM is mounted on the board directly. The ROM writer adapter (PWA-DL-ADP-350) is required to write data to these Flash ROMs. Connect the download jig with the ROM writer via ROM writer adapter to write data. For the procedure to write data, refer to the downloading procedure, instruction manual of each ROM writer, or other sources.

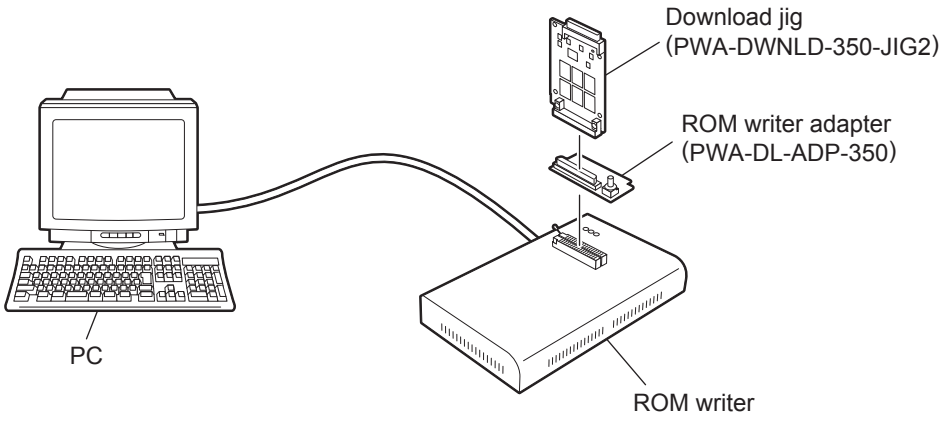
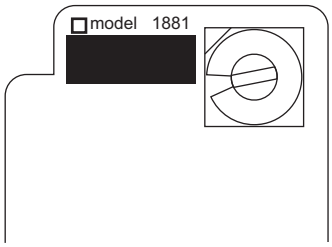


Fig. 20-15

Note:

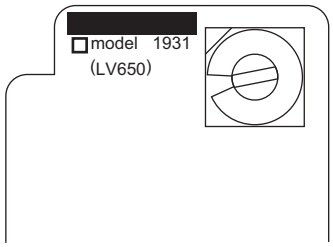
There are two types of the ROM writer adapter. Use the proper one according to the ROM writer to be used. Applicable type of the adapter for the ROM writer can be confirmed by the model name indicated on the board. Confirm that the adapter is available for the ROM writer to be used before connecting them. If an unapplied adapter is connected, the application of the ROM writer judges it as an error and writing the data cannot be implemented. Applicable combinations of the ROM writer and adapter are as follows.

ROM writer	ROM writer adapter
Minato Electronics MODEL 1881XP/1881UXP (or equivalent)	PWA-DL-ADP-350-1881 (model 1881)
Minato Electronics MODEL 1893/1895/1931/1940 (or equivalent)	PWA-DL-ADP-350-1931 (model 1931)



[PWA-DL-ADP-350-1881]

Fig. 20-16



[PWA-DL-ADP-350-1931]

Fig. 20-17

[A] Precautions when writing the System ROM data

- Set the writing voltage (VID) to 3.3 V.
  When an error appears while the data are being written to the download jig, set the writing voltage (VID) to 12 V and then write them.
- When writing the data, set the address from 0 to 3FFFFF. The data may not be written correctly if it is not set.
- Load the data file into the buffer by means of the following settings.

Auto Format Detected	Binary
From File	Normal
To Buffer	Normal
From File Address	0
To Buffer Address	0
Buffer Size	800100
Clear Buffer Before Loading the file	Clear buffer with blank state

[A-1] System ROM

System ROM		
Rotary Switch	**File Name**	**Flash ROM**
1	firmImage_jig0.bin	ROM1
2	firmImage_jig1.bin	ROM2
3	N/A	ROM3
4	N/A	ROM4
5	N/A	ROM5
6	N/A	ROM6

Note:
Be sure not to confuse different ROM Versions since the file name is identical although the ROM version is different.

[B] Precautions when writing the Engine ROM data

- Clear the buffer of the ROM writer by means of the following settings.

From Address	To Address	Code
0	800000	FF
800000	8000FF	00

- Set the writing voltage (VID) to 3.3 V.
  When an error appears while the data are being written to the download jig, set the writing voltage (VID) to 12 V and then write them.
- When writing the data, set the address from 0 to 3FFFFF. The data may not be written correctly if it is not set.
- Load the data file into the buffer by means of the following settings.

Auto Format Detected	Binary
From File	Normal
To Buffer	Normal
From File Address	0
To Buffer Address	300000
Buffer Size	800000
Clear Buffer Before Loading the file	Clear buffer with blank state

[B-1] Engine ROM

Engine ROM		
Rotary Switch	**File Name**	**Flash ROM**
1	T450MWW.xxx	ROM1
2	N/A	ROM2
3	N/A	ROM3
4	N/A	ROM4
5	N/A	ROM5
6	N/A	ROM6

20.2.2 System ROM

The firmware of the system ROM can be updated individually by using WA-DWNLD-350-JIG2.

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be able to be operated properly.

[A] Update procedure

(1) Write the ROM data to be updated to the download jig (PWA-DWNLD-350-JIG2).

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the cover plate.

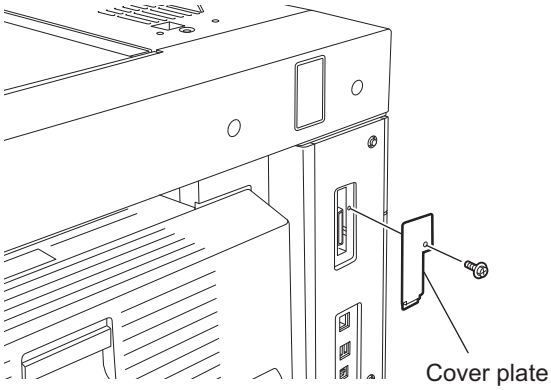


Fig. 20-18

(4) Connect the download jig with the jig connector (CN101) on the SYS board.

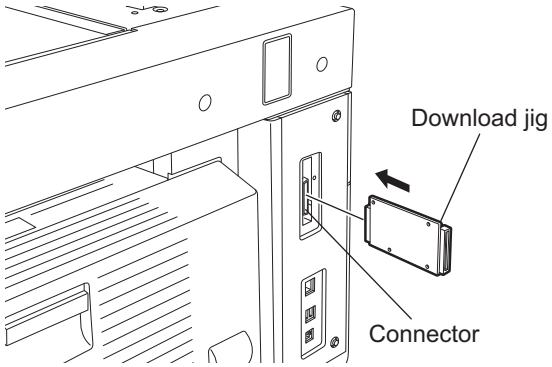


Fig. 20-19

(5) Press the [ON/OFF] button while simultaneously holding down the [8] and [9] buttons.

(6) Select the item with the digital keys.
"*" is displayed next to the selected item. Display or delete the "*" by pressing the number of the item. All items are selected in the default settings.

(7) Press the [START] button.
Updating starts and the processing status is displayed on the LCD screen.

(8) “Update Completed.” is displayed at the bottom of the LCD screen after the updating is completed properly.

Note:
“Update Failed.” is displayed at the bottom of the LCD screen when the updating is not completed properly. “Failed” appears next to the failed item on the status display. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the updating data written to the download jig properly?
- Do the download jig and the equipment operate properly?

(9) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then install the cover plate.

(10) Perform the initialization of the updating data.
- Turn the power ON using the main power switch while pressing the [0] and [8] buttons simultaneously.
- Key in “947”, and then press the [START] button.
- Press the [INITIALIZE] button.

[B] Confirmation of the updated data

After the updating is completed, check each data version in the Setting Mode (08) to confirm that the data was overwritten properly.
📖 P.20-56 "20.4 Confirmation of the updated data"

20.2.3 Engine ROM

The firmware of the engine ROM can be updated individually by using PWA-DWNLD-350-JIG2.

Important:

- Be sure to unplug the power cable before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be able to be operated properly.
- When servicing the equipment with the power cable plugged in, be sure not to touch live sections or motors, etc.

[A] Update Procedure

(1) Write the ROM data to be updated to the download jig (PWA-DWNLD-350-JIG2).

(2) Turn the power OFF using the main power switch on the right-hand surface of the equipment.

(3) Unplug the power cable from the outlet.

(4) Take off the rear cover-1.

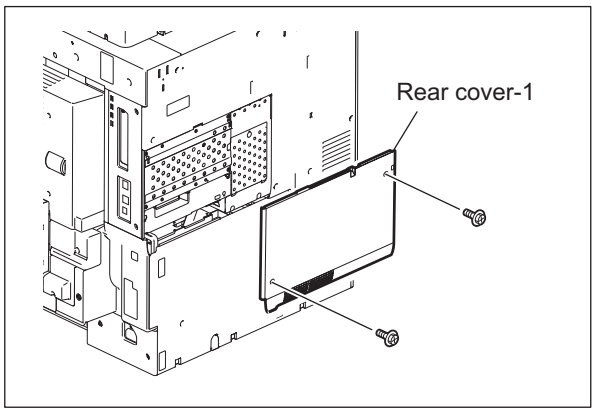


Fig. 20-20

(5) Remove the cover plate.

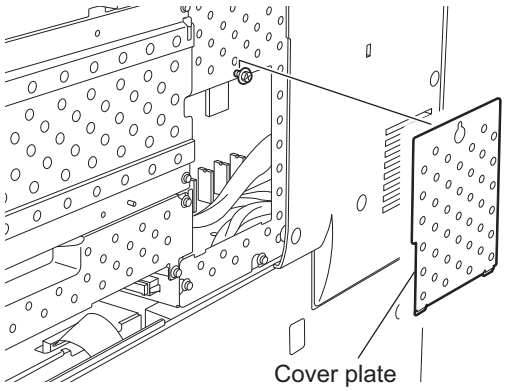


Fig. 20-21

(6) Connect the download jig with the jig connector (CN352) on the logic PC board (LGC board).

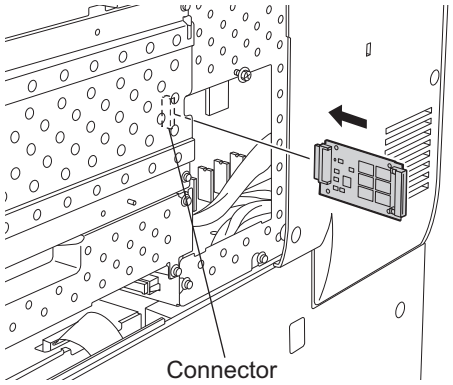


Fig. 20-22

(7) Open the front cover.

(8) Plug the power cable into the outlet.

(9) Turn the power ON using the main power switch while simultaneously holding down the [0] and [8] buttons.
Updating starts automatically and the LED on the download jig lights.

(10) When the update is completed properly, the LED (END) on the download jig blinks.
The LED starts blinking approx. 15 sec. after the update starts. It is assumed that the update has failed if it does not start blinking even though 1 min. has passed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the updating data written on the ROM of the download jig properly?
- Do the download jig and the equipment operate properly?

(11) Turn the power OFF using the main power switch on the right-hand surface of the equipment.

(12) Unplug the power cable from the outlet and remove the download jig.

(13) Install the cover plate and rear cover-1, and then close the front cover.

(14) Plug the power cable into the outlet.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.
📖 P.20-56 "20.4 Confirmation of the updated data"

[C] Adjustment

Perform the adjustment of the equipment.

- Performing Image Quality Control (05-396):
  🕮 P.8-11 "8.5.3 Performing Image Quality Control (ICQ)"

- Adjustment of Color Registration Control (05-4719):
  🕮 P.8-13 "8.5.4 Adjustment of Color Registration Control"

- Automatic gamma adjustment <PPC> (05-1642) (using [4][FAX] test pattern):
  🕮 P.8-36 "8.6.1 Automatic gamma adjustment"

- Automatic gamma adjustment < PRT > (05-1008) (using [70][FAX] test pattern):
  🕮 P.8-51 "8.7.1 Automatic gamma adjustment"

20.3 Firmware Updating with K-PWA-DLM-320

The firmware of the equipment (scanner ROM) and the option (RADF ROM, Finisher ROM, FAX ROM) can be updated individually by using K-PWA-DLM-320. Update the ROM data written on each board according to the need such as the case of replacing the board.

Equipment

Firmware	Stored
Scanner ROM (Scanner firmware)	Scanning section control PC board (SLG board)

Options

Model name	Firmware	Stored
Reversing Automatic Document Feeder (RADF) (MR-3018)	RADF firmware	RADF control PC board
Finisher (MJ-1101)	Finisher firmware	Finisher control PC board
	Converter firmware	Converter PC board
Saddle Stitch Finisher (MJ-1030)	Finisher firmware	Finisher control PC board
	Saddle stitcher firmware	
Hanging Finisher (MJ-1031)	Finisher firmware	Finisher control PC board
Hole Punch Unit (MJ-6101)	Hole punch unit firmware	Hole punch control PC board
Fax Unit (GD-1250)	Fax unit firmware	FAX board

K-PWA-DLM-320

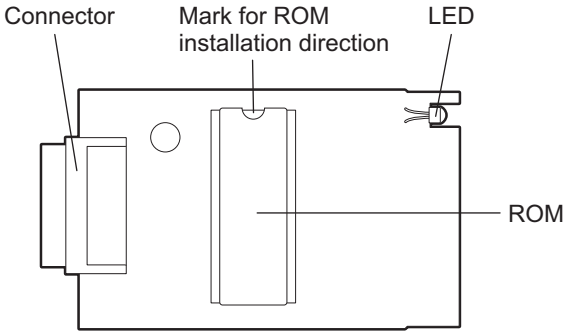


Fig. 20-23

Important:

Pay attention to the direction of the ROM.

20.3.1 Scanner ROM

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Update Procedure

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the right upper cover.

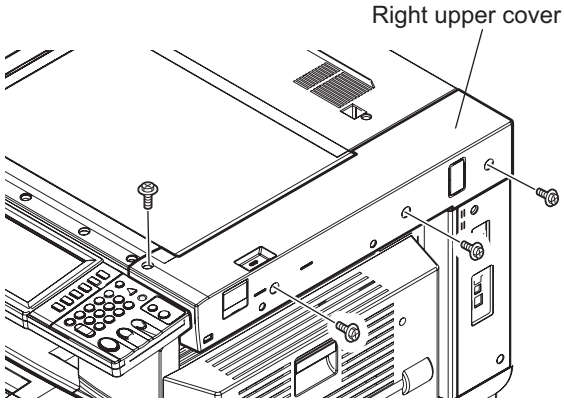


Fig. 20-24

(4) Remove the cover plate.

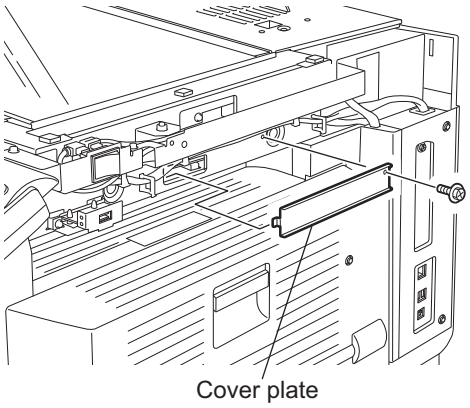


Fig. 20-25

(5) Connect the download jig with the jig connector (CN16) on the scanning section control PC board (SLG board).

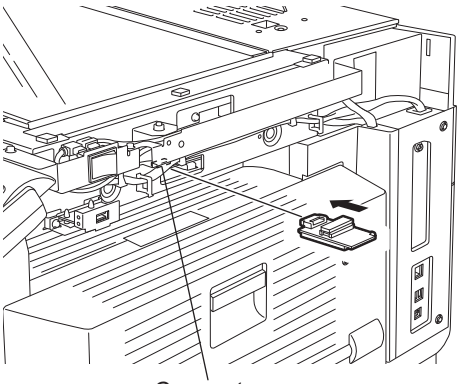


Fig. 20-26

(6) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts automatically and the LED on the download jig lights.

(7) After the update is completed properly, the LED on the download jig blinks.
The LED starts blinking approx. 20 sec. after the update starts. It is assumed that the update has failed if it does not start blinking even though 1 min. has passed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the ROM installed to the download jig properly?
- Is the updating data written on the ROM of the download jig properly?
- Do the download jig and the equipment operate properly?

(8) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then install the cover plate and the right upper cover.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.
📖 P.20-56 "20.4 Confirmation of the updated data"

Important:
If the exposure lamp blinks twice at the time of start-up and a “C270” error occurs, the model of the scanner ROM updated may be incorrect.
Check the model of the scanner ROM and retry updating.

20.3.2 RADF firmware (MR-3018)

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Update Procedure

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the RADF rear cover.

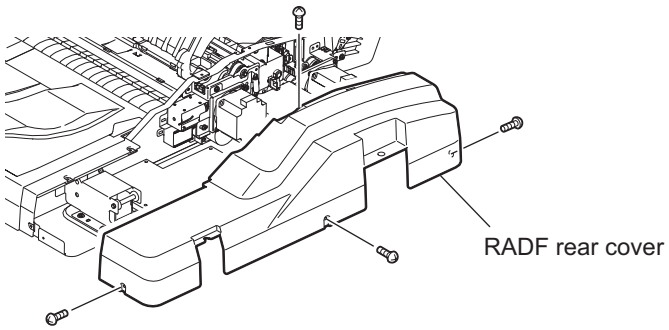


Fig. 20-27

(4) Connect the download jig with the jig connector (CN81) on the RADF control PC board.

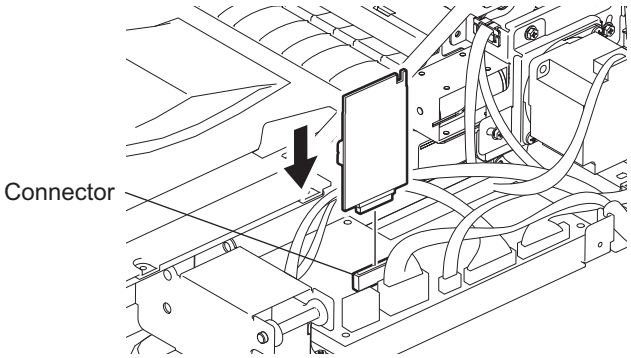


Fig. 20-28

(5) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts automatically and the LED on the download jig lights.

(6) After the update is completed properly, the LED on the download jig blinks slowly (at an interval of approx. 0.8 sec.).
The LED starts blinking approx. 15 sec. after the update starts. It is assumed that the update has failed if it does not start blinking even though 1 min. has passed or the LED blinks fast (at an interval of approx. 0.1 sec.). In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the ROM installed to the download jig properly?
- Is the updating data written on the ROM of the download jig properly?
- Do the download jig and the equipment operate properly?

(7) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then install the RADF rear cover.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.
📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.3 Finisher firmware (MJ-1101)

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Update Procedure

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Remove 1 screw and take off the board access cover.

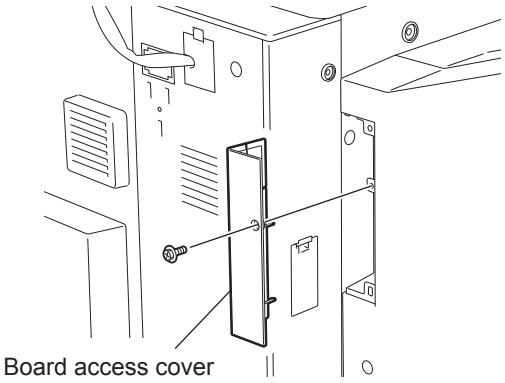


Fig. 20-29

(4) Connect the download jig with the jig connector (CN9) on the Finisher control board.

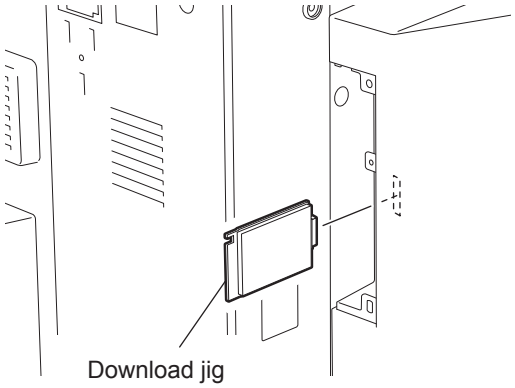


Fig. 20-30

(5) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts and the LED on the download jig lights

(6) When the update completes normally, the LED on the download jig starts blinking.
The LED on the download jig starts blinking approx. 12 seconds after the update started.
It is assumed that the update has failed if the LED does not start blinking even after 20 seconds have elapsed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the downloading jig connected properly?
- Is the ROM attached to the downloading jig properly?
- Has the update data been written correctly to the ROM on the jig?
- Is the download jig or the equipment damaged?

(7) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then install the board access cover.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.4 Converter Firmware (MJ-1101)

The harness jig for board connection is required for updating the firmware of the converter PC board of the finisher (MJ-1101) as well as the download jig (K-PWA-DLM-320).

Name of the jig	Model name
Harness jig for board connection	HRNS-CNV-DL-JIG

Important:

- Be sure to connect the equipment and finisher (MJ-1101) before updating the converter firmware.
- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Update Procedure

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the finisher board access cover.

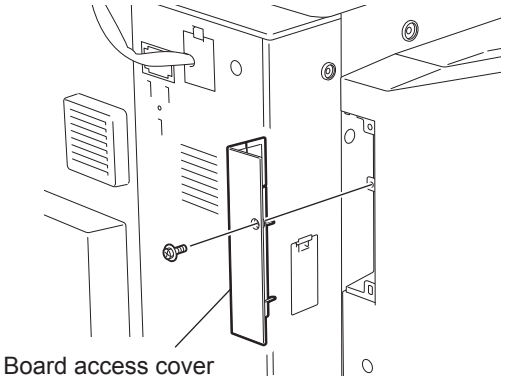


Fig. 20-31

(4) Take off the rear cover-1 of the equipment.

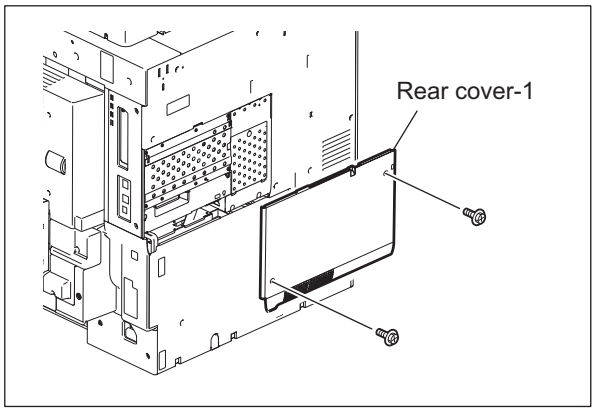


Fig. 20-32

(5) Remove the cover plate.

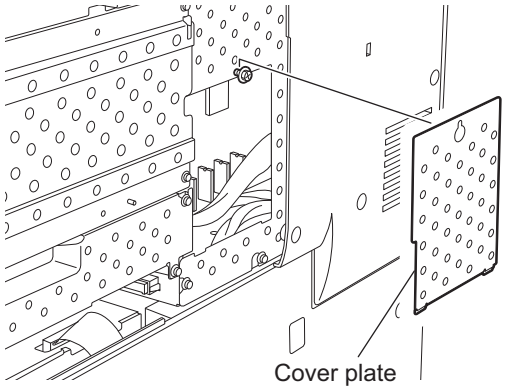


Fig. 20-33

(6) Take off the converter PC board from the logic PC board (LGC board).

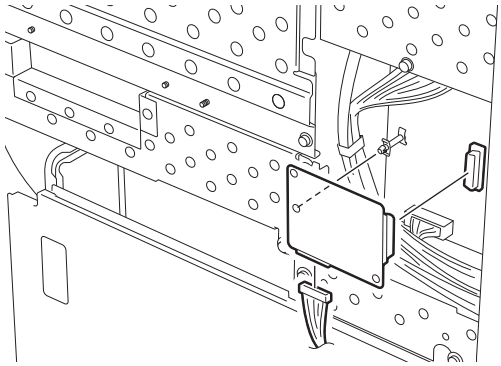


Fig. 20-34

(7) Connect the 10-pin side of the harness jig for board connection to the connector (CN2) of the converter PC board.

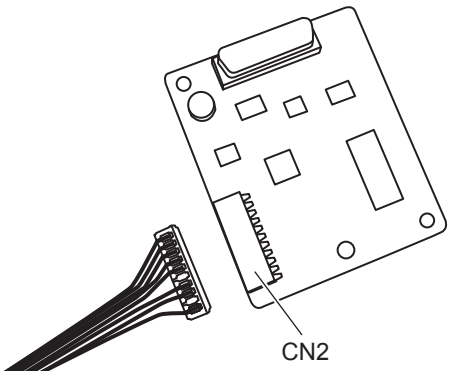


Fig. 20-35

(8) Connect the 15-pin side of the harness jig for board connection to the connector (CN15) of the finisher control PC board.

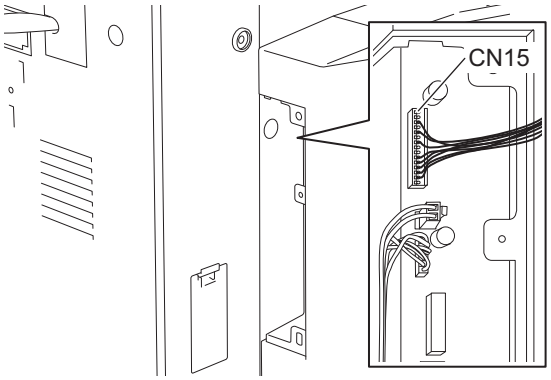


Fig. 20-36

Notes:
- Be sure to release the connection cable from the connector (CN15) of the finisher control PC board when the hole punch unit (MJ-6101) has been installed.
- Be careful not to short-circuit any part of the converter PC board.

(9) Connect the download jig with the jig connector (CN9) on the Finisher control board.

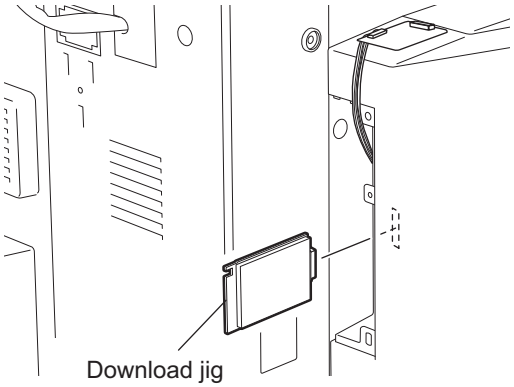


Fig. 20-37

(10) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts and the LED on the download jig lights.

(11) When the update completes normally, the LED on the download jig starts blinking.
The LED on the download jig starts blinking approx. 20 seconds after the update started.
It is assumed that the update has failed if the LED does not start blinking even after 30 seconds have elapsed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the downloading jig connected properly?
- Is the ROM attached to the downloading jig properly?
- Have the update data been written correctly to the ROM on the jig?
- Is the download jig or the equipment damaged?
- Is the harness jig for board connection connected to connector (CN2) of the converter PC board and the connector (CN15) of the finisher control PC board correctly?

(12) Turn the power OFF using the main power switch on the right-hand surface of the equipment.

(13) Remove the download jig and the harness jig for board connection from the finisher control PC board.

Note:
Be sure to secure the connection cable in the connector (CN15) of the finisher control PC board when the hole punch unit (MJ-6101) has been installed.

(14) Install the board access cover.

(15) Remove the harness jig for board connection from the converter PC board.

(16) Install the converter PC board in the equipment.

(17) Install the cover plate and the rear cover-1.

[B] Confirmation of Firmware Version

Be sure to install the converter PC board in the equipment and connect the finisher (MJ-1101) before confirming the firmware version of the converter firmware.
📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.5 Hole punch unit firmware (MJ-6101)

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Checking the hole punch position

Follow the procedure below to check the stopping position of the paper transport during the punching operation before updating the firmware, as the value for the position is defaulted when the firmware is updated.

(1) Press the [ON/OFF] button on the control panel to shut down the equipment.

(2) Remove the finisher board access cover and change the setting of the DIP-SW1 (SW1) on the finisher control PC board as shown in the figure below.

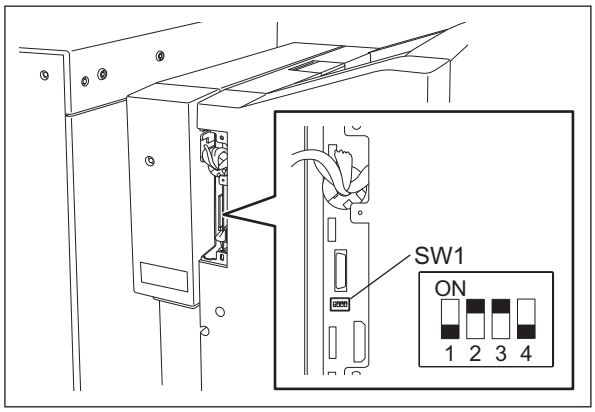


Fig. 20-38

(3) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons. The [LED1] on the finisher control panel starts blinking. Count the number of times it blinks. If the number of blinks is “6”, this indicates that the value for the stopping position is the default. If the number is other than “6”, record it because the value needs to be reset after the firmware is updated.

(4) Return the DIP-SW1 to the status before checking.

[B] Firmware update

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Remove 1 screw and take off the finisher board access cover.

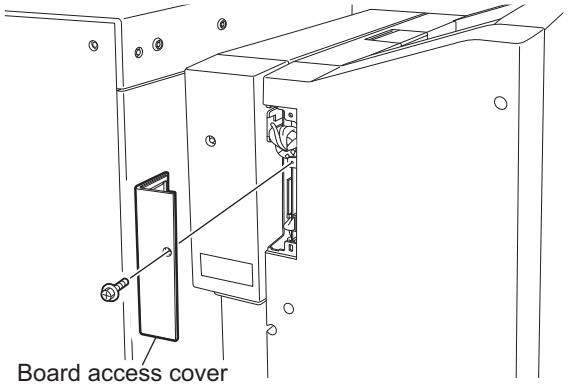


Fig. 20-39

(4) Release the latches and take off the rear lower cover of the hole punch unit.

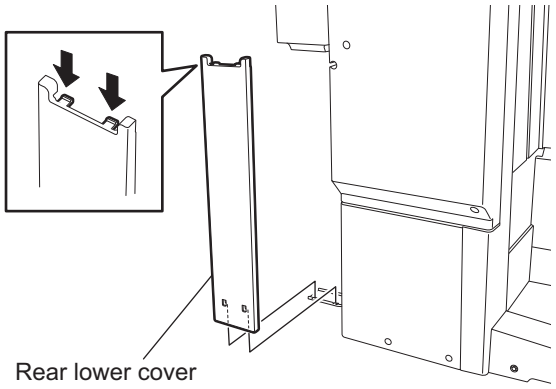


Fig. 20-40

(5) Remove 3 screws and take off the rear cover of the hole punch unit.

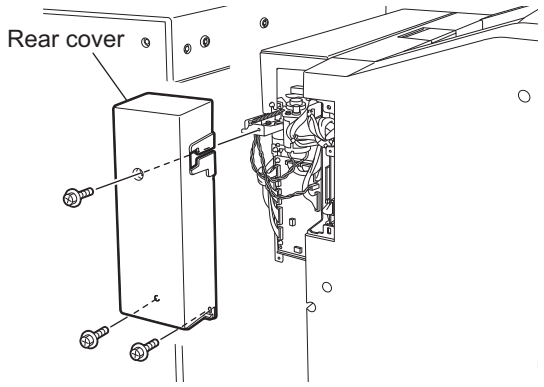


Fig. 20-41

(6) Connect the download jig with the jig connector (CN9) on the finisher control PC board.

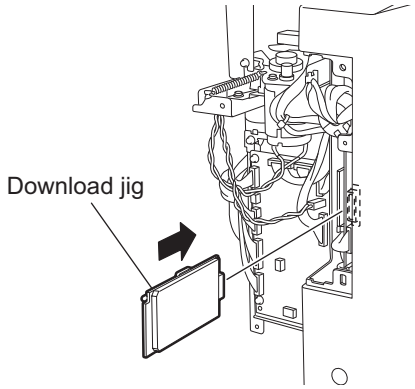


Fig. 20-42

(7) Set the DIP-SW4 on the hole punch control PC board to ON.

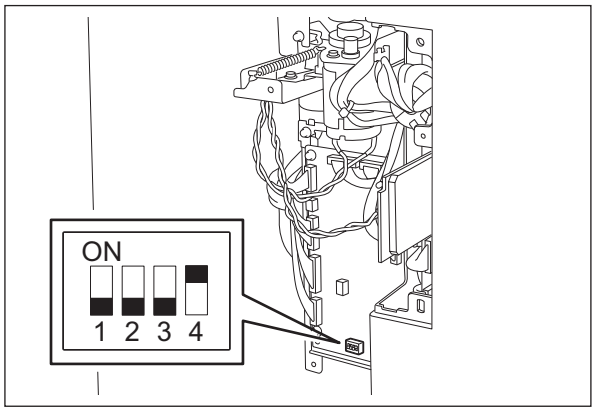


Fig. 20-43

(8) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons. Updating starts and the LED on the download jig lights.

(9) When the update is completed normally, the LED on the download jig starts blinking. The LED on the download jig starts blinking approx. 20 seconds after the update started. It is assumed that the update has failed if the LED does not start blinking even after 30 seconds have elapsed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the downloading jig connected properly?
- Is the ROM attached to the downloading jig properly?
- Is the DIP-SW4 on the hole punch control PC board set properly?
- Has the update data been written correctly to the ROM on the jig?
- Is the download jig or the equipment damaged?
- Is the connector (CN12) on the finisher control PC board connected properly?
- Are the connector (CN15) on the finisher control PC board and the connector (CN1) on the hole punch control PC board connected properly?

(10) Turn the power OFF using the main power switch on the right-hand surface of the equipment and remove the download jig.

(11) Set the DIP-SW4 on the hole punch control PC board to OFF.

Note:

When the number of blinks is other than “6” (which indicates that the adjustment value is “0”) at the section “[A]Checking the hole punch position”, follow the steps of “5.1 Stopping Position Adjustment” in the MJ-6101 Service Manual to adjust the value to the one that has been set before the update.

(12) Change the settings of the DIP-SW1 and -SW2 on the hole punch control PC board according to the model as shown in the figure below.

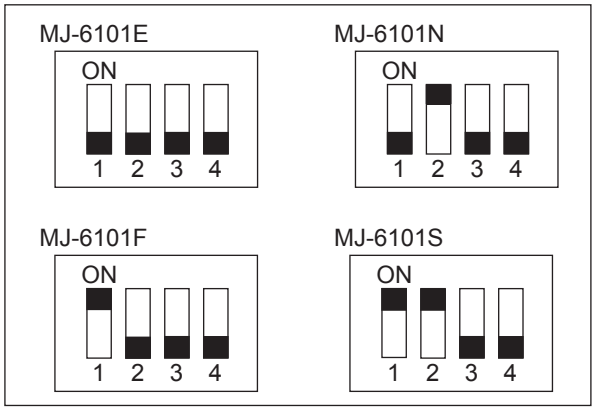


Fig. 20-44

(13) Install the rear cover of the hole punch unit.

(14) Install the rear lower cover of the hole punch unit.

(15) Install the finisher board access cover.

[C] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.6 Finisher firmware/Saddle stitcher firmware (MJ-1030)

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Firmware update

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the finisher rear cover.

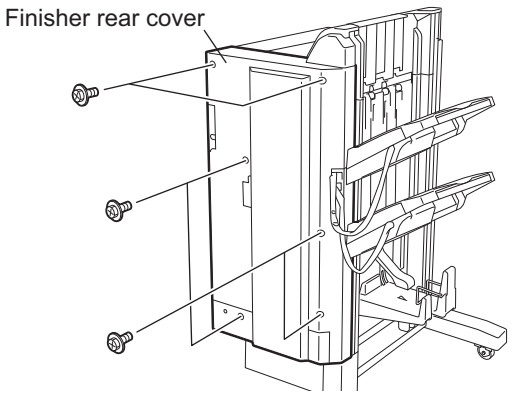


Fig. 20-45

* Connect the finisher interface cable with the equipment after removing the finisher rear cover.

(4) Connect the download jig with the jig connector on the finisher control PC board.

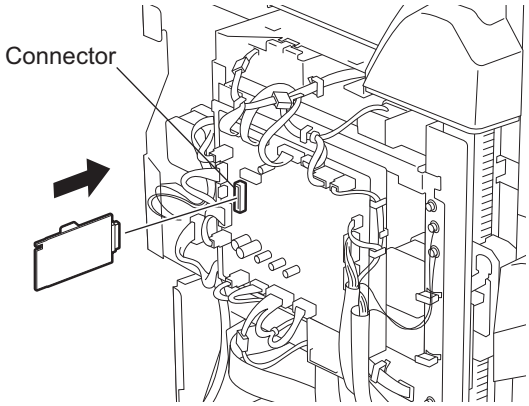


Fig. 20-46

(5) Change the setting of the DIP switch on the finisher control PC board.
Change the setting of the DIP switch as follows according to the firmware to be updated.

Note:
Record the current settings of the DIP switch before changing them. After the updating is completed, return the DIP switch to the status as record.

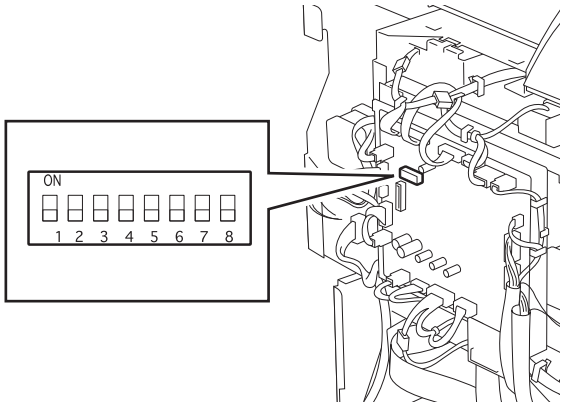


Fig. 20-47

DIP switch	Updating Finisher Firmware	Updating Saddle Stitcher Firmware
1	OFF	OFF
2	OFF	OFF
3	OFF	OFF
4	OFF	OFF
5	OFF	OFF
6	OFF	OFF
7	OFF	ON
8	OFF	ON

(6) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts automatically and the LED on the download jig lights.

Tip:
The processing status can be confirmed by the lighting of the LED (LED 101-103) on the finisher control board.

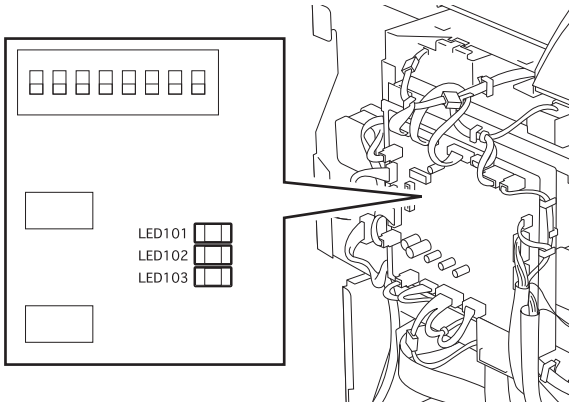


Fig. 20-48

Processing status	LED		
	LED103	LED102	LED101
0% or above	OFF	OFF	ON
15% or above	OFF	ON	OFF
30% or above	OFF	ON	ON
45% or above	ON	OFF	OFF
60% or above	ON	OFF	ON
75% or above	ON	ON	OFF
90% or above	ON	ON	ON

(7) After the update is completed properly, the LED on the download jig blinks slowly (at interval of 0.8 sec.).
The LED starts blinking approx. 30 sec. (finisher section) or 2 min. 30 sec. (saddle stitcher section) since the update starts. It is assumed that the update has failed if it does not start blinking even though 1 min. has passed (finisher section) or 3 min. (saddle stitcher section), or LED flashes fast (at interval of 0.1 sec.). In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the ROM installed to the download jig properly?
- Is the updating data written on the ROM of the download jig properly?
- Do the download jig and the equipment operate properly?
- Is the DIP switch on the finisher control PC board set properly according to the download section (finisher or saddle stitcher)?

(8) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then return the DIP switch to the status before updating.

(9) Install the finisher rear cover.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.7 Finisher firmware (MJ-1031)

Important:

- Be sure to shut down the equipment before installing and removing the download jig.
- Do not shut down the equipment during the update. The data could be damaged and not be operated properly.

[A] Update Procedure

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Take off the hanging finisher (MJ-1031) from the equipment.

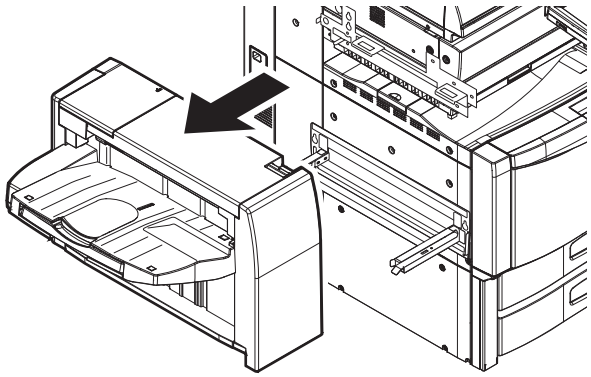


Fig. 20-49

(4) Take off the rear cover.

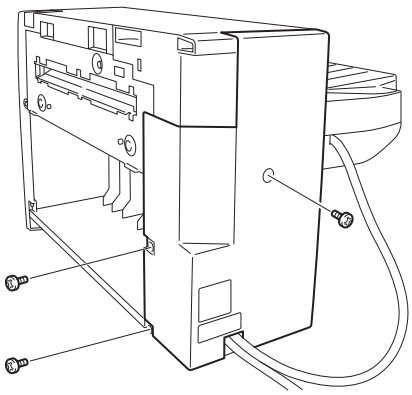


Fig. 20-50

(5) Install the hanging finisher in the equipment.

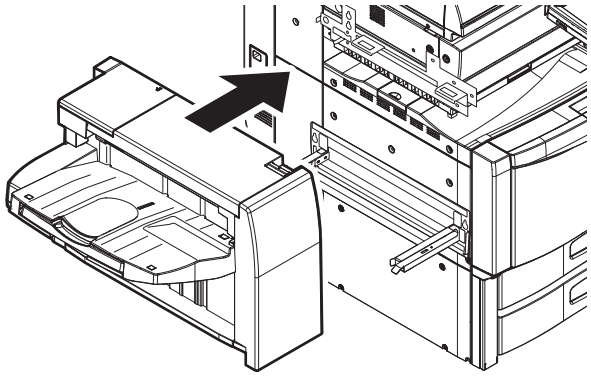


Fig. 20-51

(6) Connect the download jig with the jig connector on the Finisher control board.

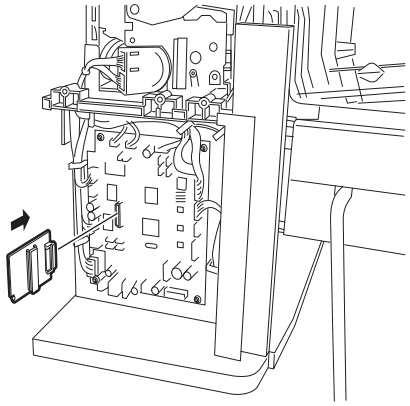


Fig. 20-52

(7) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts and the LED on the download jig lights.

(8) When the update completes normally, the LED on the download jig starts blinking.
The LED on the download jig starts blinking approx. 12 seconds after the update started.
It is assumed that the update has failed if the LED does not start blinking even after 20 seconds have elapsed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the downloading jig connected properly?
- Is the ROM attached to the downloading jig properly?
- Has the update data been written correctly to the ROM on the jig?
- Is the download jig or the equipment damaged?

(9) Turn the power OFF using the main power switch on the right-hand surface of the equipment and remove the download jig.

(10) Take off the hanging finisher from the equipment.

(11) Install the board access cover.

(12) Install the hanging finisher in the equipment.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.20-56 "20.4 Confirmation of the updated data"

20.3.8 Fax unit firmware (GD-1250)

Important:

- Before updating the FAX ROM, make sure to print out the current Function list for maintenance, Function list (ADMIN), Address book list and Group number information. In case the updating is failed and the registered information of the users is lost for some reason, re-register the user information referring to the lists and recover it.
- Confirm the following items before turning OFF the power of the equipment. Turning OFF the power may clear the data below.
  - Confirm that the “MEMORY RX” LED is OFF and there are no memory reception data.
  - Print the “Mailbox/Relay box report” and then confirm that there are no F code data.
  - Press the [JOB STATUS] button to display the screen and then confirm that there are no memory transmission data.

[A] Firmware update

(1) Install the ROM to the download jig (K-PWA-DLM-320).
Make sure the direction is correct.

(2) Press the [ON/OFF] button on the control panel to shut down the equipment.

(3) Remove the cover plate.

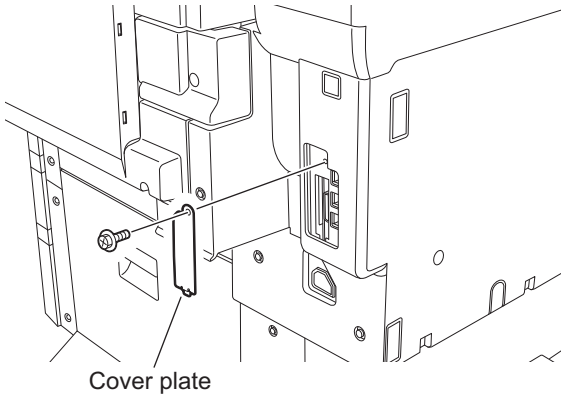


Fig. 20-53

(4) Connect the download jig with the jig connector on the FAX board.

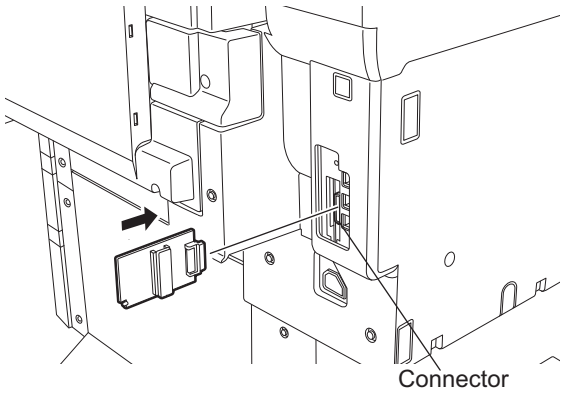


Fig. 20-54

(5) Press the [ON/OFF] button while simultaneously holding down the [0] and [8] buttons.
Updating starts automatically and the LED on the download jig lights.

(6) After the update is completed properly, the LED on the download jig blinks.
The LED starts blinking approx. 30 sec. after the update starts. It is assumed that the update has failed if it does not start blinking even though 1 min. has passed. In this case, shut down the equipment and check the following items. Then clear the problems and restart updating from the beginning.
- Is the download jig connected properly?
- Is the ROM installed to the download jig properly?
- Is the updating data written on the ROM of the download jig properly?
- Do the download jig and the equipment operate properly?

(7) Turn the power OFF using the main power switch on the right-hand surface of the equipment, remove the download jig, and then install the cover plate.

(8) In the FAX Clearing Mode, perform the “FAX Set Up”.
- Confirm the destination setting is correct in the Setting Mode (08).
  08-201: Destination setting of the equipment
  08-701: Destination setting of the FAX machine
- Turn ON the power while [1] button and [*] button are pressed simultaneously.
- Key in “100”.
- Press the [START] button.

Notes:
If the equipment does not work properly after the operation (8), follow the procedure below and then perform the “Clearing the image data” in the FAX Clearing Mode to erase the image data in the memory.
- Confirm the destination setting is correct in the Setting Mode (08).
  08-201: Destination setting of the equipment
  08-701: Destination setting of the FAX machine
- Turn ON the power while [1] button and [*] button are pressed simultaneously.
- Key in “102”.
- Press the [START] button.

[B] Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.
📖 P.20-56 "20.4 Confirmation of the updated data"

20.4 Confirmation of the updated data

After the updating is completed, check each data version in Setting Mode (08) to confirm that the data were overwritten properly.

Firmware	Code	Remarks
Updating HDD/UI data	08-944	HDD Version
	08-924	Version of UI data language 1 in HDD
Updating System ROM	08-900	System firmware ROM version
	08-921	System firmware ROM internal program version
Updating OS	08-920	FROM basic section software version
Updating Engine ROM	08-903	Engine ROM version
Updating Scanner ROM	08-905	Scanner ROM version
Updating RADF ROM	08-907	RADF ROM version
Updating Finisher ROM	08-908	Finisher ROM version
	08-911	Hole punch unit ROM version (MJ-6101 only)
	08-9945	Converter board ROM version
Updating FAX ROM	08-915	FAX ROM version
Imaging Acceleration Board ROM	08-9965	Imaging Acceleration Board SROM version

20.5 When Firmware Updating Fails

When the equipment was shut down during firmware updating or it could not be started after updating for some reason, perform firmware updating again following the procedure below.

20.5.1 Procedure

(1) Update “System ROM“ of the system control PC board (SYS board) using the download jig (PWA-DWNLD-350-JIG2).
Updating with the USB media becomes possible only after the “System ROM” (OS data) has been updated.
See the updating procedure below for details.
📖 P.20-27 "20.2.2 System ROM"

(2) Update “Master Data”, “Engine ROM” and “Scanner ROM” using the USB media.
See the updating procedure below for details.
📖 P.20-5 "20.1 Firmware Updating with USB Media"

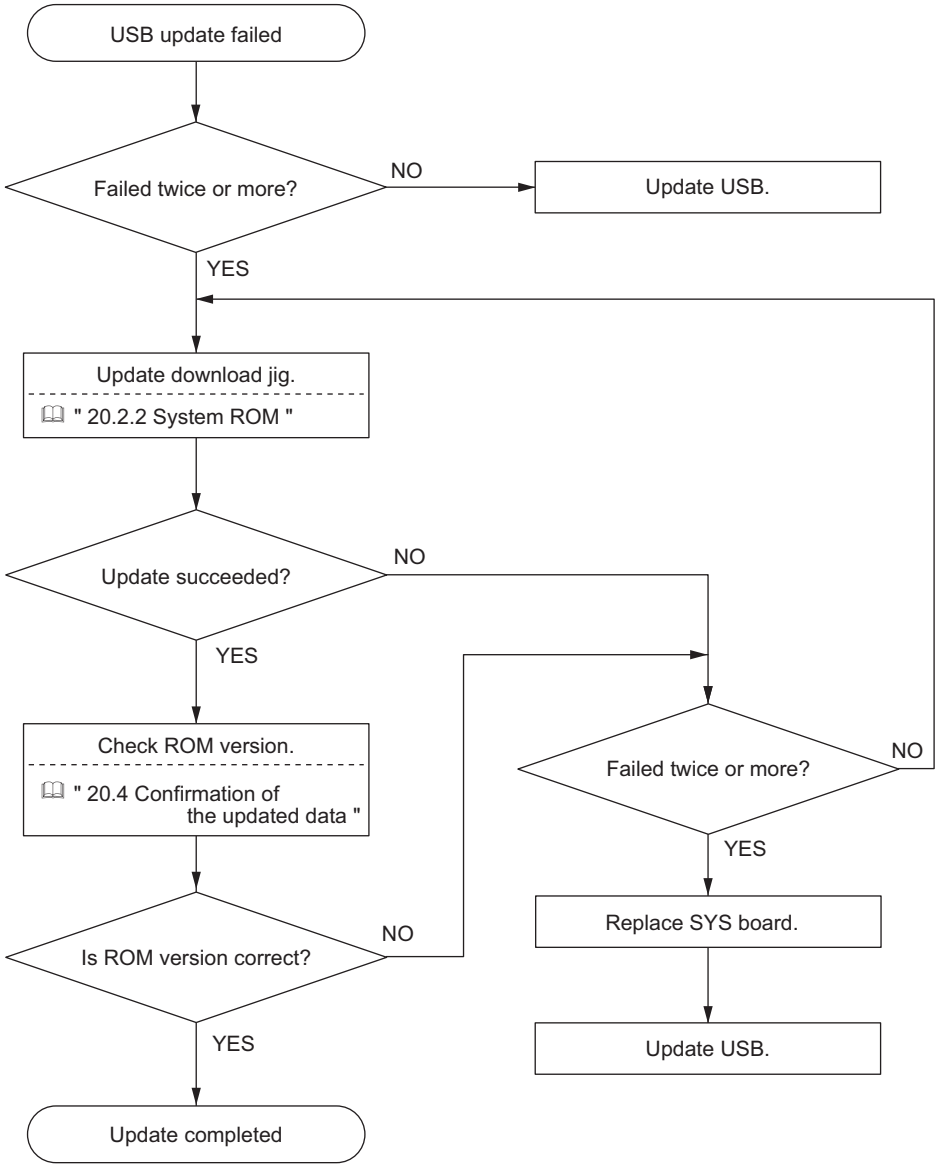
(3) When the update with the USB media for “Engine ROM” and “Scanner ROM” failed, update these ROMs using the respective download jigs in the table below.

Firmware	Storage location	Download jig
Engine ROM	Logic PC board (LGC board)	PWA-DWNLD-350-JIG2 📖 P.20-29 "20.2.3 Engine ROM"
Scanner ROM	Scanning section control PC board (SLG board)	K-PWA-DLM-320 📖 P.20-33 "20.3.1 Scanner ROM"

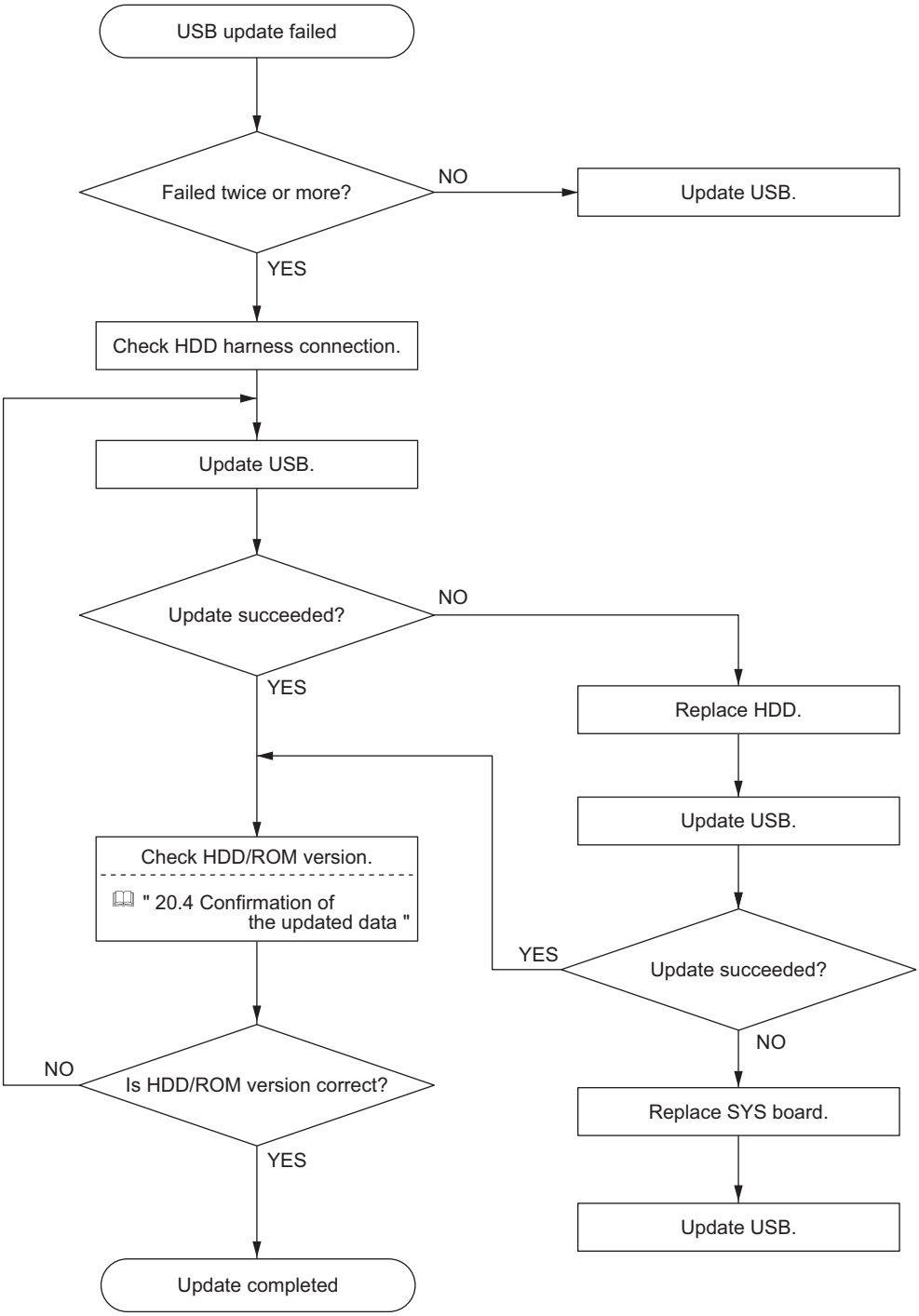
Important:
If the equipment cannot be started even when the above update has been performed, check that there is no damage to the “SYS board”, “LGC board” or “SLG board”. Replace them if necessary.

20.5.2 Flow chart for correcting USB update failure

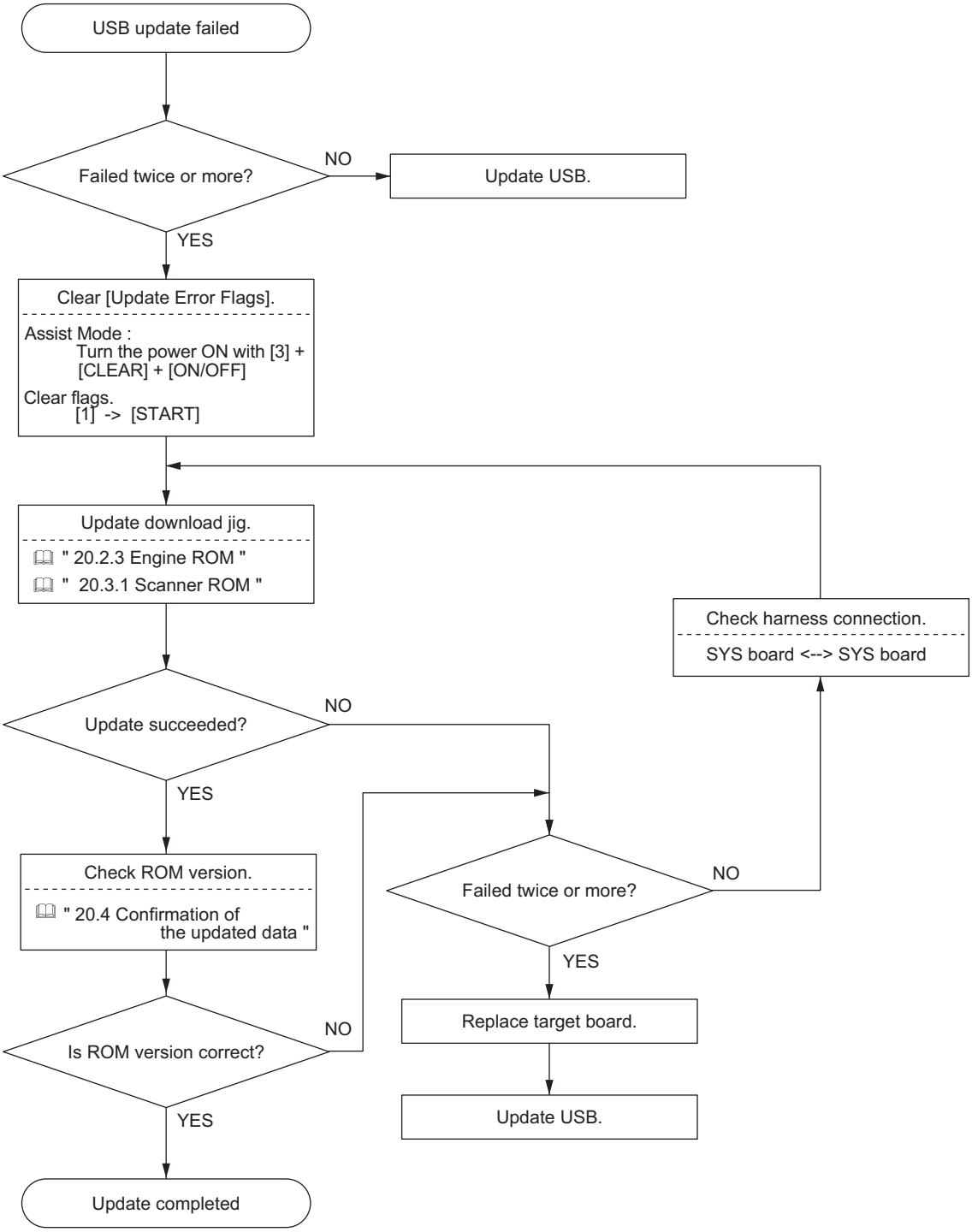
[A] When the update of the System ROM (OS data) failed



[B] When the update of HDD program data / system firmware / UI data (master data) failed



[C] When the update of Engine ROM / Scanner ROM failed



21. REPLACEMENT OF PC BOARDS/HDD

21.1 Removal and Installation of PC Boards/HDD

Note:

When the PC board/HDD is replaced, refer to the respective Notes and Cautions of “Replacement of PC boards and HDD” in 📖 P.21-15 "21.2 Precautions, Procedures and Settings for Replacing PC Boards and HDD".

21.1.1 Hard disk (HDD)

(1) Take off the rear cover-1.
📖 P.3-33 "3.5.18 Rear cover-1"
(2) Remove 4 screws.
(3) Disconnect 2 connectors and take off the HDD case.

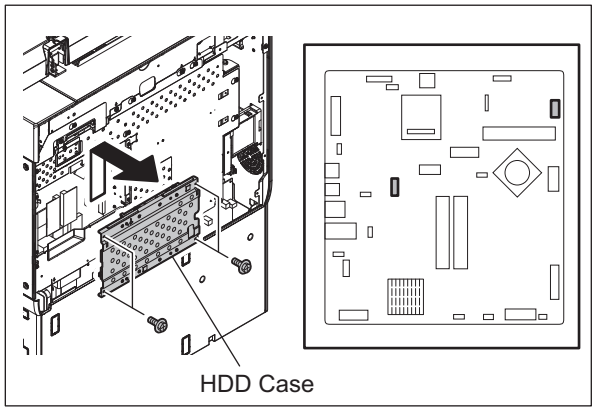


Fig. 21-1

(4) Remove 6 screws, release 1 clamp and take off the bracket.

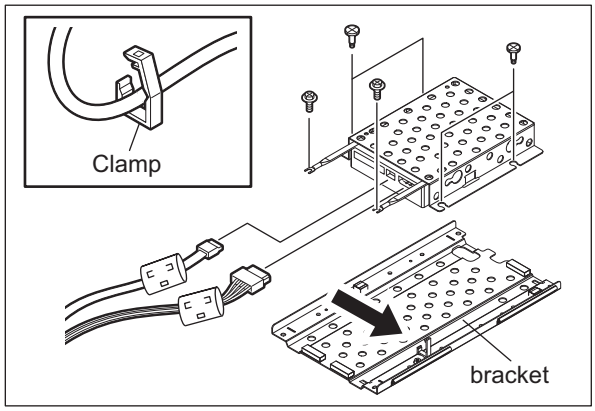


Fig. 21-2

(5) Remove 4 screws and take off the hard disk.
(6) Remove 1 screw each and the 2 ground wires.

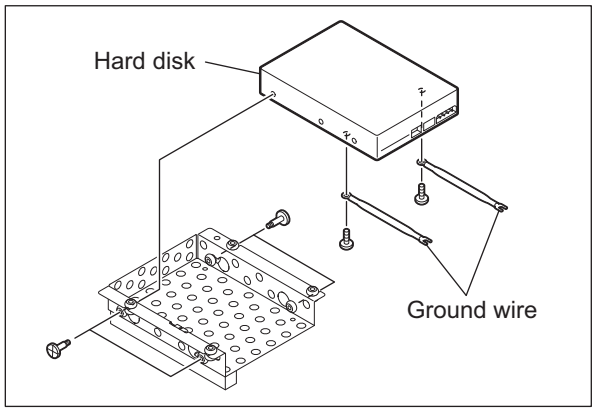


Fig. 21-3

21.1.2 Board cover

(1) Take off the rear cover-2.
📖 P.3-33 "3.5.19 Rear cover-2"
(2) Remove 1 screw and loosen 11 screws.

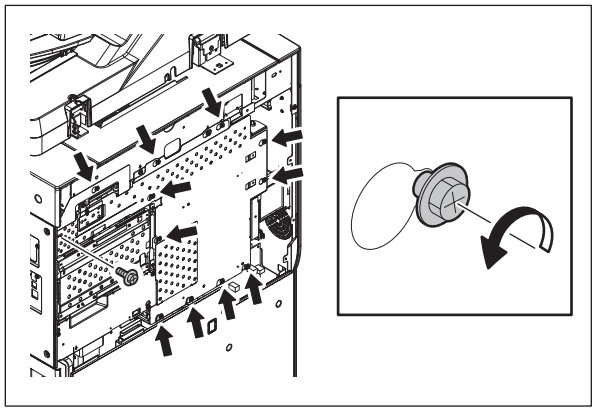


Fig. 21-4

(3) Slide the board cover to take it off.

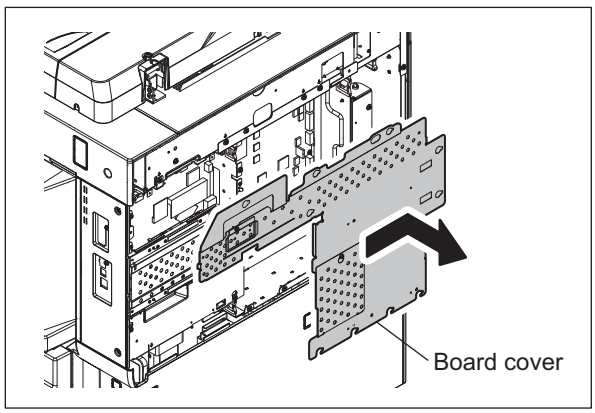


Fig. 21-5

21.1.3 FAX cover

(1) Take off the rear cover-1.
P.3-33 "3.5.18 Rear cover-1"
(2) Release 1 clamp and disconnect 1 connector.
(3) Remove 1 screw and loosen 3 screws.
(4) Slide the FAX cover to take it off.

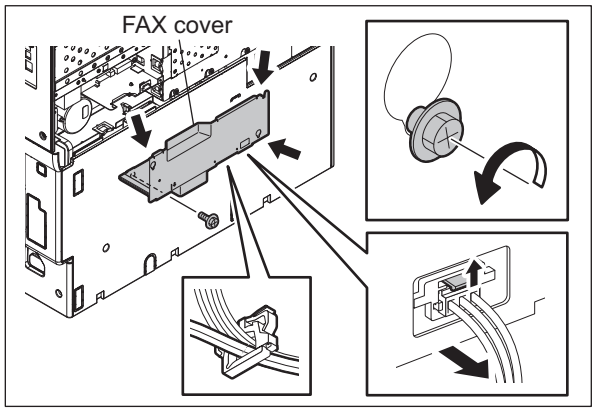


Fig. 21-6

21.1.4 SYS/HDD cooling fan

(1) Take off the FAX cover.
P.21-3 "21.1.3 FAX cover"
(2) Remove 2 screws and take off the SYS/HDD cooling fan.

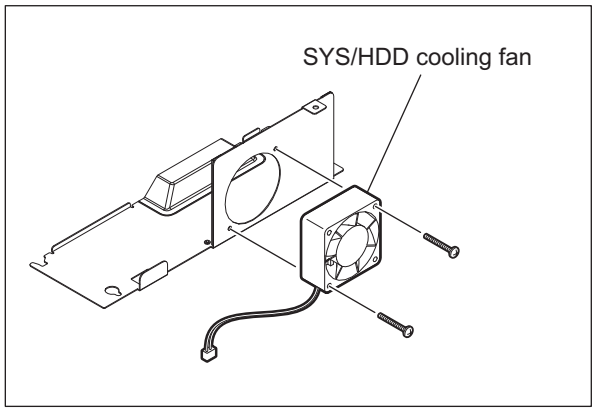


Fig. 21-7

21.1.5 SYS board

(1) Take off the board cover.
P.21-2 "21.1.2 Board cover"
(2) Take off the FAX cover.
P.21-3 "21.1.3 FAX cover"
(3) Take off the hard disk.
P.21-1 "21.1.1 Hard disk (HDD)"
(4) Remove 2 screws and take off 2 earth plates.

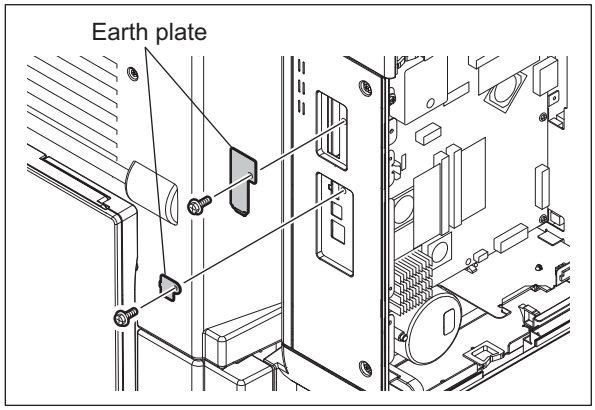


Fig. 21-8

(5) Disconnect 3 connectors and the USB terminal.

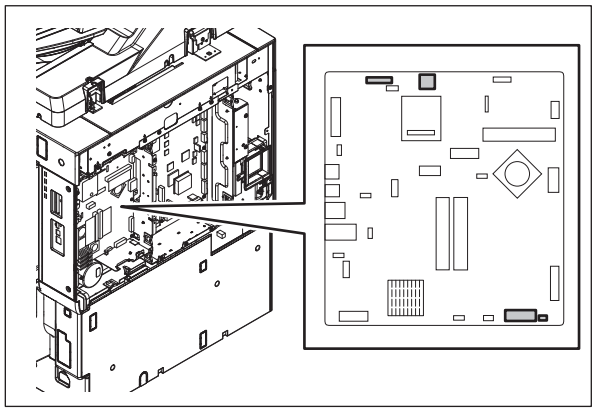


Fig. 21-9

(6) Remove 7 screws, release 2 locking supports and take off the SYS board.

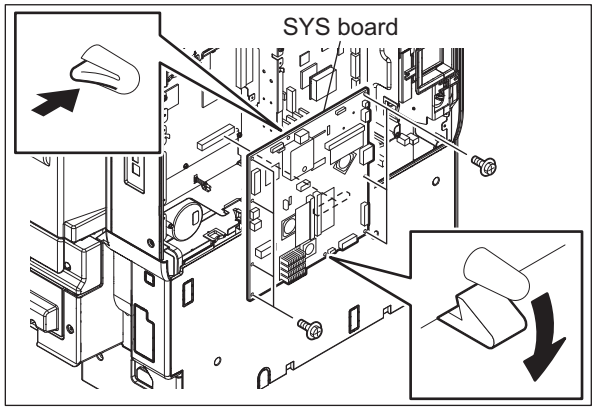


Fig. 21-10

21.1.6 IMG board

(1) Take off the SYS board.
📖 P.21-3 "21.1.5 SYS board"
(2) Disconnect 2 connectors.
(3) Remove 6 screws and slide the IMG board to take it off.

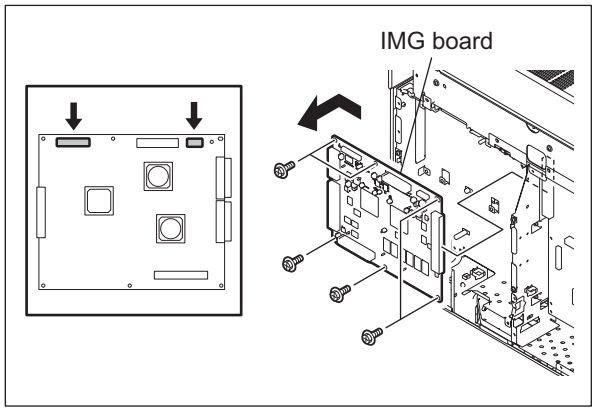


Fig. 21-11

21.1.7 LGC board

(1) Take off the board cover.
P.21-2 "21.1.2 Board cover"
(2) Disconnect 19 connectors.
(3) Remove 8 screws and slide the LGC board to take it off.

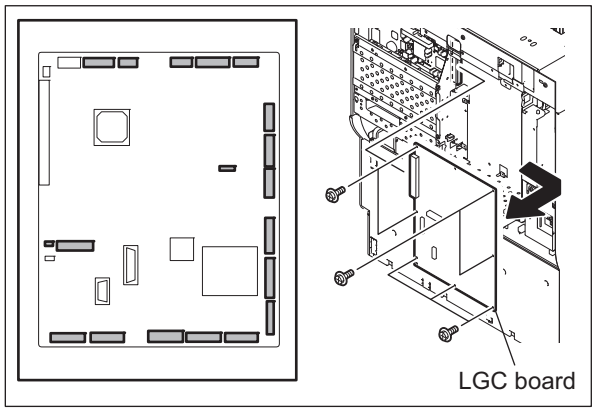


Fig. 21-12

21.1.8 Switching regulator

(1) Take off the rear cover-3.
P.3-33 "3.5.20 Rear cover-3"
(2) Remove 1 screw and take off the connector cover.
(3) Disconnect 3 connectors.

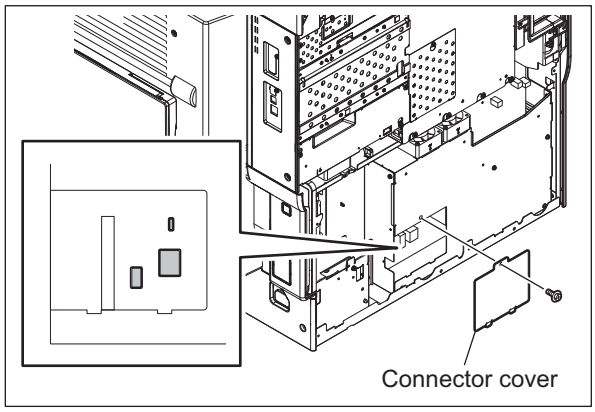


Fig. 21-13

(4) Disconnect 7 connectors.
(5) Remove 2 screws.
(6) Slightly lift up the switching regulator and release the hook.

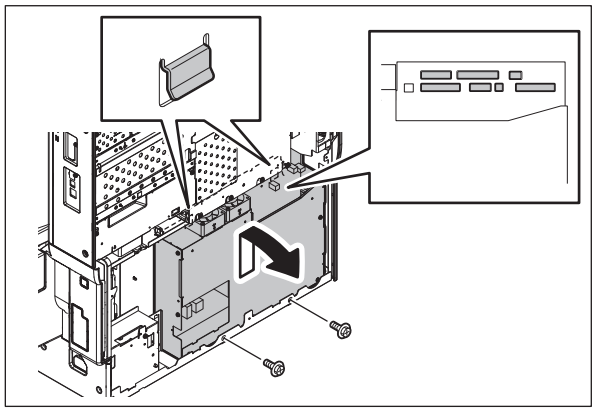


Fig. 21-14

(7) Tilt the switching regulator to the front side and take it off.

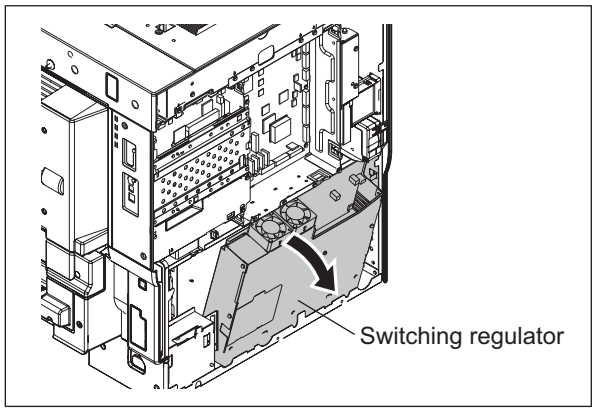


Fig. 21-15

21.1.9 High-voltage transformer (HVT)

(1) Take off the switching regulator.
P.21-5 "21.1.8 Switching regulator"
(2) Disconnect 22 connectors.

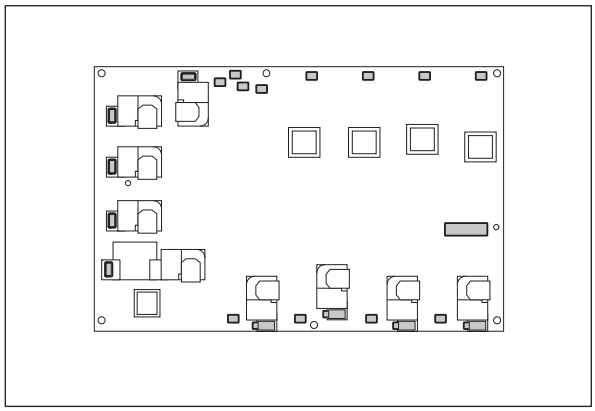


Fig. 21-16

(3) Remove 7 screws.
(4) Release 2 locking supports and take off the high-voltage transformer.

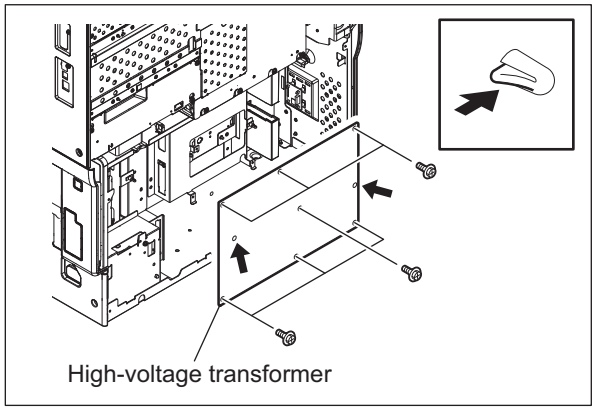


Fig. 21-17

21.1.10 FIL board

(1) Take off the right lower cover.
📖 P.3-31 "3.5.13 Right lower cover"
(2) Take off the rear cover-3.
📖 P.3-33 "3.5.20 Rear cover-3"

Note:
Release the optional connector (KD-1023/1024) from the filter bracket if it is connected.

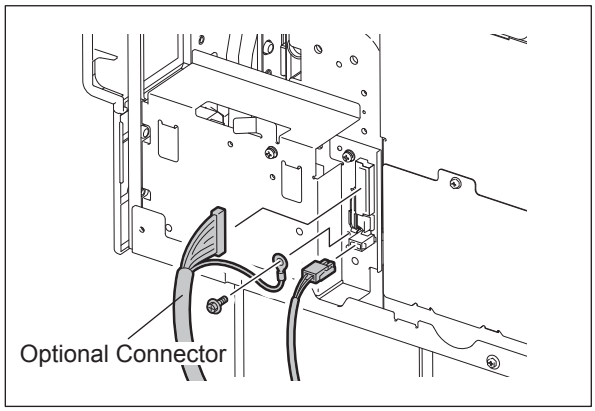


Fig. 21-18

(3) Disconnect 2 relay connector of the filter bracket.

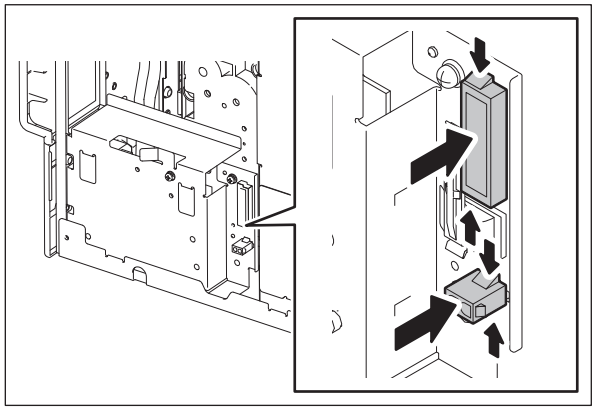


Fig. 21-19

(4) Release 2 clamps.

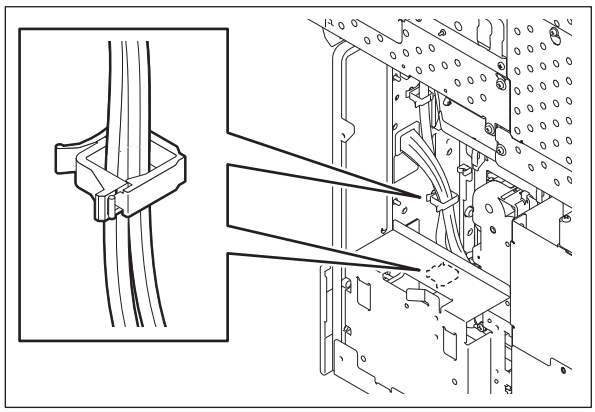


Fig. 21-20

(5) Remove 3 screws and pull out the filter bracket.

Note:
Do not pull it out too strongly because the harness is connected to it.

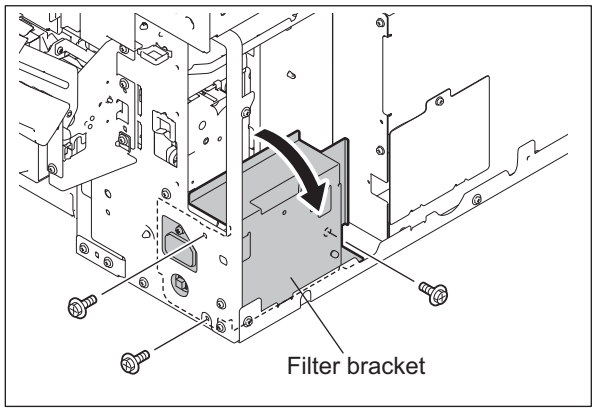


Fig. 21-21

(6) Disconnect 5 connectors from the FIL board and take off the filter bracket.

Note:
The connector connected to CN497 on the FIL board can be disconnected on the relay connector side.

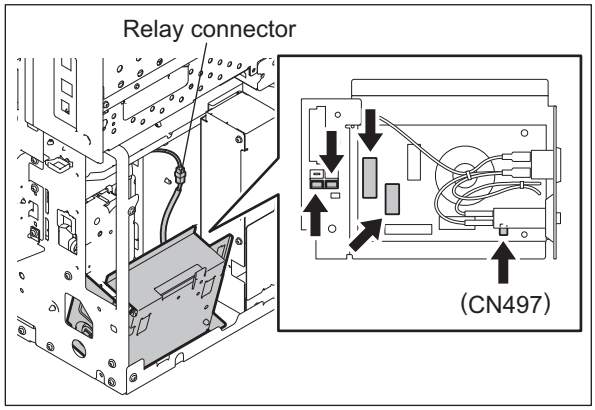


Fig. 21-22

(7) Remove 1 binding band.
(8) Remove 2 Faston terminals.

Note:
Be sure to use the correct harness (black or white) when assembling.

(9) Remove 2 screws, release 2 locking supports and take off the FIL board.

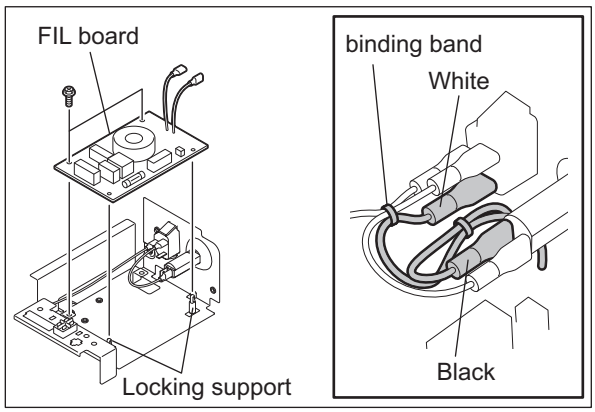


Fig. 21-23

21.1.11 Board case

(1) Take off the board cover.
P.21-2 "21.1.2 Board cover"
(2) Remove 5 screws.

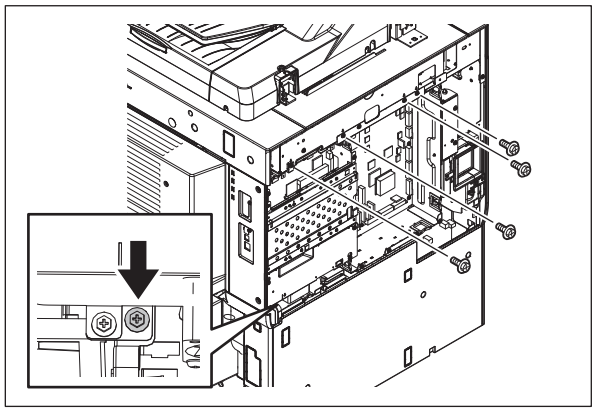


Fig. 21-24

(3) Disconnect the USB terminal and 1 connector from the SYS board.
(4) Disconnect the 1 connector from the IMG board.

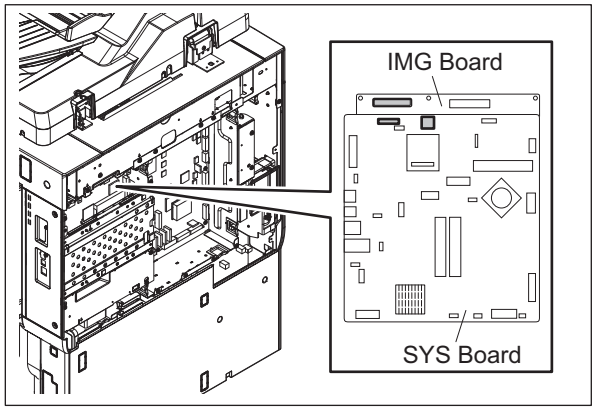


Fig. 21-25

(5) Disconnect 2 connectors from the LGC board.

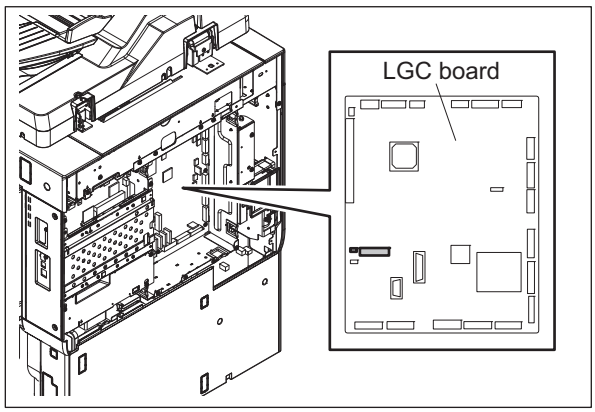


Fig. 21-26

(6) Release harnesses from 4 clamps.

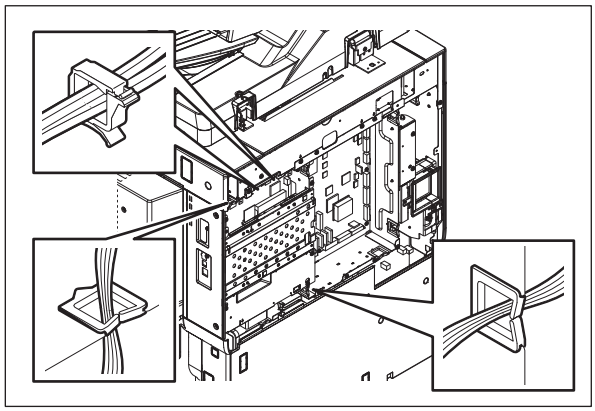


Fig. 21-27

(7) Open the board case.

Note:

Open the board case gently during maintenance work or similar.

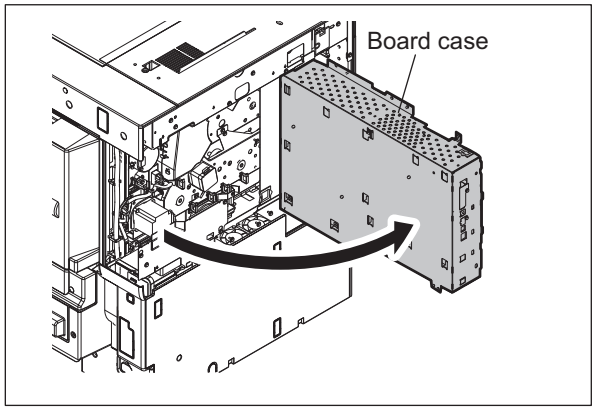


Fig. 21-28

21.1.12 SRAM board <for LGC board>

(1) Take off the board cover.
📖 P.21-2 "21.1.2 Board cover"
(2) Release 2 latches and take off the SRAM board for the LGC board with the case.

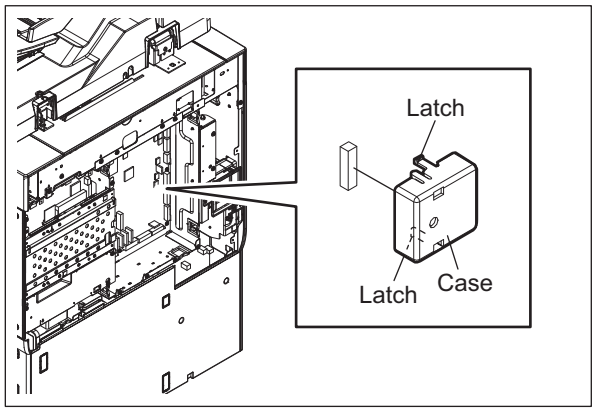


Fig. 21-29

(3) Release 2 latches and take off the SRAM board for LGC board from the case.

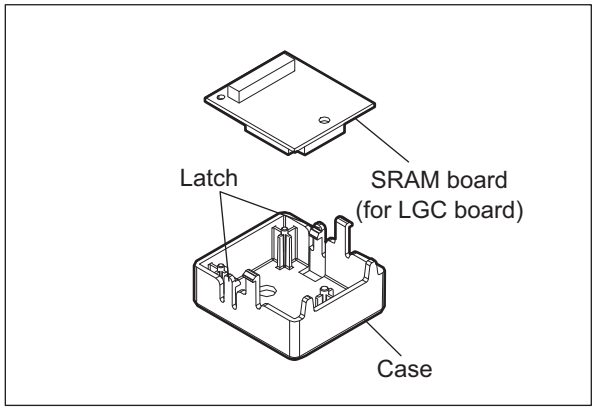


Fig. 21-30

Note:
The shape of the SRAM board for the LGC board differs from the one for the SYS board. Be sure to assemble the correct SRAM board.

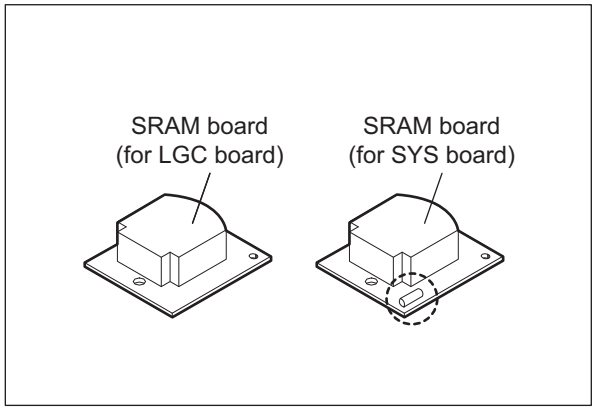


Fig. 21-31

21.1.13 SRAM board <for SYS board>

(1) Take off the board cover.
P.21-2 "21.1.2 Board cover"
(2) Disconnect 2 connectors and take off the HDD.

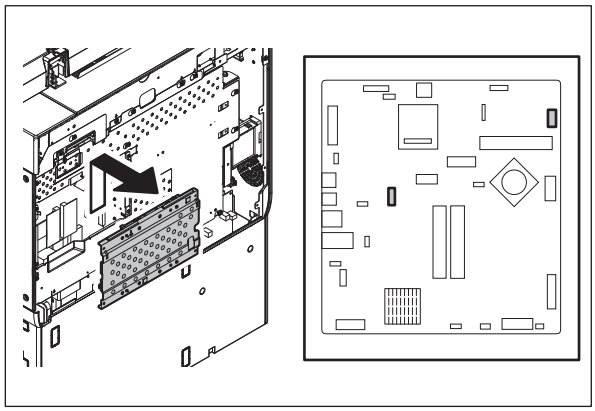


Fig. 21-32

(3) Release 2 latches and take off the SRAM board for the SYS board with the case.

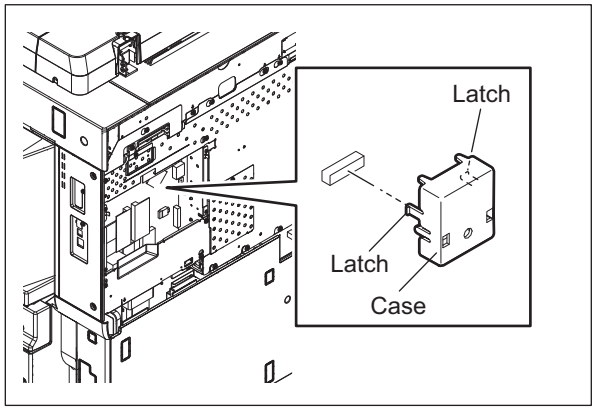


Fig. 21-33

(4) Release 2 latches and take off the SRAM board for SYS board from the case.

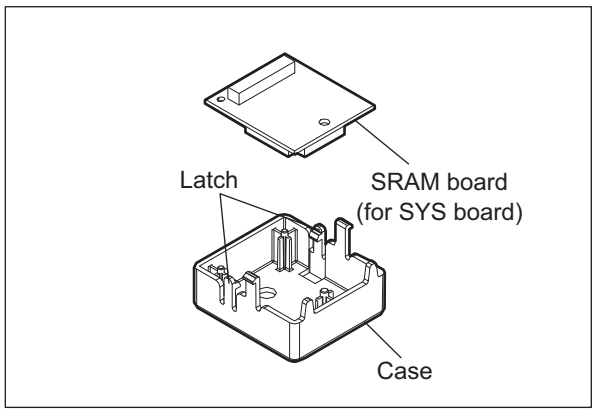


Fig. 21-34

Note:

The shape of the SRAM board for the SYS board differs from the one for the LGC board. Be sure to assemble the correct SRAM board.

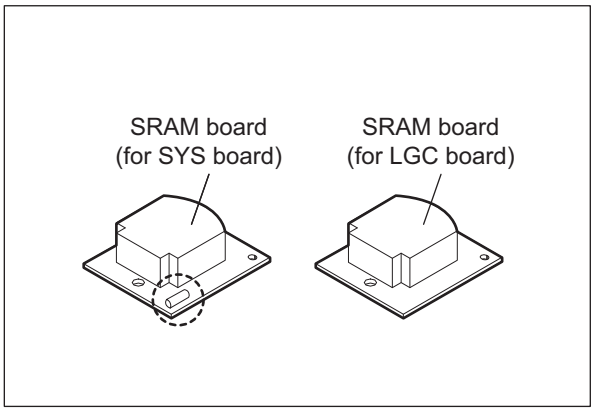


Fig. 21-35

21.2 Precautions, Procedures and Settings for Replacing PC Boards and HDD

21.2.1 Precautions when replacing PC boards

- The ID for each equipment is registered on the LGC board, the IMG board, the SYS board and the SLG board. So, if their replacement is required, be sure to replace only one board at a time.

- If more than one of the LGC board, the IMG board and the SYS board require replacement, replace them in the following procedure.
  1. First, replace one of the board to be replaced.
  2. Turn the power ON and confirm that “READY” is displayed.
  3. Turn the power OFF.
  4. Replace another board that requires replacement.
  5. Repeat steps 2 to 4.

- The LGC board and IMG board can be replaced without other settings.

- When the HDD requires replacement, see “21.2.3Precautions and procedures when replacing the HDD“.

- When the SYS board requires replacement, see “21.2.4Precautions and Procedures when replacing the SYS board“.

- When the SLG board requires replacement, see “21.2.5Procedures and settings when replacing the SLG board“.

- When SRAM requires replacement, see “21.2.6Precautions and procedure when replacing the SRAM board (for the SYS board)” / “21.2.7Procedures and settings when replacing SRAM board (for LGC board)“.

21.2.2 HDD fault diagnosis

This code displays the HDD operation history, which is recorded in the HDD, on the control panel. HDD failure can be diagnosed or predicted with the information displayed.

1. Display
   The following screen is displayed with setting code 08-670.

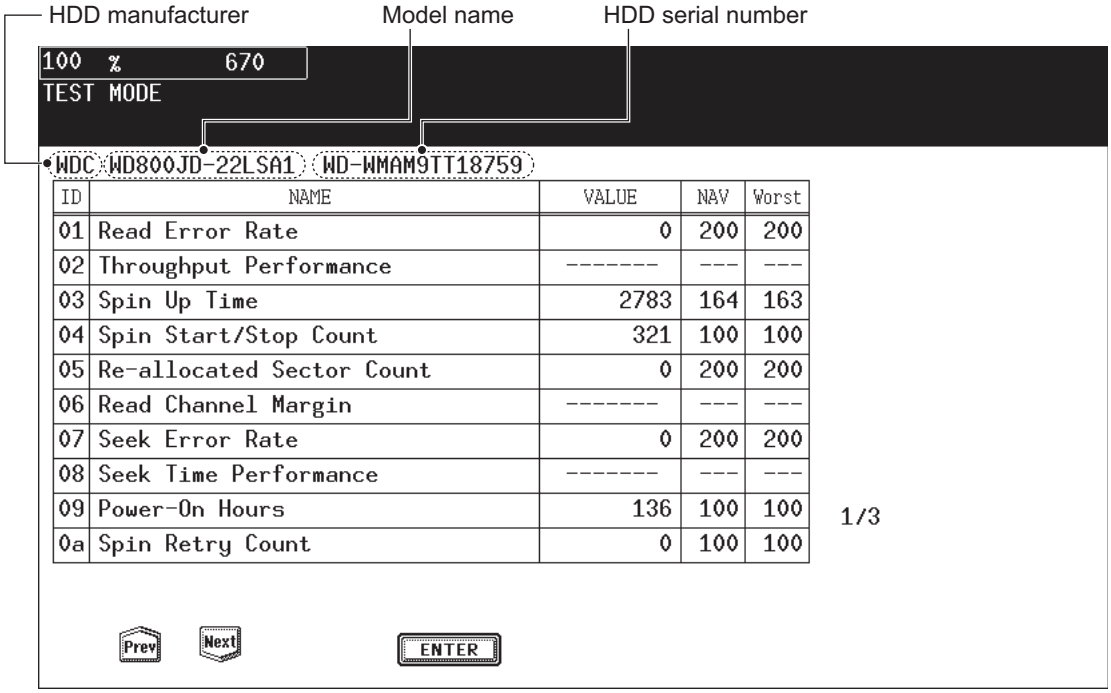


Fig. 21-36

- Items supported differ depending on the HDD manufacturer.
- "---" is displayed on the VALUE, NAV and Worst columns if items are not supported.

2. Usage
   The combination of the values of ID=05 and c5 is used to diagnose whether or not the HDD has a physical failure when HDD failure is suspected (service call F100-108 or 120 occurred).

Result		Description	Diagnosis
ID	VALUE		
05	0	Low possibility of physical failure	HDD replacement is not required.
c5	0		
05	From 1 to 999	Defective sector has been reassigned and HDD is recovered.	HDD replacement is not required.
c5	0		
05	Any value	High possibility of defective sector existence. (There will be a possibility of physical failure depending on the use of HDD.)	HDD replacement is recommended.
c5	1 or more		
05	Either one is at least 1000.	High possibility of physical failure	HDD replacement is recommended.
c5			
05	All values are displayed as "-------".	High possibility of physical failure (A HDD connector, harness or SYS board may be one of the causes.)	HDD replacement is recommended.
c5			

3. ID=05 and c5

ID	Name	Description	Remarks
05	Re-allocated Sector Count	The number of sectors reassigned	This value tends to increase at HDD failure.
c5	Current Pending Sector Count	The number of candidate sectors to be reassigned	This value tends to increase at HDD failure.

4. Description of each ID

ID	Name	Meaning
01	Read Error Rate	This attribute is a measure of the read error rate.
02	Throughput Performance	This attribute is a measure of the throughput performance.
03	Spin Up Time	This attribute is a measure of how quickly the drive is able to spin up from a spun down condition.
04	Spin Start/Stop Count	This attribute is a measure of the total number of spin ups from a spun down condition.
05	Re-allocated Sector Count	This attribute is a measure of the total number of reallocated sectors.
07	Seek Error Rate	This is a measure of the seek error rate.
08	Seek Time Performance	This attribute is a measure of a drive's seek performance during normal online operations.
09	Power-On Hours	This attribute is a measure of the total time (hours or minutes depending on disk manufacturer) the drive has been on.
0a	Spin Retry Count	This attribute is a measure of the total number of spin retries.
0c	Power Cycle Count	This attribute is a measure of the number of times the drive has been turned on.
c0	Power off Retract Count	This attribute is a measure of the total number of emergency unloads.
c1	Load Cycle Count	This attribute is a measure of the total number of load/ unloads.
c2	Temperature	This attribute is a measure of the temperature in the HDD.
c3	ECC On the Fly Count	This attribute is a measure of the total number of the ECC On the Fly.
c4	Reallocation Event Count	This attribute is a measure of the total number of the reallocation events.
c5	Current Pending Sector Count	This attribute is a measure of the total number of candidate sectors to be reallocated.
c6	Off-Line Scan Uncorrectable Sector Count	This attribute is a measure of the total number of uncorrectable sectors found during the off-line scan.
c7	Ultra DMA CRC Error Count (Rate)	This attribute is a measure of the total number of errors found in data transfer in the Ultra-DMA mode.
c8	Write Error Rate	This attribute is a measure of the write error rate.

Note:
"Over-range" appears when the digits of the numbers obtained from HDD exceed the acceptable limit for being displayed on the touch panel. This is not shown as a failure.

21.2.3 Precautions and procedures when replacing the HDD

Notes:

- When the HDD is replaced, it is necessary to back up the data in the HDD before replacing and to recover them after replacing.
- To maintain the security, ask users to perform the backup/restore for users' data/information in the HDD. The service technician can perform them only when users permit it.
- Some data in the HDD cannot be backed up and can be kept only on the paper.
- When 08-690 is performed, the HDD self-certificate is not available, so the SSL-related setting becomes disabled.
- Do not replace the HDD and the SRAM board (for the SYS board) together.

A procedure for replacing the HDD is shown below.

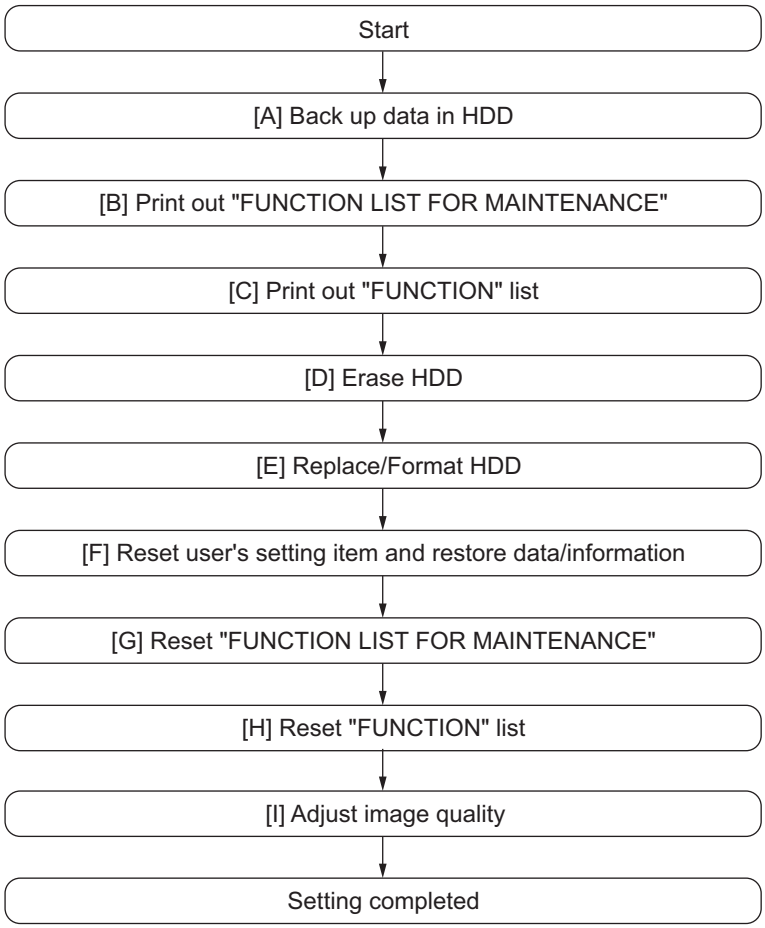


Fig. 21-37

[A] Back up in HDD

Ask the user (machine administrator) to back up the data in the HDD. Refer to the table below for the type of data, availability and method of backup.

Type of data in HDD	Availability	Backup method
Image data in the e-Filing	Available	Archive them in the “e-Filing” of TopAccess. As for the backup in Box data, all data (selectable by the box) can be backed up / restored in one go by using “e-Filing Backup/ Restore Utility”.
F-code information, Template registration information, Address book data	Available	Back them up in the “Administrator” menu of TopAccess.
Department management data	Available	Export them in “Administrator” menu of TopAccess.
Log data (Print, Scan, FAX (Transmission/Reception)	Available	Export them in the “Administrator” menu of TopAccess. (Import cannot be performed.)
Data in the shared folder (Scanned data, Saved data of copy / FAX transmission)	Available	Copy them to the client computer via the network. (The data which have been copied to the client computer cannot be copied to the shared folder.)
Print waiting data (Copying data and FAX reception data that are waiting to be printed due to the paper run-out and jam, etc.)	Not available	Finish printing them after supplying paper or releasing the jam, etc. (The data cannot be left.)
Print job (Private print data, Schedule print data)	Not available	If any jobs are left, print them. (The data cannot be backed up.)
FAX saved data (Confidential / Bulletin board data)	Not available	Print them. (The data cannot be backed up.)
Registration data for FAX transmission (Delayed transmission / Recovery transmission)	Not available	Print them. (The data cannot be backed up.)

[B] Print out “FUNCTION LIST FOR MAINTENANCE”

(1) Press the [USER FUNCTIONS] button and then the [USER] button.

(2) Press the [LIST] button.

(3) Key in [*] [#] [*] [*] [3] [3] and then press the [START] button. The “FUNCTION LIST FOR MAINTENANCE” is printed out.

[C] Print out “FUNCTION” list

(1) Press the [USER FUNCTIONS] button.

(2) Press the [ADMIN] button, enter the password, and then press the [ENTER] button.

Note:
Explain the procedure to the user (machine administrator) and ask him/her to enter his/her password.

(3) Press the [LIST/REPORT] button and then the [LIST] button.

(4) Press the [FUNCTION] button. The “FUNCTION LIST FOR MAINTENANCE” is printed out.

[D] Erase HDD

When the Data Overwrite Enabler (GP-1070) is reinstalled, be sure to perform 08-1426 (forcible HDD data clearing) and confirm that deleting of the HDD data is completed.
📖 P.21-33 "21.3.1 Precautions for Installation of GP-1070 and Disposal of HDD/Board"

[E] Replace / Format HDD

(1) Confirm that the power is turned OFF.

(2) Replace the HDD.
(Refer to 📖 P.21-1 "21.1.1 Hard disk (HDD)".)

(3) Clear the partitions on the HDD.
1. Turn the power ON while pressing [3] and [CLEAR] button simultaneously.
2. When “Firmware Version Up Mode” appears on the LCD, key in [3] to select “3: All Partition Delete and Create Loader Partition.” and then press the [START] button.
3. When “Initialize completed.” is displayed on the LCD, clearing of the partitions is completed.

(4) Turn the power OFF.

(5) Update the master data using the USB media.
See “20.1Firmware Updating with USB Media” for details.

(6) Start up with the Setting Mode (08).

(7) Format the HDD (08-690).
When “REBOOT THE MACHINE” is displayed on the LCD, formatting of the HDD is completed.

(8) Turn the power OFF.

(9) When the Fax Unit (GD-1250) is installed, perform “Fax Set Up” (1*-100) and “Clearing the image data” (1*-102).Then turn the power OFF.

(10) Start up with the Setting mode (08).

(11) Check the version of the HDD (08-944).
Confirm the version displayed on the LCD, and then press the [ENTER] button.

(12) Turn the power OFF.

[F] Reset user's setting items and restore data/information

Ask the user (machine administrator) to reset the user's setting items and to restore data or information. Refer to the following for the reset and restore:

Items to reset/restore	Method
Printer driver	Upload them in the "Administrator" menu of TopAccess.
F-code information, Template registering information, Address book data	Restore them in the "Administrator" menu of TopAccess
Department management data	Import them in the "Administrator" menu of TopAccess.
Image data in the Electronic Filing	Upload them in the "e-Filing" of TopAccess.

* When the SSL is enabled, perform the setting of the following items again with "Create self-certificate" of TopAccess.

Country Name
State or Province Name
Locality Name
Organization Name
Organizational Unit Name
Common Name
Email Address

* When wireless LAN is used, perform the setting again on the LCD panel. (only when security with a certificate is used) Also, upload the following certificate file with "Install Certificate for Wireless LAN" of TopAccess.

CA certificate
User certificate

[G] Reset "FUNCTION LIST FOR MAINTENANCE"

(1) Print out the "FUNCTION LIST FOR MAINTENANCE" list after the formatting. For how to print it out, refer to [B]Print out "FUNCTION LIST FOR MAINTENANCE".

(2) While pressing [1] and [3] simultaneously, turn the power ON. (Function Mode)

(3) Compare the lists which were printed before and after the formatting to check the setting items having the different setting values. Set the value which was set before the formatting.

(4) Turn the power OFF.

[H] Reset "FUNCTION" list

Reset the fax function by referring to the "function list" that was printed out in 📖 P.21-20 "[C] Print out "FUNCTION" list".

(1) Press the [USER FUNCTIONS] button.

(2) Press the [ADMIN] button, enter the password, and then press the [ENTER] button.

Note:
Explain the user (machine administrator) about the next operation and ask him/her to enter his/her password.

(3) Press the [FAX] button and then the [TERMINAL ID] button to set each item.

(4) Press the [INITIAL SETUP] button to set each item.

[l] Adjust image quality

(1) Start up with the Adjustment mode (05).

(2) Perform “Automatic gamma adjustment” <PPC> (05-580).
📖 P.8-36 "8.6.1 Automatic gamma adjustment"

(3) Turn the power OFF.

21.2.4 Precautions and Procedures when replacing the SYS board

A procedure for SYS board replacement is shown below.

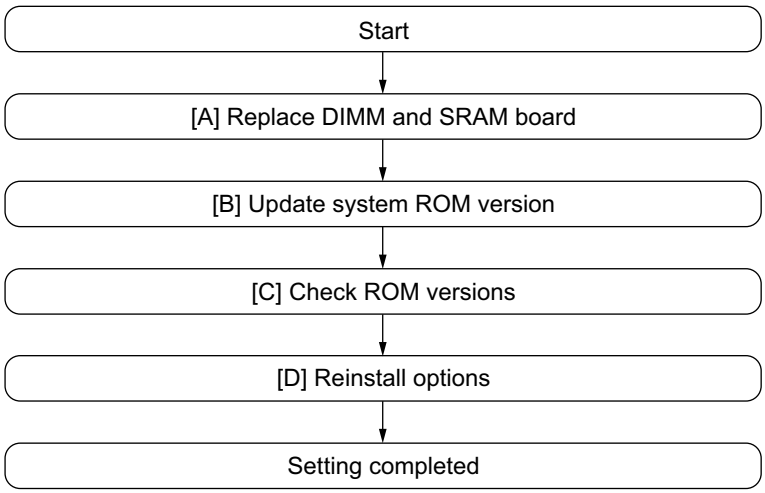


Fig. 21-38

[A] Replace DIMM and SRAM boards

Note:
Before replacing the SYS board, perform the following procedure.
📖 P.21-15 "21.2.1 Precautions when replacing PC boards"

(1) Confirm that the power is turned OFF.

(2) Replace the SYS board.

(3) Install DIMM (main memory, page memory) to the new SYS board (from the old SYS board).

(4) Install SRAM board to the new SYS board (from the old SYS board).

[B] Update system ROM version

Update the version of system ROMs (OS data, UI data, System Firmware) with the USB media.
* See “20.1Firmware Updating with USB Media” for details.

[C] Check ROM versions

- System firmware ROM version (08-900)
- FROM basic section software version (08-920)
- System firmware internal program version (08-921)
- Version of UI data in FROM displayed at power ON (08-930)

[D] Reinstall options

When any of the options below was installed, reinstall a license for the corresponding option following its unpacking instructions.

- Meta Scan Enabler (GS-1010)
- External Interface Enabler (GS-1020)
- IPSec Enabler (GP-1080)

When GP-1070 (Data Overwrite Enabler) has been installed, “F200” service call occurs.
In this case, perform cancelling the “F200” service call (installing the OS / HDD SYS / PFC Firmware / Engine MainFirmware / Scanner Firmware using the USB media), and then install GP-1070 (Data Overwrite Enabler) again.

21.2.5 Procedures and settings when replacing the SLG board

Note:
Before replacing the SLG board, perform the following procedure.

When the SLG board has been replaced, make sure to follow the procedure below.

(1) Confirm that the power is turned OFF.

(2) Replace the SLG board.
📖 P.7-28 "7.6.12 SLG board (SLG)"

(3) Update the scanner ROM using the USB Media.
📖 P.20-5 "20.1 Firmware Updating with USB Media"

(4) Start up with the Adjustment Mode (05).

(5) Perform “Data transfer of characteristic value of scanner / SYS board -> SLG board (05-363)”.

(6) Perform “Shading correction plate Automatic dust detection adjustment (05-349)”.

(7) Turn the power OFF.

(8) Start up with the Setting Mode (08).

(9) Check the version of the scanner ROM (08-905).

(10) Turn the power OFF.

21.2.6 Precautions and procedure when replacing the SRAM board (for the SYS board)

Note:

Do not replace the HDD and the SRAM board (for the SYS board) together.
Be careful not to damage the board when replacing the SRAM board.
When you replace the SRAM board while the data encryption function is enabled, readout of the user data/information stored in the HDD becomes impossible

A procedure for replacing the SRAM board is shown below.
When disposing of the SRAM board, perform the items in 📖 P.21-33 "21.3.3 Precautions when disposing of the SRAM board".

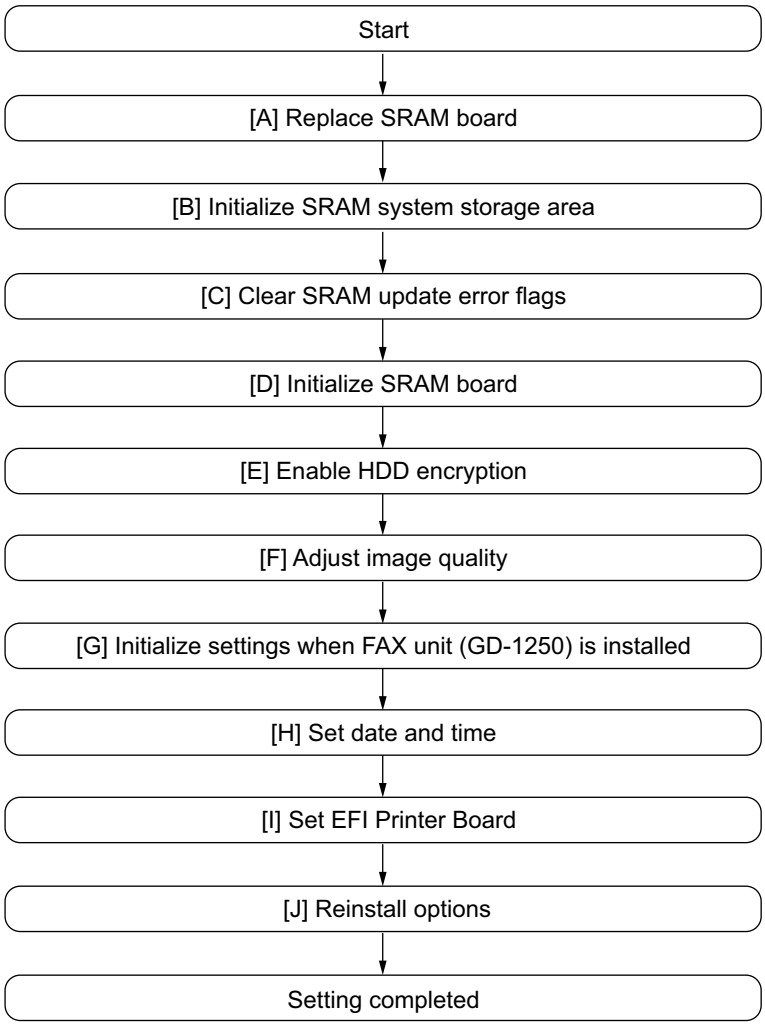


Fig. 21-39

[A] Replace SRAM board

(1) Confirm that the power is turned OFF.

(2) Take off the Fax Unit (GD-1250) if it is installed.

(3) Replace the SRAM board (for the SYS board).
📖 P.21-13 "21.1.13 SRAM board <for SYS board>"

[B] Initialize SRAM system storage area

(1) Turn the power ON while pressing [3] and [CLEAR] simultaneously.

(2) When “Firmware Version Up Mode” appears on the LCD, check that “4: SRAM Data Format.” is marked and then press the [START] button. If not marked, key in [4] and then press the [START] button

(3) When “SRAM Data Format Complete.” is displayed on the LCD, the formatting is completed.

(4) Turn the power OFF.

[C] Clear SRAM update Error flags

(1) Turn the power ON while pressing [3] and the [CLEAR] button simultaneously.

(2) After “Firmware Version Up Mode” is displayed on the LCD, check that “1: Clear SRAM update Error flags.” is marked and press the [START] button.
if not, key in [1] and then press the [START] button.

(3) When “SRAM update Error flags cleared.” is displayed on the LCD, clearing the flag is completed.

(4) Turn the power OFF.

[D] Initialize SRAM board

(1) Start up with the Setting Mode (08).

(2) Initialize the SRAM error.
1. When “SRAM ERROR DOES IT INITIALIZE” is displayed on the LCD, check the destination and then press the [START] button.
   If the destination is not correct, key in the correct one and then press the [START] button.
2. After the confirmation message is displayed, press the [INTERRUPT] button.

(3) Perform the panel calibration (08-692).
1. Touch the center of “+” mark displayed on the upper left of the LCD.
2. Touch the center of “+” mark displayed on the lower right of the LCD.

(4) Perform the initialization at the software version upgrade (08-947).

(5) Initialize the NIC information (08-693).

(6) Enter the serial number (08-995).
Key in the serial number on the label attached to the rear cover of the equipment, and then press the [OK] button.

(7) Turn the power off.

[E] Enable HDD encryption

If the HDD encryption function has been set, perform the following procedure.

(1) Start up with the Setting mode (08).

(2) Enable the HDD encryption function (08-9379).

(3) Format the HDD (08-690).

(4) Turn the power OFF.

[F] Adjust image quality

(1) Start up with the Adjustment mode (05).

(2) Perform “Data transfer of characteristic value of scanner” (05-364).

(3) Perform “Automatic gamma adjustment” <PPC> (05-1642).
📖 P.8-36 "8.6.1 Automatic gamma adjustment"

(4) Perform “Automatic gamma adjustment” <PRT> (05-1008).
📖 P.8-51 "8.7.1 Automatic gamma adjustment"

(5) Turn the power OFF.

[G] Initialize settings when FAX Unit (GD-1250) is installed

(1) Reinstall the FAX Unit (GD-1250).

(2) Start up with the Setting mode (08).

(3) Set the destination of FAX (08-701).

(4) Turn the power OFF.

(5) Start up with the FAX Clearing Mode (1*).

(6) Perform the FAX Set Up (1*-100).

(7) Turn the power OFF and then back ON.

(8) Set the dial type according to these buttons: [USER FUNCTIONS] -> [ADMIN] -> [FAX] -> [INITIAL SETUP]

[H] Set date and time

[USER FUNCTIONS] → [ADMIN] → [GENERAL] → [CLOCK] → [DATE/TIME]

[I] Set EFI Printer Board

If the EFI Printer Board (GA-1211) is installed, perform the following procedure.

(1) Turn the power OFF.

(2) Start the setting mode (08).

(3) Initialize the EFI Printer Board (08-700).

(4) Turn the power OFF.

[J] Reinstall options

When any of the options below was installed, reinstall a license for the corresponding option following its unpacking instructions.

- Meta Scan Enabler (GS-1010)
- External Interface Enabler (GS-1020)
- IPSec Enabler (GP-1080)

When GP-1070 (Data Overwrite Enabler) has been installed, “F200” service call occurs.
In this case, perform cancelling the “F200” service call (installing the OS / HDD SYS / PFC Firmware / Engine MainFirmware / Scanner Firmware using the USB media), and then install GP-1070 (Data Overwrite Enabler) again.

21.2.7 Procedures and settings when replacing SRAM board (for LGC board)

Note:
Be careful not to damage the board when replacing the SRAM board.

A procedure for replacing the SRAM board is shown below.
When disposing of the SRAM board, perform the items in 📖 P.21-33 "21.3.3 Precautions when disposing of the SRAM board"

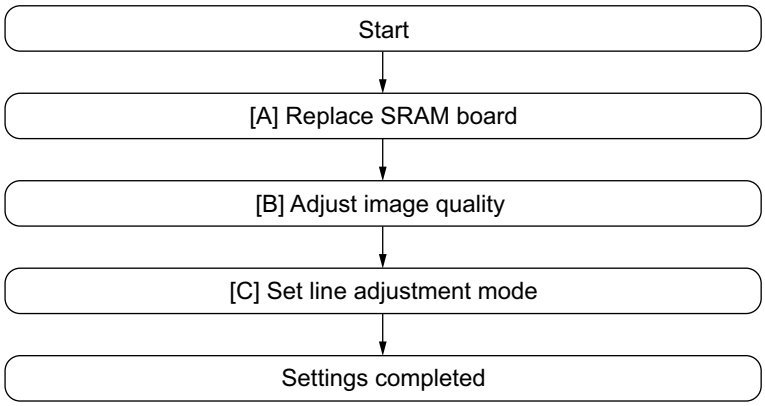


Fig. 21-40

[A] Replace SRAM board

(1) Confirm that the power is turned OFF.

(2) Replace the SRAM board (for the LGC board).
📖 P.21-12 "21.1.12 SRAM board <for LGC board>"

[B] Adjust image quality

(1) Write down the adjustment values of the following (05) code attached to the rear side of the front cover.

	L (0)	H (0)
05/2622		
05/2623		
05/2624		
05/2625		
05/2627		
05/2628		
05/2629		
05/2630		
05/2984		
05/2983		

(2) Start up with the Adjustment mode (05).

(3) Enter all the adjustment values written down in step (1).

Remark:
However, do not adjust the values of 05-2985, 2986, 2987 and 2988.

(4) Reset the auto toner sensor.
1. Turn the power OFF.
2. Replace the developer materials for four colors (YMCK).
3. Perform automatic adjustment of auto-toner sensor. Start up with the Adjustment mode (05), enter [200] and press the [START] button.

Notes:
- You can reset the auto-toner sensor by directly entering the adjustment values for (05) 205-0 to 3, (05) 2409-0 to 3 and (05) 2411 with the Adjustment mode data list, which has been printed during normal operation of equipment such as when it is setup, when preventive maintenance (PM) is performed or when developer material is replaced, etc.
- If you perform automatic adjustment (05-200) of the auto-toner sensor without replacing the developer materials for four colors (YMCK), image quality is not guaranteed.

(5) Adjust the image quality control (05-396).

(6) Perform “Tilt motor initial excitation setting” (05-4721).

(7) Perform the enforced position adjustment (05-4719).

(8) Perform printer related adjustment and scanner related adjustment.
📖 P.8-22 "8.5.8 Image dimensional adjustment at the printing section"
📖 P.8-27 "8.5.9 Image dimensional adjustment at the scanning section"

(9) Perform “Automatic gamma adjustment” <PPC> (05-1642).
📖 P.8-36 "8.6.1 Automatic gamma adjustment"

(10) Perform “Automatic gamma adjustment” <PRT> (05-1008).
📖 P.8-51 "8.7.1 Automatic gamma adjustment"

Note:
Usually, it is only necessary to perform automatic gamma adjustment for [Plain paper]; however if other paper is used, perform automatic gamma adjustment per paper type.

[C] Set line adjustment mode

(1) Turn the power OFF.

(2) Start up with the Setting Mode (08).

(3) Set “Line adjustment mode” to “0: For factory shipment” (08-203).

Note:
Be sure to change the setting of “Line adjustment mode” (08-203) to “0: For factory shipment”. Since “1: For line” is set for “Line adjustment mode” in SRAM supplied as a service part, number of prints is not counted unless it is changed.

21.2.8 Firmware confirmation after the PC board/HDD replacement

After replacing the PC board/HDD, check the firmware version in the setting mode (08) and confirm if the firmware combination is correct.

Firmware	Code	Remarks
Updating HDD/UI data	08-944	HDD Version
	08-924	Version of UI data language 1 in HDD
Updating System ROM	08-900	System firmware ROM version
	08-921	System firmware ROM internal program version
Updating OS	08-920	FROM basic section software version
Updating Engine ROM	08-903	Engine ROM version
Updating Scanner ROM	08-905	Scanner ROM version
Updating PFC ROM	08-906	PFC ROM version
Updating RADF ROM	08-907	RADF ROM version
Updating Finisher ROM	08-908	Finisher ROM version Saddle stitcher ROM version
	08-911	Hole punch unit ROM version
	08-9945	Converter ROM version
Updating FAX ROM	08-915	FAX ROM version
Imaging Acceleration Board ROM	08-9965	Imaging Acceleration Board SROM version

21.2.9 Electronic key re-registration using the one-time dongle

[A] Re-registration when the board is replaced

The Electronic key registered using the one-time dongle can be re-registered only in the same equipment. When the SYS board or SRAM board (for SYS board) is replaced, follow the procedures for re-registration given below.

(1) After the SYS board or SRAM board is replaced, set up the equipment referring to the following procedures.
📖 P.21-23 "21.2.4 Precautions and Procedures when replacing the SYS board"
📖 P.21-25 "21.2.6 Precautions and procedure when replacing the SRAM board (for the SYS board)"

(2) Reinstall the options referring to the following procedures.
📖 P.21-23 "[D] Reinstall options"
📖 P.21-28 "[J] Reinstall options"

(3) Perform 08-3840 with the one-time dongle previously used for registering the Electronic key.

(4) When the authentication succeeds, the re-registration screen appears and the available re-registration numbers are displayed after the option names.

(5) Perform the registration in the same manner as a regular one.

Note:
This procedure is available only with the one-time dongle used for the previous registration, since the model information registered in it is utilized. Use the same one-time dongle and the equipment when registering the Electronic key.

[B] Re-registration when the equipment is replaced due to malfunction

When the equipment has to be replaced due to a malfunction, return the Electronic key registered in the equipment to the one-time dongle and register it to the new equipment following the procedure below.

Note:
The Electronic key of the IPSec option (GP-1080) cannot be re-registered.

(1) Start up with the Setting mode (08).

(2) Perform 08-3870 and check the registered Electronic key.

(3) Connect the one-time dongle used for registering the Electronic key to the USB port of the equipment.

Note:
The one-time dongle to be used is the one for the previous registration of the Electronic key.

(4) Perform 08-3841. The Electronic keys which can be returned to the one-time dongle are displayed.

(5) Select one and press the [RETURN] button.

Note:
The Electronic key is deleted from the equipment and is stored in the one-time dongle.

(6) After the equipment is replaced, start up with the Setting mode (08).

(7) Connect the one-time dongle to the USB port and perform 08-3840.

(8) Perform the re-registration in the same manner as a regular one.

21.3 Precautions for Installation of GP-1070 and Disposal of HDD/ Board

21.3.1 Precautions for Installation of GP-1070 and Disposal of HDD/ Board

When installing the Data Overwrite Enabler (GP-1070), perform the following setting:

08-1422: HDD data overwriting type setting
This setting is the overwriting method complying with DoD 5220.22-M.
0: LOW: This is the standard overwriting method. (This method is used normally.)
1: MEDIUM: This overwriting method is more secure than LOW. The erasing time is between LOW and HIGH.
2: HIGH:This is the most secure overwriting method. It takes the longest time to erase data

If disposing of the HDD when the Data Overwrite Enabler (GP-1070) has been installed, perform the following settings for security.
📖 P.25-105 "25.8 System"

08-1424: HDD data clearing type setting (forcible clearing)
This setting is the overwriting method complying with DoD 5220.22-M.
0: LOW: This is the standard overwriting method. (This method is used normally.)
1: MEDIUM: This overwriting method is more secure than LOW. The erasing time is between LOW and HIGH.
2: HIGH: This is the most secure overwriting method. It takes the longest time to erase data.

08-1426: Forcible HDD data clearing
HDD data are cleared according to the setting of 08-1424

Note:
The process is displayed as a percentage during forcible HDD data clearing. Never turn the power OFF until 100% is displayed and the process is completed.

21.3.2 Precautions when disposing of the SYS board

When disposing of the SYS board, data clearing is not required since important data, such as user information, etc. are stored in the SRAM board.

21.3.3 Precautions when disposing of the SRAM board

When disposing of the SRAM board, perform 08-1428 (Forcible SRAM backup data all clearing) for security reasons.

Note:
If these codes are performed, the equipment cannot be started up.

22. BACKUP FUNCTION

22.1 Data Cloning

22.1.1 General description

Data cloning is a function that backs up user data, setting data and SRAM data into a USB media and also restores these data into the equipment. The types of data to back up or restore are selectable. You can back up or restore all data in a batch, or only the required one separately.

22.1.2 Precautions

1. Programs required for data cloning are as follows:

System ROM version	Storage location	Program file name
---	Root directory	rootusb2, clone_2820C_3530C.xxx

2. Be sure to check the “Status display of the USB data cloning permission (08-9889)” before data cloning. When the value of 08-9889 is “1 (Prohibited)”, data cloning cannot be performed. Contact and ask the user (machine administrator) to change the setting on the [Data Cloning Function] in TopAccess, or set “0 (Accepted)” in 08-9889.
3. It is assumed that data cloning is to be performed when equipment is installed or options are installed. If the address book has been registered, do not perform restore. Registered / set data are lost.
4. The USB media for the data cloning must meet the following conditions. A data cloning operation with any devices other than the following will not be guaranteed.
   - A combination USB media with a flash memory (to be connected directly to the USB port) and its capacity is between 256 MB and 512 MB (or 1 GB) or more.
   - A device compliant with the following specifications established by USB-IF (USB Implementers Forum)
     Class number: 8 (=08h) (Mass storage class)
     Sub-Class number: 6 (=06h) (SCSI transfer command set)
     Protocol number: 80 (=50h) (Bulk-only)
   - Most of the common USB medias are compliant with the above specifications and are therefore applicable to this data cloning. However, most of these devices were originally developed to be used in an environment for PCs (e.g. Windows or Macintosh) and thus operations exclusively with this equipment have not been fully guaranteed. Therefore, the user must thoroughly check in advance whether there will be any problem in operating with this equipment when adopting one of these devices.
5. The USB medias compliant with both USB 1.1 and USB 2.0 can be used for this data cloning.
6. Data cloning with any storage devices other than a flash memory (e.g. USB-connectable memory card reader, CD/DVD drive, hard disk) will never be guaranteed. Therefore never use them for this operation.
7. Be sure to unplug the LAN cable and Fax line before data are backed up / restored. Also, do not use the RADF and open the cover, drawer, etc. during the data cloning.
8. Data can be backed up / restored only for the same model and version. If the version is different, update the firmware and back up / restore data in the same version.
9. Restore data to equipment which has the same options as when the data are backed up.
10. If “Department management” or “User management information” is restored, the counter values are copied as well, so clear all of them. However, the total counter is not copied.
11. Delete the backed up data in the USB media after the data cloning.
12. [ERROR12: Device is Busy] is displayed if the equipment is in one of the following statuses when running data cloning.
    - When backing up
      - Control panel is in use
      - JOB is in process

- When restoring
  - Control panel is in use
  - JOB is in process
  - Private job has been reserved
  - Schedule print job has been reserved
  - Proof print job has been reserved
  - Hold print job has been reserved
  - Invalid job is pending

22.1.3 Backup files

Data files that are available for backup are limited to user data, setting data and SRAM data. The detailed descriptions for each file are shown below. Note that backup files are encrypted.

1.User data file

The folder “user_data” is created in the root directory and the following files are stored in it.

Data item	folder	File name
Address book	user_data	BACKUP_ADDR.sct
Mailbox	user_data	BACKUP_MBOX.sct
Template	user_data	BACKUP_TEMP.sct
Back up the Address book, Mailbox and Template in a batch	user_data	BACKUP_ALL.sct
Department management information	user_data	BACKUP_Department.sct
User management information	user_data	BACKUP_User.sct
Role information	user_data	BACKUP_Role.sct
Mata Scan information	user_data\metaScan	xxxx.sct*

* The file name that the user has set for saving this file comes at "XXXX".

2.Setting data file

The folder “setting_data” is created in the root directory and the following files are stored in it.

Data item	folder	File name
Network / Print service	setting_data	network.sct IPsec.sct*
SaveAsFile / Email / InternetFAX	setting_data	scan.sct
Notification setting	setting_data	notice.sct
Directory Service	setting_data	ldap.sct
FAX setting	setting_data	fax.sct, fax08.sct
Wireless LAN setting / Bluetooth setting	setting_data	wl.sct, bl.sctt
COPY setting	setting_data	copy.sct
GENERAL setting	setting_data	general.sct
User management setting	setting_data	usrmng.sct

* Enabled when the IPsec enabler (GP-1080) is installed.

3.SRAM data file

The folder “sram_data” is created in the root directory and the following files are stored in it.

Data item	folder	File name
SRAM	sram_data	sram.sct

Note:

In addition to the backed up data, the following files are created in each folder

Data item	folder	File name
User data	user_data	user_data.txt
Setting data	setting_data	setting_data.txt
SRAM data	sram_data	sram_data.txt

<Contents of file>

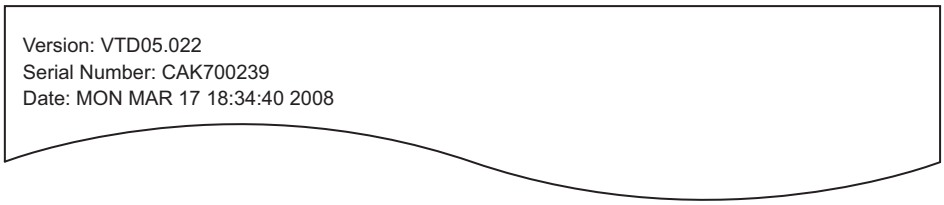


Fig. 22-1

- File format (user_data.txt, setting_data.txt, sram_data.txt: all in common)
  Line 1: Version
  Line 2: Serial number
  Line 3: Date

22.1.4 List of codes available for cloning

Setting mode (08)

08-204	08-205	08-206	08-209	08-218
08-219	08-221	08-250	08-254	08-259
08-260	08-264	08-272	08-273	08-274
08-288	08-290	08-291	08-292	08-293
08-294	08-295	08-296	08-297	08-298
08-299	08-300	08-302	08-331	08-342
08-503	08-550	08-603	08-610	08-611
08-619	08-620	08-621	08-622	08-623
08-624	08-629	08-634	08-638	08-640
08-642	08-645	08-649	08-650	08-651
08-652	08-653	08-658	08-659	08-671
08-702	08-703	08-707	08-721	08-723
08-726	08-727	08-728	08-729	08-730
08-780	08-781	08-782	08-783	08-784
08-785	08-786	08-787	08-788	08-789
08-790	08-945	08-969	08-970	08-973
08-976	08-978	08-979	08-1002	08-1007
08-1011	08-1012	08-1014	08-1015	08-1016
08-1017	08-1018	08-1019	08-1020	08-1022
08-1024	08-1025	08-1026	08-1027	08-1028
08-1029	08-1030	08-1031	08-1032	08-1037
08-1038	08-1039	08-1040	08-1041	08-1042
08-1043	08-1044	08-1045	08-1046	08-1047
08-1048	08-1049	08-1050	08-1051	08-1052
08-1055	08-1059	08-1060	08-1063	08-1065
08-1066	08-1069	08-1070	08-1073	08-1074
08-1075	08-1076	08-1078	08-1079	08-1080
08-1089	08-1090	08-1091	08-1092	08-1094
08-1095	08-1096	08-1097	08-1098	08-1099
08-1100	08-1101	08-1102	08-1103	08-1111
08-1114	08-1123	08-1125	08-1138	08-1432
08-1440	08-1441	08-1442	08-1444	08-1445
08-1446	08-1447	08-1448	08-1449	08-1450
08-1451	08-1464	08-1472	08-1661	08-1662
08-1665	08-1666	08-1667	08-1668	08-1669
08-1670	08-1671	08-1672	08-1673	08-1674
08-1675	08-1676	08-1677	08-1678	08-1685
08-1686	08-1689	08-1690	08-1691	08-1692
08-1693	08-1696	08-1697	08-1699	08-1700
08-1701	08-1704	08-1705	08-1706	08-1707
08-1708	08-1710	08-1711	08-1712	08-1713
08-1714	08-1715	08-1719	08-1720	08-1721
08-1722	08-1723	08-1724	08-1725	08-1726
08-1727	08-1728	08-1729	08-1730	08-1731
08-1732	08-1733	08-1734	08-1735	08-1736
08-1737	08-1738	08-1739	08-1740	08-1741
08-1743	08-1744	08-1745	08-1746	08-1748
08-1749	08-1750	08-1755	08-1756	08-1759
08-1760	08-1762	08-1764	08-1765	08-1766
08-1767	08-1772	08-1779	08-1780	08-1781-0
08-1781-1	08-1782	08-1783	08-1784-0	08-1784-1
08-1785	08-1786	08-1920	08-1937	08-1941
08-1950	08-1951	08-1953	08-1958	08-1959
08-3506	08-3507	08-3508	08-3631	08-3722
08-3723	08-3724	08-3736	08-3737	08-3738

08-3739	08-3740	08-3741	08-3742	08-3743
08-3745	08-3746	08-3747	08-3748	08-3754
08-3755	08-3757	08-3758	08-3759	08-3760
08-3767	08-3768	08-3774	08-3775	08-3776
08-3777	08-3778	08-3779	08-3780	08-3781
08-3782	08-3783	08-3785	08-3789	08-3793
08-3796	08-3797	08-3812	08-3833	08-3846
08-3847	08-3848	08-3849	08-3851	08-3852
08-3853	08-3854	08-3855	08-3856	08-3857
08-3858	08-3859	08-3860	08-3861	08-3862
08-3863	08-8504	08-8511	08-8543	08-8580
08-8581	08-8582	08-8583	08-8584	08-8585
08-8586	08-8587	08-8588	08-8589	08-8590-0
08-8590-1	08-8590-2	08-8590-3	08-8590-4	08-8591
08-8592	08-8593	08-8604	08-8605	08-8606
08-8608	08-8609	08-8610	08-8615	08-8616
08-8617	08-8618	08-8619	08-8620	08-8624
08-8625	08-8626	08-8628	08-8629	08-8800
08-8801	08-8803	08-8804	08-8805	08-8817
08-8818	08-9015	08-9103	08-9117	08-9120
08-9121	08-9122	08-9123	08-9124	08-9125
08-9126	08-9193	08-9294	08-9384	08-9394
08-9629	08-9700	08-9746	08-9747	08-9748
08-9791	08-9799	08-9829	08-9889	08-9891
08-9946	08-9947	08-9957	08-9958	08-9980
08-9981	08-9984-0	08-9984-1	08-9984-2	08-9984-3
08-9984-4				

Fax function mode (13)

13-100	13-101	13-102	13-103	13-104
13-105	13-106	13-107	13-108	13-109
13-110	13-111	13-112	13-116	13-117
13-122	13-123	13-125	13-127	13-128
13-129	13-132	13-135	13-137	13-138
13-139	13-140	13-141	13-142	13-143
13-149	13-150	13-151	13-152	13-153
13-200	13-201	13-203	13-206	13-210
13-211	13-213	13-216	13-220	13-221
13-222	13-223	13-224	13-225	13-226
13-227	13-228	13-229	13-230	13-231
13-232	13-236	13-245	13-247	13-249
13-262	13-267	13-268	13-269	13-270
13-271	13-272	13-273	13-279	13-280
13-281	13-282	13-283	13-312	13-313
13-317	13-325	13-328	13-331	13-335
13-338	13-339	13-340	13-346	13-350
13-351	13-355	13-356	13-357	13-359
13-361	13-362	13-363	13-365	13-367
13-368	13-370	13-371	13-372	13-373
13-375	13-377	13-378	13-379	13-382
13-389	13-391	13-394	13-398	13-430
13-433	13-501	13-509	13-510	13-511
13-512	13-517	13-518	13-519	13-564
13-565	13-566	13-567	13-569	13-571
13-574	13-575	13-576	13-577	13-578
13-580	13-581	13-584	13-585	13-586
13-587	13-601	13-602	13-605	13-606
13-607	13-610	13-611	13-612	13-614
13-615	13-616	13-706	13-707	13-709
13-711	13-720	13-722	13-723	13-724
13-725	13-726	13-727	13-728	13-922
13-923	13-924	13-925	13-926	13-927
13-930	13-931	13-940	13-941	13-944
13-955	13-961	13-962	13-970	13-971

22.1.5 Cloning procedure

[A] Backup procedure

(1) Shut down the equipment.

(2) Connect the USB media to the USB port on the right upper cover.

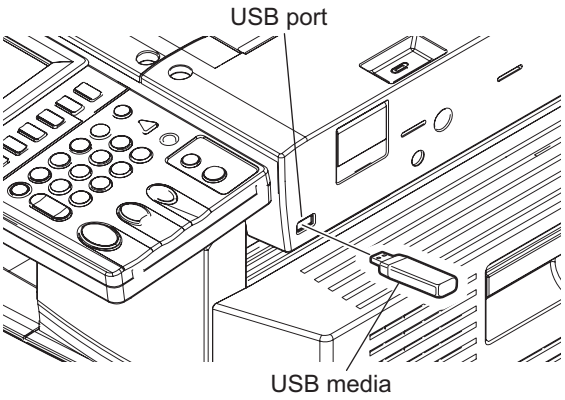


Fig. 22-2

Note:
Backing up cannot be performed with multiple USB media connected at the same time.

(3) Turn the power ON while pressing the [5] and [9] buttons simultaneously.
A screen for selecting items to back up is displayed. Select the number (any of “1”, “3” and “5”) for data you want to back up. Press the [Start] button.

Number	Backup Item
1: User Data Back Up	Backing up User data
3: Setting Back Up	Backing up Setting item
5: SRAM Data Back Up	Backing up SRAM data

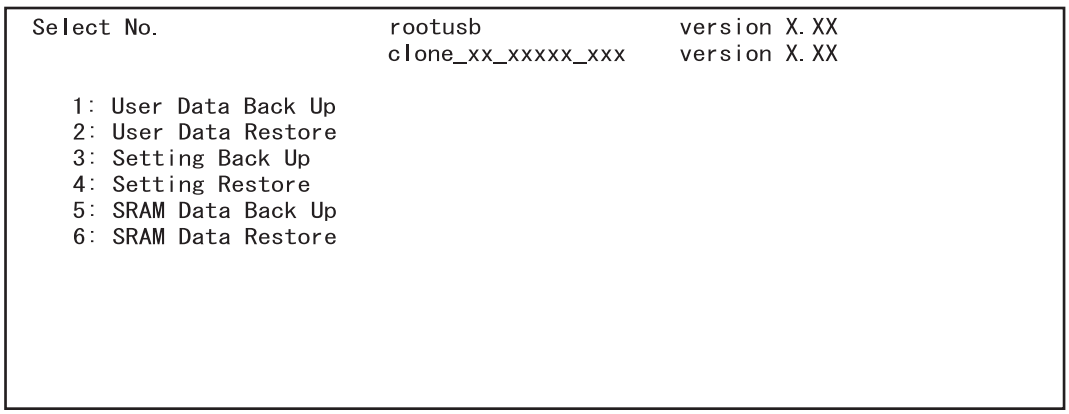


Fig. 22-3

Notes:
- It may take some time for the next screen to appear after you key in the number for the item.
- The screen above is not displayed if the data cloning function is disabled. In this case, ask the user (machine administrator) to enable the data cloning function on the TopAccess menu, or set “0 (Accepted)” in 08-9889.
- To clear the selection, press the [CLEAR] or [FUNCTION CLEAR] button.

(4) The screen below is displayed when a certain period of time has passed after an asterisk was displayed. Then select the number of the desired data so that an asterisk will be displayed.

<When “1: User Data Back Up” is selected>

Number	Backup Item
1: Address Book	Backing up Address book
2: Mail Boxes	Backing up Mail box
3: Template	Backing up Template and meta scan definition file
4: Combined	Backing up Address Book, Mail Box, Template, and meta scan definition file in a batch
5: FAX Kit	Backing up Department management
6: User Info	Backing up User management information
7: Role Info	Backing up role information

* The items “4”, “5”, “6”, and “7” are selected in the screen by default.

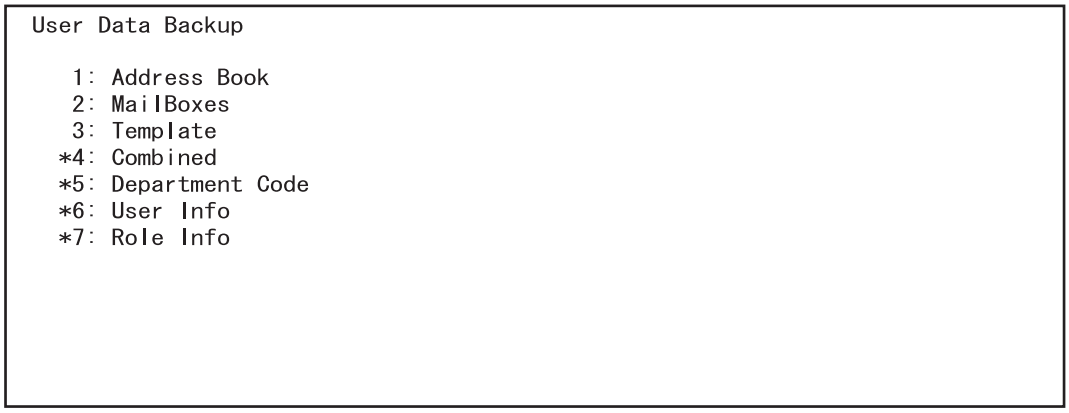


Fig. 22-4

<When “3: Setting Back Up” is selected>

Number	Backup Item
1: Network/Print Service	Backing up TopAccess: Network/Print Service
2: SaveAsFile/Email/InternetFAX	Backing up TopAccess: SaveAsFile/Email/InternetFAX
3: Notification	Backing up TopAccess: Notification
4: Directory Service	Backing up TopAccess: Directory Service
5: FAX Kit	Backing up Option: Fax setting
6: WirelessLAN/Bluetooth Kit	Backing up Option: WirelessLAN/Bluetooth setting
7: Copy	Backing up TopAccess: Copy setting
8: General	Backing up TopAccess: General setting
9: User Management	Backing up TopAccess: User management setting

* No items are selected in the screen by default.

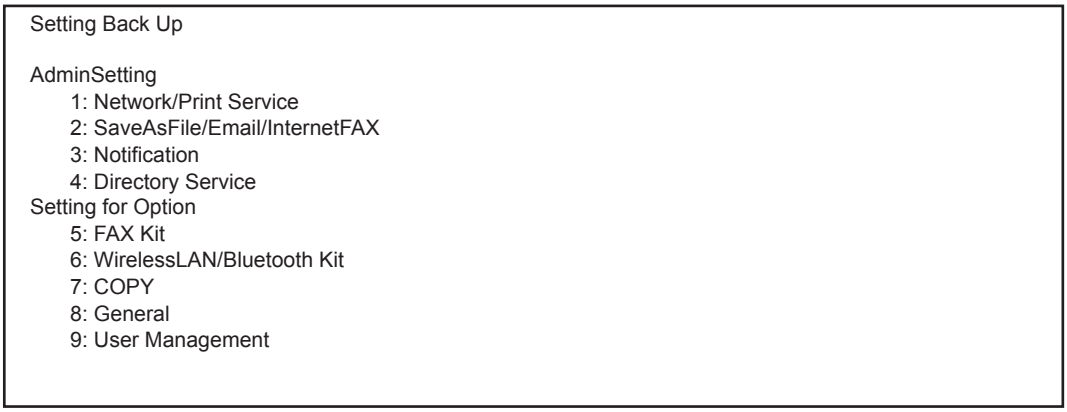


Fig. 22-5

<When “5: SRAM Data Back Up” is selected>

Number	Backup Item
1. SRAM	Backing up SRAM Data

* No items are selected in the screen by default.

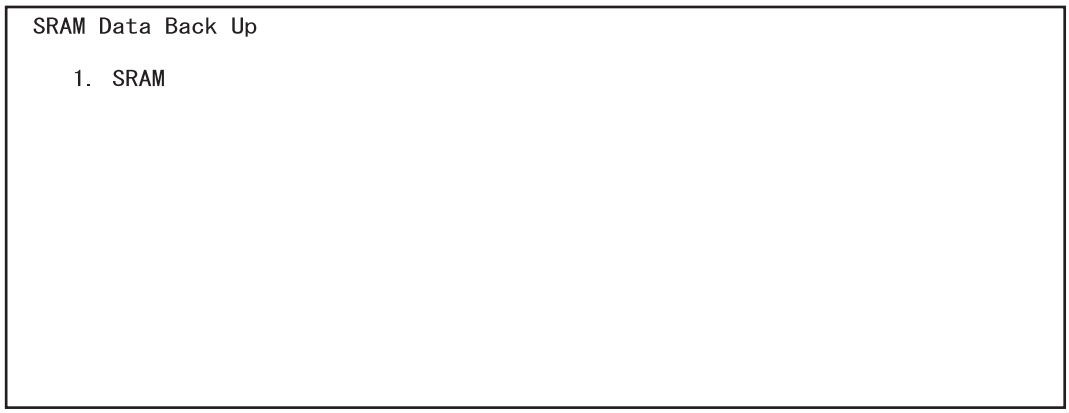


Fig. 22-6

(5) Press the [START] button. The backup starts and the backing up status is displayed on the LCD screen.

(6) “Back Up Completed” is displayed on the LCD screen when the backup has been properly completed.

(7) Turn the power OFF and remove the USB media.

[B] Restoring procedure

(1) Shut down the equipment.

(2) Connect the USB media to the USB port on the right upper cover.

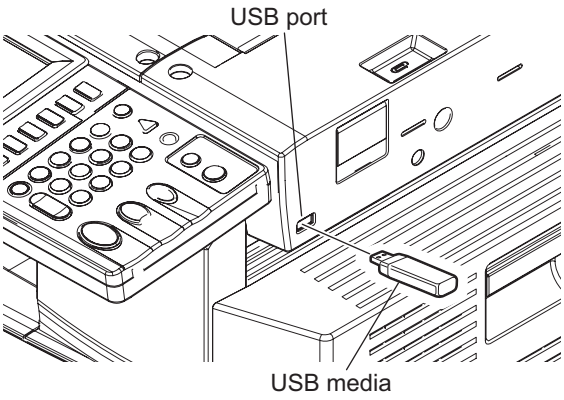


Fig. 22-7

Note:
Restoring cannot be performed with multiple USB media connected at the same time.

(3) Turn the power ON while pressing the [5] and [9] buttons simultaneously.
A screen for selecting items to restore is displayed. Select the number (any of “2”, “4” and “6”) for data you want to restore. Press the [Start] button.

Number	Restore Item
2: User Data Restore	Restoring up User data
4: Setting Restore	Restoring up Setting item
6: SRAM Data Restore	Restoring up SRAM data

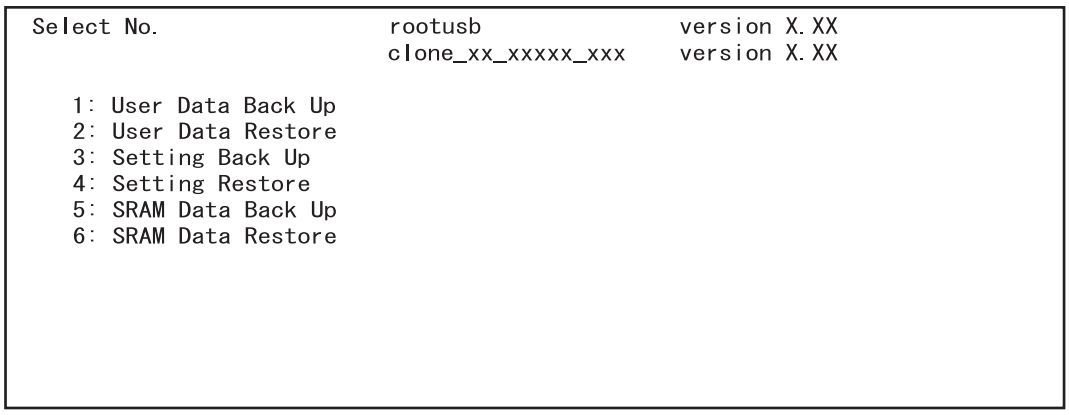


Fig. 22-8

Notes:
- It may take some time for the next screen to appear after you key in the number for the item.
- The screen above is not displayed if the data cloning function is disabled. In this case, ask the user (machine administrator) to enable the data cloning function on the TopAccess menu, or set “0 (Accepted)” in 08-9889.
- To clear the selection, press the [CLEAR] or [FUNCTION CLEAR] button.

(4) The screen below is displayed when a certain period of time has passed after the [START] button is pressed. Then select the number of the desired data so that an asterisk will be displayed.

<When “2: User Data Restore” is selected>

Number	Restore Item
1: Address Book	Restoring Address book
2: Mail Boxes	Restoring Mail boxes
3: Template	Restoring Template and meta scan definition file
4: Combined	Restoring Address Book, Mail Box, Template, and meta scan definition file in a batch
5: Department Code	Restoring Department management
6: User Info	Restoring User management information
7: Role Info	Restoring role information

* The items “4”, “5”, “6”, and “7” are selected in the screen by default.

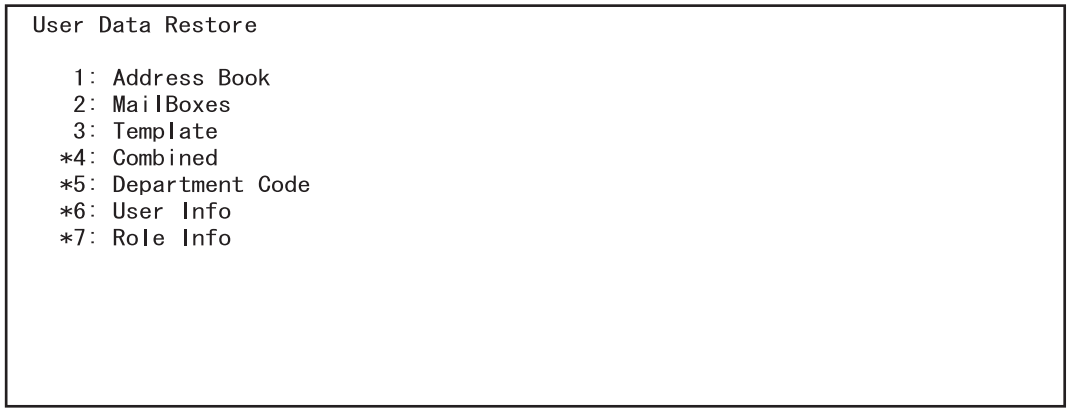


Fig. 22-9

<When “4: Setting Restore” is selected>

Number	Restore Item
1: Network/Print Service	Restoring TopAccess: Network/Print Service
2: SaveAsFile/Email/InternetFAX	Restoring TopAccess: SaveAsFile/Email/InternetFAX
3: Notification	Restoring TopAccess: Notification
4: Directory Service	Restoring TopAccess: Directory Service
5: FAX Kit	Restoring Option: Fax setting
6: WirelessLAN/Bluetooth Kit	Restoring Option: WirelessLAN/Bluetooth setting
7: Copy	Restoring TopAccess: Copy setting
8: General	Restoring TopAccess: General setting
9: User Management	Restoring TopAccess: User management setting

* No items are selected in the screen by default.
* Be sure to restore the same option items in the same condition as when the option items were backed up.

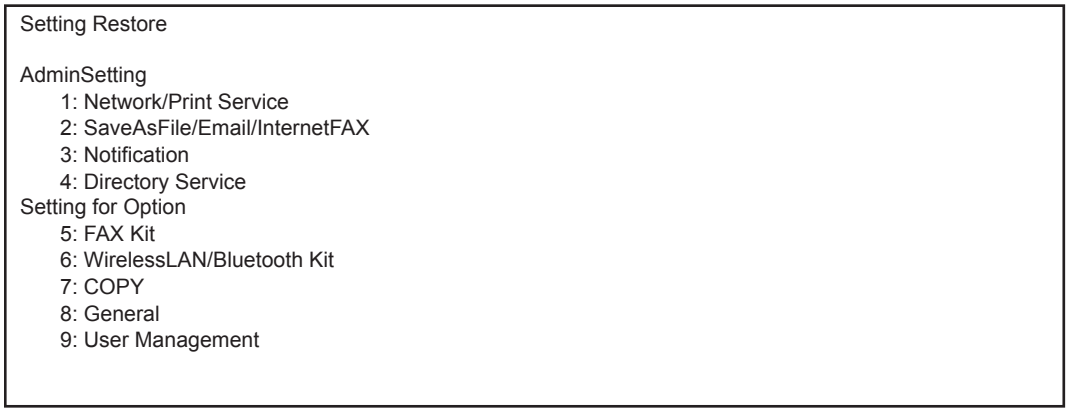


Fig. 22-10

<When “6: SRAM Data Restore” is selected>

Number	Restore Item
1. SRAM	Restoring SRAM Data

* No items are selected in the screen by default.

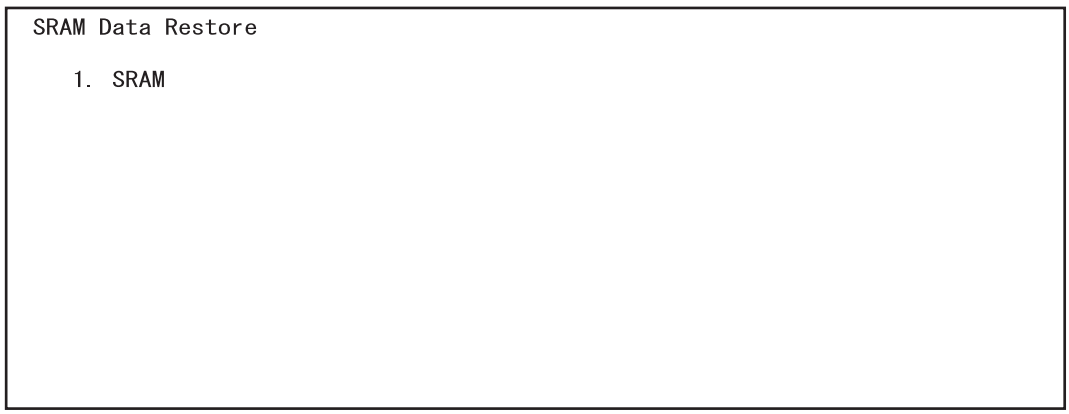


Fig. 22-11

(5) Press the [START] button. The restore starts and the restoring status is displayed on the LCD screen.

(6) “Restore Completed” is displayed on the LCD screen when restoring has been properly completed.

(7) Turn the power OFF and remove the USB media.
* When “department management data” or “user management data” are restored, clear their counter values in a procedure below.

(8) Counter values can be all cleared as the data are copied. Note that the total counter values are not copied.

<Procedure>
Press the buttons as follows: [USER FUNCTIONS] → [ADMIN] → Enter the password → [COUNTER] → [DEPARTMANT SETTING] → Enter the password → [RESET ALL COUNTERS]
* Enable the department management when the [RESET ALL COUNTERS] buttons is set to be disabled.

[C] Confirmation of the error

"Back Up ERROR X" (X: Error number) is displayed at the top of the LCD screen when the data have not been properly backed up / restored. In this case, turn the power OFF and then check the following items. After confirming and solving the problem, back up / restore the data again from the beginning.

- Does the USB media meet the conditions being used for this cloning?
- Is the updated program file written on the USB media properly?
- Is the USB media installed properly?
- Is the USB media or the equipment damaged?

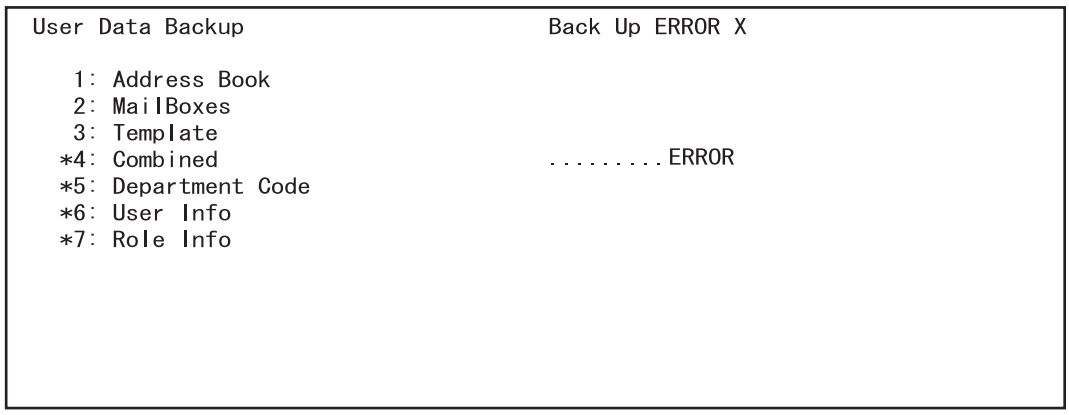


Fig. 22-12

Error number	Error content
ERROR 1	Copy error
ERROR 2	I/F error
ERROR 3	USB memory full error
ERROR 4	Working folder error
ERROR 5	File not found error
ERROR 6	Security error
ERROR 7	Checksum error
ERROR 8	Model check error
ERROR 9	Version check error
ERROR 10	Destination check error
ERROR 11	Serial number check error
ERROR 12	Device is Busy

22.2 AES Data Encryption Function Setting

22.2.1 General description

Data encryption is a function that encrypts data in the HDD to enhance the security.
Note that this function may affect the equipment performance.

22.2.2 Precautions

When the data encryption function is set enabled, data currently stored in the HDD will not be retrieved. Therefore when data encryption function needs to be enabled after the installation of the equipment, it is necessary to back up the data in the HDD before setting this function and then recover them after the setting.

- To ensure security, ask the user (machine administrator) to back up or restore the user's data and information in the HDD. A service technician can back up or restore them only when the user (machine administrator) permits it.
- Some data in the HDD cannot be backed up and can be left only on printouts.

22.2.3 Setting procedure

A procedure for setting the data encryption function is shown below.

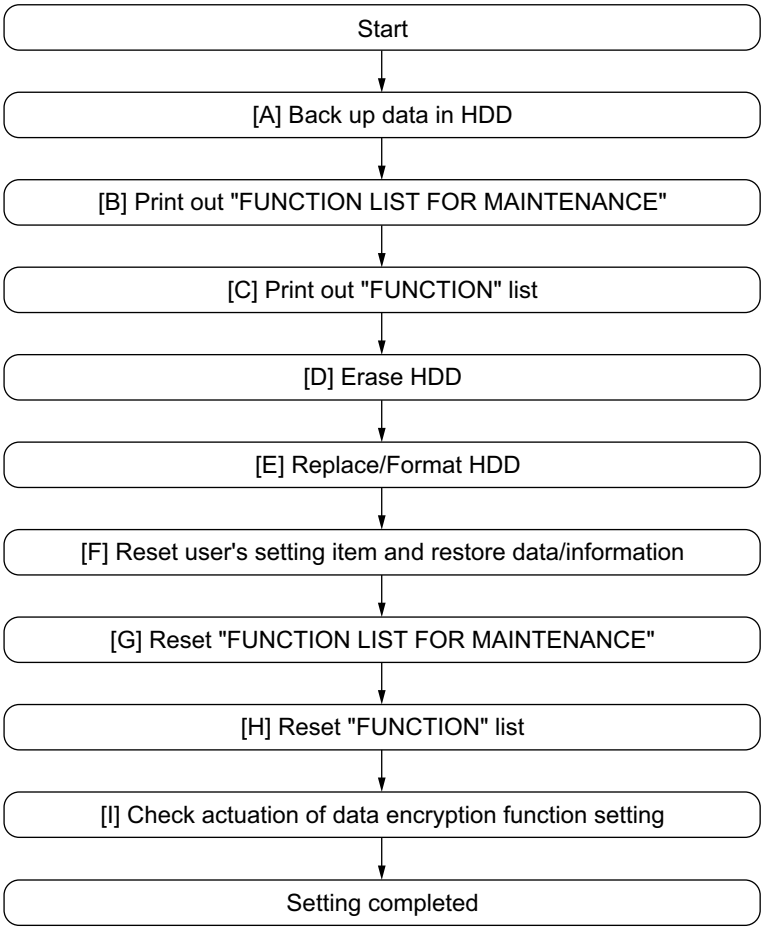


Fig. 22-13

[A] Back up in HDD

Ask the user (machine administrator) to back up the data in the HDD. Refer to the table below for the type of data, availability and method of backup.

Type of data in HDD	Availability	Backup method
Image data in the e-Filing	Available	Archive them in the “e-Filing” of TopAccess. As for the backup in Box data, all data (selectable by the box) can be backed up / restored in one go by using “e-Filing Backup/ Restore Utility”.
F-code information, Template registration information, Address book data	Available	Back them up in the “Administrator” menu of TopAccess.
Department management data	Available	Export them in “Administrator” menu of TopAccess.
Log data (Print, Scan, FAX (Transmission/Reception)	Available	Export them in the “Administrator” menu of TopAccess. (Import cannot be performed.)
Data in the shared folder (Scanned data, Saved data of copy / FAX transmission)	Available	Copy them to the client computer via the network. (The data which have been copied to the client computer cannot be copied to the shared folder.)
Role information	Available	Export role information on the TopAccess menus. [User Management] tab > [User Confirm/Create/Modify] > [Role Information]
Print waiting data (Copying data and FAX reception data that are waiting to be printed due to the paper run-out and jam, etc.)	Not available	Finish printing them after the paper supply and the jam release, etc. (The data cannot be kept.)
Print job (Private print data, Schedule print data)	Not available	If any jobs are left, print them. (The data cannot be backed up.)
FAX saved data (Confidential / Bulletin board data)	Not available	Print them. (The data cannot be backed up.)
Registration data for FAX transmission (Delayed transmission / Recovery transmission)	Not available	Print them. (The data cannot be backed up.)

[B] Print out “FUNCTION LIST FOR MAINTENANCE”

(1) Press the [USER FUNCTIONS] button and then the [USER] button.

(2) Press the [LIST] button.

(3) Key in [*] [#] [*] [*] [3] [3] and then press the [START] button. The “FUNCTION LIST FOR MAINTENANCE” is printed out.

[C] Print out "FUNCTION" list

(1) Press the [USER FUNCTIONS] button.

(2) Press the [ADMIN] button, enter the password, and then press the [ENTER] button.

(3) Press the [LIST/REPORT] button and then the [LIST] button.

(4) Press the [FUNCTION] button. The "FUNCTION" list is printed out.

Note:
Explain the procedure to the user (machine administrator) and ask him/her to enter his/her password.

[D] Enable data encryption function

Perform the setting of the data encryption function in the code 08-9379. The setting values are shown below.

0: Encryption disabled
1: Encryption enabled (Security priority)
2: Encryption enabled (Performance priority)

Security priority: All user data are encrypted.
Performance priority: Encryption data are generated only in a copying or a printing process temporarily. All user data except files which are deleted in a corresponding process are encrypted.

[E] Format HDD

Perform the code 08-690:2 to format the HDD.

When the FAX Unit (GD-1250) is installed, perform "Fax Set Up (1*-100)" and "Clearing the image data (1*-102)". Then turn the power OFF.

1. Turn the power ON while pressing the digital keys [1] and [*] simultaneously.
2. Key in [100] and then press the [START] button.
3. Key in [102] and then press the [START] button.
4. Turn the power OFF.

[F] Reset user's setting items and restore data/information

Ask the user (machine administrator) to reset the user's setting items and to restore data or information. Refer to the following for the reset and restore:

Items to reset/restore	Method
Printer driver	Upload them in the "Administrator" menu of TopAccess.
F-code information, Template registering information, Address book data	Restore them in the "Administrator" menu of TopAccess.
Department management data	Import them in the "Administrator" menu of TopAccess.
Image data in the e-Filing	Restore them in the "e-Filing" of the TopAccess.
Role information	Import role information on the TopAccess menus. [User Management] tab > [User Confirm/Create/Modify] > [Role Information]

* When the SSL is enabled, perform the setting of the following items again with "Create self-certificate" of TopAccess.

Country Name
State or Province Name
Locality Name
Organization Name
Organizational Unit Name
Common Name
Email Address

* When wireless LAN is used, perform the setting again on the LCD panel. (only when security with a certificate is used) Also, upload the following certificate file with "Install Certificate for Wireless LAN" of TopAccess.

CA certificate
User certificate

[G] Reset “FUNCTION LIST FOR MAINTENANCE”

(1) Print out the “FUNCTION LIST FOR MAINTENANCE” list after the formatting.
🕮 P.22-16 "[B] Print out “FUNCTION LIST FOR MAINTENANCE”"

(2) While pressing [1] and [3] simultaneously, turn the power ON. (Function Mode)

(3) Compare the lists which were printed before and after the formatting to check the setting items having the different setting values. Set the value which was set before the formatting
Turn the power OFF.

(4) Turn the power OFF.

[H] Reset “FUNCTION” list

- Reset the fax function by referring to the “function list” that was printed out in Ch.22.2.3 [C] Print out “function list”.

(1) Press the [USER FUNCTIONS] button.

(2) Press the [ADMIN] button, enter the password, and then press the [ENTER] button.

(3) Press the [FAX] button and then the [TERMINAL ID] button to set each item.

(4) Press the [INITIAL SETUP] button to set each item.

Note:
Explain to the user (machine administrator) about the next operation and ask him/her to enter his/her password.

[I] Check actuation of data encryption function setting

Check if the data encryption function is in operation.

- Press the [USER FUNCTION] button on the control panel. If a key-shaped icon is displayed at the top right of the screen, the data encryption function is in operation.

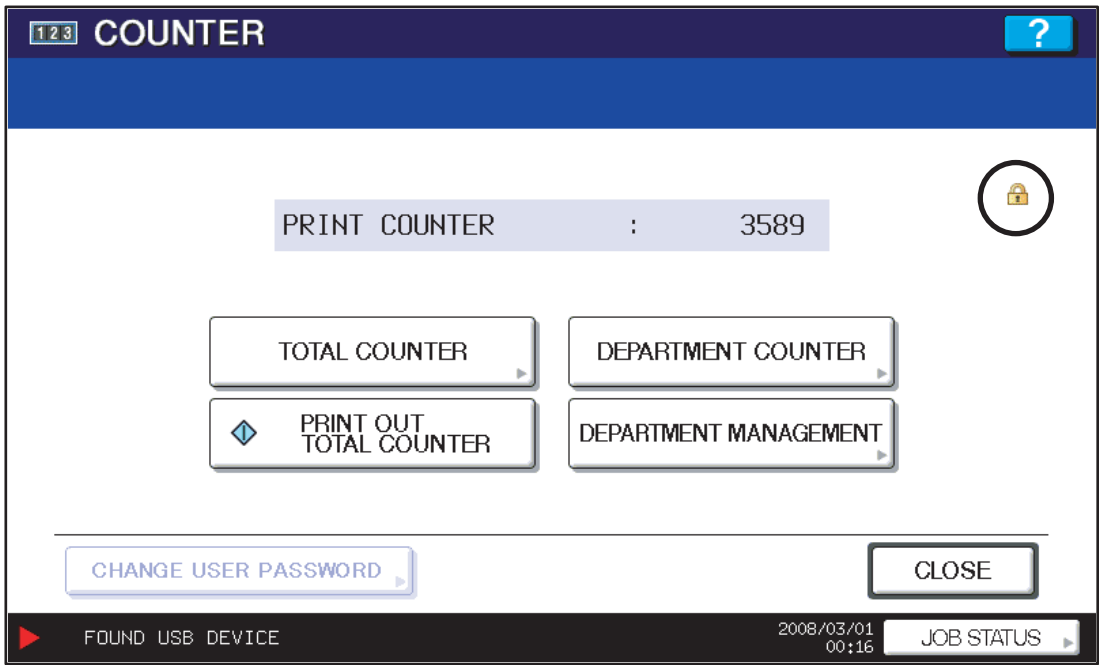


Fig. 22-14

22.2.4 Procedure for disabling data encryption function

The basic procedure is the same as the one for enabling this function. To disable it, set “0 (Invalid)” in the code 08-9379 at step 📖 P.22-17 "[D] Enable data encryption function".

22.2.5 Procedure for discarding HDD when data encryption function is enabled

Set the data encryption function disabled following the procedure shown in 📖 P.22-20 "22.2.4 Procedure for disabling data encryption function". Then perform the code 08-1426 (Forcible HDD data clearing) to completely erase the data in the HDD.

22.3 Assist Mode

22.3.1 Assist Mode

This equipment has the Assist Mode to enable the following functions.

(1) Update Error flag clearing (Clear Update Error Flags.)
Even if the firmware downloading has been completed normally, the Recovery Mode may accidentally start up when the power is turned ON again. In this case, clear the Update Error flags used in the download process with this function. (Normally, the flags are automatically cleared in the download process.)
Also in the case the Recovery Mode accidentally starts up after the replacement of SRAM on the SYS board, the flags are cleared with this function.

(2) Data storage partition formatting (“Format Loader Partition.”)
When a defection occurs on the UI data, etc. which are stored in the HDD, the partition with the stored UI data, etc. is formatted with this function. (Do not use this function since it is not normally necessary.)

(3) HDD partition creation (“All Partition Delete and Create Loader Partition.”)
When the HDD is replaced or UI data, etc. are downloaded using the USB storage, it is necessary to format a partition in the HDD before downloading. In this case, the partition is created in the HDD with this function.

Notes:
1. When downloading with a download jig, it is not necessary to format a partition in advance.
2. Perform the HDD partition formatting only when a new HDD is installed since all data in the current HDD are erased by this operation.

(4) SRAM data format
When SRAM is replaced with a new one, abnormal values may be written in the new SRAM. SRAM data must be formatted with this function for such case.

Notes:
1. This function is required only when a new SRAM is installed.
2. Do not perform this function in cases other than the installation of a new SRAM because all data in the SRAM will be deleted with this function.

22.3.2 Operating Procedure of Assist Mode

(1) Turn ON the power while [3] button and [CLEAR] button are pressed simultaneously.
- The following screen is displayed.

```
Firmware Version Up Mode

Select Number(1-4) and Press START key

> 1 : Clear Update Error Flags.
  2 : Format Loader Partition.
  3 : All Partition Delete and Create Loader Partition.
  4 : SRAM Data Format.
```

Fig. 22-15

(2) Select the item with the digital keys and press the [START] button.

Note:
Explain the user (machine administrator) about the next operation and ask him/her to enter his/her password.

23. SELF-DIAGNOSTIC MODE

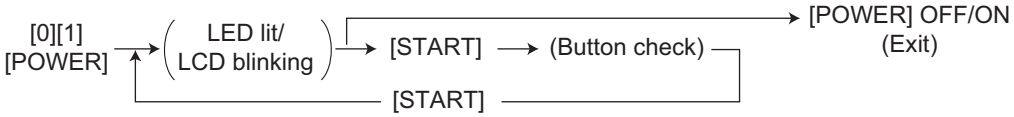
Mode	For start	Contents	For exit	Display
Control panel check mode	[0]+[1]+ [POWER]	All LEDs on the control panel are lit, and all the LCD pixels blink.	[POWER] OFF/ON	-
Test mode	[0]+[3]+ [POWER]	Checks the status of input/output signals.	[POWER] OFF/ON	100% C A4 TEST MODE
Test print mode	[0]+[4]+ [POWER]	Outputs the test patterns.	[POWER] OFF/ON	100% P A4 TEST PRINT
Adjustment mode	[0]+[5]+ [POWER]	Adjusts various items.	[POWER] OFF/ON	100% A A4 TEST MODE
Setting mode	[0]+[8]+ [POWER]	Sets various items.	[POWER] OFF/ON	100% D TEST MODE
List print mode	[9]+[START]+ [POWER]	Prints out the data lists of the codes 05 and 08, PM support mode and pixel counter.	[POWER] OFF/ON	100% L A4 LIST PRINT
PM support mode	[6]+[START]+ [POWER]	Clears each counter.	[POWER] OFF/ON	100% K TEST MODE
Firmware update mode	[8]+[9]+ [POWER]	Performs updating of the system firmware.	[POWER] OFF/ON	-

Note:
To enter the desired mode, turn the power ON while pressing two digital keys designated to each mode (e.g. [0] and [5]) simultaneously. Hold the two keys until the [COPY] [e-FILING] [SCAN] [PRINT] [FAX] buttons is lit.

To exit from Adjustment mode and Setting mode:
Shut down the equipment. When the power should be turned OFF, be sure to shut down the equipment by pressing the [ON/OFF] button for a few seconds.

- Control panel check mode (01):

<Operation procedure>

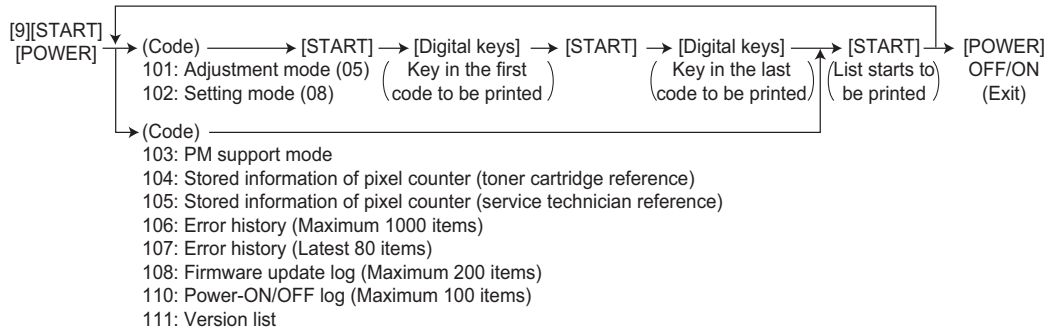


Notes:
1. A mode can be canceled by [POWER] OFF/ON when the LED is lit and the LCD is blinking.
2. Button Check
   Buttons with LED (Press to turn OFF the LED.)
   Buttons without LED (Press to display the message on the control panel.)
   Button on touch panel (Press to display the initial screen displayed at power-ON. Press [execution] on the touch panel and then the [CLEAR] button on the control panel. The screen then returns to the Button Check menu.)

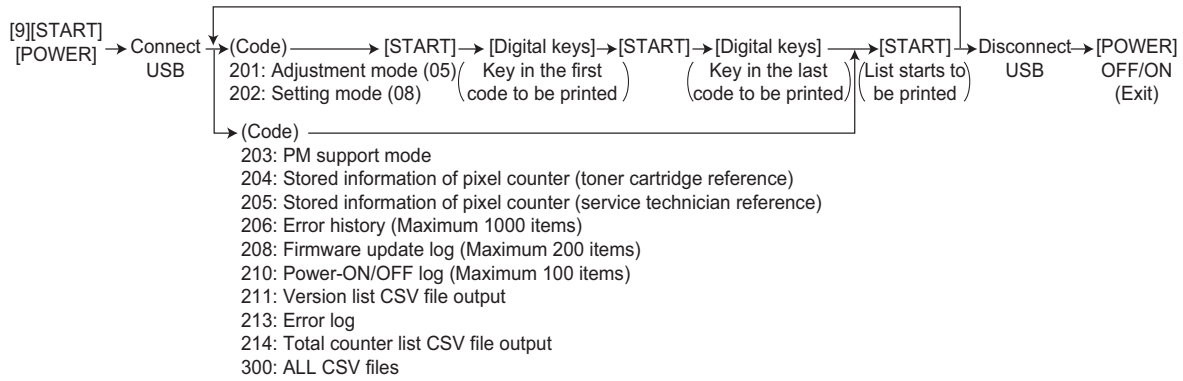
- Test mode (03): Refer to 📖 P.23-4 "23.1 Input check (Test mode 03)" and 📖 P.23-12 "23.2 Output check (test mode 03)".
- Test print mode (04): Refer to 📖 P.23-15 "23.3 Test print mode (test mode 04)".
- Adjustment mode (05): Refer to 📖 P.24-1 "24. ADJUSTMENT MODE (05)"
- Setting mode (08): Refer to 📖 P.25-1 "25. SETTING MODE (08)"
- List print mode (9S): The procedure varies depending on the code.

<Operation procedure>

PRINT



USB (CSV format, txt format)



Notes:

Precautions when storing information into USB media

- When storing the setting information of the equipment into a USB media, be sure to obtain permission from a user in advance.
- When storing the setting information of the equipment into a USB media, the information is printed out in a CSV format. Handle and manage the information with extra care.
- Do not lose or leak the setting information of the equipment.
- Do not use the setting information of the equipment for purposes other than maintenance or product services.
- Provide the information promptly if a user requires so.

Remarks:

- The [COPY] [e-FILING] [SCAN] [PRINT] [FAX] buttons on the control panel keep blinking while data are being stored in the USB media.
- Do not disconnect the USB media while data are being stored.
- When the data of a code are printed again on the same equipment, the CSV file will be overwritten because the names of these files contain the same serial number.
- In the USB storage procedure above, lists are stored in a CSV or txt format. The names of the CSV and txt files are shown below. The numbers "0123456789" in the file name represent the serial number of the machine.
  - 201:ADJUSTMENT_LIST_0123456789.csv
  - 202:SETTING_LIST_0123456789.csv
  - 203:PM_LIST_0123456789.csv
  - 204:PIXEL_TONER_LIST_0123456789.csv
  - 205:PIXEL_SERVICE_LIST_0123456789.csv
  - 206:ERROR_LOG_0123456789.csv
  - 208:FW_UPGRADE_LOG0123456789.csv
  - 210:POWER_ONOFF_LOG_0123456789.csv
  - 211:VERSION_LIST_0123456789.csv
  - 213:logdump.txt / i.txt
  - 214:TOTAL_COUNTER_LIST_0123456789.csv

- PM support mode (6S):

<Operation procedure>

- Firmware update mode (89): Refer to “20.FIRMWARE UPDATING”.

- State transition diagram of self-diagnosis modes

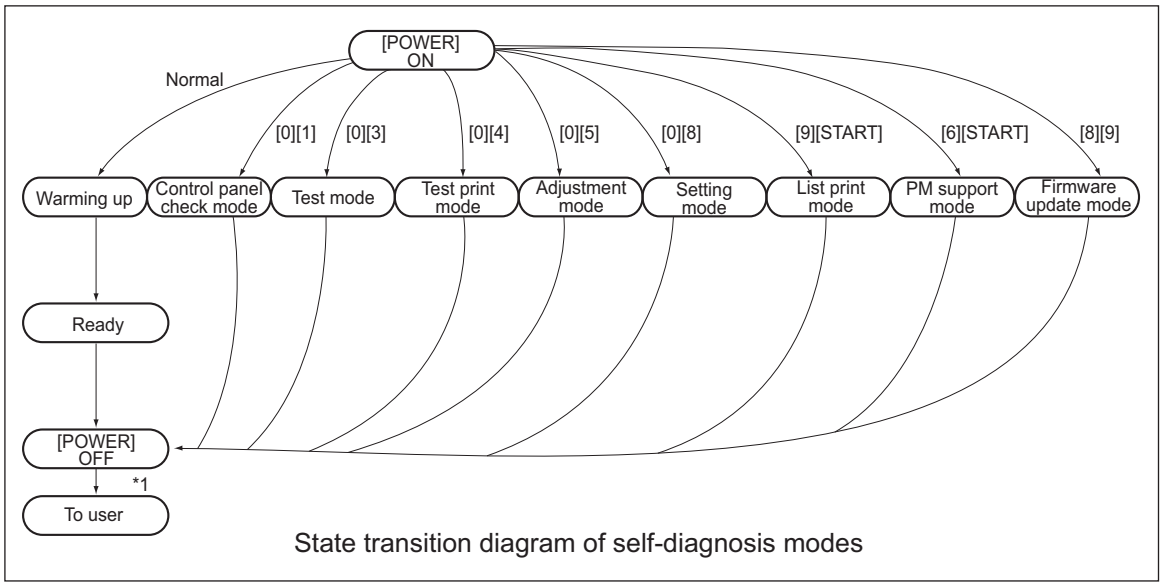


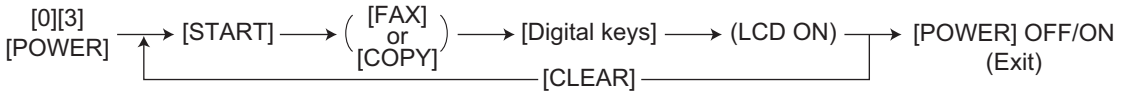
Fig. 23-1

*1 Turn OFF the power after using the self-diagnosis mode, and leave the equipment to the user.

23.1 Input check (Test mode 03)

The status of each input signal can be checked by pressing the [FAX] button, [COPY] button and the digital keys in the test mode (03).

<Operation procedure>



Note:
Initialization is performed before the equipment enters the test mode.

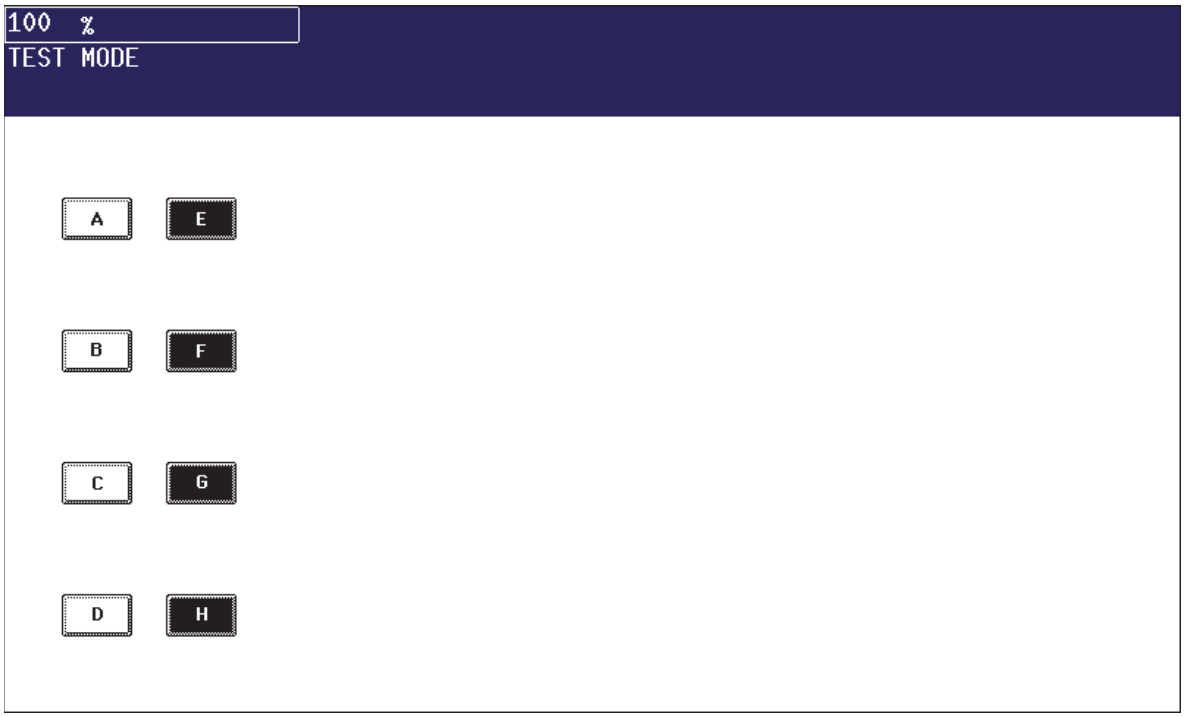


Fig. 23-2 Example of display during input check

Items to be checked and the condition of the equipment when the buttons [A] to [H] are highlighted are listed in the following pages.

[FAX] button: OFF/[COPY] button: OFF ([FAX] LED: OFF/[COPY] LED: OFF)

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[1]	A	-	-	-
	B	-	-	-
	C	Used toner paddle motor lock detection sensor	Sensor blocked	Sensor not blocked
	D	PWA-F-SRAM connection detection	Not connected	Connected
	E	K drum phase sensor	Sensor blocked	Sensor not blocked
	F	Color drum phase sensor	Sensor blocked	Sensor not blocked
	G	-	-	-
	H	Waste toner cover open/close detection switch	OPEN	CLOSE
[2]	A	-	-	-
	B	PFP upper drawer detection switch	Drawer not installed	Drawer present
	C	PFP upper drawer paper stock sensor	Paper almost empty	Paper present
	D	PFP upper drawer feed sensor	Paper present	No paper
	E	PFP connection	Not connected	Connected
	F	PFP side cover open/close switch	Cover opened	Cover closed
	G	PFP upper drawer empty sensor	No paper	Paper present
	H	PFP upper drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
[3]	A	-	-	-
	B	-	-	-
	C	IMG board connection	Not connected	Connected
	D	-	-	-
	E	-	-	-
	F	IPC board connection	Not connected	Connected
	G	-	-	-
	H	HSYNC error	Error	Normal
[4]	A	2nd drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
	B	1st drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
	C	2nd drawer paper stock sensor	Paper almost empty	Paper present
	D	1st drawer paper stock sensor	Paper almost empty	Paper present
	E	2nd drawer detection switch	Drawer not installed	Drawer present
	F	1st drawer detection switch	Drawer not installed	Drawer present
	G	2nd drawer empty sensor	No paper	Paper present
	H	1st drawer empty sensor	No paper	Paper present
[5]	A	High voltage control leak detection status	Normal	Abnormal
	B	Fuser unit thermistor connection detection	Connected	Not connected
	C	Fuser unit new BAM judging signal-1	Old	New BAM
	D	Bridge unit transport sensor-2 (Exit sensor)	Paper present	No paper
	E	Bridge unit cover open/close detection switch	Cover opened	Cover closed
	F	Bridge unit transport sensor-1 (Entrance sensor)	Paper present	No paper
	G	Bridge unit paper full detection sensor	Paper full	Paper not full
	H	Bridge unit connection	Not connected	Connected

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[6]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-
[7]	A	K process unit connection signal	Not connected	Connected
	B	C process unit connection signal	Not connected	Connected
	C	M process unit connection signal	Not connected	Connected
	D	Y process unit connection signal	Not connected	Connected
	E	Paper clinging detection sensor	No paper	Paper present
	F	Registration sensor	Paper present	No paper
	G	Image position aligning sensor (rear)		Toner pattern detection
	H	Image position aligning sensor (front)		Toner pattern detection
[8]	A	-	-	-
	B	PFP lower drawer detection switch	Drawer not installed	Drawer present
	C	PFP lower drawer paper stock sensor	Paper almost empty	Paper present
	D	PFP lower drawer feed sensor	Paper present	No paper
	E	PFP motor rotation status (Motor is rotating at output mode (03))	Abnormal rotation	Normal rotation
	F	-	-	-
	G	PFP lower drawer empty sensor	No paper	Paper present
	H	PFP lower drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
[9]	A	LCF tray bottom sensor	Tray at bottom position	Other than upper limit position
	B	LCF standby side paper misload detection sensor	Properly loaded	Paper misload
	C	LCF drawer detection switch	Drawer not installed	Drawer present
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	Paper stock sensor at LCF feed side	Paper almost empty	Paper present
[0]	A	LCF end fence home position sensor	Fence home position	Other than home position
	B	LCF end fence stop position sensor	Fence stop position	Other than stop position
	C	Empty sensor at LCF standby side	No paper	Paper present
	D	LCF side cover open/close switch	Cover closed	Cover opened
	E	LCF motor rotation status (Motor is rotating at output mode (03))	Normal rotation	Abnormal rotation
	F	LCF tray-up sensor	Tray at upper limit position	Other than upper limit position
	G	LCF feed sensor	No paper	Paper present
	H	Empty sensor at LCF feed side	Paper present	No paper

[FAX] button: ON/[COPY] button: OFF ([FAX] LED: ON/[COPY] LED: OFF)

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[1]	A	LCF connection	Not connected	Connected
	B	Exit sensor	Paper present	No paper
	C	-	-	-
	D	-	-	-
	E	Transfer belt installation detection	Not connected	Connected
	F	2nd drawer feeding jam sensor	Paper present	No paper
	G	1st drawer feeding jam sensor	Paper present	No paper
	H	-	-	-
[2]	A	Polygonal motor ready signal		Ready
	B	24V Power supply	Power ON	Power OFF
	C	ADU opening/closing switch	ADU opened	ADU closed
	D	Laser shutter open/close detection	ON	OFF
	E	Waste toner box full detection sensor	Waste toner box full	Not full
	F	2nd transfer roller position detection sensor	Released	Contacted
	G	Used toner motor lock detection sensor	Sensor blocked	Sensor not blocked
	H	Belt contact position detection sensor	Color	Black
[3]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	Transfer cover switch	Cover opened	Cover closed
	E	Toner cartridge detection sensor-K	Cartridge present	No Cartridge
	F	Toner cartridge detection sensor-C	Cartridge present	No Cartridge
	G	Toner cartridge detection sensor-M	Cartridge present	No Cartridge
	H	Toner cartridge detection sensor-Y	Cartridge present	No Cartridge
[4]	A	ADU exit sensor	Paper present	No paper
	B	ADU entrance sensor	Paper present	No paper
	C	Bypass feed paper existence sensor	No paper	Paper present
	D	Bypass feed sensor	No paper	Paper present
	E	Bypass feed paper width sensor 3 (Refer to table1)	Bit 1	Bit 0
	F	Bypass feed paper width sensor 2 (Refer to table1)	Bit 1	Bit 0
	G	Bypass feed paper width sensor 1 (Refer to table1)	Bit 1	Bit 0
	H	Bypass feed paper width sensor 0 (Refer to table1)	Bit 1	Bit 0
[5]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	RADF connection	Connected	Not connected
	G	Platen sensor	Platen cove opened	Platen cover closed
	H	Carriage home position sensor	Home position	Other than home position

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[6]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	APS sensor (APS-R)	Original present	No original
	E	APS sensor (APS-C)	Original present	No original
	F	APS sensor (APS-3)	Original present	No original
	G	APS sensor (APS-2)	Original present	No original
	H	APS sensor (APS-1)	Original present	No original
[7]	A	RADF tray sensor	Original present	No original
	B	RADF empty sensor	Original present	No original
	C	RADF jam access cover sensor	Cover opened	Cover closed
	D	RADF open/close sensor	RADF opened	RADF closed
	E	RADF exit sensor	Original present	No original
	F	RADF intermediate sensor	Original present	No original
	G	RADF read sensor	Original present	No original
	H	RADF registration sensor	Original present	No original
[8]	A	RADF original tray width sensor (TWID0S) (Refer to table2)	OFF(H)	ON(L)
	B	RADF original tray width sensor (TWID1S) (Refer to table2)	OFF(H)	ON(L)
	C	RADF original tray width sensor (TWID2S) (Refer to table2)	OFF(H)	ON(L)
	D	-	-	-
	E	RADF original length sensor	Original present	No original
	F	RADF original width sensor 1	Original present	No original
	G	RADF original width sensor 2	Original present	No original
	H	-	-	-
[9]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	Needle electrode cleaner detection sensor	Cleaner limit position	Other than cleaner limit position
	F	-	-	-
	G	-	-	-
	H	-	-	-
[0]	A	-	-	-
	B	Side cover open/close switch	Cover opened	Cover closed
	C	-	-	-
	D	-	-	-
	E	Drum mode detection signal	Color	Black
	F	-	-	-
	G	Fuser unit connection	Connected	Not connected
	H	Key copy counter connection	Not connected	Connected

Table 1. Relation between the status of the bypass paper width sensor and paper size (width).

Bypass paper width sensor				Paper width size
3	**2**	**1**	**0**	
0	1	1	1	A3/LD
1	0	1	1	A4-R/LT-R
1	1	0	1	A5-R/ST-R
1	1	1	0	Card size
0	0	1	1	B4-R/LG
1	0	0	1	B5-R

Table 2. Relation between the status of the original tray width sensor and paper size (width).

Original tray width sensor			Paper width size (LT series)	Paper width size (A4 series)
TWID2S	**TWID1S**	**TWID0S**		
H	H	L	-	B5-R
H	L	H	ST-R	A5-R
H	L	L	LD / LT	A3 / A4
L	H	L	8.5x8.5 / LT-R / KLG / 13"LG	A4-R / FOLIO
L	L	L	COMPUTER	B4 / B5

H (= high level): Open L (= low level): Short

[FAX] button: OFF/[COPY] button: ON ([FAX] LED: OFF/[COPY] LED: ON)

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[1]	-	Temperature/humidity sensor (displays temperature inside of the equipment)	-	Temperature [°C]
[2]	-	Temperature/humidity sensor (displays humidity inside of the equipment)	-	Humidity [%RH]
[3]	-	Drum thermistor-K (displays temperature on the drum surface of K color)	-	Temperature [°C]
[4]	-	Drum thermistor-Y (displays temperature on the drum surface of Y color)	-	Temperature [°C]
[5]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-
[6]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-
[7]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-
[8]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-
[9]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	-	-	-
	E	-	-	-
	F	-	-	-
	G	-	-	-
	H	-	-	-

Digital key	Button	Items to check	Contents	
			Highlighted display e.g. A	Normal display e.g. A
[0]	A	-	-	-
	B	-	-	-
	C	-	-	-
	D	Security enabler	Connectable	Not connectable
	E	Judgement for acceptable USB storage device (*1)	Acceptable	Not acceptable
	F	-	-	-
	G	-	-	-
	H	-	-	-

*1

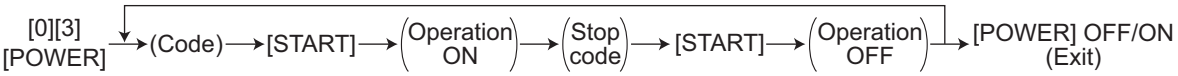
- Be sure to install the USB storage device to the equipment and check if the device can be used with this code.
- Be sure to turn OFF the write protection (the function to prevent data from erasure by the accidental recording or deleting) of the USB storage device before performing the check, otherwise this code cannot be used.
- It may take some time (2 sec. to 10 sec.) before this check is completed depending on the USB storage device.

23.2 Output check (test mode 03)

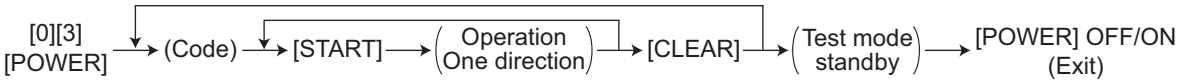
Status of the output signals can be checked by entering the following codes in the test mode 03.

<Operation procedure>

Procedure 1

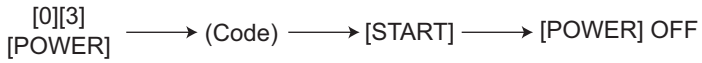


Procedure 2



Procedure 3

Procedure 4



Code	Function	Code	Function	Procedure
101	Drum motor ON + Transfer belt motor ON (Operational without process unit Y/M/C/K)	151	Code No.101 function OFF	1
103	Polygonal motor (600dpi) ON	153	Code No.103 function OFF	1
108	Registration motor ON	158	Code No.108 function OFF	1
109	PFP motor ON	159	Code No.109 function OFF	1
110	ADU motor ON	160	Code No.110 function OFF	1
111	Developer unit motor Y/M/C/K ON (Operational without process unit Y/M/C/K)	161	Code No.111 function OFF	1
112	Developer unit motor K ON (Operational without process unit K)	162	Code No.112 function OFF	1
113	Fuser motor ON	163	Code No.113 function OFF	1
114	Developer unit motor ON + Drum motor ON (normal speed)	164	Code No.114 function OFF	1
115	ADU motor ON (high speed during transport within ADU)	165	Code No.115 function OFF	1
116	Exit motor (reversal rotation) ON (high speed)	166	Code No.116 function OFF	1
118	Laser ON(Y: 05-2853, M: 05-2854, C: 05-2855, k: 05-2856 setting value output)	168	Code No.118 function OFF1	1
119	ADU motor ON (transport speed)	169	Code No.119 function OFF	1
120	Exit motor (normal rotation) ON	170	Code No.120 function OFF	1
121	Exit motor (reversal rotation) ON	171	Code No.121 function OFF	1
122	LCF motor ON	172	Code No.122 function OFF	1
123	Transport motor ON	173	Code No.123 function OFF	1
125	Sensor shutter solenoid ON (open)	175	Code No.125 function OFF	1

Code	Function	Code	Function	Procedure
126	Image position aligning sensor (front/ rear) LED ON	176	Code No.126 function OFF	1

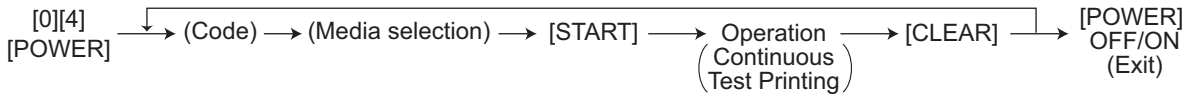
Code	Function	Procedure
201	1st drawer feed clutch ON/OFF	3
202	2nd drawer feed clutch ON/OFF	3
204	Bypass feed clutch ON/OFF	3
206	LCF pickup solenoid ON/OFF	3
207	LCF end fence reciprocating movement	2
208	LCF end fence motor ON/OFF	3
209	LCF feed clutch ON/OFF	3
210	LCF transport clutch ON/OFF	3
218	Key copy counter count up	2
222	ADU clutch ON/OFF	3
225	PFP transport clutch ON/OFF	3
226	PFP upper drawer feed clutch ON/OFF	3
228	PFP lower drawer feed clutch ON/OFF	3
229	Middle roller (upper) transport speed drive clutch ON/OFF	3
230	Middle roller (lower) transport speed drive clutch ON/OFF	3
231	Middle roller (upper) process speed drive clutch ON/OFF	3
232	Bridge unit gate solenoid ON/OFF	3
233	Middle roller (lower) process speed drive clutch ON/OFF	3
234	Bypass pickup solenoid ON/OFF	3
235	Discharge LED (K) ON/OFF (Do not let it radiate to the photoconductive drum for a long time.)	3
236	Discharge LED (Y/M/C) ON/OFF (Do not let it radiate to the photoconductive drum for a long time.)	3
239	Switching contact/release of 2nd transfer roller	2
240	Drum switching motor (switches position in the black/color mode)	2
241	1st transfer roller cam motor (switches contact/release of transfer belt)	2
242	1st drawer tray-up motor ON (tray up)	2
243	2nd drawer tray-up motor ON (tray up)	2
248	Developer bias (K) [DC] ON/OFF (Operational without process unit K)	3
249	Developer bias (K) [AC] ON/OFF (Operational without process unit K)	3
252	Main charger (K) ON/OFF (Operational without process unit K)	3
253	Main charger (Y/M/C) ON/OFF (Operational without process unit Y/M/C)	3
254	Developer bias (Y) [DC] ON/OFF (Operational without process unit Y)	3
255	Developer bias (M) [DC] ON/OFF (Operational without process unit M)	3
256	Developer bias (C) [DC] ON/OFF (Operational without process unit C)	3
257	Developer bias (Y/M/C) [AC] ON/OFF (Operational without process unit Y/M/C)	3
261	Scan motor ON (Automatically stops at limit position)	2
264	Scanner fan motor (high speed) ON/OFF	3
265	Scanner fan motor (low speed) ON/OFF	3
267	Scanner exposure lamp ON/OFF	3
271	LCF tray-up motor UP/DOWN	2
278	PFP upper drawer tray-up motor ON (tray up)	2

Code	Function	Procedure
280	PFP lower drawer tray-up motor ON (tray up)	2
281	RADF feed motor ON/OFF (normal rotation)	3
282	RADF feed motor ON/OFF (reverse rotation)	3
283	RADF read motor ON/OFF	3
284	RADF exit/reverse motor ON/OFF (normal rotation)	3
285	RADF exit/reverse motor ON/OFF (reverse rotation)	3
294	Reverse/exit solenoid ON/OFF	3
295	Power OFF mode	4
297	RADF fan motor ON/OFF	3
410	Toner motor (K) ON/OFF (Operational without toner cartridge K)	3
411	Toner motor (C) ON/OFF (Operational without toner cartridge C)	3
412	Toner motor (M) ON/OFF (Operational without toner cartridge M)	3
413	Toner motor (Y) ON/OFF (Operational without toner cartridge Y)	3
414	Used toner motor ON/OFF	3
415	Waste toner transport motor ON/OFF	3
417	Laser shutter (open/close)	2
433	Drum (K) recovery blade bias ON/OFF	3
434	Drum (Y/M/C) recovery blade bias ON/OFF	3
439	EPU cooling fan (low speed) ON/OFF	3
440	EPU cooling fan (high speed) ON/OFF	3
441	Fuser/exit section cooling fan (low speed) ON/OFF	3
442	Fuser/exit section cooling fan (high speed) ON/OFF	3
443	Ozone exhaust fan (low speed) ON/OFF	3
444	Ozone exhaust fan (high speed) ON/OFF	3
445	Laser unit cooling fan (low speed) ON/OFF	3
446	Laser unit cooling fan (high speed) ON/OFF	3
448	Switching regulator cooling fan ON/OFF	3
449	Internal cooling fan (low speed) ON/OFF	3
450	Internal cooling fan (high speed) ON/OFF	3

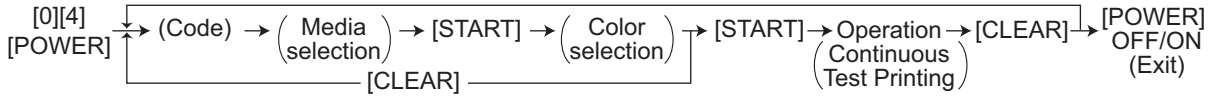
23.3 Test print mode (test mode 04)

The embedded test pattern can be printed out by keying in the following codes in the test print mode (04).

<Procedure 1>



<Procedure 2>



Notes:

1. When an error occurs, it is indicated on the panel, but the recovery operation is not performed.
   Turn OFF the power and then back ON to clear the error.
2. During test printing, the [CLEAR] button is disabled when “Wait adding toner” is displayed.

Code	Types of test pattern	Remarks	Remarks	Output from
142	Grid pattern (black)	Pattern width: 2 dots, Pitch: 10 mm	1	LGC
204	Grid pattern (color)	Pattern width: 1 dot, Pitch: 10 mm	2	LGC
219	6% test pattern		2	LGC
220	8% test pattern		2	LGC
231	Secondary scanning direction 33 gradation steps	3 pixels standard, Width: 10 mm	2	LGC
237	Halftone		2	LGC
262	Ladder pattern (4 lines ON/ 4 lines OFF)	For color deviation confirmation	2	LGC
270	Image quality control test pattern	For checking the image quality control	2	LGC
285	Field curvature deviation check pattern	For secondary scanning position fine adjustment	1	LGC

Note:

In the (Color selection) of <Procedure 2>, the printing method is different between [K(1)] and [K(4)] as follows.

[K(1)] ..... Printing by bringing one K color developer unit into contact with the transfer belt

[K(4)] ..... The developer units of four (YMCK) colors are brought into contact with the transferbelt, but the test pattern is printed in K color only.

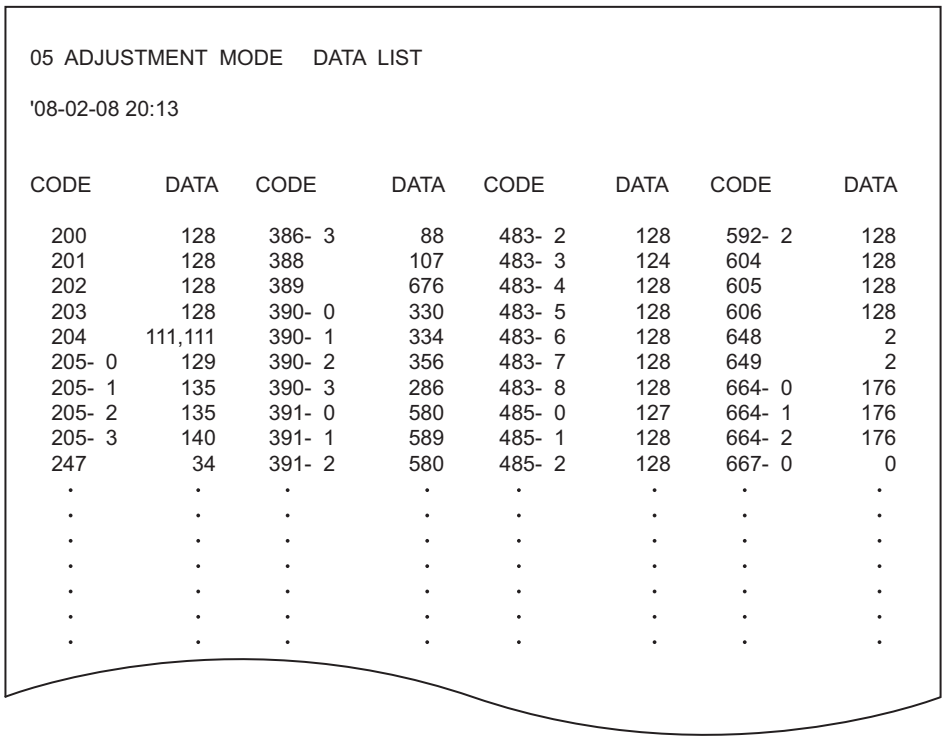
* The number in parentheses indicates the contact of the developer unit and the transfer belt.

23.4 List Printing

Lists below are output in the list print mode.
List data are printed out or output in a CSV or txt format by storing them in a USB media. Paper sizes available for this printing are A4 or LT or larger. This section introduces a sample of each list.
Starting the list print mode: [9] + [START] + [ON/OFF]

Lists	List code		
	Printout	CSV file output	txt file output
Adjustment mode (05) data list	101	201	-
Setting mode (08) data list	102	202	-
PM support mode data list	103	203	-
Pixel counter list (toner cartridge reference)	104	204	-
Pixel counter list (service call reference)	105	205	-
Error history list	106 (Maximum 1000 items)	206 (Maximum 1000 items)	-
Error history list	107 (Latest 80 items)	-	-
Firmware upgrade log	108 (Maximum 200 items)	208 (Maximum 200 items)	-
Power ON/OFF log	110 (Maximum 100 items)	210 (Maximum 100 items)	-
Version list	111	211	-
Error log	-	-	213
Total counter list	-	214	-
All CSV files	-	300	-

- Adjustment mode (05)



05 ADJUSTMENT MODE DATA LIST

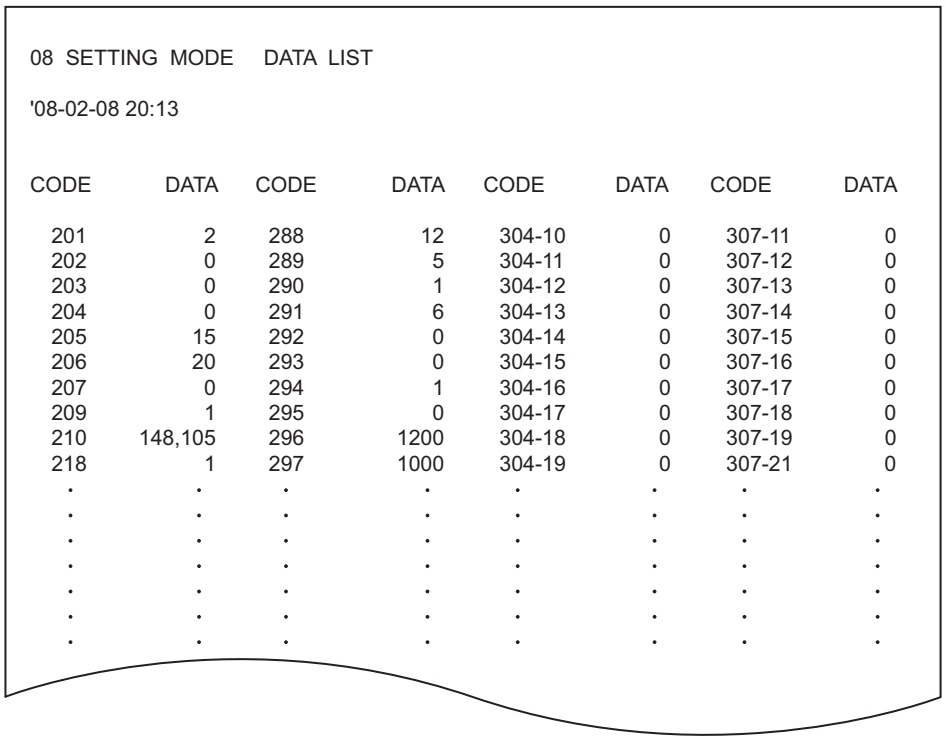
'08-02-08 20:13

CODE	DATA	CODE	DATA	CODE	DATA	CODE	DATA
200	128	386- 3	88	483- 2	128	592- 2	128
201	128	388	107	483- 3	124	604	128
202	128	389	676	483- 4	128	605	128
203	128	390- 0	330	483- 5	128	606	128
204	111,111	390- 1	334	483- 6	128	648	2
205- 0	129	390- 2	356	483- 7	128	649	2
205- 1	135	390- 3	286	483- 8	128	664- 0	176
205- 2	135	391- 0	580	485- 0	127	664- 1	176
205- 3	140	391- 1	589	485- 1	128	664- 2	176
247	34	391- 2	580	485- 2	128	667- 0	0

Fig. 23-3

The selected adjustment codes and the current adjustment value for each code are output in a list.
See the following page for the adjustment code (05):
📖 P.24-1 "24. ADJUSTMENT MODE (05)"

- Setting mode (08)



08 SETTING MODE DATA LIST

'08-02-08 20:13

CODE	DATA	CODE	DATA	CODE	DATA	CODE	DATA
201	2	288	12	304-10	0	307-11	0
202	0	289	5	304-11	0	307-12	0
203	0	290	1	304-12	0	307-13	0
204	0	291	6	304-13	0	307-14	0
205	15	292	0	304-14	0	307-15	0
206	20	293	0	304-15	0	307-16	0
207	0	294	1	304-16	0	307-17	0
209	1	295	0	304-17	0	307-18	0
210	148,105	296	1200	304-18	0	307-19	0
218	1	297	1000	304-19	0	307-21	0

Fig. 23-4

The selected setting codes and the current setting value for each code are output in a list. See the following page for the setting code (08):
📖 P.25-1 "25. SETTING MODE (08)"

- PM support mode

PM SUPPORT CODE LIST

'08-02-08 20:13

UNIT	OUTPUT PAGES/ DEVELOP COUNTS	PM OUTPUT PAGE/ DEVELOP COUNTS	DRIVE COUNTS	PM DRIVE COUNTS
DRUM (K)	2516	70000	11735	170000
DRUM BLADE (K)	2516	70000	11735	170000
GRID (K)	2516	70000	11735	170000
MAIN CHARGER NEEDLE (K)	2516	70000	11735	170000
CHARGER CLEANING PAD (K)	2516	70000	11735	170000
DRUM (Y)	411	70000	8625	170000
DRUM BLADE (Y)	411	70000	8625	170000
GRID (Y)	411	70000	8625	170000
MAIN CHARGER NEEDLE (Y)	411	70000	8625	170000
CHARGER CLEANING PAD (Y)	411	70000	8625	170000
DRUM (M)	411	70000	8625	170000
DRUM BLADE (M)	411	70000	8625	170000
GRID (M)	411	70000	8625	170000
MAIN CHARGER NEEDLE (M)	411	70000	8625	170000
CHARGER CLEANING PAD (M)	411	70000	8625	170000
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.

Fig. 23-5

The number of pages currently output (OUTPUT PAGES/DEVELOP COUNTS), the recommended number of output pages for PM (PM OUTPUT PAGES/DEVELOP COUNTS), the current drive count (DRIVE COUNTS) and the recommended drive count for PM (PM DRIVE COUNTS) are output together with PM units. Use this list for confirming the PM units to be replaced at each PM. See the following page for PM:

📖 P.19-1 "19. PREVENTIVE MAINTENANCE (PM)"

Note:

The number of output pages printed only in the full color mode is given in "PM OUTPUT PAGE/ DEVELOP COUNTS" of the PM support code list.

- Stored information of pixel counter (toner cartridge reference)

PIXEL COUNTER CODE LIST

'08-02-08 20:13

TONERCARTRIDGE

No	DATE	COL.		PPC	PRN	FAX	TOTAL
0	20080208	Y	Print Count[LT/A4]	181	45	---	226
1	20080208	Y	Average Pixel Count[%]	2.70	1.74	---	2.51
2	20080208	Y	Latest Pixel Count[%]	6.15	0.39	---	0.39
3	20080208	M	Print Count[LT/A4]	181	45	---	226
4	20080208	M	Average Pixel Count[%]	6.11	2	---	5.29
5	20080208	M	Latest Pixel Count[%]	6.82	2.15	---	2.15
6	20080208	C	Print Count[LT/A4]	181	45	---	226
7	20080208	C	Average Pixel Count[%]	5.46	2	---	4.81
8	20080208	C	Latest Pixel Count[%]	6.42	2.73	---	2.73
9	20080208	K	Print Count[LT/A4]	278	145	9	432
10	20080208	K	Average Pixel Count[%]	6.15	3.86	23.25	5.74
11	20080208	K	Latest Pixel Count[%]	7.32	2.19	6.25	2.19

Fig. 23-6

Pixel counter data (toner cartridge reference) are output in a list. See the following page for the pixel counter:
📖 P.25-214 "25.9 Pixel counter"

- Stored information of pixel counter (service technician reference)

PIXEL COUNTER CODE LIST

'08-02-08 20:13

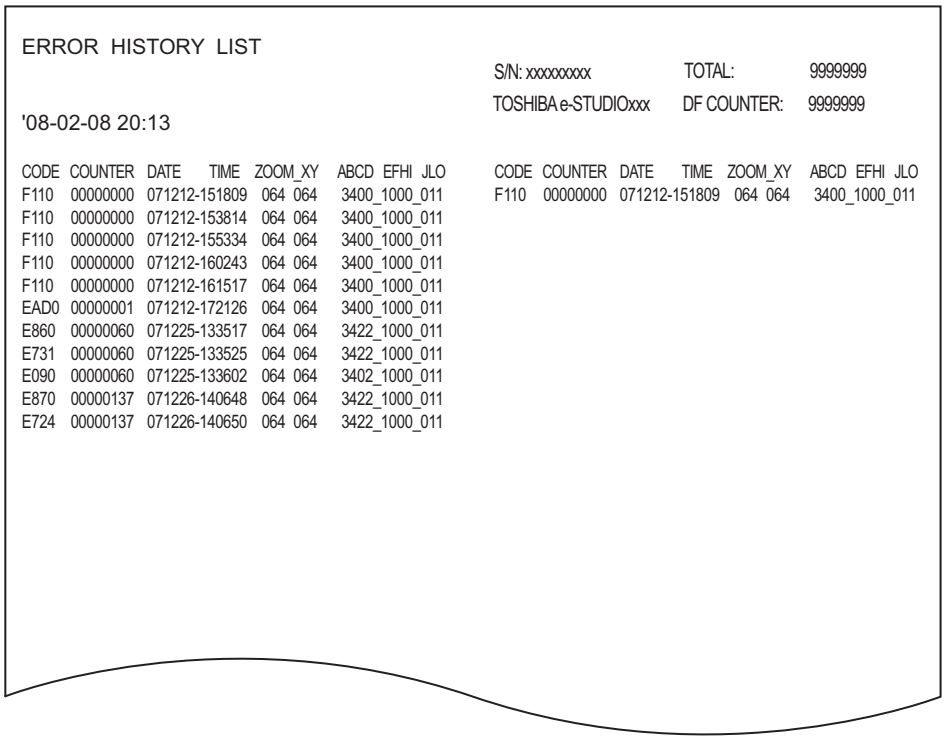
SERVICEMAN

No	DATE	COL.		PPC	PRN	FAX	TOTAL
0	20080208	F	Print Count[LT/A4]	181	45	---	226
1	20080208	F	Average Pixel Count[%]	4.95	2.34	---	4.43
2	20080208	F	Latest Pixel Count[%]	8.36	2.34	---	2.34
3	20080208	Y	Print Count[LT/A4]	181	45	---	226
4	20080208	Y	Average Pixel Count[%]	2.7	1.74	---	2.51
5	20080208	Y	Latest Pixel Count[%]	6.15	0.39	---	0.39
6	20080208	M	Print Count[LT/A4]	181	45	---	226
7	20080208	M	Average Pixel Count[%	6.11	2	---	5.29
8	20080208	M	Latest Pixel Count[%]	6.82	2.15	---	2.15
9	20080208	C	Print Count[LT/A4]	181	45	---	226
10	20080208	C	Average Pixel Count[%]	5.46	2.18	---	4.81
11	20080208	C	Latest Pixel Count[%]	6.42	2.73	---	2.73
12	20080208	K	Print Count[LT/A4]	181	45	---	226
13	20080208	K	Average Pixel Count[%]	5.51	3.43	---	5.10
14	20080208	K	Latest Pixel Count[%]	14.05	4.10	---	4.10
15	20080208	K	Print Count[LT/A4]	97	100	9	206
16	20080208	K	Average Pixel Count[%]	7.36	4.06	23.25	6.45
17	20080208	K	Latest Pixel Count[%]	7.32	2.19	6.25	2.19

Fig. 23-7

Pixel counter data (service call reference) are output in a list. See the following page for the pixel counter:
📖 P.25-214 "25.9 Pixel counter"

- Error history



ERROR HISTORY LIST

S/N: xxxxxxxxx TOTAL: 9999999
TOSHIBA e-STUDIOxxx DF COUNTER: 9999999

'08-02-08 20:13

CODE	COUNTER	DATE	TIME	ZOOM_XY	ABCD EFHI JLO
F110	00000000	071212-	151809	064 064	3400_1000_011
F110	00000000	071212-	153814	064 064	3400_1000_011
F110	00000000	071212-	155334	064 064	3400_1000_011
F110	00000000	071212-	160243	064 064	3400_1000_011
F110	00000000	071212-	161517	064 064	3400_1000_011
EAD0	00000001	071212-	172126	064 064	3400_1000_011
E860	00000060	071225-	133517	064 064	3422_1000_011
E731	00000060	071225-	133525	064 064	3422_1000_011
E090	00000060	071225-	133602	064 064	3402_1000_011
E870	00000137	071226-	140648	064 064	3422_1000_011
E724	00000137	071226-	140650	064 064	3422_1000_011

CODE	COUNTER	DATE	TIME	ZOOM_XY	ABCD EFHI JLO
F110	00000000	071212-	151809	064 064	3400_1000_011

Fig. 23-8

The error history is output. See the following page for the parameters for each error:
📖 P.26-22 "26.2.4 Printer function error"

- Firmware update log

FW UPGRADE LOG

'08-05-10 17:35

S / N : 12345678901
TOSHIBA e-STUDIO3520C

STATE	DATE	TOTAL	COPY(B)	COPY(2)	COPY(C)	PRINT(B)	PRINT(2)	PRINT(C)	LIST	FAX
MANUFACTURE	2007-04-17									
UNPACKING	2007-04-17									
V1.00	2007-04-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430SY0J001	2007-04-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430S-01	2007-04-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430M-01	2007-05-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430F-02	2007-05-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
V1.01	2007-06-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430SY0J002	2007-06-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430S-02	2007-06-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430M-02	2007-06-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430F-03	2007-06-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
V1.02	2007-07-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430SY0J003	2007-07-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430S-03	2007-07-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430M-03	2007-07-17	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
T430F-04	2007-08-18	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999
.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.

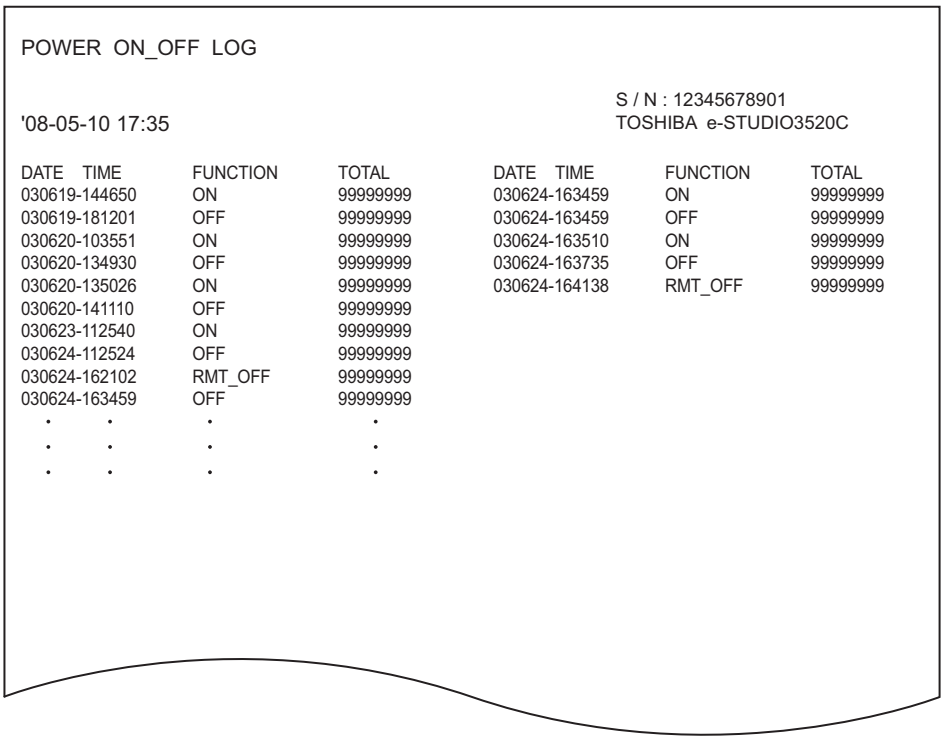
Fig. 23-9

Firmware upgrade logs are output.

- The MANUFACTURE field shows the date of manufacture. The UNPACKING field shows the date that the equipment was unpacked.
- Only the versions of ROMs downloaded using a USB download jig are displayed.

Item	Content
STATE	Version name of ROM downloaded
DATE	Date that the ROM was downloaded
TOTAL	Total counter data when the ROM was downloaded
COPY (B)	Copier counter data (black) when the ROM was downloaded
COPY (2)	Copier counter data (twin color) when the ROM was downloaded
COPY (C)	Copier counter data (full color) when the ROM was downloaded
PRINT (B)	Printer counter data (black) when the ROM was downloaded
PRINT (2)	Printer counter data (twin color) when the ROM was downloaded
PRINT (C)	Printer counter data (full color) when the ROM was downloaded
LIST	List print counter data when the ROM was downloaded
FAX	Fax print counter data when the ROM was downloaded

- Power-ON/OFF log



POWER ON_OFF LOG

S / N : 12345678901
'08-05-10 17:35 TOSHIBA e-STUDIO3520C

DATE	TIME	FUNCTION	TOTAL	DATE	TIME	FUNCTION	TOTAL
030619-	144650	ON	99999999	030624-	163459	ON	99999999
030619-	181201	OFF	99999999	030624-	163459	OFF	99999999
030620-	103551	ON	99999999	030624-	163510	ON	99999999
030620-	134930	OFF	99999999	030624-	163735	OFF	99999999
030620-	135026	ON	99999999	030624-	164138	RMT_OFF	99999999
030620-	141110	OFF	99999999				
030623-	112540	ON	99999999				
030624-	112524	OFF	99999999				
030624-	162102	RMT_OFF	99999999				
030624-	163459	OFF	99999999				

Fig. 23-10

Power ON/OFF logs are output.

- Note that cases that the power was turned OFF with the main switch (not with the [ON/OFF] button on the control panel) will not be displayed.

Item	Content
DATE	Date that the power was turned ON or OFF
TIME	Time that the power was turned ON or OFF
FUNCTION	Whether the power was turned ON or OFF, or if it was turned ON or OFF with a remote reset function
TOTAL	Total counter data when the power was turned OFF and then back ON

- Version list

VERSION LIST

TIME : 04-12-'00 09:00
SERIAL NUMBER: 01234567890123456789

SYSTEM FIRMWARE ROM VERSION	: T410SY0J230
SYSTEM FIRMWARE INTERNAL ROM VERSION	: VTD12.000 J
PRINTER ROM VERSION	: 390M-915
SCANNER ROM VERSION	: 390S-915
RADF ROM VERSION	: DF-9010
FINISHER STACKER ROM VERSION	: FIN-90
FINISHER SADDLE ROM VERSION	: SDL-07
FINISHER PUNCH ROM VERSION	:
CONVERTER ROM VERSION	:
FAX BOARD FIRMWARE ROM VERSION	:
SYSTEM FIRMWARE OS VERSION	: 3901-00
UI DATA FIX SECTION VERSION	: V0.70/0.B3
UI DATA COMMON SECTION VERSION	: V002.000 0
UI DATA INITIAL LANGUAGE AT POWER ON	: V002.000 0
UI DATA 1ST LANGUAGE IN HDD	: V002.000 3
UI DATA 2ND LANGUAGE IN HDD	: V002.000 3
UI DATA 3RD LANGUAGE IN HDD	: V034.000 7
UI DATA 4TH LANGUAGE IN HDD	: V034.000 6
UI DATA 5TH LANGUAGE IN HDD	: V034.000 11
UI DATA 6TH LANGUAGE IN HDD	: V034.000 10
UI DATA 7TH LANGUAGE IN HDD	: V030.000 4
HDD DATA VERSION	: T410HD0J230
WEB UI DATA 1ST LANGUAGE IN HDD	: V022.000 1
WEB UI DATA 2ND LANGUAGE IN HDD	: V022.000 2
WEB UI DATA 3RD LANGUAGE IN HDD	: V022.000 3
WEB UI DATA 4TH LANGUAGE IN HDD	: V022.000 4
WEB UI DATA 5TH LANGUAGE IN HDD	: V022.000 5
WEB UI DATA 6TH LANGUAGE IN HDD	: V022.000 6
CAPACITY OF HDD	: 74.5 GB
DEVICE INFORMATION OF HDD	:
SERIAL NUMBER OF HDD	:
MEMORY SIZE	: 512 MB
INSTALLED ELK NAME	: Data overwrite enabler IPSec enabler Meta scan enabler External interface enabler

Fig. 23-11

The list of versions is output.

- Error Log

  Error logs are output.

  The conditions of the error logs produced in a USB media are as shown below.

  LOG folders

  - yyyymmddhhmm_ss_xxxx (Date and time in which the error occurred + error code)
  - logdump.txt
  - i.txt

- Total Counter list

TOTAL COUNTER LIST
2010/9/28 17:07
TOSHIBA e-STUDIO2020C
CUE800200 TOTAL 220 DF TOTAL 22

PRINT COUNTER

TOTAL

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
COPY	37	0	1	38
FAX	0	0	0	0
PRINTER	122	0	60	182
LIST	0	0	0	0
TOTAL	159	0	61	220

COPY

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	37	0	1	38
LARGE	0	0	0	0
TOTAL	37	0	1	38

FAX

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	0	0	0	0
LARGE	0	0	0	0
TOTAL	0	0	0	0

PRINTER

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	118	0	60	178
LARGE	4	0	0	4
TOTAL	122	0	60	182

LIST

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	0	0	0	0
LARGE	0	0	0	0
TOTAL	0	0	0	0

SCAN COUNTER

TOTAL

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
COPY	7	0	1	8
FAX	0	0	0	0
NETWOF	0	0	0	0
TOTAL	7	0	1	8

COPY

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	7	0	1	8
LARGE	0	0	0	0
TOTAL	7	0	1	8

FAX

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	0	0	0	0
LARGE	0	0	0	0
TOTAL	0	0	0	0

NETWORK

	FULL COLOR	TWIN/MONO COLOR	BLACK	TOTAL
SMALL	0	0	0	0
LARGE	0	0	0	0
TOTAL	0	0	0	0

CALIBRATION COUNTER 0

Fig. 23-12

The list of total counter is output.

24. ADJUSTMENT MODE (05)

Items in the adjustment mode list in the following pages can be corrected or changed in this adjustment mode (05). Turn ON the power with pressing the digital keys [0] and [5] simultaneously in order to enter this mode.

Note:

When the power should be turned OFF, be sure to shut down the equipment by pressing the [ON/OFF] button for a few seconds.

Remarks:

- The Service Handbook contains only the selected codes while the Service Manual contains all codes.
- The digit after the hyphen in “Code” of the following table is a sub code.
- In “RAM”, the SRAM of the board in which the data of each code is stored is indicated. “M” stands for the LGC board and “SYS” stands for the SYS board.

24.1 Classification List of Adjustment Mode (05)

Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Scanner	[Log table]	361, 362	
	[Image position]		305, 306
	[Carriage position]	359, 360	
	[Fixed value]		363, 364
	[Shading position]	350, 351	
	[Distortion]		308
	[Reproduction ratio]		340
	[Automatic dust detection]	349	
Image	[ACS]		1675
	[RGB]		1080, 1081, 1082, 8372
	[Black header density level adjustment]		7811, 7812, 7816
	[Fine line enhancement switchover]	7323-0 to 2, 8103-0 to 2	7322-0 to 2, 8102-0 to 2,
	[Leading edge adjustment]	497-0 to 5, 4065, 4066, 4067-0 to 6, 4562, 4563, 4564, 4565, 4567-0 to 5, 4568,	408, 410, 411, 428, 429, 440, 441, 442, 444, 445, 498-0 to 1, 4732-0 to 1
	[Image density]		503, 504, 505, 507, 508, 510, 514, 515, 700, 710, 714, 725, 729, 845, 846, 847, 848, 860, 861, 862, 863, 931, 934, 937, 940, 1585, 1586, 1587, 1588, 1589, 7475, 7478, 7641-0 to 2, 7642-0 to 2, 8210-0 to 3, 8211-0 to 3, 8212-0 to 3, 8213, 8214, 8215, 8249-0 to 4, 8250-0 to 4, 8251-0 to 4, 8252-0 to 4, 8253-0 to 4, 8254-0 to 4, 8340, 8341, 8342, 8344, 8345, 8346, 8348, 8349, 8350, 8371, 8380, 8381, 8382

Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Image	[Color balance]		1779-0 to 2, 1780-0 to 2, 1781-0 to 2, 1782-0 to 2, 1783-0 to 2, 1784-0 to 2, 1785-0 to 2, 1786-0 to 2, 1787-0 to 2, 1788-0 to 2, 1789-0 to 2, 1790-0 to 2, 1791-0 to 2, 1792-0 to 2, 1793-0 to 2, 1794-0 to 2, 1795-0 to 2, 1796-0 to 2, 1797-0 to 2, 1798-0 to 2, 7980-0 to 2, 7981-0 to 2, 7982-0 to 2, 7983-0 to 2, 8026-0 to 2, 8027-0 to 2, 8028-0 to 2, 8029-0 to 2, 8030-0 to 2, 8031-0 to 2, 8032-0 to 2, 8033-0 to 2, 8034-0 to 2, 8035-0 to 2, 8036-0 to 2, 8037-0 to 2, 8038-0 to 2, 8039-0 to 2, 8040-0 to 2, 8041-0 to 2, 8042-0 to 2, 8043-0 to 2, 8044-0 to 2, 8045-0 to 2, 8046-0 to 2, 8047-0 to 2, 8048-0 to 2, 8049-0 to 2, 8050-0 to 2, 8051-0 to 2, 8052-0 to 2, 8053-0 to 2, 8054-0 to 2, 8055-0 to 2, 8056-0 to 2, 8057-0 to 2, 8058-0 to 2, 8059-0 to 2, 8060-0 to 2, 8061-0 to 2, 8062-0 to 2, 8063-0 to 2, 8064-0 to 2, 8065-0 to 2, 8066, 8150-0 to 2, 8151-0 to 2, 8152-0 to 2, 8153-0 to 2, 8154-0 to 2, 8155-0 to 2, 8156-0 to 2, 8157-0 to 2
	[Gamma adjustment]	1644-0 to 8, 7380-0 to 2	580, 1642
	[Gamma balance]	7319-0 to 2, 7320-0 to 2,	590-0 to 2, 591-0 to 2, 592-0 to 2, 880-0 to 2, 881-0 to 2, 882-0 to 2, 883-0 to 2, 949-0 to 2, 1004-0 to 8, 1008, 7315-0 to 2, 7316-0 to 2, 7317-0 to 2, 7318-0 to 2, 7480-0 to 2, 7956-0 to 2, 7957-0 to 2, 7958-0 to 2, 7959-0 to 2
	[Black reproduction switching]		1761
	[Highlight pen]		1769-0 to 5
	[Color / Black selection]		8218
	[Line width minimum value adjustment]		8240
	[Reproduction level adjustment]	7841	1725
	[Maximum text density]		1630, 1631, 1632, 1633
	[Background/Black density]		1075, 1076, 1077

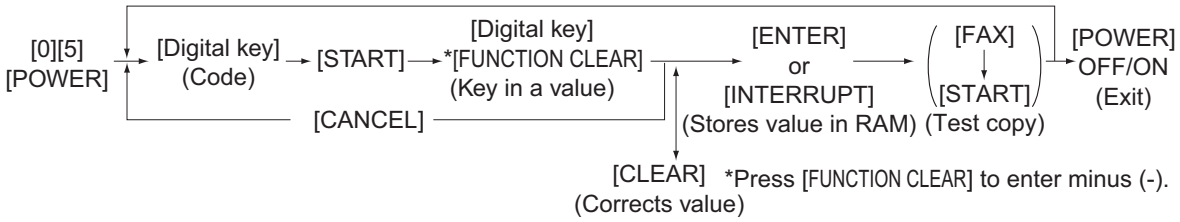
Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Image	[Saturation]		8325, 8326, 8327, 8373
	[Background processing]		1070, 1071, 1072, 1688, 1689, 1690, 1691, 1692, 1698, 1699, 1700, 1701, 1702, 7025, 7033, 7034, 7041, 7042, 7043, 7044, 7048, 7049, 7279, 7280, 7468, 7675, 7676, 7677, 7678, 7679, 7754, 7755, 7756, 7757, 7758, 7759, 7760, 7761, 7762, 7763, 7764, 7765, 7766, 8010-0 to 2, 8011-0 to 2, 8012-0 to 2, 8013-0 to 2, 8014-0 to 2, 8015-0 to 2, 8370, 8385, 8386, 8387, 8389, 8390, 8391, 8392, 8394, 8395, 8400, 8402, 8403, 8404, 8405, 8407, 8408, 8409
	[Sharpness]		604, 605, 606, 840, 841, 842, 843, 922, 1086, 1087, 1088, 1737, 1738, 1739, 1740, 1741, 1757, 7470, 7795, 7807, 7808, 7809, 8110-0 to 2, 8111-0 to 2, 8112-0 to 2, 8113-0 to 2, 8118-0 to 2, 8119-0 to 2, 8375
	[Switchover on screens]	8179, 8190, 8191	8176, 8187, 8188
	[Smudged/faint text]		648, 649, 925, 7102, 7103, 7340, 7341, 7342, 8130, 8131, 8132
	[Toner saving]		664-0 to 2, 1055-0 to 2
	[Toner limit threshold]		8070-0 to 9, 8071-0 to 9
	[Toner amount]		1050, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620
	[Blank page judgment]	7618	
	[Background processing]	9104, 9107	
	[Setting beam level conversion]	672-0 to 4, 678-0 to 4	667-0 to 4
	[Image void correction]	4731-0 to 7, 7489	
	[Margin]	435, 436, 437, 438	430, 431, 432, 433, 434-0 to 5,
	[Range correction]		7236, 7237, 7283, 7284, 7286, 7287, 7295, 7296, 7416, 7417, 7418, 7419, 7421, 7422, 7423, 7424, 7425, 7426, 7667, 7668, 7669, 7670, 7767, 7768, 7769, 7770, 7771, 7772, 7773, 7774, 7775, 7776, 7777, 7778, 8330, 8331, 8332, 8334, 8361, 8362, 8363, 8365
Color registration	[Color registration adjustment]		4719, 4720

Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Image control	[Secondary scanning position fine adjustment]	417-0 to 2	
	[Temperature/ Humidity]	393	
	[Color/Black developer]	386-0 to 3	
	[Contrast voltage]	330-0 to 3, 332-0 to 3, 380-0 to 3, 381-0 to 3, 1800-0 to 3, 1801-0 to 3, 1811-0 to 3, 1812-0 to 3, 1815-0 to 3	
	[Performing]		394, 395, 396
	[Sensor]	392	388, 389, 390-0 to 3, 391-0 to 3
	[Main charger]	385-0 to 3	
	[Laser power]	331-0 to 3, 333-0 to 3, 382-0 to 3, 383-0 to 3, 384-0 to 3, 1802-0 to 3, 1803-0 to 3, 1816-0 to 3, 2725, 2726	
Drive system	[ADU motor]	491-0 to 11	
	[PFP motor]	4707-0 to 8	
	[TLCF motor]	4708-0 to 8	
	[Feed/transport motor]		489-0 to 8
	[Transfer belt motor]		487-0 to 8
	[Drum motor]	481-0 to 8	
	[Exit motor]	446-0 to 11	
	[Fuser roller]	485-0 to 8	
	[Registration motor]	483-0 to 8	
Feeding system	[Aligning amount]	4100-0 to 4, 4101-0 to 4, 4103-0 to 4, 4104-0 to 4, 4105-0 to 4, 4106-0 to 4, 4107-0 to 4, 4108-0 to 4, 4109-0 to 4, 4110-0 to 4, 4111, 4115-0 to 4, 4116-0 to 4, 4117-0 to 4, 4118-0 to 4, 4120-0 to 4, 4122-0 to 4, 4123-0 to 4, 4124-0 to 4, 4125-0 to 4, 4126, 4127-0 to 4, 4128-0 to 4, 4129-0 to 4	480
	[Paper pushing amount]	467-0 to 4	
Laser	[Polygonal motor]	4703, 4704, 4758, 4759	401, 405
Developer	[Auto-toner]	205-0 to 3, 2409-0 to 3, 2411	200, 201, 202, 203, 204, 206

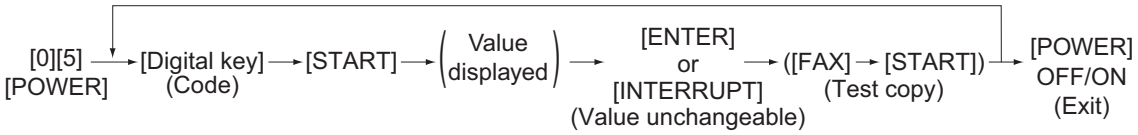
Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Transfer	[1st transfer]	2900-0 to 11, 2905-0 to 11, 2981-0 to 1, 2985-0 to 1, 2986-0 to 1, 2987-0 to 1, 2988-0 to 1, 2920-0 to 11, 2921-0 to 11	
	[2nd transfer]	2924-0 to 8, 2925-0 to 8, 2926-0 to 8, 2927-0 to 8, 2983-0 to 1, 2984-0 to 1	
	[Color registration control]	4789	
	[Temperature/ humidity]	247, 270	
	[Cleaning]	2961-0 to 1, 2962-0 to 1, 2963-0 to 1, 2966-0 to 1	
	[Bias offset]	2934-0 to 8, 2935-0 to 8, 2936-0 to 8, 2937-0 to 8, 2938-0 to 8, 2939-0 to 8, 2940-0 to 8, 2941-0 to 8	
Charger	[Charger grid calibration]	248, 2622-0 to 1, 2623-0 to 1, 2624-0 to 1, 2625-0 to 1, 2764	
Developer	[Developer]	2627-0 to 1, 2628-0 to 1, 2629-0 to 1, 2630-0 to 1	
RADF	[Aligning amount]	354, 355	
	[Transporting]		357, 358, 365, 366
Finisher	[Binding/Folding position]		468-0 to 2
Maintenance	[Equipment number]		976
	[Maintenance]		4721

24.2 Operating Procedure

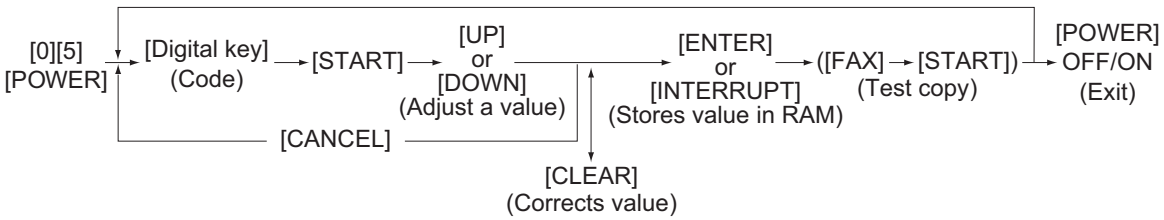
Procedure 1



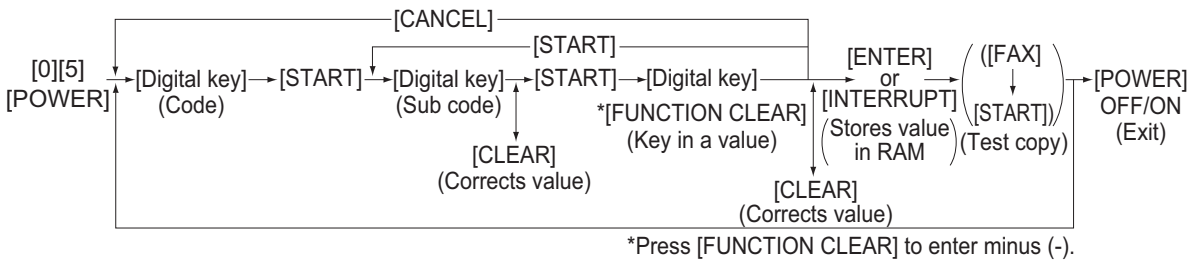
Procedure 2



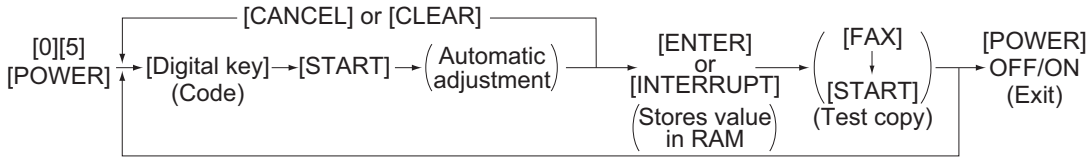
Procedure 3



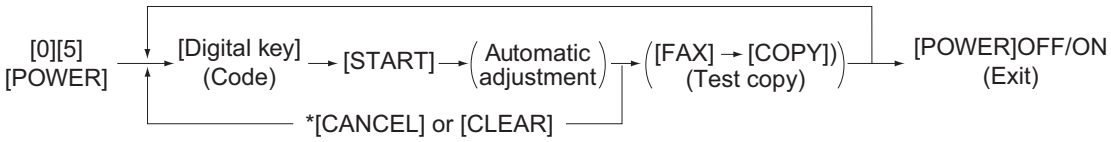
Procedure 4



Procedure 5



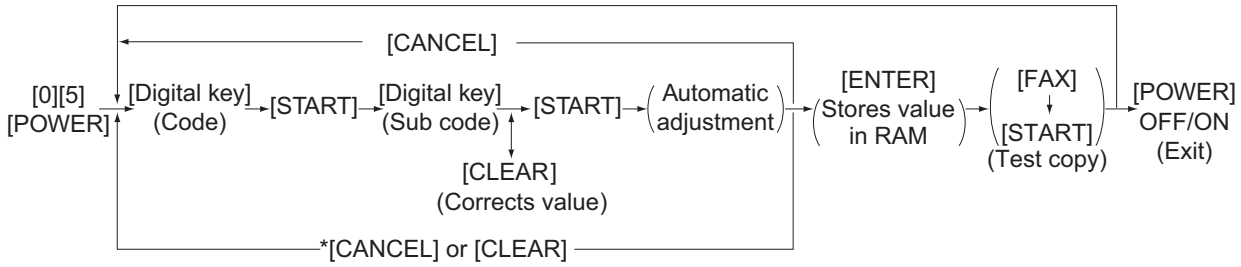
Procedure 6



* When the automatic adjustment ends abnormally, an error message is displayed.

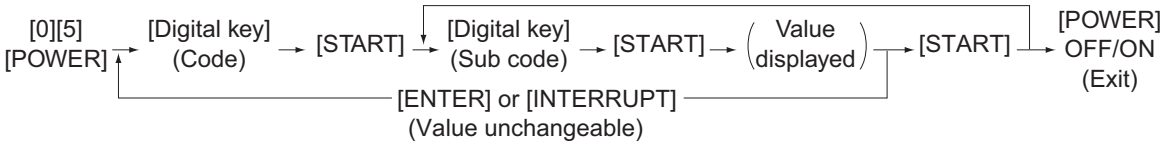
* Return to standby screen by pressing the [CANCEL] or [CLEAR] button.

Procedure 7

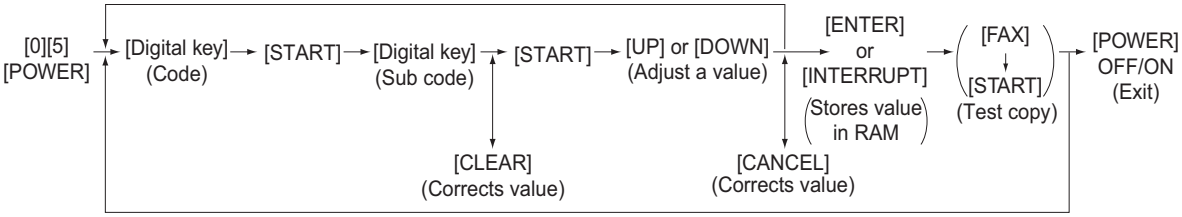


* When the automatic adjustment ends abnormally, an error message is displayed.
* Return to standby screen by pressing the [CANCEL] or [CLEAR] button.

Procedure 10



Procedure 14



Note:

The fuser roller temperature control at the adjustment mode is different from that at the normal state.
Therefore, the problem of fusing efficiency may be occurred in the test copy at the adjustment mode.
In that case, turn ON the power normally, leave the equipment for approx. 3 minutes after it has become ready state and then start up the adjustment mode again.

24.3 Test print pattern in Adjustment Mode (05)

Operation:
One test print is printed out when the [FAX] button is pressed after the code is keyed in at Standby Screen.

Code	Types of test pattern	Remarks
1	Grid pattern (Black)	For printer related adjustment
3	Grid pattern (Black/Duplex printing)	Refer to 8.5.8Image dimensional adjustment at the printing section
4	Copier gamma adjustment pattern (Color & black integrated / All media types)	Refer to 8.6.1Automatic gamma adjustment
5	Copier gamma adjustment pattern (Color / All media types)	Refer to 8.6.1Automatic gamma adjustment
6	Copier gamma confirmation pattern (Black / All media types)	Refer to 8.6.1Automatic gamma adjustment
7	Copier gamma confirmation pattern (Color / All media types)	Refer to 8.6.1Automatic gamma adjustment
8	Grid pattern (Color)	
10	Copier gamma adjustment pattern (Black / All media types)	Refer to 8.6.1Automatic gamma adjustment
12	Secondary scanning direction 33 gradation steps (Y)	For checking the image of printer section
13	Secondary scanning direction 33 gradation steps (M)	For checking the image of printer section
14	Secondary scanning direction 33 gradation steps (C)	For checking the image of printer section
15	Secondary scanning direction 33 gradation steps (K)	For checking the image of printer section
55	Grid pattern (Full Color / Thick paper 2)	Refer to 8.5.7Paper alignment at the registration roller
56	Grid pattern (Full Color / Thick paper 3)	Refer to 8.5.7Paper alignment at the registration roller
57	Grid pattern (Full Color / OHP)	Refer to 8.5.7Paper alignment at the registration roller
58	Grid pattern (Black / Thick paper 2)	Refer to 8.5.7Paper alignment at the registration roller
59	Grid pattern (Black / Thick paper 3)	Refer to 8.5.7Paper alignment at the registration roller
60	Grid pattern (Black / OHP)	Refer to 8.5.7Paper alignment at the registration roller
63	For color deviation correction (Full Color)	Only for A3/LD size
70	Printer gamma correction table creation pattern (Plain paper)	Refer to 8.7.1Automatic gamma adjustment
71	Printer gamma correction table confirmation pattern (Plain paper)	Refer to 8.7.1Automatic gamma adjustment
74	Printer gamma correction table creation pattern	Refer to 8.7.1Automatic gamma adjustment
75	Printer gamma correction table confirmation pattern (Recycled paper)	Refer to 8.7.1Automatic gamma adjustment
76	Printer gamma correction table creation pattern (Thick paper 1)	Refer to 8.7.1Automatic gamma adjustment
77	Printer gamma correction table confirmation pattern (Thick paper 1)	Refer to 8.7.1Automatic gamma adjustment

Code	Types of test pattern	Remarks
78	Printer gamma correction table creation pattern (Thick paper 2)	Refer to 8.7.1Automatic gamma adjustment
79	Printer gamma correction table confirmation pattern (Thick paper 2)	Refer to 8.7.1Automatic gamma adjustment
80	Printer gamma correction table creation pattern (Thick paper 3)	Refer to 8.7.1Automatic gamma adjustment
81	Printer gamma correction table confirmation pattern (Thick paper 3)	Refer to 8.7.1Automatic gamma adjustment
82	Printer gamma correction table creation pattern (Thick paper 4)	Refer to 8.7.1Automatic gamma adjustment
83	Printer gamma correction table confirmation pattern (Thick paper 4)	Refer to 8.7.1Automatic gamma adjustment
84	Printer gamma correction table creation pattern (Special paper 1)	Refer to 8.7.1Automatic gamma adjustment
85	Printer gamma correction table confirmation pattern (Special paper 1)	Refer to 8.7.1Automatic gamma adjustment
86	Printer gamma correction table creation pattern (Special paper 2)	Refer to 8.7.1Automatic gamma adjustment
87	Printer gamma correction table confirmation pattern (Special paper 2)	Refer to 8.7.1Automatic gamma adjustment
98	Grid pattern -2 (For printing K(4) / Plain paper)	Refer to 8.5.8Image dimensional adjustment at the printing section
99	Grid pattern -2 (For printing K(4) / Thick paper 1)	
100	Grid pattern - 1 (Full color / Thick paper 1)	
101	Grid pattern - 1 (Black / Thick paper 1)	
104	Color deviation confirmation pattern (A3/LD)	
111	Field curvature deviation confirmation pattern	For secondary scanning position fine adjustment
200	Copier gamma adjustment pattern (Color & black integrated / Plain paper)	Refer to 8.6.1Automatic gamma adjustment
201	Copier gamma confirmation pattern (Color / Plain paper)	Refer to 8.6.1Automatic gamma adjustment
204	Copier gamma adjustment pattern (Color & black integrated / Recycled paper)	Refer to 8.6.1Automatic gamma adjustment
205	Copier gamma confirmation pattern (Color / Recycled paper)	Refer to 8.6.1Automatic gamma adjustment
206	Copier gamma adjustment pattern (Color & black integrated / Thick paper 1)	Refer to 8.6.1Automatic gamma adjustment
207	Copier gamma confirmation pattern (Color / Thick paper 1)	Refer to 8.6.1Automatic gamma adjustment
208	Copier gamma adjustment pattern (Color & black integrated / Thick paper 2)	Refer to 8.6.1Automatic gamma adjustment
209	Copier gamma confirmation pattern (Color / Thick paper 2)	Refer to 8.6.1Automatic gamma adjustment
210	Copier gamma adjustment pattern (Color & black integrated / Thick paper 3)	Refer to 8.6.1Automatic gamma adjustment
211	Copier gamma confirmation pattern (Color / Thick paper 3)	Refer to 8.6.1Automatic gamma adjustment
212	Copier gamma adjustment pattern (Color & black integrated / Thick paper 4)	Refer to 8.6.1Automatic gamma adjustment

Code	Types of test pattern	Remarks
213	Copier gamma confirmation pattern (Color / Thick paper 4)	Refer to 8.6.1Automatic gamma adjustment
214	Copier gamma adjustment pattern (Color & black integrated / Special paper 1)	Refer to 8.6.1Automatic gamma adjustment
215	Copier gamma confirmation pattern (Color / Special paper 1)	Refer to 8.6.1Automatic gamma adjustment
216	Copier gamma adjustment pattern (Color & black integrated / Special paper 2)	Refer to 8.6.1Automatic gamma adjustment
217	Copier gamma confirmation pattern (Color / Special paper 2)	Refer to 8.6.1Automatic gamma adjustment

24.4 Process

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
200	Development	Initialization of color auto-toner sensor light amount correction target value	All (Y,M,C,K)	ALL	- <0-255>	M	The value starts changing approx. 3 minutes after this adjustment started. The value is automatically set during this adjustment (approx. 2 minutes). (As the value increases, the sensor output increases correspondingly.) Ch.8.5.2	5
201			Y	ALL	- <0-255>	M		5
202			M	ALL	- <0-255>	M		5
203			C	ALL	- <0-255>	M		5
204			K	ALL	- <0-255>	M		5
205-0	Development	Normal speed mode Adjustment of auto-toner initial adjustment reference setting value (YMCK)	Y	ALL	130 <0-255>	M		4
205-1			M	ALL	130 <0-255>	M		4
205-2			C	ALL	130 <0-255>	M		4
205-3			K	ALL	130 <0-255>	M		4
206	Development	Initialization of auto-toner		ALL	- <0-255>	M		5
247	Transfer	Temperature/humidity sensor humidity display		ALL	50 <0-100>	M	Displays the humidity value set at the image quality open-loop control transfer correction.	2
248	Charger	Drum thermistor temperature display (K)		ALL	23 <0-100>	M	(Unit: °C)	2
270	Transfer	Temperature/humidity sensor temperature display		ALL	23 <0-100>	M	Displays the temperature value set at the image quality open-loop control transfer correction.	2
330-0	Image control	Image quality closed-loop control contrast voltage correction/ Mode 2 maximum number of time corrected	Y	ALL	3 <0-16>	M	Sets the maximum correction number of time of the contrast voltage in the closed-loop control mode 2.	4
330-1			M	ALL	3 <0-16>	M		4
330-2			C	ALL	3 <0-16>	M		4
330-3			K	ALL	3 <0-16>	M		4
331-0	Image control	Image quality closed-loop control laser power correction/ Mode 2 maximum number of time corrected	Y	ALL	2 <0-16>	M	Sets the maximum correction number of time of the laser power in the closed-loop control mode 2.	4
331-1			M	ALL	2 <0-16>	M		4
331-2			C	ALL	2 <0-16>	M		4
331-3			K	ALL	2 <0-16>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
332-0	Image control	Image quality closed-loop control contrast voltage correction/ Mode 1 maximum number of time corrected	Y	ALL	1 <0-16>	M	Sets the maximum correction number of time of the contrast voltage in the closed-loop control mode 1.	4
332-1			M	ALL	1 <0-16>	M		4
332-2			C	ALL	1 <0-16>	M		4
332-3			K	ALL	1 <0-16>	M		4
333-0	Image control	Image quality closed-loop control laser power correction/ Mode 1 maximum number of time corrected	Y	ALL	1 <0-16>	M	Sets the maximum correction number of time of the laser power in the closed-loop control mode 1.	4
333-1			M	ALL	1 <0-16>	M		4
333-2			C	ALL	1 <0-16>	M		4
333-3			K	ALL	1 <0-16>	M		4
380-0	Image control	Image quality open-loop control/ contrast voltage initial value display	Y	ALL	310 <0-999>	M	Displays the contrast voltage initial value set by the open-loop control. (Unit: V)	10
380-1			M	ALL	310 <0-999>	M		10
380-2			C	ALL	310 <0-999>	M		10
380-3			K	ALL	260 <0-999>	M		10
381-0	Image control	Contrast voltage actual value display	Y	ALL	300 <0-999>	M	Displays the contrast voltage when printing is operated. (Unit: V)	10
381-1			M	ALL	300 <0-999>	M		10
381-2			C	ALL	300 <0-999>	M		10
381-3			K	ALL	300 <0-999>	M		10
382-0	Image control	Image quality open-loop control/ laser power initial value display	Y	ALL	322 <0-999>	M	Displays the laser power initial value set by the open-loop control. (Unit: µW)	10
382-1			M	ALL	322 <0-999>	M		10
382-2			C	ALL	322 <0-999>	M		10
382-3			K	ALL	322 <0-999>	M		10
383-0	Image control	Laser power actual value display	Y	ALL	82 <0-255>	M	Displays the laser power when printing is operated. (bit value)	10
383-1			M	ALL	82 <0-255>	M		10
383-2			C	ALL	82 <0-255>	M		10
383-3			K	ALL	82 <0-255>	M		10
384-0	Image control	Laser power actual value display	Y	ALL	322 <0-999>	M	Displays the laser power when printing is operated. (Unit: µW)	10
384-1			M	ALL	322 <0-999>	M		10
384-2			C	ALL	322 <0-999>	M		10
384-3			K	ALL	322 <0-999>	M		10

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
385-0	Image control	Main charger grid bias actual value display	Y	ALL	77 <0-255>	M	Displays the main charger grid bias when printing is operated. (bit value)	10
385-1			M	ALL	77 <0-255>	M		10
385-2			C	ALL	77 <0-255>	M		10
385-3			K	ALL	77 <0-255>	M		10
386-0	Image control	Developer bias DC (-) actual value display	Y	ALL	80 <0-255>	M	Displays the developer bias when printing is operated. (bit value)	10
386-1			M	ALL	80 <0-255>	M		10
386-2			C	ALL	80 <0-255>	M		10
386-3			K	ALL	80 <0-255>	M		10
388	Image control	Output value display of image quality sensor	When the light source is OFF	ALL	0 <0-1023>	M	Displays the output value of image quality sensor when the sensor light source is OFF.	2
389			Transfer belt surface	ALL	0 <0-1023>	M	Displays the output value of image quality sensor (when there is no test pattern) on the transfer belt.	2
390-0			High density pattern Y	ALL	0 <0-1023>	M	Displays the output value of image quality sensor when a high-density test pattern is written. The larger the value is, the smaller the toner amount adhered becomes.	10
390-1			High density pattern M	ALL	0 <0-1023>	M		10
390-2			High density pattern C	ALL	0 <0-1023>	M		10
390-3			High density pattern K	ALL	0 <0-1023>	M		10
391-0	Image control	Output value display of image quality sensor	Low density pattern Y	ALL	0 <0-1023>	M	Displays the output value of image quality sensor when a low-density test pattern is written. The larger the value is, the smaller the toner amount adhered becomes.	10
391-1			Low density pattern M	ALL	0 <0-1023>	M		10
391-2			Low density pattern C	ALL	0 <0-1023>	M		10
391-3			Low density pattern K	ALL	0 <0-1023>	M		10
392	Image control	Light amount adjustment result of image quality sensor		ALL	0 <0-255>	M	The LED light amount adjustment value of this sensor is the reference value to set the reflected light from the belt surface.	2

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
393	Image control	Relative humidity display during latest closed-loop control		ALL	0 <0-100>	M	Displays the relative humidity at the latest performing of the closed-loop control. (Unit: %)	2
394	Image control	Enforced performing of image quality open-loop control		ALL	-	-	Performs the image quality open-loop control.	6
395	Image control	Enforced performing of image quality color closed-loop control		ALL	-	M	Performs the image quality closedloop control.	6
396	Image control	Image quality control initialization		ALL	-	M	Performs the image quality control, initialize each control value.	6
1800-0	Image control	Upper limit value of contrast voltage	Y	ALL	500 <350-700>	M	Sets the upper limit value of the contrast voltage at the image quality control. (Unit: V)	4
1800-1			M	ALL	500 <350-700>	M		4
1800-2			C	ALL	500 <350-700>	M		4
1800-3			K	ALL	500 <350-700>	M		4
1801-0	Image control	Lower limit value of contrast voltage	Y	ALL	150 <120-350>	M	Sets the lower limit value of the contrast voltage at the image quality control. (Unit: V)	4
1801-1			M	ALL	150 <120-350>	M		4
1801-2			C	ALL	150 <120-350>	M		4
1801-3			K	ALL	140 <120-350>	M		4
1802-0	Image control	Upper limit value of laser power	Y	ALL	600 <322-750>	M	Sets the upper limit value of the laser power at the image quality control. (Unit: µW)	4
1802-1			M	ALL	600 <322-750>	M		4
1802-2			C	ALL	600 <322-750>	M		4
1802-3			K	ALL	600 <322-750>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1803-0	Image control	Lower limit value of laser power	Y	ALL	260 <150-322>	M	Sets the lower limit value of the laser power at the image quality control. (Unit: µW)	4
1803-1			M	ALL	260 <150-322>	M		4
1803-2			C	ALL	260 <150-322>	M		4
1803-3			K	ALL	260 <150-322>	M		4
1811-0	Image control	Contrast voltage/upper limit actual value display	Y	ALL	600 <0-999>	M	Displays the upper limit value of the contrast voltage when printing is operated. (Unit: V)	10
1811-1			M	ALL	600 <0-999>	M		10
1811-2			C	ALL	600 <0-999>	M		10
1811-3			K	ALL	600 <0-999>	M		10
1812-0	Image control	Contrast voltage/lower limit actual value display	Y	ALL	150 <0-999>	M	Displays the lower limit value of the contrast voltage when printing is operated. (Unit: V)	10
1812-1			M	ALL	150 <0-999>	M		10
1812-2			C	ALL	150 <0-999>	M		10
1812-3			K	ALL	140 <0-999>	M		10
1815-0	Image control	Contrast voltage/ correction number of time display	Y	ALL	0 <0-255>	M	Displays the actual number of time the contrast voltage has been corrected at the closed-loop control.	10
1815-1			M	ALL	0 <0-255>	M		10
1815-2			C	ALL	0 <0-255>	M		10
1815-3			K	ALL	0 <0-255>	M		10
1816-0	Image control	Laser power correction/ number of time display	Y	ALL	0 <0-255>	M	Displays the actual number of time the laser power has been corrected at the closed-loop control.	10
1816-1			M	ALL	0 <0-255>	M		10
1816-2			C	ALL	0 <0-255>	M		10
1816-3			K	ALL	0 <0-255>	M		10
2409-0	Development	Decelerating mode Adjustment of auto-toner initial adjustment reference setting value (YMCK)	Y	ALL	125 <0-255>	M		4
2409-1			M	ALL	125 <0-255>	M		4
2409-2			C	ALL	125 <0-255>	M		4
2409-3			K	ALL	125 <0-255>	M		4
2411	Development	High speed mode Adjustment of auto-toner initial adjustment reference setting value (K(1))		ALL	137 <0-255>	M		1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2622-0	Charger	Main charger grid calibration voltage (Y)	Low	ALL	300 <0-1400>	M	(Unit: V)	4
2622-1			High	ALL	1200 <0-1400>	M		4
2623-0	Charger	Main charger grid calibration voltage (M)	Low	ALL	300 <0-1400>	M	(Unit: V)	4
2623-1			High	ALL	1200 <0-1400>	M		4
2624-0	Charger	Main charger grid calibration voltage (C)	Low	ALL	300 <0-1400>	M	(Unit: V)	4
2624-1			High	ALL	1200 <0-1400>	M		4
2625-0	Charger	Main charger grid calibration voltage (K)	Low	ALL	300 <0-1400>	M	(Unit: V)	4
2625-1			High	ALL	1200 <0-1400>	M		4
2627-0	Developer	Developer bias DC (-) calibration voltage (Y)	Low	ALL	200 <0-1000>	M	(Unit: V)	4
2627-1			High	ALL	900 <0-1000>	M		4
2628-0	Developer	Developer bias DC (-) calibration voltage (M)	Low	ALL	200 <0-1000>	M	(Unit: V)	4
2628-1			High	ALL	900 <0-1000>	M		4
2629-0	Developer	Developer bias DC (-) calibration voltage (C)	Low	ALL	200 <0-1000>	M	(Unit: V)	4
2629-1			High	ALL	900 <0-1000>	M		4
2630-0	Developer	Developer bias DC (-) calibration voltage (K)	Low	ALL	200 <0-1000>	M	(Unit: V)	4
2630-1			High	ALL	900 <0-1000>	M		4
2725	Image control	Upper limit value of laser power	Black / High speed	ALL	750 <428-750>	M	Sets the upper limit value of the laser power at the image quality control. (Unit: µW)	1
2726	Image control	Lower limit value of laser power	Black / High speed	ALL	340 <150-428>	M	Sets the lower limit value of the laser power at the image quality control. (Unit: µW)	1
2764	Charger	Drum thermistor temperature display (Y)		ALL	23 <0-100>	M	(Unit: °C)	2

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2900-0	Transfer	1st transfer bias RMS value in the normal mode	Y normal speed	ALL	Refer to content <0-255>	M	Displays the 1st transfer bias in printing. (bit value) 2900-0, 4, 5 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C/3530C: 97 e-STUDIO4520C: 108 2900-1, 3 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C/3530C: 102 e-STUDIO4520C: 108	10
2900-1			M normal speed	ALL	Refer to content <0-255>	M		10
2900-2			C normal speed	ALL	108 <0-255>	M		10
2900-3			K normal speed	ALL	Refer to content <0-255>	M		10
2900-4			K(4) normal speed	ALL	Refer to content <0-255>	M		10
2900-5			K(1) Normal speed / High speed	ALL	Refer to content <0-255>	M		10
2900-6			Y decelerating	ALL	85 <0-255>	M		10
2900-7			M decelerating	ALL	91 <0-255>	M		10
2900-8			C decelerating	ALL	102 <0-255>	M		10
2900-9			K decelerating	ALL	91 <0-255>	M		10
2900-10			K(4) decelerating	ALL	85 <0-255>	M		10
2900-11			K(1) decelerating	ALL	85 <0-255>	M		10

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2905-0	Transfer	1st transfer bias resistance detection offset	Y normal speed	ALL	5 <0-10>	M	Sets the offset amount of the 1st transfer bias. Offsetting level 0: 0.75 1: 0.80 2: 0.85 3: 0.90 4: 0.95 5: 1.00 6: 1.05 7: 1.10 8: 1.15 9: 1.20 10: 1.25 (Unit: Correcting factor)	4
2905-1			M normal speed	ALL	5 <0-10>	M		4
2905-2			C normal speed	ALL	5 <0-10>	M		4
2905-3			K normal speed	ALL	5 <0-10>	M		4
2905-4			K(4) normal speed	ALL	5 <0-10>	M		4
2905-5			K(1) (35/45) Normal speed / High speed	ALL	5 <0-10>	M		4
2905-6			Y decelerating	ALL	5 <0-10>	M		4
2905-7			M decelerating	ALL	5 <0-10>	M		4
2905-8			C decelerating	ALL	5 <0-10>	M		4
2905-9			K decelerating	ALL	5 <0-10>	M		4
2905-10			K(4) decelerating	ALL	5 <0-10>	M		4
2905-11			K(1) decelerating	ALL	5 <0-10>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2920-0	Transfer	1st transfer roller bias actual value display of the leading/ trailing edge of the paper	Y normal speed	ALL	86 <0-255>	M	Displays the 1st transfer roller bias (leading/trailing edge of the paper) in printing (bit value)	10
2920-1			M normal speed	ALL	91 <0-255>	M		10
2920-2			C normal speed	ALL	96 <0-255>	M		10
2920-3			K normal speed	ALL	91 <0-255>	M		10
2920-4			K(4) normal speed	ALL	86 <0-255>	M		10
2920-5			K(1) (35/ 45) Normal speed / High speed	ALL	86 <0-255>	M		10
2920-6			Y decelerating	ALL	77 <0-255>	M		10
2920-7			M decelerating	ALL	81 <0-255>	M		10
2920-8			C decelerating	ALL	91 <0-255>	M		10
2920-9			K decelerating	ALL	81 <0-255>	M		10
2920-10			K(4) decelerating	ALL	77 <0-255>	M		10
2920-11			K(1) decelerating	ALL	77 <0-255>	M		10

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2921-0	Transfer	1st transfer roller bias correction factor of the leading/ trailing edge of the paper	Y normal speed	ALL	85 <50-100>	M	Corrects the 1st transfer leading/trailing edge bias	4
2921-1			M normal speed	ALL	85 <50-100>	M		4
2921-2			C normal speed	ALL	85 <50-100>	M		4
2921-3			K normal speed	ALL	85 <50-100>	M		4
2921-4			K(4) normal speed	ALL	85 <50-100>	M		4
2921-5			K(1) (35/ 45) Normal speed / High speed	ALL	85 <50-100>	M		4
2921-6			Y decelerating	ALL	85 <50-100>	M		4
2921-7			M decelerating	ALL	85 <50-100>	M		4
2921-8			C decelerating	ALL	85 <50-100>	M		4
2921-9			K decelerating	ALL	85 <50-100>	M		4
2921-10			K(4) decelerating	ALL	85 <50-100>	M		4
2921-11			K(1) decelerating	ALL	85 <50-100>	M		4
2924-0	Transfer	2nd transfer bias RMS value in the color mode (Top side)	Plain paper	ALL	Refer to content <0-255>	M	Displays the 2nd transfer bias when printing the top side in the color mode. (bit value) 2924-0,7 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C/3530C: 142 e-STUDIO4520C: 137	10
2924-1			Thick paper 1	ALL	142 <0-255>	M		10
2924-2			Thick paper 2	ALL	132 <0-255>	M		10
2924-3			Thick paper 3	ALL	127 <0-255>	M		10
2924-4			Overhead transparencies	ALL	127 <0-255>	M		10
2924-5			Special paper 1	ALL	127 <0-255>	M		10
2924-6			Special paper 2	ALL	127 <0-255>	M		10
2924-7			Recycled paper	ALL	Refer to content <0-255>	M		10
2924-8			Thick paper 4	ALL	127 <0-255>	M		10

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2925-0	Transfer	2nd transfer bias RMS value in the color mode (Back side)	Plain paper	ALL	Refer to content <0-255>	M	Displays the 2nd transfer bias when printing the back side in the color mode. (bit value) 2925-0, 7 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C/3530C: 125 e-STUDIO4520C: 120	10
2925-1			Thick paper 1	ALL	107 <0-255>	M		10
2925-2			Thick paper 2	ALL	87 <0-255>	M		10
2925-3			Thick paper 3	ALL	87 <0-255>	M		10
2925-5			Special paper 1	ALL	87 <0-255>	M		10
2925-6			Special paper 2	ALL	87 <0-255>	M		10
2925-7			Recycled paper	ALL	Refer to content <0-255>	M		10
2925-8			Thick paper 4	ALL	87 <0-255>	M		10
2926-0	Transfer	2nd transfer bias RMS value in the black mode (Top side)	Plain paper	ALL	Refer to content <0-255>	M	Displays the 2nd transfer bias when printing the top side in the black mode. (bit value) 2926-0, 7 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C: 142 e-STUDIO3530C/ 4520C: 137	10
2926-1			Thick paper 1	ALL	142 <0-255>	M		10
2926-2			Thick paper 2	ALL	132 <0-255>	M		10
2926-3			Thick paper 3	ALL	127 <0-255>	M		10
2926-4			Overhead transparencies	ALL	127 <0-255>	M		10
2926-5			Special paper 1	ALL	127 <0-255>	M		10
2926-6			Special paper 2	ALL	127 <0-255>	M		10
2926-7			Recycled paper	ALL	Refer to content <0-255>	M		10
2926-8			Thick paper 4	ALL	127 <0-255>	M		10
2927-0	Transfer	2nd transfer bias RMS value in the black mode (Back side)	Plain paper	ALL	Refer to content <0-255>	M	Displays the 2nd transfer bias when printing the back side in the black mode. (bit value) 2927-0, 7 <Default value> e-STUDIO2020C/ 2330C/2820C/2830C/ 3520C: 125 e-STUDIO3530C/ 4520C: 120	10
2927-1			Thick paper 1	ALL	107 <0-255>	M		10
2927-2			Thick paper 2	ALL	87 <0-255>	M		10
2927-3			Thick paper 3	ALL	87 <0-255>	M		10
2927-5			Special paper 1	ALL	87 <0-255>	M		10
2927-6			Special paper 2	ALL	87 <0-255>	M		10
2927-7			Recycled paper	ALL	Refer to content <0-255>	M		10
2927-8			Thick paper 4	ALL	87 <0-255>	M		10

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2934-0	Transfer	Bias offset in the color mode (Top side)	Plain paper	ALL	5 <0-10>	M	Sets the bias offset amount of the 2nd transfer bias in the color mode (Top side). Offsetting level 0: 0 1: 0.2 2: 0.4 3: 0.6 4: 0.8 5: 1.0 6: 1.2 7: 1.4 8: 1.6 9: 1.8 10: 2.0	4
2934-1			Thick paper 1	ALL	5 <0-10>	M		4
2934-2			Thick paper 2	ALL	5 <0-10>	M		4
2934-3			Thick paper 3	ALL	5 <0-10>	M		4
2934-4			Overhead transparencies	ALL	5 <0-10>	M		4
2934-5			Special paper 1	ALL	5 <0-10>	M		4
2934-6			Special paper 2	ALL	5 <0-10>	M		4
2934-7			Recycled paper	ALL	5 <0-10>	M		4
2934-8			Thick paper 4	ALL	5 <0-10>	M		4
2935-0	Transfer	Bias offset in the color mode (Back side)	Plain paper	ALL	5 <0-10>	M	Sets the bias offset amount of the 2nd transfer bias in the color mode (Back side). Offsetting level 0: 0 1: 0.2 2: 0.4 3: 0.6 4: 0.8 5: 1.0 6: 1.2 7: 1.4 8: 1.6 9: 1.8 10: 2.0	4
2935-1			Thick paper 1	ALL	5 <0-10>	M		4
2935-2			Thick paper 2	ALL	5 <0-10>	M		4
2935-3			Thick paper 3	ALL	5 <0-10>	M		4
2935-5			Special paper 1	ALL	5 <0-10>	M		4
2935-6			Special paper 2	ALL	5 <0-10>	M		4
2935-7			Recycled paper	ALL	5 <0-10>	M		4
2935-8			Thick paper 4	ALL	5 <0-10>	M		4
2936-0	Transfer	Bias offset in the black mode (Top side)	Plain paper	ALL	5 <0-10>	M	Sets the bias offset amount of the 2nd transfer bias in the black mode (Top side). Offsetting level 0: 0 1: 0.2 2: 0.4 3: 0.6 4: 0.8 5: 1.0 6: 1.2 7: 1.4 8: 1.6 9: 1.8 10: 2.0	4
2936-1			Thick paper 1	ALL	5 <0-10>	M		4
2936-2			Thick paper 2	ALL	5 <0-10>	M		4
2936-3			Thick paper 3	ALL	5 <0-10>	M		4
2936-4			Overhead transparencies	ALL	5 <0-10>	M		4
2936-5			Special paper 1	ALL	5 <0-10>	M		4
2936-6			Special paper 2	ALL	5 <0-10>	M		4
2936-7			Recycled paper	ALL	5 <0-10>	M		4
2936-8			Thick paper 4	ALL	5 <0-10>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2937-0	Transfer	Bias offset in the black mode (Back side)	Plain paper	ALL	5 <0-10>	M	Sets the bias offset amount of the 2nd transfer bias in the black mode (Back side). Offsetting level 0: 0 1: 0.2 2: 0.4 3: 0.6 4: 0.8 5: 1.0 6: 1.2 7: 1.4 8: 1.6 9: 1.8 10: 2.0	4
2937-1			Thick paper 1	ALL	5 <0-10>	M		4
2937-2			Thick paper 2	ALL	5 <0-10>	M		4
2937-3			Thick paper 3	ALL	5 <0-10>	M		4
2937-5			Special paper 1	ALL	5 <0-10>	M		4
2937-6			Special paper 2	ALL	5 <0-10>	M		4
2937-7			Recycled paper	ALL	5 <0-10>	M		4
2937-8			Thick paper 4	ALL	5 <0-10>	M		4
2938-0	Transfer	2nd transfer leading/ trailing edge bias correction factor (Top side in the color mode)	Plain paper	ALL	0 <0-10>	M	Corrects the 2nd transfer leading/trailing edge bias (Top side in the color mode). Offsetting level 0: 1.00 1: 0.95 2: 0.90 3: 0.85 4: 0.80 5: 0.75 6: 0.70 7: 0.65 8: 0.60 9: 0.55 10: 0.50	4
2938-1			Thick paper 1	ALL	0 <0-10>	M		4
2938-2			Thick paper 2	ALL	0 <0-10>	M		4
2938-3			Thick paper 3	ALL	0 <0-10>	M		4
2938-4			Overhead transparencies	ALL	0 <0-10>	M		4
2938-5			Special paper 1	ALL	0 <0-10>	M		4
2938-6			Special paper 2	ALL	0 <0-10>	M		4
2938-7			Recycled paper	ALL	0 <0-10>	M		4
2938-8			Thick paper 4	ALL	0 <0-10>	M		4
2939-0	Transfer	2nd transfer leading/ trailing edge bias correction factor (Back side in the color mode)	Plain paper	ALL	0 <0-10>	M	Corrects the 2nd transfer leading/trailing edge bias (Back side in the color mode). Offsetting level 0: 1.00 1: 0.95 2: 0.90 3: 0.85 4: 0.80 5: 0.75 6: 0.70 7: 0.65 8: 0.60 9: 0.55 10: 0.50	4
2939-1			Thick paper 1	ALL	0 <0-10>	M		4
2939-2			Thick paper 2	ALL	0 <0-10>	M		4
2939-3			Thick paper 3	ALL	0 <0-10>	M		4
2939-5			Special paper 1	ALL	0 <0-10>	M		4
2939-6			Special paper 2	ALL	0 <0-10>	M		4
2939-7			Recycled paper	ALL	0 <0-10>	M		4
2939-8			Thick paper 4	ALL	0 <0-10>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2940-0	Transfer	2nd transfer leading/ trailing edge bias correction factor (Top side in the black mode)	Plain paper	ALL	0 <0-10>	M	Corrects the 2nd transfer leading/trailing edge bias (Top side in the black mode). Offsetting level 0: 1.00 1: 0.95 2: 0.90 3: 0.85 4: 0.80 5: 0.75 6: 0.70 7: 0.65 8: 0.60 9: 0.55 10: 0.50	4
2940-1			Thick paper 1	ALL	0 <0-10>	M		4
2940-2			Thick paper 2	ALL	0 <0-10>	M		4
2940-3			Thick paper 3	ALL	0 <0-10>	M		4
2940-4			Overhead transparencies	ALL	0 <0-10>	M		4
2940-5			Special paper 1	ALL	0 <0-10>	M		4
2940-6			Special paper 2	ALL	0 <0-10>	M		4
2940-7			Recycled paper	ALL	0 <0-10>	M		4
2940-8			Thick paper 4	ALL	0 <0-10>	M		4
2941-0	Transfer	2nd transfer leading/ trailing edge bias correction factor (Back side in the black mode)	Plain paper	ALL	0 <0-10>	M	Corrects the 2nd transfer leading/trailing edge bias (Back side in the black mode). Offsetting level 0: 1.00 1: 0.95 2: 0.90 3: 0.85 4: 0.80 5: 0.75 6: 0.70 7: 0.65 8: 0.60 9: 0.55 10: 0.50	4
2941-1			Thick paper 1	ALL	0 <0-10>	M		4
2941-2			Thick paper 2	ALL	0 <0-10>	M		4
2941-3			Thick paper 3	ALL	0 <0-10>	M		4
2941-5			Special paper 1	ALL	0 <0-10>	M		4
2941-6			Special paper 2	ALL	0 <0-10>	M		4
2941-7			Recycled paper	ALL	0 <0-10>	M		4
2941-8			Thick paper 4	ALL	0 <0-10>	M		4
2961-0	Transfer	Number of time of cleaning at printing end	Normal speed / High speed	ALL	0 <0-7>	M	0: once 1: twice 2: 3times 3: 5times 4: 7times 5: 10times 6: 12times 7: 15times	4
2961-1			Decelerating	ALL	0 <0-7>	M		4
2962-0	Transfer	Number of time of cleaning at jam recovery / bypass non-standard printing / tab paper printing.	Normal speed / High speed	ALL	5 <0-7>	M	0: once 1: twice 2: 3times 3: 5times 4: 7times 5: 10times 6: 12times 7: 15times	4
2962-1			Decelerating	ALL	5 <0-7>	M		4
2963-0	Transfer	Number of time of cleaning at image quality control end	Normal speed / High speed	ALL	0 <0-7>	M	0: once 1: twice 2: 3times 3: 5times 4: 7times 5: 10times 6: 12times 7: 15times	4
2963-1			Decelerating	ALL	0 <0-7>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2966-0	Transfer	Enforced toner supply / Number of time of cleaning at the end of fusing-wait period	Normal speed / High speed	ALL	2 <0-7>	M	0: once 1: twice 2: 3times 3: 5times 4: 7times 5: 10times 6: 12times 7: 15times	4
2966-1			Decelerating	ALL	2 <0-7>	M		4
2981-0	Transfer	1st transfer bias constant-current transformer calibration value (K only)	Low	ALL	5 <0-50>	M	(Unit: μA)	4
2981-1			High	ALL	50 <0-50>	M		4
2983-0	Transfer	2nd transfer bias constant-current transformer calibration value	Low	ALL	-50 <-60-30>	M	(Unit: μA)	4
2983-1			High	ALL	20 <-60-30>	M		4
2984-0	Transfer	2nd transfer bias constant-voltage transformer calibration value	Low	ALL	-6700 <-7000-3200>	M	(Unit: V)	4
2984-1			High	ALL	2100 <-7000-3200>	M		4
2985-0	Transfer	1st transfer bias constant-voltage calibration value (Y)	Low	ALL	400 <300-8200>	M		4
2985-1			High	ALL	6000 <300-8200>	M		4
2986-0	Transfer	1st transfer bias constant-voltage calibration value (M)	Low	ALL	400 <300-8200>	M		4
2986-1			High	ALL	6000 <300-8200>	M		4
2987-0	Transfer	1st transfer bias constant-voltage calibration value (C)	Low	ALL	400 <300-8200>	M		4
2987-1			High	ALL	6000 <300-8200>	M		4
2988-0	Transfer	1st transfer bias constant-voltage calibration value (K)	Low	ALL	400 <300-8200>	M		4
2988-1			High	ALL	6000 <300-8200>	M		4

24.5 Image Processing

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
503	Image	Density adjustment Manual adjustment / Center value	Text/Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image at the center value becomes.	1
504			Text	PPC (black)	128 <0-255>	SYS		1
505	Image	Density adjustment Manual adjustment / Light step value	Text/Photo	PPC (black)	20 <0-255>	SYS	The larger the value is, the lighter the image of the “light” step becomes.	1
507			Text	PPC (black)	20 <0-255>	SYS		1
508	Image	Density adjustment Manual adjustment / Dark step value	Text/Photo	PPC (black)	20 <0-255>	SYS	The larger the value is, the darker the image of the “dark” step becomes.	1
510			Text	PPC (black)	20 <0-255>	SYS		1
514	Image	Density adjustment Automatic adjustment	Text/Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image becomes.	1
515			Text	PPC (black)	128 <0-255>	SYS		1
580	Image	Automatic gamma adjustment (Black)	All media types	PPC (black)	-	-	• When color deviation is found in gradation reproduction, the gradation reproduction of color K can be corrected with the automatic gamma adjustment. • The result of the correction above will be applied to all media types.	7
590-0	Image	Gamma balance adjustment (Text/Photo)	Low density	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes.	4
590-1			Medium density	PPC (black)	128 <0-255>	SYS		4
590-2			High density	PPC (black)	128 <0-255>	SYS		4
591-0	Image	Gamma balance adjustment (Text)	Low density	PPC (black)	128 <0-255>	SYS		4
591-1			Medium density	PPC (black)	128 <0-255>	SYS		4
591-2			High density	PPC (black)	128 <0-255>	SYS		4
592-0	Image	Gamma balance adjustment (Photo)	Low density	PPC (black)	128 <0-255>	SYS		4
592-1			Medium density	PPC (black)	128 <0-255>	SYS		4
592-2			High density	PPC (black)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
604	Image	Sharpness adjustment (Black)	Text/Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
605			Text	PPC (black)	128 <0-255>	SYS		1
606			Photo	PPC (black)	128 <0-255>	SYS		1
648	Image	Smudged/ faint text adjustment	Text/Photo	PPC (black)	2 <0-4>	SYS	0: Faint text is suppressed most. 4: Smudged text is suppressed most.	1
649			Text	PPC (black)	2 <0-4>	SYS		1
664-0	Image	Upper limit value in toner saving mode (Black / 600 dpi)	PS	PRT (black)	176 <0-255>	SYS	The smaller the value is, the lighter the printed image becomes.	4
664-1			PCL	PRT (black)	176 <0-255>	SYS		4
664-2			XPS	PRT (black)	176 <0-255>	SYS		4
667-0	Image	Setting beam level conversion	Beam level 0/4	PPC (black)	0 <0-255>	SYS	The smaller the value is, the narrower the beam width becomes and the smaller the dots are reproduced.	4
667-1			Beam level 1/4	PPC (black)	63 <0-255>	SYS		4
667-2			Beam level 2/4	PPC (black)	127 <0-255>	SYS		4
667-3			Beam level 3/4	PPC (black)	191 <0-255>	SYS		4
667-4			Beam level 4/4	PPC (black)	255 <0-255>	SYS		4
672-0	Image	Setting beam level conversion	Beam level 0/4	PRT (black)	0 <0-255>	SYS	The smaller the value is, the narrower the beam width becomes and the smaller the dots are reproduced.	4
672-1			Beam level 1/4	PRT (black)	63 <0-255>	SYS		4
672-2			Beam level 2/4	PRT (black)	127 <0-255>	SYS		4
672-3			Beam level 3/4	PRT (black)	191 <0-255>	SYS		4
672-4			Beam level 4/4	PRT (black)	255 <0-255>	SYS		4
678-0	Image	Setting beam level conversion (FAX)	Beam level 0/4	FAX (black)	0 <0-255>	SYS	The smaller the value is, the narrower the beam width becomes and the smaller the dots are reproduced.	4
678-1			Beam level 1/4	FAX (black)	63 <0-255>	SYS		4
678-2			Beam level 2/4	FAX (black)	127 <0-255>	SYS		4
678-3			Beam level 3/4	FAX (black)	191 <0-255>	SYS		4
678-4			Beam level 4/4	FAX (black)	255 <0-255>	SYS		4
700	Image	Density adjustment Manual adjustment / Center value	Text	FAX (black)	128 <0-255>	SYS	The larger the value is, the lighter the image at the center value becomes.	1
710	Image		Photo	FAX (black)	128 <0-255>	SYS	The larger the value is, the darker the image at the center value becomes.	1
714			Text/Photo	FAX (black)	128 <0-255>	SYS		1
725	Image	Density adjustment Automatic adjustment	Text	FAX (black)	128 <0-255>	SYS	The larger the value is, the darker the image becomes.	1
729			Text/Photo	FAX (black)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
840	Image	Sharpness adjustment (Black)	Text/Photo	SCN (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
841			Text	SCN (black)	128 <0-255>	SYS		1
842			Photo	SCN (black)	128 <0-255>	SYS		1
843			Image smoothing	SCN (black)	128 <0-255>	SYS		1
845	Image	Density adjustment Manual adjustment / Center value	Text/Photo	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the center value becomes.	1
846			Text	SCN (black)	128 <0-255>	SYS		1
847			Photo	SCN (black)	128 <0-255>	SYS		1
848			Image smoothing	SCN (black)	128 <0-255>	SYS		1
860	Image	Density adjustment Automatic adjustment	Text/Photo	SCN (black)	128 <0-255>	SYS	When the value increases, the image becomes darker.	1
861			Text	SCN (black)	128 <0-255>	SYS		1
862			Photo	SCN (black)	128 <0-255>	SYS		1
863			Image smoothing	SCN (black)	128 <0-255>	SYS		1
880-0	Image	Gamma balance adjustment (Text/Photo)	Low density	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes.	4
880-1			Medium density	SCN (black)	128 <0-255>	SYS		4
880-2			High density	SCN (black)	128 <0-255>	SYS		4
881-0	Image	Gamma balance adjustment (Text)	Low density	SCN (black)	128 <0-255>	SYS		4
881-1			Medium density	SCN (black)	128 <0-255>	SYS		4
881-2			High density	SCN (black)	128 <0-255>	SYS		4
882-0	Image	Gamma balance adjustment (Photo)	Low density	SCN (black)	128 <0-255>	SYS		4
882-1			Medium density	SCN (black)	128 <0-255>	SYS		4
882-2			High density	SCN (black)	128 <0-255>	SYS		4
883-0	Image	Gamma balance adjustment (Image smoothing)	Low density	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes.	4
883-1			Medium density	SCN (black)	128 <0-255>	SYS		4
883-2			High density	SCN (black)	128 <0-255>	SYS		4
922	Image	Sharpness adjustment (Black)	User custom	PPC (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
925	Image	Smudged/ faint text adjustment	User custom	PPC (black)	2 <0-4>	SYS	0: Faint text is suppressed most. 4: Smudged text is suppressed most.	1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
931	Image	Density adjustment Manual adjustment/ Center value	User custom	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the center value becomes.	1
934	Image	Density adjustment Manual adjustment/ Light step value	User custom	PPC (black)	20 <0-255>	SYS	The larger the value is, the lighter the image of the “light” step becomes.	1
937	Image	Density adjustment Manual adjustment/ Dark step value	User custom	PPC (black)	20 <0-255>	SYS	The larger the value is, the darker the image of the “dark” step becomes.	1
940	Image	Density adjustment Automatic adjustment	User custom	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image becomes.	1
949-0	Image	Gamma balance adjustment (User custom)	Low density	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the target area becomes.	4
949-1			Medium density	PPC (black)	128 <0-255>	SYS		4
949-2			High density	PPC (black)	128 <0-255>	SYS		4
1004-0	Image	Automatic gamma adjustment	Plain paper	PRT (color)	-	SYS	• When color deviation is found in gradation reproduction, the gradation reproduction of 4 colors can be corrected with the automatic gamma adjustment. • The result of the correction above will be applied for each media type.	7
1004-2			Recycled paper	PRT (color)	-	SYS		7
1004-3			Thick paper 1	PRT (color)	-	SYS		7
1004-4			Thick paper 2	PRT (color)	-	SYS		7
1004-5			Thick paper 3	PRT (color)	-	SYS		7
1004-6			Thick paper 4	PRT (color)	-	SYS		7
1004-7			Special paper 1	PRT (color)	-	SYS		7
1004-8			Special paper 2	PRT (color)	-	SYS		7
1008	Image		All media types	PRT (color)	-	SYS	• When color deviation is found in gradation reproduction, the gradation reproduction of 4 colors can be corrected with the automatic gamma adjustment. • The result of the correction above will be applied to all media types.	7

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1050	Image	Maximum toner density adjustment to OHP film (600 dpi)		PRT (color)	200 <0-255>	SYS	The larger the value is, the darker the image becomes. The smaller the value is, the lighter the image becomes. * Image offset may occur if the value is too large.	1
1055-0	Image	Upper limit value in toner saving mode (Color / 600 dpi)	PS	PRT (color)	176 <0-255>	SYS	The smaller the value is, the lighter the printed image becomes.	4
1055-1			PCL	PRT (color)	176 <0-255>	SYS		4
1055-2			XPS	PRT (color)	176 <0-255>	SYS		4
1070	Image	Background adjustment	Text	SCN (color)	50 <0-50>	SYS	The smaller the value is, the lighter the background becomes.	1
1071			Printed image	SCN (color)	50 <0-50>	SYS		1
1072			Photo	SCN (color)	50 <0-50>	SYS		1
1075	Image	Fine adjustment of black density	Text	SCN (color)	0 <0-4>	SYS	The larger the value is, the darker the black side of the image becomes.	1
1076			Printed image	SCN (color)	0 <0-4>	SYS		1
1077			Photo	SCN (color)	0 <0-4>	SYS		1
1080	Image	RGB conversion method selection	Text	SCN (color)	0 <0-3>	SYS	Sets the color space format of the output image. 0: sRGB 1: AppleRGB 2: ROMMRGB 3: AdobeRGB	1
1081			Printed image	SCN (color)	0 <0-3>	SYS		1
1082			Photo	SCN (color)	0 <0-3>	SYS		1
1086	Image	Sharpness adjustment (Full color)	Text	SCN (color)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
1087			Printed image	SCN (color)	128 <0-255>	SYS		1
1088			Photo	SCN (color)	128 <0-255>	SYS		1
1585	Image	Density adjustment Automatic/ Manual adjustment/ Center value	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the darker the image becomes.	1
1586			Text	PPC (color)	128 <0-255>	SYS		1
1587			Printed image	PPC (color)	128 <0-255>	SYS		1
1588			Photo	PPC (color)	128 <0-255>	SYS		1
1589			Map	PPC (color)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1612	Image	Maximum toner density adjustment to paper type	Plain paper	PPC (color)	255 <0-255>	SYS	The smaller the value is, the less toner is adhered to the high-density section of the image.	1
1613			Thick paper 1	PPC (color)	255 <0-255>	SYS		1
1614			Thick paper 2	PPC (color)	255 <0-255>	SYS		1
1615			Thick paper 3	PPC (color)	255 <0-255>	SYS		1
1616			OHP film	PPC (color)	240 <0-255>	SYS		1
1617			Special paper 1	PPC (color)	255 <0-255>	SYS		1
1618			Special paper 2	PPC (color)	255 <0-255>	SYS		1
1619			Recycled paper	PPC (color)	255 <0-255>	SYS		1
1620			Thick paper 4	PPC (color)	255 <0-255>	SYS		1
1630	Image	Maximum text density adjustment	Y	PPC (color)	5 <0-10>	SYS	The larger the value is, the darker the text becomes.	1
1631			M	PPC (color)	5 <0-10>	SYS		1
1632			C	PPC (color)	5 <0-10>	SYS		1
1633			K	PPC (color)	5 <0-10>	SYS		1
1642	Image	Automatic gamma adjustment (Color / Black)	All media types	PPC (color)	-	SYS	• When color deviation is found in gradation reproduction, the gradation reproduction of 4 colors can be corrected with the automatic gamma adjustment. • The result of the correction above will be applied to all media types.	7
1644-0	Image	Automatic gamma adjustment (Color / Black)	Plain paper 1	PPC (color)	-	SYS	• When color deviation is found in gradation reproduction, the gradation reproduction of 4 colors can be corrected with the automatic gamma adjustment. • The result of the correction above will be applied for each media type.	7
1644-2			Recycled paper	PPC (color)	-	SYS		7
1644-3			Thick paper 1	PPC (color)	-	SYS		7
1644-4			Thick paper 2	PPC (color)	-	SYS		7
1644-5			Thick paper 3	PPC (color)	-	SYS		7
1644-6			Thick paper 4	PPC (color)	-	SYS		7
1644-7			Special paper 1	PPC (color)	-	SYS		7
1644-8			Special paper 2	PPC (color)	-	SYS		7

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1675	Image	ACS judgment threshold		PPC/ SCN	70 <0-255>	SYS	The larger the value is, the more an original tends to be judged as black even at the auto color mode. The smaller value is, the more it tends to be judged as color.	1
1688	Image	Background adjustment (Full color / Automatic density adjustment)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
1689			Text	PPC (color)	128 <0-255>	SYS		1
1690			Printed image	PPC (color)	128 <0-255>	SYS		1
1691			Photo	PPC (color)	128 <0-255>	SYS		1
1692			Map	PPC (color)	128 <0-255>	SYS		1
1698	Image	Background adjustment (Full color / Manual density adjustment)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
1699			Text	PPC (color)	128 <0-255>	SYS		1
1700			Printed image	PPC (color)	128 <0-255>	SYS		1
1701			Photo	PPC (color)	128 <0-255>	SYS		1
1702			Map	PPC (color)	128 <0-255>	SYS		1
1725	Image	Text/Photo reproduction level adjustment (Text/Photo reproduction)	Text/Photo	PPC (color)	0 <0-5>	SYS	0: Default 1: Photo-oriented 2 (The reproduction level of printed image is higher than that of the Photo-oriented 1) 2: Photo-oriented 1 (The reproduction level of printed image is higher than that of the default setting) 3: Equivalent to the default setting 4: Text-oriented 1 (The reproduction level of text is higher than that of the default setting) 5: Text-oriented 2 (The reproduction level of text is higher than that of text-oriented 1)	1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1737	Image	Sharpness adjustment (Full color)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
1738			Text	PPC (color)	128 <0-255>	SYS		1
1739			Printed image	PPC (color)	128 <0-255>	SYS		1
1740			Photo	PPC (color)	128 <0-255>	SYS		1
1741			Map	PPC (color)	128 <0-255>	SYS		1
1757	Image	Sharpness adjustment (Auto color)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
1761	Image	Black reproduction level switchover in twin color copy mode		PPC (color)	0 <0-1>	SYS	0: Default 1: Black reproduction level is higher	1
1769-0	Image	Marker color adjustment	Yellow	PPC (color)	3 <0-6>	SYS	The color of the one-touch adjustment “Marker” can be adjusted. 📖 P.8-45 "8.6.10 Color Adjustment of Marker"	4
1769-1			Magenta	PPC (color)	3 <0-6>	SYS		4
1769-2			Cyan	PPC (color)	3 <0-6>	SYS		4
1769-3			Red	PPC (color)	3 <0-6>	SYS		4
1769-4			Green	PPC (color)	3 <0-6>	SYS		4
1769-5			Blue	PPC (color)	3 <0-6>	SYS		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1779-0	Image	Color balance adjustment for “Y” (Text/ Photo)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
1779-1			M	PPC (color)	128 <0-255>	SYS		4
1779-2			H	PPC (color)	128 <0-255>	SYS		4
1780-0	Image	Color balance adjustment for “Y” (Text)	L	PPC (color)	128 <0-255>	SYS		4
1780-1			M	PPC (color)	128 <0-255>	SYS		4
1780-2			H	PPC (color)	128 <0-255>	SYS		4
1781-0	Image	Color balance adjustment for “Y” (Printed image)	L	PPC (color)	128 <0-255>	SYS		4
1781-1			M	PPC (color)	128 <0-255>	SYS		4
1781-2			H	PPC (color)	128 <0-255>	SYS		4
1782-0	Image	Color balance adjustment for “Y” (Photo)	L	PPC (color)	128 <0-255>	SYS		4
1782-1			M	PPC (color)	128 <0-255>	SYS		4
1782-2			H	PPC (color)	128 <0-255>	SYS		4
1783-0	Image	Color balance adjustment for “Y” (Map)	L	PPC (color)	128 <0-255>	SYS		4
1783-1			M	PPC (color)	128 <0-255>	SYS		4
1783-2			H	PPC (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1784-0	Image	Color balance adjustment for “M” (Text/ Photo)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
1784-1			M	PPC (color)	128 <0-255>	SYS		4
1784-2			H	PPC (color)	128 <0-255>	SYS		4
1785-0	Image	Color balance adjustment for “M” (Text)	L	PPC (color)	128 <0-255>	SYS		4
1785-1			M	PPC (color)	128 <0-255>	SYS		4
1785-2			H	PPC (color)	128 <0-255>	SYS		4
1786-0	Image	Color balance adjustment for “M” (Printed image)	L	PPC (color)	128 <0-255>	SYS		4
1786-1			M	PPC (color)	128 <0-255>	SYS		4
1786-2			H	PPC (color)	128 <0-255>	SYS		4
1787-0	Image	Color balance adjustment for “M” (Photo)	L	PPC (color)	128 <0-255>	SYS		4
1787-1			M	PPC (color)	128 <0-255>	SYS		4
1787-2			H	PPC (color)	128 <0-255>	SYS		4
1788-0	Image	Color balance adjustment for “M” (Map)	L	PPC (color)	128 <0-255>	SYS		4
1788-1			M	PPC (color)	128 <0-255>	SYS		4
1788-2			H	PPC (color)	128 <0-255>	SYS		4
1789-0	Image	Color balance adjustment for “C” (Text/ Photo)	L	PPC (color)	128 <0-255>	SYS		4
1789-1			M	PPC (color)	128 <0-255>	SYS		4
1789-2			H	PPC (color)	128 <0-255>	SYS		4
1790-0	Image	Color balance adjustment for “C” (Text)	L	PPC (color)	128 <0-255>	SYS		4
1790-1			M	PPC (color)	128 <0-255>	SYS		4
1790-2			H	PPC (color)	128 <0-255>	SYS		4
1791-0	Image	Color balance adjustment for “C” (Printed image)	L	PPC (color)	128 <0-255>	SYS		4
1791-1			M	PPC (color)	128 <0-255>	SYS		4
1791-2			H	PPC (color)	128 <0-255>	SYS		4
1792-0	Image	Color balance adjustment for “C” (Photo)	L	PPC (color)	128 <0-255>	SYS		4
1792-1			M	PPC (color)	128 <0-255>	SYS		4
1792-2			H	PPC (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1793-0	Image	Color balance adjustment for “C” (Map)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
1793-1			M	PPC (color)	128 <0-255>	SYS		4
1793-2			H	PPC (color)	128 <0-255>	SYS		4
1794-0	Image	Color balance adjustment for “K” (Text/ Photo)	L	PPC (color)	128 <0-255>	SYS		4
1794-1			M	PPC (color)	128 <0-255>	SYS		4
1794-2			H	PPC (color)	128 <0-255>	SYS		4
1795-0	Image	Color balance adjustment for “K” (Text)	L	PPC (color)	128 <0-255>	SYS		4
1795-1			M	PPC (color)	128 <0-255>	SYS		4
1795-2			H	PPC (color)	128 <0-255>	SYS		4
1796-0	Image	Color balance adjustment for “K” (Printed image)	L	PPC (color)	128 <0-255>	SYS		4
1796-1			M	PPC (color)	128 <0-255>	SYS		4
1796-2			H	PPC (color)	128 <0-255>	SYS		4
1797-0	Image	Color balance adjustment for “K” (Photo)	L	PPC (color)	128 <0-255>	SYS		4
1797-1			M	PPC (color)	128 <0-255>	SYS		4
1797-2			H	PPC (color)	128 <0-255>	SYS		4
1798-0	Image	Color balance adjustment for “K” (Map)	L	PPC (color)	128 <0-255>	SYS		4
1798-1			M	PPC (color)	128 <0-255>	SYS		4
1798-2			H	PPC (color)	128 <0-255>	SYS		4
7025	Image	Background offset adjustment for ADF	Text/Photo Text User custom mode	PPC (black)	128 <0-255>	SYS	The larger the adjustment value is, the lighter the background becomes. The smaller the adjustment value is, the darker the background becomes.	1
7033	Image	Background adjustment (Black / Automatic density adjustment)	Text/Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7034	Image		Text	PPC (black)	128 <0-255>	SYS		1
7041	Image	Background adjustment (Black / Manual density adjustment)	Text/Photo	PPC (black)	128 <0-255>	SYS		1
7042	Image		Text	PPC (black)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7043	Image	Background adjustment (Black / Automatic density adjustment)	Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7044	Image		Image smoothing	PPC (black)	128 <0-255>	SYS		1
7048	Image	Background adjustment (Black / Manual density adjustment)	Photo	PPC (black)	128 <0-255>	SYS		1
7049	Image		Image smoothing	PPC (black)	128 <0-255>	SYS		1
7102	Image	Smudged/ faint text adjustment (Auto color & black)	Text/Photo	PPC (black)	2 <0-4>	SYS	0: Faint text is suppressed most. 4: Smudged text is suppressed most.	1
7103	Image		Text	PPC (black)	2 <0-4>	SYS		1
7236	Image	Range correction adjustment (Black / Automatic density adjustment)	User custom	PPC (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7237	Image	Range correction adjustment (Black / Manual density adjustment)	User custom	PPC (black)	1 <0-1>	SYS		1
7279	Image	Background adjustment (Black / Automatic density adjustment)	User custom	PPC (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7280	Image	Background adjustment (Black / Manual density adjustment)	User custom	PPC (black)	128 <0-255>	SYS		1
7283	Image	Range correction adjustment (Black / Automatic density adjustment)	Text/Photo	PPC (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7284	Image		Text	PPC (black)	1 <0-1>	SYS		1
7286	Image	Range correction adjustment (Black / Manual density adjustment)	Text/Photo	PPC (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7287	Image		Text	PPC (black)	1 <0-1>	SYS		1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
7295	Image	Range correction adjustment (Automatic density adjustment)	Image smoothing	PPC (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7296	Image	Range correction adjustment (Manual density adjustment)	Image smoothing	PPC (black)	0 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7315-0	Image	Gamma balance adjustment (PS / Smooth / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7315-1			M	PRT (black)	128 <0-255>	SYS		4
7315-2			H	PRT (black)	128 <0-255>	SYS		4
7316-0	Image	Gamma balance adjustment (PS / Detail / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7316-1			M	PRT (black)	128 <0-255>	SYS		4
7316-2			H	PRT (black)	128 <0-255>	SYS		4
7317-0	Image	Gamma balance adjustment (PCL / Smooth / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7317-1			M	PRT (black)	128 <0-255>	SYS		4
7317-2			H	PRT (black)	128 <0-255>	SYS		4
7318-0	Image	Gamma balance adjustment (PCL / Detail / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7318-1			M	PRT (black)	128 <0-255>	SYS		4
7318-2			H	PRT (black)	128 <0-255>	SYS		4
7319-0	Image	Gamma balance adjustment (XPS / Smooth / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7319-1			M	PRT (black)	128 <0-255>	SYS		4
7319-2			H	PRT (black)	128 <0-255>	SYS		4
7320-0	Image	Gamma balance adjustment (XPS / Detail / 600dpi)	L	PRT (black)	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. L: Low density area M: Medium density area H: High density area	4
7320-1			M	PRT (black)	128 <0-255>	SYS		4
7320-2			H	PRT (black)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7322-0	Image	Fine line enhancement switchover (e-BRIDGE)	PS	PRT (black)	1 <0-1>	SYS	Sets whether or not fine line enhancement is enabled in the printer function. Use this code in cases such as fine lines being excessively emphasized. 0: OFF 1: ON	4
7322-1			PCL	PRT (black)	1 <0-1>	SYS		4
7322-2			XPS	PRT (black)	1 <0-1>	SYS		4
7323-0 (EFI)	Image	Fine line enhancement switchover (EFI)	PS	PRT (black)	1 <0-1>	SYS	Sets whether or not fine line enhancement is enabled in the printer function. Use this code in cases such as fine lines being excessively emphasized. 0: OFF 1: ON	4
7323-1 (EFI)			PCL	PRT (black)	1 <0-1>	SYS		4
7323-2 (EFI)			XPS	PRT (black)	1 <0-1>	SYS		4
7340	Image	Smudged/ faint text adjustment	PS	PRT (black)	0 <0-8>	SYS	The larger the value is, the darker the small text and fine lines become and the more faint text is suppressed.	1
7341			PCL	PRT (black)	0 <0-8>	SYS		1
7342			XPS	PRT (black)	0 <0-8>	SYS		1
7380-0	Image	Monocolor network printer target gamma switchover	PS	PRT (black)	0 <0-1>	SYS	0: Darker 1: Lighter When “1” is set, the whole graphics area is reproduced with a lighter tone and more shading.	4
7380-1			PCL	PRT (black)	0 <0-1>	SYS		4
7380-2			XPS	PRT (black)	0 <0-1>	SYS		4
7416	Image	Range correction adjustment (Black / Automatic density adjustment)	Text/Photo	SCN (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7417			Text	SCN (black)	1 <0-1>	SYS		1
7418			Photo	SCN (black)	1 <0-1>	SYS		1
7419			Image smoothing	SCN (black)	1 <0-1>	SYS		1
7421	Image	Range correction adjustment (Black / Manual density adjustment)	Text/Photo	SCN (black)	0 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7422			Text	SCN (black)	0 <0-1>	SYS		1
7423			Photo	SCN (black)	0 <0-1>	SYS		1
7424			Image smoothing	SCN (black)	0 <0-1>	SYS		1
7425	Image	Range correction adjustment (Black / Automatic density adjustment)	User custom	SCN (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7426	Image	Range correction adjustment (Black / Manual density adjustment)	User custom	SCN (black)	0 <0-1>	SYS		1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
7468	Image	Background offset adjustment for ADF		SCN (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7470	Image	Sharpness adjustment (Black)	User custom	SCN (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
7475	Image	Density adjustment Manual density adjustment / Center value	User custom	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image at the center value becomes.	1
7478	Image	Density adjustment Automatic density adjustment	User custom	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image becomes.	1
7480-0	Image	Gamma balance adjustment (User custom)	L	SCN (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes. L: Low density area M: Medium density area H: High density area	4
7480-1			M	SCN (black)	128 <0-255>	SYS		4
7480-2			H	SCN (black)	128 <0-255>	SYS		4
7489	Image	Amount of surrounding void (network scanning)		SCN	0 <0-255>	SYS	When the value increases, the blank area around the scanned image becomes wider. (e.g.: In network scanning with 600 dpi, if the setting value is “1”, the blank area increases by 1 dot.)	1
7618	Image	Blank page judgment threshold adjustment		PPC/ SCN	128 <0-255>	SYS	The larger the value is, the more the original tends to be judged as a blank page.	1
7641-0	Image	Black area adjustment in twin color copy mode (Selected 2 colors)	H	PPC (color)	128 <0-255>	SYS	The larger the value is, the larger the area recognized as black in the original becomes. The smaller the value is, the larger the area recognized as colors other than black becomes. L: Low density area M: Medium density area H: High density area	4
7641-1			M	PPC (color)	128 <0-255>	SYS		4
7641-2			L	PPC (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7642-0	Image	Black area adjustment in twin color copy mode (Black and red)	H	PPC (color)	128 <0-255>	SYS	The larger the value is, the larger the area recognized as red in the original becomes. The smaller the value is, the larger the area recognized as colors other than red becomes. L: Low density area M: Medium density area H: High density area	4
7642-1			M	PPC (color)	128 <0-255>	SYS		4
7642-2			L	PPC (color)	128 <0-255>	SYS		4
7667	Image	Range correction adjustment (Auto color & black / Automatic density adjustment)	Text/Photo	PPC (black)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7668	Image		Text	PPC (black)	1 <0-1>	SYS		1
7669	Image	Range correction adjustment (Auto color & black / Manual density adjustment)	Text/Photo	PPC (black)	1 <0-1>	SYS		1
7670	Image		Text	PPC (black)	1 <0-1>	SYS		1
7675	Image	Background offset adjustment for ADF	Auto color & black	PPC (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7676	Image	Background adjustment (Auto color & black / Automatic density adjustment)	Text/Photo	PPC (black)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7677	Image		Text	PPC (black)	128 <0-255>	SYS		1
7678	Image	Background adjustment (Auto color & black / Manual density adjustment)	Text/Photo	PPC (black)	128 <0-255>	SYS		1
7679	Image		Text	PPC (black)	128 <0-255>	SYS		1
7754	Image	Background adjustment (Monocolor / Automatic density adjustment)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7755			Text	PPC (color)	128 <0-255>	SYS		1
7756			Printed image	PPC (color)	128 <0-255>	SYS		1
7757			Photo	PPC (color)	128 <0-255>	SYS		1
7758			Map	PPC (color)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7759	Image	Background adjustment (Twin color / Manual density adjustment)	Text/Photo	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7760			Text	PPC (color)	128 <0-255>	SYS		1
7761			Printed image	PPC (color)	128 <0-255>	SYS		1
7762	Image	Background adjustment (Monocolor / Automatic density adjustment)	User custom	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7763	Image	Background adjustment (Monocolor / Manual density adjustment)	User custom	PPC (color)	128 <0-255>	SYS		1
7764	Image	Background offset adjustment for ADF	Full color	PPC (color)	128 <0-255>	SYS	The larger the value is, the lighter the background becomes.	1
7765	Image		Mono color	PPC (color)	128 <0-255>	SYS		1
7766	Image		Twin color	PPC (color)	128 <0-255>	SYS		1
7767	Image	Range correction adjustment (Full color / Automatic adjustment)	Text/Photo	PPC (color)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7768	Image		Text	PPC (color)	1 <0-1>	SYS		1
7769	Image		Printed image	PPC (color)	1 <0-1>	SYS		1
7770	Image		Photo	PPC (color)	1 <0-1>	SYS		1
7771	Image		Map	PPC (color)	1 <0-1>	SYS		1
7772	Image	Range correction adjustment (Full color / Manual adjustment)	Text/Photo	PPC (color)	0 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7773	Image		Text	PPC (color)	0 <0-1>	SYS		1
7774	Image		Printed image	PPC (color)	0 <0-1>	SYS		1
7775	Image		Photo	PPC (color)	0 <0-1>	SYS		1
7776	Image		Map	PPC (color)	0 <0-1>	SYS		1
7777	Image	Range correction adjustment (Full color / Automatic adjustment)	User custom	PPC (color)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
7778	Image	Range correction adjustment (Full color / Manual adjustment)	User custom	PPC (color)	0 <0-1>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7795	Image	Sharpness adjustment (Full color)	User custom	PPC (color)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes and the less moire appears.	1
7807	Image	Sharpness adjustment (Auto color)	Text	PPC (color)	128 <0-255>	SYS		1
7808	Image	Sharpness adjustment (Auto color)	Printed image	PPC (color)	128 <0-255>	SYS		1
7809	Image	Sharpness adjustment (Black)	Image smoothing	PPC (color)	128 <0-255>	SYS		1
7811	Image	Black header density level adjustment	Text/Photo	PPC (color)	0 <0-8>	SYS	The larger the value is, the darker the header becomes. The smaller the value is, the lighter the header becomes.	1
7812	Image		Text	PPC (color)	0 <0-8>	SYS		1
7816	Image		User custom	PPC (color)	0 <0-8>	SYS		1
7841	Image	Text/Photo reproduction level adjustment (Text/Photo reproduction)	User custom	PPC (color)	0 <0-5>	SYS	0: Default 1: Photo-oriented 2 (The reproduction level of printed image is higher than that of the Photo-oriented 1) 2: Photo-oriented 1 (The reproduction level of printed image is higher than that of the default setting) 3: Equivalent to the default setting 4: Text-oriented 1 (The reproduction level of text is higher than that of the default setting) 5: Text-oriented 2 (The reproduction level of text is higher than that of text-oriented 1)	1
7956-0	Image	Gamma balance adjustment (Black / Image smoothing)	L	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes. L: Low density area M: Medium density area H: High density area	4
7956-1			M	PPC (black)	128 <0-255>	SYS		4
7956-2			H	PPC (black)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
7957-0	Image	Gamma balance adjustment (Auto color & black / Text/ photo)	L	PPC (black)	128 <0-255>	SYS	The larger the value is, the darker the image of the area surrounding the target area becomes. L: Low density area M: Medium density area H: High density area	4
7957-1			M	PPC (black)	128 <0-255>	SYS		4
7957-2			H	PPC (black)	128 <0-255>	SYS		4
7958-0	Image	Gamma balance adjustment (Auto color & black / Text)	L	PPC (black)	128 <0-255>	SYS		4
7958-1			M	PPC (black)	128 <0-255>	SYS		4
7958-2			H	PPC (black)	128 <0-255>	SYS		4
7959-0	Image	Gamma balance adjustment (Auto color & black / Photo)	L	PPC (black)	128 <0-255>	SYS		4
7959-1			M	PPC (black)	128 <0-255>	SYS		4
7959-2			H	PPC (black)	128 <0-255>	SYS		4
7980-0	Image	Color balance adjustment for “Y” (User custom mode)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
7980-1			M	PPC (color)	128 <0-255>	SYS		4
7980-2			H	PPC (color)	128 <0-255>	SYS		4
7981-0	Image	Color balance adjustment for “M” (User custom mode)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
7981-1			M	PPC (color)	128 <0-255>	SYS		4
7981-2			H	PPC (color)	128 <0-255>	SYS		4
7982-0	Image	Color balance adjustment for “C” (User custom mode)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
7982-1			M	PPC (color)	128 <0-255>	SYS		4
7982-2			H	PPC (color)	128 <0-255>	SYS		4
7983-0	Image	Color balance adjustment for “K” (User custom mode)	L	PPC (color)	128 <0-255>	SYS	The target color, mode and density area become darker as the value increases. L: Low density area M: Medium density area H: High density area	4
7983-1			M	PPC (color)	128 <0-255>	SYS		4
7983-2			H	PPC (color)	128 <0-255>	SYS		4
8010-0	Image	Background adjustment (Smooth / Color / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8010-1			PCL	PRT (color)	128 <0-255>	SYS		4
8010-2			XPS	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8011-0	Image	Background adjustment (Smooth / Twin color / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8011-1			PCL	PRT (color)	128 <0-255>	SYS		4
8011-2			XPS	PRT (color)	128 <0-255>	SYS		4
8012-0	Image	Background adjustment (Smooth / Monocolor / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8012-1			PCL	PRT (color)	128 <0-255>	SYS		4
8012-2			XPS	PRT (color)	128 <0-255>	SYS		4
8013-0	Image	Background adjustment (Detail / Color / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8013-1			PCL	PRT (color)	128 <0-255>	SYS		4
8013-2			XPS	PRT (color)	128 <0-255>	SYS		4
8014-0	Image	Background adjustment (Detail / Twin color / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8014-1			PCL	PRT (color)	128 <0-255>	SYS		4
8014-2			XPS	PRT (color)	128 <0-255>	SYS		4
8015-0	Image	Background adjustment (Detail / Monocolor / 600 dpi)	PS	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker the background becomes. The smaller the value is, the lighter the background becomes.	4
8015-1			PCL	PRT (color)	128 <0-255>	SYS		4
8015-2			XPS	PRT (color)	128 <0-255>	SYS		4
8026-0	Image	Color balance adjustment for twin color mode (PS/ smooth/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8026-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8026-2			High density	PRT (color)	128 <0-255>	SYS		4
8027-0	Image	Color balance adjustment for twin color mode (PS/ smooth/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8027-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8027-2			High density	PRT (color)	128 <0-255>	SYS		4
8028-0	Image	Color balance adjustment for twin color mode (PS/ smooth/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8028-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8028-2			High density	PRT (color)	128 <0-255>	SYS		4
8029-0	Image	Color balance adjustment for twin color mode (PS/ smooth/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8029-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8029-2			High density	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8030-0	Image	Color balance adjustment for twin color mode (PS/ smooth/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8030-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8030-2			High density	PRT (color)	128 <0-255>	SYS		4
8031-0	Image	Color balance adjustment for twin color mode (PS/ smooth/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8031-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8031-2			High density	PRT (color)	128 <0-255>	SYS		4
8032-0	Image	Color balance adjustment for twin color mode (PS/ smooth/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8032-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8032-2			High density	PRT (color)	128 <0-255>	SYS		4
8033-0	Image	Color balance adjustment for twin color mode (PS/ smooth/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8033-0			Medium density	PRT (color)	128 <0-255>	SYS		4
8033-0			High density	PRT (color)	128 <0-255>	SYS		4
8034-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8034-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8034-2			High density	PRT (color)	128 <0-255>	SYS		4
8035-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8035-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8035-2			High density	PRT (color)	128 <0-255>	SYS		4
8036-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8036-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8036-2			High density	PRT (color)	128 <0-255>	SYS		4
8037-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8037-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8037-2			High density	PRT (color)	128 <0-255>	SYS		4
8038-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8038-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8038-2			High density	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8039-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8039-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8039-2			High density	PRT (color)	128 <0-255>	SYS		4
8040-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8040-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8040-2			High density	PRT (color)	128 <0-255>	SYS		4
8041-0	Image	Color balance adjustment for twin color mode (PCL/ smooth/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8041-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8041-2			High density	PRT (color)	128 <0-255>	SYS		4
8042-0	Image	Color balance adjustment (XPS/smooth/ Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes. L: Low density area M: Medium density area H: High density area	4
8042-1			M	PRT (color)	128 <0-255>	SYS		4
8042-2			H	PRT (color)	128 <0-255>	SYS		4
8043-0	Image	Color balance adjustment (XPS/smooth/ M)	L	PRT (color)	128 <0-255>	SYS		4
8043-1			M	PRT (color)	128 <0-255>	SYS		4
8043-2			H	PRT (color)	128 <0-255>	SYS		4
8044-0	Image	Color balance adjustment (XPS/smooth/ C)	L	PRT (color)	128 <0-255>	SYS		4
8044-1			M	PRT (color)	128 <0-255>	SYS		4
8044-2			H	PRT (color)	128 <0-255>	SYS		4
8045-0	Image	Color balance adjustment (XPS/smooth/ K)	L	PRT (color)	128 <0-255>	SYS		4
8045-1			M	PRT (color)	128 <0-255>	SYS		4
8045-2			H	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8046-0	Image	Color balance adjustment (XPS/detail/Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes. L: Low density area M: Medium density area H: High density area	4
8046-1			M	PRT (color)	128 <0-255>	SYS		4
8046-2			H	PRT (color)	128 <0-255>	SYS		4
8047-0	Image	Color balance adjustment (XPS/detail/M)	L	PRT (color)	128 <0-255>	SYS		4
8047-1			M	PRT (color)	128 <0-255>	SYS		4
8047-2			H	PRT (color)	128 <0-255>	SYS		4
8048-0	Image	Color balance adjustment (XPS/detail/C)	L	PRT (color)	128 <0-255>	SYS		4
8048-1			M	PRT (color)	128 <0-255>	SYS		4
8048-2			H	PRT (color)	128 <0-255>	SYS		4
8049-0	Image	Color balance adjustment (XPS/detail/K)	L	PRT (color)	128 <0-255>	SYS		4
8049-1			M	PRT (color)	128 <0-255>	SYS		4
8049-2			H	PRT (color)	128 <0-255>	SYS		4
8050-0	Image	Color balance adjustment (PS / Smooth / Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes. L: Low density area M: Medium density area H: High density area	4
8050-1			M	PRT (color)	128 <0-255>	SYS		4
8050-2			H	PRT (color)	128 <0-255>	SYS		4
8051-0	Image	Color balance adjustment (PS / Smooth / M)	L	PRT (color)	128 <0-255>	SYS		4
8051-1			M	PRT (color)	128 <0-255>	SYS		4
8051-2			H	PRT (color)	128 <0-255>	SYS		4
8052-0	Image	Color balance adjustment (PS / Smooth / C)	L	PRT (color)	128 <0-255>	SYS		4
8052-1			M	PRT (color)	128 <0-255>	SYS		4
8052-2			H	PRT (color)	128 <0-255>	SYS		4
8053-0	Image	Color balance adjustment (PS / Smooth / K)	L	PRT (color)	128 <0-255>	SYS		4
8053-1			M	PRT (color)	128 <0-255>	SYS		4
8053-2			H	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8054-0	Image	Color balance adjustment (PS / Detail / Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes. L: Low density area M: Medium density area H: High density area	4
8054-1			M	PRT (color)	128 <0-255>	SYS		4
8054-2			H	PRT (color)	128 <0-255>	SYS		4
8055-0	Image	Color balance adjustment (PS / Detail / M)	L	PRT (color)	128 <0-255>	SYS		4
8055-1			M	PRT (color)	128 <0-255>	SYS		4
8055-2			H	PRT (color)	128 <0-255>	SYS		4
8056-0	Image	Color balance adjustment (PS / Detail / C)	L	PRT (color)	128 <0-255>	SYS		4
8056-1			M	PRT (color)	128 <0-255>	SYS		4
8056-2			H	PRT (color)	128 <0-255>	SYS		4
8057-0	Image	Color balance adjustment (PS / Detail / K)	L	PRT (color)	128 <0-255>	SYS		4
8057-1			M	PRT (color)	128 <0-255>	SYS		4
8057-2			H	PRT (color)	128 <0-255>	SYS		4
8058-0	Image	Color balance adjustment (PCL / Smooth / Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes.	4
8058-1			M	PRT (color)	128 <0-255>	SYS		4
8058-2			H	PRT (color)	128 <0-255>	SYS		4
8059-0	Image	Color balance adjustment (PCL / Smooth / M)	L	PRT (color)	128 <0-255>	SYS		4
8059-1			M	PRT (color)	128 <0-255>	SYS		4
8059-2			H	PRT (color)	128 <0-255>	SYS		4
8060-0	Image	Color balance adjustment (PCL / Smooth / C)	L	PRT (color)	128 <0-255>	SYS		4
8060-1			M	PRT (color)	128 <0-255>	SYS		4
8060-2			H	PRT (color)	128 <0-255>	SYS		4
8061-0	Image	Color balance adjustment (PCL / Smooth / K)	L	PRT (color)	128 <0-255>	SYS		4
8061-1			M	PRT (color)	128 <0-255>	SYS		4
8061-2			H	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8062-0	Image	Color balance adjustment (PCL / Detail / Y)	L	PRT (color)	128 <0-255>	SYS	The larger the value is, the darker only the target color becomes. L: Low density area M: Medium density area H: High density area	4
8062-1			M	PRT (color)	128 <0-255>	SYS		4
8062-2			H	PRT (color)	128 <0-255>	SYS		4
8063-0	Image	Color balance adjustment (PCL / Detail / M)	L	PRT (color)	128 <0-255>	SYS		4
8063-1			M	PRT (color)	128 <0-255>	SYS		4
8063-2			H	PRT (color)	128 <0-255>	SYS		4
8064-0	Image	Color balance adjustment (PCL / Detail / C)	L	PRT (color)	128 <0-255>	SYS		4
8064-1			M	PRT (color)	128 <0-255>	SYS		4
8064-2			H	PRT (color)	128 <0-255>	SYS		4
8065-0	Image	Color balance adjustment (PCL / Detail / K)	L	PRT (color)	128 <0-255>	SYS		4
8065-1			M	PRT (color)	128 <0-255>	SYS		4
8065-2			H	PRT (color)	128 <0-255>	SYS		4
8066	Image	Color balance adjustment mode switchover (Network print)		PRT (color)	0 <0-1>	SYS	Switches the image processing method for color balance adjustment for network printing by changing the default value “0” to “1” so that the density of solid images will become lighter along with the adjustment. 0: Adjusts color balance with the solid image density fixed 1: Adjusts color balance with the solid image density varied	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8070-0	Image	Maximum toner density Threshold adjustment (Detail / 600 dpi)	Plain paper	PRT (color)	128 <0-255>	SYS	The larger the value is, the larger the maximum amount of toner to be adhered becomes. The smaller the value is, the smaller the maximum amount of toner to be adhered becomes.	4
8070-2			Recycled paper	PRT (color)	128 <0-255>	SYS		4
8070-3			Thick paper 1	PRT (color)	128 <0-255>	SYS		4
8070-4			Thick paper 2	PRT (color)	128 <0-255>	SYS		4
8070-5			Thick paper 3	PRT (color)	128 <0-255>	SYS		4
8070-6			Thick paper 4	PRT (color)	128 <0-255>	SYS		4
8070-7			Special paper 1	PRT (color)	128 <0-255>	SYS		4
8070-8			Special paper 2	PRT (color)	128 <0-255>	SYS		4
8070-9			OHP film	PRT (color)	128 <0-255>	SYS		4
8071-0	Image	Maximum toner density Threshold adjustment (Smooth / 600 dpi)	Plain paper	PRT (color)	128 <0-255>	SYS	The larger the value is, the larger the maximum amount of toner to be adhered becomes. The smaller the value is, the smaller the maximum amount of toner to be adhered becomes.	4
8071-2			Recycled paper	PRT (color)	128 <0-255>	SYS		4
8071-3			Thick paper 1	PRT (color)	128 <0-255>	SYS		4
8071-4			Thick paper 2	PRT (color)	128 <0-255>	SYS		4
8071-5			Thick paper 3	PRT (color)	128 <0-255>	SYS		4
8071-6			Thick paper 4	PRT (color)	128 <0-255>	SYS		4
8071-7			Special paper 1	PRT (color)	128 <0-255>	SYS		4
8071-8			Special paper 2	PRT (color)	128 <0-255>	SYS		4
8071-9			OHP film	PRT (color)	128 <0-255>	SYS		4
8102-0	Image	Fine line enhancement switchover (e-BRIDGE)	PS	PRT (color)	1 <0-1>	SYS	Sets whether or not fine line enhancement is enabled in the printer function. Use this code in cases such as fine lines being excessively emphasized. 0: OFF 1: ON	4
8102-1			PCL	PRT (color)	1 <0-1>	SYS		4
8102-2			XPS	PRT (color)	1 <0-1>	SYS		4
8103-0 (EFI)	Image	Fine line enhancement switchover (EFI)	PS	PRT (color)	1 <0-1>	SYS	Sets whether or not fine line enhancement is enabled in the printer function. Use this code in cases such as fine lines being excessively emphasized. 0: OFF 1: ON	4
8103-1 (EFI)			PCL	PRT (color)	1 <0-1>	SYS		4
8103-2 (EFI)			XPS	PRT (color)	1 <0-1>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8110-0	Image	Sharpness adjustment (e-BRIDGE / PS / General)	Text	PRT (color)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes.	4
8110-1			Graphics	PRT (color)	128 <0-255>	SYS		4
8110-2			Image	PRT (color)	128 <0-255>	SYS		4
8111-0	Image	Sharpness adjustment (e-BRIDGE / PS / Photograph)	Text	PRT (color)	128 <0-255>	SYS		4
8111-1			Graphics	PRT (color)	128 <0-255>	SYS		4
8111-2			Image	PRT (color)	128 <0-255>	SYS		4
8112-0	Image	Sharpness adjustment (e-BRIDGE / PS / Presentation)	Text	PRT (color)	128 <0-255>	SYS		4
8112-1			Graphics	PRT (color)	128 <0-255>	SYS		4
8112-2			Image	PRT (color)	128 <0-255>	SYS		4
8113-0	Image	Sharpness adjustment (e-BRIDGE / PS / Line Art)	Text	PRT (color)	128 <0-255>	SYS		4
8113-1			Graphics	PRT (color)	128 <0-255>	SYS		4
8113-2			Image	PRT (color)	128 <0-255>	SYS		4
8118-0	Image	Sharpness adjustment (e-BRIDGE / PS)	Text	PRT (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes.	4
8118-1			Graphics	PRT (black)	128 <0-255>	SYS		4
8118-2			Image	PRT (black)	128 <0-255>	SYS		4
8119-0 (EFI)	Image	Sharpness adjustment (EFI / PS)	Text	PRT (black)	128 <0-255>	SYS	The larger the value is, the sharper the image becomes. The smaller the value is, the softer the image becomes.	4
8119-1 (EFI)			Graphics	PRT (black)	128 <0-255>	SYS		4
8119-2 (EFI)			Image	PRT (black)	128 <0-255>	SYS		4
8130	Image	Smudged/ faint text adjustment	PS	PRT (color)	0 <0-8>	SYS	The larger the value is, the darker the small text and fine lines become and the more faint text is suppressed.	1
8131			PCL	PRT (color)	0 <0-8>	SYS		1
8132			XPS	PRT (color)	0 <0-8>	SYS		1
8150-0	Image	Color balance adjustment for twin color mode (XPS/ smooth/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8150-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8150-2			High density	PRT (color)	128 <0-255>	SYS		4
8151-0	Image	Color balance adjustment for twin color mode (XPS/ smooth/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8151-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8151-2			High density	PRT (color)	128 <0-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8152-0	Image	Color balance adjustment for twin color mode (XPS/ smooth/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8152-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8152-2			High density	PRT (color)	128 <0-255>	SYS		4
8153-0	Image	Color balance adjustment for twin color mode (XPS/ smooth/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8153-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8153-2			High density	PRT (color)	128 <0-255>	SYS		4
8154-0	Image	Color balance adjustment for twin color mode (XPS/ detail/Y/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the yellow density of the area becomes.	4
8154-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8154-2			High density	PRT (color)	128 <0-255>	SYS		4
8155-0	Image	Color balance adjustment for twin color mode (XPS/ detail/M/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the magenta density of the area becomes.	4
8155-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8155-2			High density	PRT (color)	128 <0-255>	SYS		4
8156-0	Image	Color balance adjustment for twin color mode (XPS/ detail/C/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the cyan density of the area becomes.	4
8156-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8156-2			High density	PRT (color)	128 <0-255>	SYS		4
8157-0	Image	Color balance adjustment for twin color mode (XPS/ detail/K/ 600dpi)	Low density	PRT (color)	128 <0-255>	SYS	The larger the value is, the higher the black density of the area becomes.	4
8157-1			Medium density	PRT (color)	128 <0-255>	SYS		4
8157-2			High density	PRT (color)	128 <0-255>	SYS		4
8176	Image	Screen switchover (e-BRIDGE)		PRT (color)	0 <0-1>	SYS	0: High screen ruling value (smoother image) 1: Low screen ruling value (rougher image)	1
8179 (EFI)	Image	Screen switchover (EFI)		PRT (color)	0 <0-1>	SYS	0: High screen ruling value (smoother image) 1: Low screen ruling value (rougher image)	1
8187	Image	Screen switchover (e-BRIDGE)	Graphics	PRT (color)	3 <3,11>	SYS	3: High screen ruling value (smoother image) 11: Low screen ruling value (rougher image)	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8188	Image	Screen switchover (e-BRIDGE)	Image	PRT (color)	3 <3,11>	SYS	3: High screen ruling value (smoother image) 11: Low screen ruling value (rougher image)	1
8190 (EFI)	Image	Screen switchover (EFI)	Graphics	PRT (color)	3 <3,11>	SYS	3: High screen ruling value (smoother image) 11: Low screen ruling value (rougher image)	1
8191 (EFI)	Image	Screen switchover (EFI)	Image	PRT (color)	3 <3,11>	SYS	3: High screen ruling value (smoother image) 11: Low screen ruling value (rougher image)	1
8210-0	Image	PureBlack / Gray threshold adjustment (PCL / Graphics)	General	PRT (color)	8 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8210-1			Photograph	PRT (color)	8 <1-255>	SYS		4
8210-2			Presentation	PRT (color)	8 <1-255>	SYS		4
8210-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8211-0	Image	PureBlack / Gray threshold adjustment (PCL / Image)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8211-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8211-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8211-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8212-0	Image	PureBlack / Gray threshold adjustment (PCL / Image)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8212-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8212-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8212-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8213	Image	PureBlack / Gray threshold adjustment (Twin color print)	General	PRT (color)	8 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	1
8214			General	PRT (color)	1 <1-255>	SYS		1
8215			General	PRT (color)	1 <1-255>	SYS		1
8218	Image	Twin color copy mode / black selection	Image	PRT (color)	0 <0-1>	SYS	Sets whether the image on an original is printed in the color or the black mode. 0: OFF (printed in color) 1: ON (printed in black)	1
8240	Image	Line width minimum value adjustment		PRT (color)	2 <1-9>	SYS	The larger the value is, the thicker (darker) the lines become.	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8249-0	Image	PureBlack / Gray threshold adjustment (XPS / Text)	General	PRT (color)	8 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8249-1			Photograph	PRT (color)	8 <1-255>	SYS		4
8249-2			Presentation	PRT (color)	8 <1-255>	SYS		4
8249-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8249-4			Advanced	PRT (color)	8 <1-255>	SYS		4
8250-0	Image	PureBlack / Gray threshold adjustment (XPS / Graphic)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8250-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8250-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8250-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8250-4			Advanced	PRT (color)	1 <1-255>	SYS		4
8251-0	Image	PureBlack / Gray threshold adjustment (XPS / Image)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8251-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8251-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8251-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8251-4			Advanced	PRT (color)	1 <1-255>	SYS		4
8252-0	Image	PureBlack / Gray threshold adjustment (PS / Text)	General	PRT (color)	8 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8252-1			Photograph	PRT (color)	8 <1-255>	SYS		4
8252-2			Presentation	PRT (color)	8 <1-255>	SYS		4
8252-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8252-4			Advanced	PRT (color)	8 <1-255>	SYS		4
8253-0	Image	PureBlack / Gray threshold adjustment (PS / Graphic)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8253-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8253-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8253-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8253-4			Advanced	PRT (color)	1 <1-255>	SYS		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8254-0	Image	PureBlack / Gray threshold adjustment (PS / Image)	General	PRT (color)	1 <1-255>	SYS	The larger the value is, the wider the range of colors to be replaced with black becomes. The smaller the value is, the narrower the range becomes.	4
8254-1			Photograph	PRT (color)	1 <1-255>	SYS		4
8254-2			Presentation	PRT (color)	1 <1-255>	SYS		4
8254-3			Line Art	PRT (color)	8 <1-255>	SYS		4
8254-4			Advanced	PRT (color)	1 <1-255>	SYS		4
8325	Image	Saturation adjustment	Text	SCN (color)	128 <0-255>	SYS	The larger the value is, the brighter the image becomes. The smaller the value is, the duller the image becomes.	1
8326			Photo	SCN (color)	128 <0-255>	SYS		1
8327			Printed image	SCN (color)	128 <0-255>	SYS		1
8330	Image	Range correction adjustment (Full color / Automatic density adjustment)	Text	SCN (color)	1 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
8331			Printed image	SCN (color)	1 <0-1>	SYS		1
8332			Photo	SCN (color)	1 <0-1>	SYS		1
8334			User custom	SCN (color)	1 <0-1>	SYS		1
8340	Image	Density adjustment Manual adjustment / Center value	Text	SCN (color)	128 <0-255>	SYS	The larger the value is, the darker the image at the center value becomes.	1
8341			Printed image	SCN (color)	128 <0-255>	SYS		1
8342			Photo	SCN (color)	128 <0-255>	SYS		1
8344	Image	Density adjustment Manual adjustment / Light step value	Text	SCN (color)	20 <0-255>	SYS	Sets the changing amount per step of the density adjustment buttons on the control panel. The larger the value is, the lighter the image of the “light” step becomes.	1
8345			Printed image	SCN (color)	20 <0-255>	SYS		1
8346			Photo	SCN (color)	20 <0-255>	SYS		1
8348	Image	Density adjustment Manual adjustment / Dark step value	Text	SCN (color)	20 <0-255>	SYS	Sets the changing amount per step of the density adjustment buttons on the control panel. The larger the value is, the darker the image of the “dark” step becomes.	1
8349			Printed image	SCN (color)	20 <0-255>	SYS		1
8350			Photo	SCN (color)	20 <0-255>	SYS		1
8361	Image	Range correction adjustment (Full color / Manual density adjustment)	Text	SCN (color)	0 <0-1>	SYS	0: Background peak - Fixed 1: Background peak - Varied	1
8362			Printed image	SCN (color)	0 <0-1>	SYS		1
8363			Photo	SCN (color)	0 <0-1>	SYS		1
8365			User custom	SCN (color)	0 <0-1>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8370	Image	Background adjustment	User custom mode	SCN (color)	50 <0-50>	SYS	When the value increases, the background becomes darker.	1
8371	Image	Fine adjustment of black density	User custom mode	SCN (color)	0 <0-4>	SYS	Adjusts the black density of the scanned image. When the value increases, the black density becomes darker.	1
8372	Image	RGB conversion method selection	User custom mode	SCN (color)	0 <0-3>	SYS	Sets the color space format of the output image. 0: sRGB 1: AppleRGB 2: ROMMRGB 3: AdobeRGB	1
8373	Image	Saturation adjustment	User custom mode	SCN (color)	128 <0-255>	SYS	The larger the value is, the brighter the image becomes. The smaller the value is, the duller the image becomes.	1
8375	Image	Sharpness adjustment	User custom mode	SCN (color)	128 <0-255>	SYS	When the value increases, the image becomes sharper. When the value decreases, the image becomes softer. The smaller the value is, the less the moire becomes.	1
8380	Image	Density adjustment Fine curve compensation / Center value	User custom mode	SCN (color)	128 <0-255>	SYS	The larger the value is, the darker the image of the center step density becomes.	1
8381	Image	Density adjustment / Light step value	User custom mode	SCN (color)	20 <0-255>	SYS	Sets the changing amount by 1 step at density adjustment on the control panel The larger the value is, the lighter the image of the light steps becomes.	1
8382	Image	Density adjustment / Dark step value	User custom mode	SCN (color)	20 <0-255>	SYS	Sets the changing amount by 1 step at density adjustment on the control panel The larger the value is, the darker the image of the dark steps becomes.	1
8385	Image	Background offset adjustment (Automatic density adjustment)	Text	SCN (color)	128 <0-255>	SYS	The larger the value is, the less easily the background (low density area) is printed. The smaller the value is, the more easily the background (low density area) is printed.	1
8386			Printed image	SCN (color)	128 <0-255>	SYS		1
8387			Photo	SCN (color)	128 <0-255>	SYS		1
8389			User custom mode	SCN (color)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8390	Image	Background offset adjustment (Manual density adjustment)	Text	SCN (color)	128 <0-255>	SYS	The larger the value is, the less easily the background (low density area) is printed. The smaller the value is, the more easily the background (low density area) is printed.	1
8391			Printed image	SCN (color)	128 <0-255>	SYS		1
8392			Photo	SCN (color)	128 <0-255>	SYS		1
8394			User custom mode	SCN (color)	128 <0-255>	SYS		1
8395	Image	Background offset adjustment for ADF		SCN (color)	128 <0-255>	SYS	The larger the adjustment value is, the lighter the background becomes.	1
8400	Image	Background offset adjustment (Automatic density adjustment)	Text/Photo	SCN (black)	128 <0-255>	SYS	The larger the value is, the less easily the background (low density area) is printed. The smaller the value is, the more easily the background (low density area) is printed.	1
8402			Photo	SCN (black)	128 <0-255>	SYS		1
8403			Gray scale	SCN (black)	128 <0-255>	SYS		1
8404			User custom mode	SCN (black)	128 <0-255>	SYS		1
8405	Image	Background offset adjustment (Manual density adjustment)	Text/Photo	SCN (black)	128 <0-255>	SYS	The larger the value is, the less easily the background (low density area) is printed. The smaller the value is, the more easily the background (low density area) is printed.	1
8407			Photo	SCN (black)	128 <0-255>	SYS		1
8408			Gray scale	SCN (black)	128 <0-255>	SYS		1
8409			User custom mode	SCN (black)	128 <0-255>	SYS		1

24.6 System

Adjustment mode (05)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
976	Maintenance	Equipment number (serial number) display	ALL	-	SYS	When this adjustment is performed with this code, the setting code (08-995) is also performed automatically. (10 digits)	1
9104	Image	Compression quality of s SLIM PDF background processing	SCN (color)	5 <0-10>	SYS	0-10 0: High compression, low image quality 10: Low compression, high image quality	1
9107	Image	Resolution adjustment of SLIM PDF background processing	SCN (color)	1 <0-3>	SYS	0: 75dpi 1: 100dpi 2: 150dpi 3: 200dpi	1

24.7 Scanner

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
305	Scanner	Image location adjustment of secondary scanning direction (scanner section)		ALL	124 <68-188>	SYS	When the value increases by “1”, the image shifts by approx. 0.08333 mm toward the trailing edge of the paper.	1
306	Scanner	Image location adjustment of primary scanning direction (scanner section)		ALL	113 <0-255>	SYS	When the value increases by “1”, the image shifts by approx. 0.0423 mm toward the front side of the paper.	1
308	Scanner	Distortion mode		ALL	-	-	Moves carriages to the adjusting position. (Ch.8.5.9)	6
340	Scanner	Reproduction ratio adjustment of secondary scanning direction (scanner section)		ALL	128 <0-255>	SYS	When the value increases by “1”, the reproduction ratio in the secondary scanning direction (vertical to paper feeding direction) increases by approx. 0.017%.	1
349	Scanner	Shading correction plate Automatic dust detection adjustment		ALL	-	-	Performs adjustment for automatic dust detection with the shading correction plate. If dust is detected, shading correction is performed by avoiding the dust.	6
350	Scanner	Shading position adjustment	Original glass	ALL	117 <68-188>	SYS	0.08333 mm/step	1
351			RADF	ALL	133 <68-188>	SYS	0.08333 mm/step	1
354	RADF	Adjustment of RADF paper alignment	for single sided original	ALL	10 <0-20>	SYS	When the value increases by “1”, the aligning amount increases by approx. 0.4 mm.	1
355			for double sided original	ALL	10 <0-20>	SYS	When the value increases by “1”, the aligning amount increases by approx. 0.5 mm.	1
357	RADF	Fine adjustment of RADF transport speed		ALL	50 <0-100>	SYS	When the value increases by “1”, the reproduction ratio of the secondary scanning direction on original (fed from the RADF) increases by approx. 0.1%.	1
358	RADF	RADF sideways deviation adjustment		ALL	128 <0-255>	SYS	When the value increases by “1”, the image of original fed from the RADF shifts toward the rear side of paper by approx. 0.0423 mm.	1

Adjustment mode (05)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
359	Scanner	Carriage position adjustment during scanning from RADF	ALL (black)	128 <0-255>	SYS	When the value increases by "1", the carriage position shifts by approx. 0.1 mm toward the exit side when using the RADF.	1
360			ALL (color)	128 <0-255>	SYS		1
361	Scanner	Log table switching for RADF copying	ALL (color)	2 <0-4>	SYS	0: Same log table as the one used at copying with original glass 1: Background reproduction - Light 2 2: Background reproduction - Light 1 3: Background reproduction - Dark 1 4: Background reproduction - Dark 2	1
362	Scanner	Log table switching for RADF copying	ALL (black)	2 <0-4>	SYS	0: Same log table as the one used at copying with original glass 1: Background reproduction - Light 2 2: Background reproduction - Light 1 3: Background reproduction - Dark 1 4: Background reproduction - Dark 2	1
363	Scanner	Data transfer of characteristic value of scanner / SYS board → SLG board	SCN	-	SYS	Transfers the characteristic values of the scanner (shading correction factor / RGB color correction / reproduction ratio color aberration correction / shading position correction factor / reproduction ratio correction value in primary scanning direction) from the SRAM of the SYS board to the SRAM of the SLG board.	6

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
364	Scanner	Data transfer of characteristic value of scanner / SLG board → SYS board		SCN	-	SYS	Transfers the characteristic values of the scanner (shading correction factor / RGB color correction / reproduction ratio color aberration correction / shading position correction factor / reproduction ratio correction value in primary scanning direction) from the SRAM of the SLG board to the SRAM of the SYS board.	6
365	RADF	RADF leading edge position 1 adjustment	for single sided original	ALL	50 <0-100>	SYS	When the value increases by “1”, the copied image of original fed from the RADF shifts toward the trailing edge of paper by approx. 0.2 mm.	1
366			for double sided original	ALL	50 <0-100>	SYS		1

24.8 Printer

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
401	Laser	Fine adjustment of polygonal motor rotation speed (reproduction ratio adjustment)		PRT	128 <0-255>	M	When the value increases by “1”, the reproduction ratio of primary scanning direction increases by approx. 0.07%. (approx. 0.1 mm/step)	1
405				PPC	128 <0-255>	M		1
408	Image	Leading edge position adjustment (Normal speed)	Common items	PPC	100 <0-200>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
410	Image	Adjustment of primary scanning laser writing start position		PPC	128 <0-255>	M	When the value increases by “1”, the writing start position shifts to the front side by approx. 0.0423 mm.	1
411				PRT	128 <0-255>	M		1
417-0	Laser	Secondary scanning position Fine adjustment	Y	ALL	128 <118-138>	M	Performs secondary scanning position fine adjustment to make field curvature deviation less noticeable.	4
417-1			M	ALL	128 <118-138>	M		4
417-2			C	ALL	128 <118-138>	M		4
428	Image	Leading edge position adjustment (Normal speed)	PFP lower drawer	ALL	50 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
429	Image	Leading edge position adjustment (Normal speed)	LCF	ALL	50 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
430	Image	Top margin adjustment (blank area at the leading edge of the paper))		PPC	0 <0-255>	M	When the value increases by “1”, the blank area becomes wider by approx. 0.0423 mm.	1
431	Image	Left margin adjustment (blank area at the left of the paper along the paper feeding direction)		PPC	0 <0-255>	M		1
432	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction)		PPC	0 <0-255>	M		1
433	Image	Bottom margin adjustment (blank area at the trailing edge of the paper)		PPC	0 <0-255>	M		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
434-0	Image	Bottom margin adjustment (blank area at the trailing edge of the paper) /Reverse side at duplexing		PPC/ PRT	24 <0-255>	M	When the value increases, the blank area becomes wider.	4
434-1	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction) /Reverse side at duplexing		PPC/ PRT	18 <0-255>	M		4
434-2	Image	Bottom margin adjustment (blank area at the trailing edge of the paper) /Reverse side at duplexing (black)		PPC/ PRT	24 <0-255>	M		4
434-3	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction) /Reverse side at duplexing (color)		PPC/ PRT	18 <0-255>	M		4
434-4	Image	Bottom margin adjustment (blank area at the trailing edge of the paper) /Reverse side at duplexing (color)		PPC/ PRT	18 <0-255>	M		4
434-5	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction) /Reverse side at duplexing (Thick paper 1)		PPC/ PRT	12 <0-255>	M		4
435	Image	Top margin adjustment (blank area at the leading edge of the paper)		PRT	24 <0-255>	M	When the value increases by “1”, the blank area becomes wider by approx. 0.0423 mm.	1
436	Image	Left margin adjustment (blank area at the left of the paper along the paper feeding direction)		PRT	0 <0-255>	M	When the value increases by “1”, the blank area becomes wider by approx. 0.0423 mm.	1
437	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction)		PRT	0 <0-255>	M		1
438	Image	Bottom margin adjustment (blank area at the trailing edge of the paper)		PRT	0 <0-255>	M		1
440	Image	Leading edge position adjustment (Normal speed)	1st drawer	ALL	50 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
441			2nd drawer	ALL	50 <0-100>	M		1
442			Bypass feeding	ALL	50 <0-100>	M		1
444			PFP upper drawer	ALL	50 <0-100>	M		1
445			Duplex feeding	ALL	50 <0-100>	M		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
446-0	Drive	Fine adjustment of exit motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M		4
446-1				FAX	128 <0-255>	M		4
446-2				PPC	128 <0-255>	M		4
446-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
446-4				FAX	128 <0-255>	M		4
446-5				PPC	128 <0-255>	M		4
446-6			Transport speed: High speed	PRT	128 <0-255>	M		4
446-7				FAX	128 <0-255>	M		4
446-8				PPC	128 <0-255>	M		4
446-9			Reverse rotation: Normal speed	ALL	128 <0-255>	M		4
446-10			Reverse rotation: Decelerating	ALL	128 <0-255>	M		4
446-11			Reverse rotation: High speed	ALL	128 <0-255>	M		4
467-0	Paper feeding	Adjustment of paper pushing amount/ Duplex feeding (short size)	Plain paper	ALL	0 <0-255>	M	When the value increases by "0.8", the driving speed of ADU transport roller increases by approx. 2 ms when the paper transport is started from the registration section.	4
467-1			Thick paper 1	ALL	0 <0-255>	M	When the value increases by "0.4", the driving speed of ADU transport roller increases by approx. 2 ms when the paper transport is started from the registration section.	4
467-2			Thick paper 2	ALL	0 <0-255>	M		4
467-3			Thick paper 3	ALL	0 <0-255>	M		4
467-4			Special paper	ALL	20 <0-255>	M		4
468-0	Finisher	Fine adjustment of binding position/ folding position	A4-R /LT-R	ALL	0 <-14-14>	M	When the value increases by “1”, the binding/folding position shifts toward the right page by 0.25 mm.	4
468-1			B4	ALL	0 <-14-14>	M		4
468-2			A3/LD	ALL	0 <-14-14>	M		4
480	Paper feeding	Paper feed aligning amount adjustment (using icons)		ALL	-	M	Press the button on the LCD.	4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
481-0	Drive	Fine adjustment of drum motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M		4
481-1				FAX	128 <0-255>	M		4
481-2				PPC	128 <0-255>	M		4
481-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
481-4				FAX	128 <0-255>	M		4
481-5				PPC	128 <0-255>	M		4
481-6			Transport speed: High speed	PRT	128 <0-255>	M		4
481-7				FAX	128 <0-255>	M		4
481-8				PPC	128 <0-255>	M		4
483-0	Drive	Fine adjustment of registration motor rotational speed	Transport speed: Normal speed	PRT	Refer to content <0-255>	M	483-0 <Default value> e-STUDIO2020C/2330C: 138 (Except for NAD), 133 (NAD) e-STUDIO2820C/2830C/3520C/3530C/4520C: 133 483-3 <Default value> e-STUDIO2020C/2330C: 120 (Except for NAD), 125 (NAD) e-STUDIO2820C/2830C/3520C/3530C: 125 e-STUDIO4520C: 124	4
483-1				FAX	128 <0-255>	M		4
483-2				PPC	128 <0-255>	M		4
483-3			Transport speed: Decelerating	PRT	Refer to content <0-255>	M		4
483-4				FAX	128 <0-255>	M		4
483-5				PPC	128 <0-255>	M		4
483-6			Transport speed: High speed	PRT	128 <0-255>	M		4
483-7				FAX	128 <0-255>	M		4
483-8				PPC	128 <0-255>	M		4
485-0	Drive	Fine adjustment of fuser roller rotational speed	Transport speed: Normal speed	PRT	Refer to content <0-255>	M	485-0 <Default value> e-STUDIO2020C/2330C: 131 (Except for NAD), 137 (NAD) e-STUDIO2820C/2830C/3520C/3530C/4520C: 131 485-3 <Default value> e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C: 136 (Except for NAD), 124 (NAD) e-STUDIO4520C: 139	4
485-1				FAX	128 <0-255>	M		4
485-2				PPC	128 <0-255>	M		4
485-3			Transport speed: Decelerating	PRT	Refer to content <0-255>	M		4
485-4				FAX	128 <0-255>	M		4
485-5				PPC	128 <0-255>	M		4
485-6			Transport speed: High speed	PRT	128 <0-255>	M		4
485-7				FAX	128 <0-255>	M		4
485-8				PPC	128 <0-255>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
487-0	Drive	Fine adjustment of transfer belt motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M	When the value increases, the reproduction ratio in the secondary scanning direction becomes larger. (Approx. 0.1 mm/1 steps)	4
487-1				FAX	128 <0-255>	M		4
487-2				PPC	128 <0-255>	M		4
487-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
487-4				FAX	128 <0-255>	M		4
487-5				PPC	128 <0-255>	M		4
487-6			Transport speed: High speed	PRT	128 <0-255>	M		4
487-7				FAX	128 <0-255>	M		4
487-8				PPC	128 <0-255>	M		4
489-0	Drive	Fine adjustment of feed/transport motor rotational speed	Transport speed: Normal speed	PRT	136 <0-255>	M		4
489-1				FAX	128 <0-255>	M		4
489-2				PPC	128 <0-255>	M		4
489-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
489-4				FAX	128 <0-255>	M		4
489-5				PPC	128 <0-255>	M		4
489-6			Transport speed: High speed	PRT	128 <0-255>	M		4
489-7				FAX	128 <0-255>	M		4
489-8				PPC	128 <0-255>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
491-0	Drive system	Fine adjustment of ADU motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M		4
491-1				FAX	128 <0-255>	M		4
491-2				PPC	128 <0-255>	M		4
491-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
491-4				FAX	128 <0-255>	M		4
491-5				PPC	128 <0-255>	M		4
491-6			Transport speed: High speed	PRT	128 <0-255>	M		4
491-7				FAX	128 <0-255>	M		4
491-8				PPC	128 <0-255>	M		4
491-9			Transport speed: Normal speed	ALL	128 <0-255>	M		4
491-10			Transport speed: Decelerating	ALL	128 <0-255>	M		4
491-11			Transport speed: High speed	ALL	128 <0-255>	M		4
497-0	Image	Adjustment of drawer sideways deviation	1st drawer	ALL	128 <0-255>	M	When the value increases by “1”, the image shifts toward the front side by 0.0423 mm.	4
497-1			2nd drawer	ALL	128 <0-255>	M		4
497-2			PFP upper drawer	ALL	128 <0-255>	M		4
497-3			PFP lower drawer	ALL	128 <0-255>	M		4
497-4			LCF	ALL	128 <0-255>	M		4
497-5			Bypass feeding	ALL	128 <0-255>	M		4
498-0	Image	Adjustment of primary scanning laser writing start position for duplex printing	Long size	ALL	128 <0-255>	M	When the value increases by “1”, the image shifts toward the front side by 0.0423 mm. When the value of 498-0 is set, the same one is automatically applied to 498-1.	4
498-1			Short size (A4/LT or shorter)	ALL	128 <0-255>	M		4
4065	Image	Leading edge position adjustment (Decelerated)	Common items	ALL	100 <0-200>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4066	Image	Leading edge position adjustment (High speed)	Common items	ALL	100 <0-200>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
4067-0	Image	Leading edge position adjustment (High speed)	1st drawer	ALL	50 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	4
4067-1			2nd drawer	ALL	50 <0-100>	M		4
4067-2			PFP upper drawer	ALL	50 <0-100>	M		4
4067-3			PFP lower drawer	ALL	50 <0-100>	M		4
4067-4			Bypass feed	ALL	50 <0-100>	M		4
4067-5			ADU	ALL	50 <0-100>	M		4
4067-6			LCF	ALL	50 <0-100>	M		4
4100-0	Paper feeding	Paper aligning amount adjustment at the registration section (1st drawer / Plain paper)	Plain paper Long size	ALL	20 <0~63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4100-1			Plain paper Middle size	ALL	20 <0-63>	M		4
4100-2			Plain paper Short size 1	ALL	25 <0-63>	M		4
4100-3			Plain paper Short size 2	ALL	22 <0-63>	M		4
4100-4			Plain paper Short size 3	ALL	22 <0-63>	M		4
4101-0	Paper feeding	Paper aligning amount adjustment at the registration section (2nd drawer / Plain paper)	Plain paper Long size	ALL	20 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4101-1			Plain paper Middle size	ALL	20 <0-63>	M		4
4101-2			Plain paper Short size 1	ALL	17 <0-63>	M		4
4101-3			Plain paper Short size 2	ALL	17 <0-63>	M		4
4101-4			Plain paper Short size 3	ALL	17 <0-63>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4103-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Plain paper)	Plain paper Long size	ALL	20 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4103-1			Plain paper Middle size	ALL	20 <0-63>	M		4
4103-2			Plain paper Short size 1	ALL	20 <0-63>	M		4
4103-3			Plain paper Short size 2	ALL	22 <0-63>	M		4
4103-4			Plain paper Short size 3	ALL	22 <0-63>	M		4
4104-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Thick paper 1)	Thick paper 1 Long size	ALL	30 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4104-1			Thick paper 1 Middle size	ALL	30 <0-63>	M		4
4104-2			Thick paper 1 Short size 1	ALL	35 <0-63>	M		4
4104-3			Thick paper 1 Short size 2	ALL	35 <0-63>	M		4
4104-4			Thick paper 1 Short size 3	ALL	35 <0-63>	M		4
4105-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Thick paper 2)	Thick paper 2 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4105-1			Thick paper 2 Middle size	ALL	35 <0-63>	M		4
4105-2			Thick paper 2 Short size 1	ALL	35 <0-63>	M		4
4105-3			Thick paper 2 Short size 2	ALL	35 <0-63>	M		4
4105-4			Thick paper 2 Short size 3	ALL	35 <0-63>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4106-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Thick paper 3)	Thick paper 3 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4106-1			Thick paper 3 Middle size	ALL	35 <0-63>	M		4
4106-2			Thick paper 3 Short size 1	ALL	35 <0-63>	M		4
4106-3			Thick paper 3 Short size 2	ALL	35 <0-63>	M		4
4106-4			Thick paper 3 Short size 3	ALL	35 <0-63>	M		4
4107-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / OHP film)	OHP film Long size	ALL	30 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4107-1			OHP film Middle size	ALL	30 <0-63>	M		4
4107-2			OHP film Short size 1	ALL	30 <0-63>	M		4
4107-3			OHP film Short size 2	ALL	30 <0-63>	M		4
4107-4			OHP film Short size 3	ALL	30 <0-63>	M		4
4108-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFP upper drawer / Plain paper)	Plain paper Long size	ALL	20 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4108-1			Plain paper Middle size	ALL	20 <0-63>	M		4
4108-2			Plain paper Short size 1	ALL	17 <0-63>	M		4
4108-3			Plain paper Short size 2	ALL	17 <0-63>	M		4
4108-4			Plain paper Short size 3	ALL	17 <0-63>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4109-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFP lower drawer / Plain paper)	Plain paper Long size	ALL	20 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4109-1			Plain paper Middle size	ALL	20 <0-63>	M		4
4109-2			Plain paper Short size 1	ALL	17 <0-63>	M		4
4109-3			Plain paper Short size 2	ALL	17 <0-63>	M		4
4109-4			Plain paper Short size 3	ALL	17 <0-63>	M		4
4110-0	Paper feeding	Paper aligning amount adjustment at the registration section (ADU / Plain paper)	Plain paper Long size	ALL	18 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4110-1			Plain paper Middle size	ALL	18 <0-63>	M		4
4110-2			Plain paper Short size 1	ALL	6 <0-63>	M		4
4110-3			Plain paper Short size 2	ALL	6 <0-63>	M		4
4110-4			Plain paper Short size 3	ALL	6 <0-63>	M		4
4111	Paper feeding	Paper aligning amount adjustment at the registration section (LCF)		ALL	17 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm.	1

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4115-0	Paper feeding	Paper aligning amount adjustment at the registration section (1st drawer / Thick paper 1)	Thick paper 1/ Thick paper 2/ Thick paper 3 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4115-1			Thick paper 1/ Thick paper 2/ Thick paper 3 Middle size	ALL	35 <0-63>	M		4
4115-2			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 1	ALL	35 <0-63>	M		4
4115-3			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 2	ALL	35 <0-63>	M		4
4115-4			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 3	ALL	35 <0-63>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4116-0	Paper feeding	Paper aligning amount adjustment at the registration section (2nd drawer / Thick paper 1)	Thick paper 1/ Thick paper 2/ Thick paper 3 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4116-1			Thick paper 1/ Thick paper 2/ Thick paper 3 Middle size	ALL	35 <0-63>	M		4
4116-2			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 1	ALL	35 <0-63>	M		4
4116-3			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 2	ALL	35 <0-63>	M		4
4116-4			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 3	ALL	35 <0-63>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4117-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFP upper drawer / Thick paper 1)	Thick paper 1/ Thick paper 2/ Thick paper 3 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4117-1			Thick paper 1/ Thick paper 2/ Thick paper 3 Middle size	ALL	35 <0-63>	M		4
4117-2			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 1	ALL	35 <0-63>	M		4
4117-3			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 2	ALL	35 <0-63>	M		4
4117-4			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 3	ALL	35 <0-63>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4118-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFP lower drawer / Thick paper 1)	Thick paper 1/ Thick paper 2/ Thick paper 3 Long size	ALL	35 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4118-1			Thick paper 1/ Thick paper 2/ Thick paper 3 Middle size	ALL	35 <0-63>	M		4
4118-2			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 1	ALL	35 <0-63>	M		4
4118-3			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 2	ALL	35 <0-63>	M		4
4118-4			Thick paper 1/ Thick paper 2/ Thick paper 3 Short size 3	ALL	35 <0-63>	M		4
4120-0	Paper feeding	Paper aligning amount adjustment at the registration section (ADU / Thick paper 1)	Thick paper 1 Long size	ALL	22 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4120-1			Thick paper 1 Middle size	ALL	22 <0-63>	M		4
4120-2			Thick paper 1 Short size 1	ALL	22 <0-63>	M		4
4120-3			Thick paper 1 Short size 2	ALL	22 <0-63>	M		4
4120-4			Thick paper 1 Short size 3	ALL	22 <0-63>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4122-0	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s(1st drawer / Plain paper)	Plain paper Long size	ALL	10 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4122-1			Plain paper Middle size	ALL	10 <0-63>	M		4
4122-2			Plain paper Short size 1	ALL	15 <0-63>	M		4
4122-3			Plain paper Short size 2	ALL	10 <0-63>	M		4
4122-4			Plain paper Short size 3	ALL	10 <0-63>	M		4
4123-0	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s(2nd drawer / Plain paper)	Plain paper Long size	ALL	10 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4123-1			Plain paper Middle size	ALL	10 <0-63>	M		4
4123-2			Plain paper Short size 1	ALL	10 <0-63>	M		4
4123-3			Plain paper Short size 2	ALL	10 <0-63>	M		4
4123-4			Plain paper Short size 3	ALL	10 <0-63>	M		4
4124-0	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s (PFP upper drawer / Plain paper)	Plain paper Long size	ALL	10 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4124-1			Plain paper Middle size	ALL	10 <0-63>	M		4
4124-2			Plain paper Short size 1	ALL	10 <0-63>	M		4
4124-3			Plain paper Short size 2	ALL	10 <0-63>	M		4
4124-4			Plain paper Short size 3	ALL	10 <0-63>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4125-0	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s (PFP lower drawer / Plain paper)	Plain paper Long size	ALL	10 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4125-1			Plain paper Middle size	ALL	10 <0-63>	M		4
4125-2			Plain paper Short size 1	ALL	10 <0-63>	M		4
4125-3			Plain paper Short size 2	ALL	10 <0-63>	M		4
4125-4			Plain paper Short size 3	ALL	10 <0-63>	M		4
4126	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s (LCF)		ALL	10 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm.	1
4127-0	Paper feeding	Paper aligning amount adjustment at the registration section: 200mm/s (Bypass feed / Plain paper)	Plain paper Long size	ALL	15 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4127-1			Plain paper Middle size	ALL	15 <0-63>	M		4
4127-2			Plain paper Short size 1	ALL	15 <0-63>	M		4
4127-3			Plain paper Short size 2	ALL	15 <0-63>	M		4
4127-4			Plain paper Short size 3	ALL	15 <0-63>	M		4

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4128-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Special paper 1)	Special paper 1 Long size	ALL	30 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4128-1			Special paper 1 Middle size	ALL	30 <0-63>	M		4
4128-2			Special paper 1 Short size 1	ALL	30 <0-63>	M		4
4128-3			Special paper 1 Short size 2	ALL	30 <0-63>	M		4
4128-4			Special paper 1 Short size 3	ALL	30 <0-63>	M		4
4129-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feed / Special paper 2)	Special paper 2 Long size	ALL	30 <0-63>	M	When the value increases by “1”, the aligning amount increases by approx. 0.6 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size 1: 205 mm to 219 mm Short size 2: 160 mm to 204 mm Short size 3: 159 mm or shorter	4
4129-1			Special paper 2 Middle size	ALL	30 <0-63>	M		4
4129-2			Special paper 2 Short size 1	ALL	30 <0-63>	M		4
4129-3			Special paper 2 Short size 2	ALL	30 <0-63>	M		4
4129-4			Special paper 2 Short size 3	ALL	30 <0-63>	M		4
4562	Image	Leading edge position adjustment correction item on each media type (when decelerating)	1st drawer	ALL	52 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
4563			2nd drawer	ALL	52 <0-100>	M		1
4564			PFP upper drawer	ALL	52 <0-100>	M		1
4565			PFP lower drawer	ALL	52 <0-100>	M		1
4567-0	Image	Leading edge position adjustment (Decelerated)	Thick paper 1	ALL	51 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	4
4567-1			Thick paper 2	ALL	52 <0-100>	M		4
4567-2			Thick paper 3	ALL	54 <0-100>	M		4
4567-3			OHP film	ALL	52 <0-100>	M		4
4567-4			Special paper 1	ALL	54 <0-100>	M		4
4567-5			Special paper 2	ALL	54 <0-100>	M		4

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4568	Image	Leading edge position adjustment correction item on each media type (when decelerating)	ADU	ALL	52 <0-100>	M	When the value increases by “1”, the image shifts toward the trailing edge of the paper by approx. 0.1 mm.	1
4703	Laser	Fine adjustment of polygonal motor rotational speed (PPC): High speed		ALL	128 <0-255>	M	e-STUDIO3530C only	1
4704	Laser	Fine adjustment of polygonal motor rotational speed (PRT): High speed		ALL	128 <0-255>	M	e-STUDIO3530C only	1
4707-0	Drive	Fine adjustment of PFP motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M		4
4707-1				FAX	128 <0-255>	M		4
4707-2				PPC	128 <0-255>	M		4
4707-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
4707-4				FAX	128 <0-255>	M		4
4707-5				PPC	128 <0-255>	M		4
4707-6			Transport speed: High speed	PRT	128 <0-255>	M		4
4707-7				FAX	128 <0-255>	M		4
4707-8				PPC	128 <0-255>	M		4
4708-0	Drive	Fine adjustment of TLCF motor rotational speed	Transport speed: Normal speed	PRT	128 <0-255>	M		4
4708-1				FAX	128 <0-255>	M		4
4708-2				PPC	128 <0-255>	M		4
4708-3			Transport speed: Decelerating	PRT	128 <0-255>	M		4
4708-4				FAX	128 <0-255>	M		4
4708-5				PPC	128 <0-255>	M		4
4708-6			Transport speed: High speed	PRT	128 <0-255>	M		4
4708-7				FAX	128 <0-255>	M		4
4708-8				PPC	128 <0-255>	M		4
4719	Color registration	Color registration adjustment		ALL	-	M	Forcibly performs the color registration control adjustment in order to eliminate the color deviation of Y, M, C and K colors.	6

Adjustment mode (05)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4720	Color registration	Displaying parameters for color registration adjustment detection abnormality		ALL	- <0-255>	M	Checks the cause of a “CA00” error when it occurs.	2
4721	Maintenance	Tilt motor initial excitation setting		ALL	-	M	Perform this adjustment when the SRAM on the laser unit or the LGC board has been replaced.	6
4731-0	Image	Image void correction code	Top margin	PPC (black)	0 <0-255>	M		4
4731-1				PPC (color)	48 <0-255>	M		4
4731-2				PRT (black)	29 <0-255>	M		4
4731-3				PRT (color)	29 <0-255>	M		4
4731-4			Bottom margin	PPC (black)	24 <0-255>	M		4
4731-5				PPC (color)	24 <0-255>	M		4
4731-6				PRT (black)	0 <0-255>	M		4
4731-7				PRT (color)	0 <0-255>	M		4
4732-0	Image	Displaying corrected values of leading edge adjustment	Absolute humidity reference value	ALL	255 <0-255>	M		10
4732-1			Absolute humidity RMS value	ALL	255 <0-255>	M		10
4758	Laser	Fine adjustment of polygonal motor rotational speed (PPC): Normal speed		ALL	128 <0-255>	M	e-STUDIO4520C only	1
4759	Laser	Fine adjustment of polygonal motor rotational speed (PRT): Normal speed		ALL	128 <0-255>	M	e-STUDIO4520C only	1
4789	Transfer	Temperature setting for determination of color registration control interval		ALL	10 <0-100>	M	he larger the value is, the longer the interval of the color registration control becomes. (Unit: Temperature value x 10)	1

25. SETTING MODE (08)

The items in the setting code list can be set or changed in this setting mode (08).

Note:

When the power should be turned OFF, be sure to shut down the equipment by pressing the [ON/OFF] button for a few seconds.

Remarks:

1. The Service Handbook contains only the selected codes while the Service Manual contains all codes.
2. The digit after the hyphen in “Code” of the following table is a sub code.
3. In “RAM”, the SRAM of the board in which the data of each code is stored is indicated. “M” stands for the LGC board, “SYS”, “NIC” and “UTY” stands for the SYS board.

25.1 Classification List of Setting Mode (08)

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
User interface	[ACS]	9698	
	[AMS]	605	
	[Feeding paper media]	9185-0 to 1	
	[X in 1]	650	
	[Color specification]	643, 644	
	[Indicator]	671	
	[Edit copying]	645, 646	
	[Sound]	610, 969, 970	
	[Counter]	202	
	[Cascade]	652, 653	
	[ACS]	268	
	[Screen]	207, 602, 9985	
	[Administrator]	263, 9882	
	[Feeding setting]	658, 659	
	[Language]	220, 221, 1929, 1930, 1931, 1932, 1933, 1934, 1935	
	[Original counter]	302	
	[Original direction]	628	
	[Copy volume]	300	
	[Automatic calibration]	632	
	[Default setting]	276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 289, 331, 603, 604, 607, 618, 642, 9986	
	[Jam releasing]	9359	
	[Offsetting between jobs]	682	
	[Security level]	1708	
	[Sorting]	627, 634, 641, 649	
	[Timer]	204, 205, 206	
	[Template]	1140	
	[Image shift]	636, 1429, 1430, 8546	
	[Tray reset]	648	
	[Panel calibration]	9051	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
User interface	[Date]	640	
	[Annotation]	651, 657	
	[Displaying number]	342, 1478, 9891	
	[Job Build]	1130, 1131	
	[File]	209, 218, 219	
	[Department management]	617, 620, 621, 622, 623, 624, 629	
	[Black-free]		343
	[Book duplexing]	611	
	[Box printing]	951, 953, 954	
	[Paper size]	613	
	[Blank copy prevention]	625	
	[User mode]	506, 508, 580, 590	
	[EXTENSION button]	9955	
	[Icon]	8598, 9982	
	[Trial copy function]	3635	
	[ACC function]	8591	
	[Display method of file name]	8624	
	[File name form for exporting]	8625	
	[Private print/Hold print job continue operation]	8626	
	[Print job list]	8633	
	[Auto-color print]	8634	
	[Meta Scan]	8635	
Scanner	[E-mail]	272, 273	
	[Pre-scan]	3015	
	[Date/time]	8540	
Fax	[FAX mistransmission prevention function]	3847, 3848, 3849	
	[Receiving confidential data]	3846	
	[Function]	1498, 1926, 8612	
	[Destination]		701
	[Default setting]	274	
	[Priority drawer]	689	
	[Retaining the settings]	9987	
Image	[ACS]	609-0 to 4, 9825, 9974, 9975	
	[ALL clear]	7000, 7001, 7300, 7301, 7400, 7500	
	[Automatic calibration]	595	
	[Default setting]	1149, 9382, 9897, 9898, 9899	
	[Toner density ratio]	2707-0 to 3	
	[Smoothing]	560, 562	
	[Image repeat gap]	7612	
	[Outlining white text]	8011	
	[Blank page judgment]	9973	
	[Quantized coefficient correction]	8304	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Image control	[2nd transfer]	548	
	[Abnormality detection]		573, 574, 575, 576
	[Contrast voltage]	2513-0 to 3, 2514-0 to 3, 2515	556,
	[Automatic starting]	559, 565, 566, 567, 568, 569, 570, 571, 572	
	[Smoothing]	560	
	[Laser power]	2525-0 to 3, 2526-0 to 3, 2527	557,
	[Potential on white background]	2548-0 to 3, 2549-0 to 3, 2554	
Feeding system	[Feeding setting]	254, 255, 619, 1438	
	[Paper source]	480, 481, 1135, 1431, 4016-0 to 1	
	[detection]	449, 1492, 4621, 4622	
	[Setting]	988	
	[Coated paper Mode]	675-0 to 4	
	[Paper size]	224, 225, 226, 227, 228, 256, 8548	
	[Paper dimension]	210, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 470, 471, 4567, 4568	
	[Paper retry]	463-0 to 1, 464-0 to 1, 465-0 to 1, 466-0 to 1, 467-0 to 1, 468-0 to 1, 482, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401	
	[Pushing Paper]	4553-0 to 4	
	[Paper information]	9300, 9301, 9302, 9303, 9304, 9305	
	[Color registration adjustment]	4550-0 to1, 4562, 4605	4546
	[Drum phase adjustment]	4766	
Laser	[Polygonal motor]	398, 399, 478, 483, 484, 485, 486, 489, 490, 4604, 9805	
Main charger	[Cleaning]	1389	
	[Charger]	808	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Developer	[Toner nearly empty]	1415, 1416, 1416-0 to 3, 6452-0 to 3, 6453-0 to 3, 6454-0 to 3, 8523, 9804	
	[Toner cartridge rotation counter]	1376-0 to 3	
	[Toner density ratio manual offset control]	2707-0 to 3	
	[Prevention of color toner low density]	2692, 2693	
	[Used toner mixing paddles]	4551-0 to 1, 4554-0 to 1, 4561, 6209-0 to 2	
	[Used toner motor lock detection]	4595	
	[Enforced toner supply]	2411-0 to 2, 2412-0 to 2, 2413-0 to 2	
Paper exit	[Paper exit speed control switching]	4563	
	[Duplex reversing position correction control]	4564	
Transfer	[1st transfer]	816, 2512	
	[2nd transfer]	2490	
	[Resistance detection]	2511	
	[Transfer bias]	2510	
Cleaner	[Drum reverse rotation amount control]	2367	
	[Prevention of drum rotation without fusing]	2380, 2381, 2382, 2383, 2384	
	[Discharge blade]	2553	
	[Exhaust fan rotation period]	2370	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Fuser	[Temperature]	409, 410-0 to 3, 412-0 to 1, 413-0 to 1, 434-0 to 1, 437-0 to 1, 438, 448, 450-0 to 3, 451-0 to 1, 452, 453, 518-0 to 1, 531-0 to 1, 534-0 to 4, 1902, 1903, 1904, 2017-0 to 3, 2018-0 to 3, 2019-0 to 3, 2151-0 to 3, 2153-0 to 1, 2155-0 to 1, 2159-0 to 1, 2161, 2255, 4545, 5241-0 to 3, 5277-0 to 5, 5285-0 to 3, 5293-0 to 3, 5294-0 to 3, 5295-0 to 3, 5296-0 to 3, 5409-0 to 1, 5410-0 to 1	
	[Intermittence setting]	5449-0 to 6	
	[Status counter]		400
	[Fuser reverse rotation setting]	4569	
	[Pre-running]	417-0 to 1, 439-0 to 1, 440-0 to 1, 441-0 to 1, 461-0 to 4, 517, 526, 584, 855, 2020-0 to 3, 5280-0 to 1, 5299-0 to 1, 5308-0 to 1, 5309-0 to 1, 5310-0 to 3	
	[Fuser unit]	4549	
	[Fuser unit voltage determination]	4591	
Image processing	[Counter]	1371, 1372, 1378, 1380, 1382, 1383, 1385, 1386, 1387, 1388	
RADF	[Switchback]	462	
Finisher	[Stapling]	704-0 to 1, 1911, 9811-0 to 3, 9937-0 to 3, 9938-0 to 3	
	[Hole punching]	9847	
	[Finisher model switching]	1912	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Network	[AppleTalk]	1014, 1015, 1936, 3729, 3730	
	[Bindery]	1026	
	[Cloning]	3789, 9791	
	[Community]	1065, 1066	
	[DDNS]	1020, 1112, 3737, 3745, 3746, 3747, 3748	
	[DHCP]	1755, 1756, 1757, 1759, 1760, 1762, 3772, 3773, 3774, 3778, 3779, 3780	
	[Directory]	1028, 1029	
	[DNS]	1017, 1018, 1019, 3736, 3781, 3782, 3784	
	[DPWS]	3749, 3750, 3751, 3752, 3753, 3754, 3755, 3757, 3758, 3759, 3760, 3765, 3766, 3785, 3796	
	[E-mail]	265, 1097, 1098, 1477, 1489, 1491, 3837, 8584, 8585, 8586, 8587, 8588, 9384, 9946, 9947, 9957, 9958, 9959, 9980, 9981	
	[File]	1779, 1782, 1783, 1784, 1785, 1786	
	[FTP]	1055, 1059, 1060, 1089, 1090, 1091, 1092, 3739, 3804	
	[HTTP]	1030, 1031, 1032	
	[IP Conflict]	1440	
	[IP Filter]	1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 8804	
	[IPP]	1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1447,1448, 1449, 1450, 1451, 3725, 3726	
	[IPv6]	3767, 3768, 3770, 3775, 3776, 3777	
	[IPX]	1011, 1099	
	[IP address]	1006, 1007, 1008, 1009, 1010, 1767, 1768	
	[LDAP]	1016, 1138, 1923, 1924, 3743, 9629, 9933	
	[LLTD]	3793	
	[LPD]	1075, 1076, 1077	
	[MAC address]	1141, 8805	
	[MIB]	1063	
	[Network logs]	8535, 8536, 8590-0 to 4, 8605, 8606	
	[NDS]	1027	
	[NIC]	1002	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Network	[Novell]	1093, 1094	
	[PCL setting]	973	
	[PMK]	9747, 9748	
	[POP3]	1046, 1047, 1048, 1049, 1050, 1051, 1052, 3742, 3744	
	[RawPort]	945	
	[Raw/TCP]	1073, 1074, 3731, 3732	
	[Raw printing]	290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 978, 979	
	[Bonjour]	1103, 1104, 1105	
	[Role Base Access]	1493, 1928, 3871	
	[Samba]	1464, 3783, 3833	
	[SearchRoot]	1095	
	[SLP]	1021	
	[SMB]	1023, 1024, 1025, 1117, 1124, 1950, 1951	
	[SMTP]	1022, 1037, 1038, 1039, 1040, 1041, 1042, 1100, 1101, 1102, 1111, 3741	
	[SNMP]	3631, 3845, 8803	
	[SNTP]	1441, 1442, 1444, 1445, 1446, 3740	
	[SSL]	1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 9819, 9822	
	[TRAP]	1069, 1070	
	[WIA Scan Driver]	9749	
	[InternetFAX]	266, 1114, 1485, 3812	
	[Offramp]	1043, 1044, 1045	
	[Function]	1432, 1435, 1436	
	[Automatic transferring]	660, 661	
	[Initialization]	1119	
	[Scan setting]	1781-0 to 1, 1940, 3805, 3815, 3816, 3817, 3818, 3850	
	[Speed and settings]	1003	
	[Direct SMTP]	3810, 3811	
	[Data retention period]	259, 260, 264	
	[Domain]	1113, 1121, 1122, 1123, 8589	
	[Authentication]	1484, 1486, 1487, 1920, 1921, 1922, 1925, 1937, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 3722, 3723, 3724, 8608, 8609, 8610, 8623	
	[Print queue]	1096	
	[Prefix]	3771	

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Network	[Frame type]	1012	
	[Temporary communication password]	9798	
	[Local I/F]	614	
	[telnet]	3864, 3865, 3866, 3867, 3868	
	[802.1X]	8800, 8801, 8816, 8819, 9746	
	[IPsec]	8802, 8815, 8820, 8821	
	[SCEP]	8806, 8807, 8808, 8809, 8810, 8811, 8812, 8813, 8814	
	[WS Pull Scan]	8817, 8818	
Wireless LAN	[Supplicant]	1679, 1681, 1682, 1684, 1685, 1686, 1689, 1690, 1691, 1692, 1693, 1696, 1697, 1699, 1700, 1701, 1704, 1705, 1706, 1707, 1764, 1765, 1766	
	[Driver]	1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678	
Bluetooth	[Data encryption]	1715	
	[Setting]	1710, 1711, 1712, 1713, 1714, 1719, 1941	
Counter	[ACS]	6853-0 to 2, 6854-0 to 2, 6855-0 to 2, 6856-0 to 2, 6857-0 to 2, 6858-0 to 2, 6859-0 to 2, 6860-0 to 2, 6861-0 to 2, 6862-0 to 2, 6863-0 to 2, 6864-0 to 2	
	[HDD]	390, 391, 392, 393	
	[JOB]	6850-0 to 2, 6851-0 to 2, 6852-0 to 2	
	[External counter]	381, 1126, 8549, 8594	
	[Calibration counter]	6817	
	[Count method]	616, 663	
	[Paper source]	356, 357, 358, 359, 360, 370, 372, 374	
	[Black toner cartridge drive]	1410-0 to 3	
	[Paper size]	301-0 to 23, 303-0 to 23, 304-0 to 23, 305-0 to 23, 306-0 to 23, 307-0 to 23, 308-0 to 23, 309-0 to 23, 310-0 to 23, 311-0 to 23, 312-0 to 23, 313-0 to 23, 314-0 to 23, 315-0 to 23, 316-0 to 23, 6027-0 to 23, 6078-0 to 3	

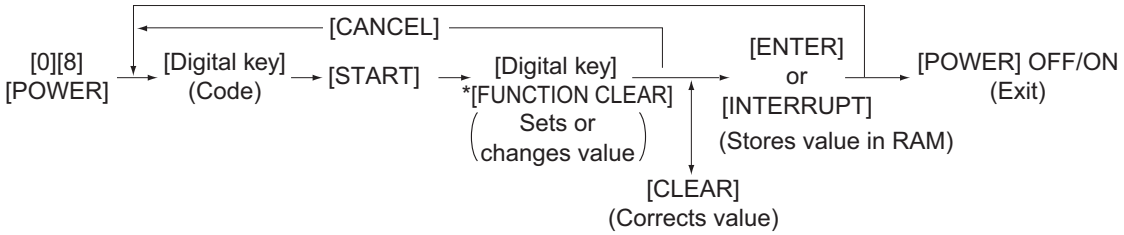
Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Counter	[Accelerating/Decelerating mode]	6900, 6901, 6905-0 to 3, 6906-0 to 3, 6907-0 to 3, 6908-0 to 3, 6925-0 to 3, 6926-0 to 3, 6927-0 to 3, 6928-0 to 3, 6929-0 to 3, 6930-0 to 3, 6931-0 to 3, 6932-0 to 3, 6933-0 to 3, 6935-0 to 3, 6950-0 to 3, 6955-0 to 3, 6956-0 to 3, 6960-0 to 3, 6962-0 to 3	
	[Tab paper]	1412	
	[Special paper]	6243	
	[Extra long size]	3800-0 to 1	
	[Double count]	6018	344, 346, 347, 348, 349, 352, 353,
	[Large/Small size]	317-0 to 2, 318-0 to 2, 319-0 to 2, 320-0 to 2, 321-0 to 2, 322-0 to 2, 323-0 to 2, 324-0 to 2, 325-0 to 2, 326-0 to 2, 327-0 to 2, 328-0 to 2, 329-0 to 2, 330-0 to 2, 332-0 to 2, 333-0 to 2, 334-0 to 2, 335-0 to 2	
	[n-UP printing]	1530-0 to 4, 1531-0 to 4, 1532-0 to 4, 1533-0 to 1, 1534-0 to 1, 1535, 6806-0 to 7, 6810-0 to 7, 6811-0 to 7, 6812-0 to 7, 6813-0 to 7, 6814-0 to 7, 6815-0 to 7, 6816-0 to 7	
	[Department counter]	8616, 8617, 8618, 8619, 8620	
Version	[FAX]		915
	[HDD]		944
	[Engine]		903, 905, 907
	[System]		900, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 933, 934, 935, 936, 937, 938, 939
	[Finisher]	9945	908, 911,
	[Imaging Acceleration Board]		9965
Maintenance	[FSMS]	999	
	[HTTP]	726, 727, 728, 729, 730, 731	
	[PM counter]	223, 5550, 5551, 5552, 5553, 5554, 5555, 5556, 5557, 5558, 5559, 5560, 5561, 5562, 5563, 5564, 5565, 5566, 5567, 5568, 5569, 5570, 5571, 5572, 5573, 5574, 5575, 5576, 5577, 5578, 5579, 5580, 5581, 5582, 5583, 5584, 5585, 6192, 6193, 6196, 6197	251, 252, 375, 376,
	[Error history]		253
	[Equipment number]		995

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Maintenance	[Calibration]		9059
	[Emergency Mode]	710, 711	
	[Service notification]	702, 703, 707, 715, 716, 717, 718, 719, 720, 721, 723, 767, 768, 769, 770, 771, 772, 773, 775, 776, 777, 778, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 1145, 1495, 9739	774,
	[Remote update]	3630	
	[Supply order]	732, 733, 734, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764,	765
	[Telephone]		250
	[Panel calibration]		692
Electronic Filing	[Setting]	267, 270, 950, 976, 1497, 8613	
Data overwrite enabler	[HDD]	1422, 1424,	1426
	[SRAM]		1428

Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
General	[HDD]	271, 691, 3625	670, 690, 693, 694, 9379
	[EFI]	700, 9950, 9956	
	[EWB]	3869	
	[PJL]	3797	
	[Raw printing]	9117, 8504	
	[S-ACS]	4565, 9934	
	[USB]	3615, 3802, 9889	
	[Thick paper]	8533, 8534	
	[TAT partition]	1118	
	[Address book]	1125, 3508	
	[Easy setup]	9047	
	[Imaging Acceleration Board]	9966	
	[Overprint function setting]	8513-0	
	[Card authentication]	1776-0 to 15	
	[Card reader]	1772, 1773, 1774, 1775, 3521, 3522, 3523, 3524, 8595	
	[Custom size]	9381	
	[Administrator's password]	1778	
	[Summer time]	3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863	
	[Destination]	201	
	[Initialization]		947
	[Setting]	949, 975, 986, 1470, 1471, 9814, 9815, 9828, 9829, 9848, 9892, 9893, 9894, 9799	9826,
	[Direct print]	3803	
	[Databases]	685, 686	684,
	[Default repeat count]	9789	
	[Template]	3851, 9886, 9888	
	[Partition]		662, 666, 667
	[Banner]	678, 679, 680	
	[Date/Time]	200, 638	
	[File]	288, 1913, 1914, 1916	
	[Department management]	672	
	[Private print]	8537, 8597, 8601	
	[BANNER MESSAGE button]	681	
	[Memory]	615	
	[User data management]	1468, 1469, 1472, 1473, 1474, 1481, 1482, 1483, 1496	
	[Line]	203	
	[Duplex printing]	683	

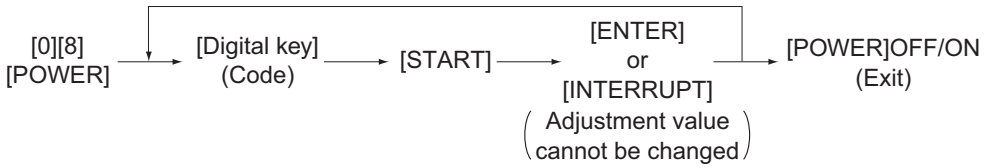
Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
General	[KS/KSSM]	1960, 1961, 1963, 1964, 1965, 1966, 1967, 1968, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994	
	[Profile]	1790-0 to 35, 1791, 1792, 1793, 1794-0 to 35, 1795, 1796, 1797, 1798-0 to 35, 3600-0 to 35, 3601, 3602, 3603, 3604-0 to 35, 3605, 3606, 3607, 3608-0 to 35,	
	[SRAM board data check]	4586, 4587-0 to 15, 4588-0 to 15, 4589-0 to 15, 4590-0 to 15	
	[Date unpacked]	3612	
	[DIG partition]	3619	
	[Counter/job list print]	9954	
	[Default setting]	503, 550, 585, 587, 588, 9972, 9977	
	[Cartridge empty]	8506	
	[Print image position adjustment in secondary scanning direction]	8508, 8509, 8510	
	[Wide A4 Mode (for PCL)]	8511	
	[Number of jobs in batch processing]	8512	
	[RIP standard paper judgment]	8514	
	[Outside erase]	8515, 8516, 8600	
	[Scan setting]	8517, 8518, 8519, 8526, 8527, 8528	
	[No paper message]	8524	
	[ACS release]	8529-0 to 2, 8530-0 to 2, 8531-0 to 2,	
	[Panel]	8532	
	[Hardcopy security printing]	9883, 9884	
	[Electronic key]	3840, 3841, 3842, 3870	
	[Real time log notification]	3623, 3624, 3626	
	[Job status display]	8596, 8604	
	[Converts spaces of folder name into underscores]	8599	
	[ScanToFile]	8602, 8622	
	[External options I/F]	8603	
	[User authentication]	8823	
	[JOB STATUS]	9984-0 to 4	
	[Mode]	3520	
	[hrPrinterTable]	8611	
	[Saving log]	8615	
	[Operation of machine when coin controller is used]	8628	
	[Default setting of color mode]	8629	

25.2 Operating Procedure

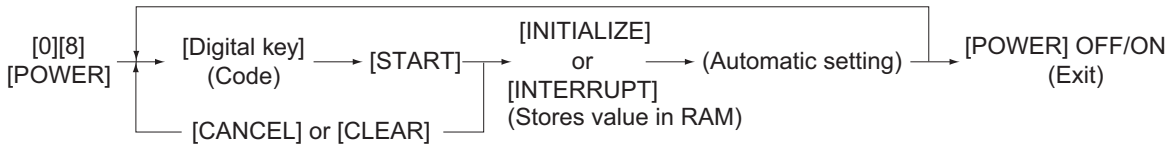


* Press [FUNCTION CLEAR] to enter minus (-).

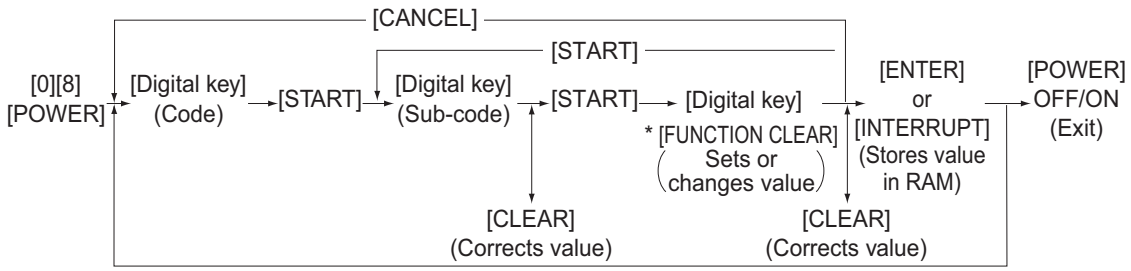
Procedure 2



Procedure 3

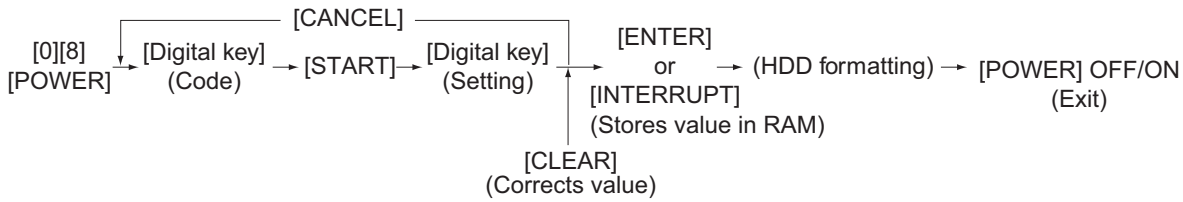


Procedure 4

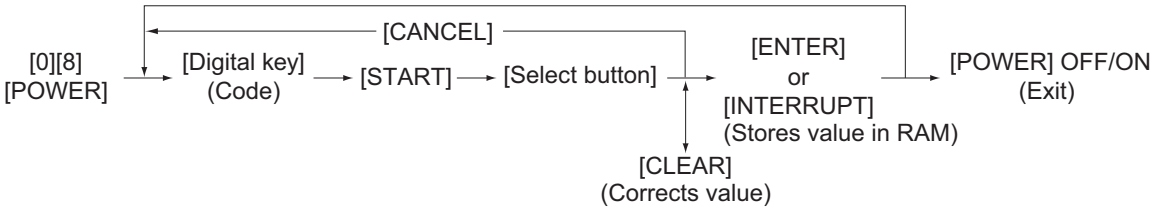


* Press [FUNCTION CLEAR] to enter minus (-).

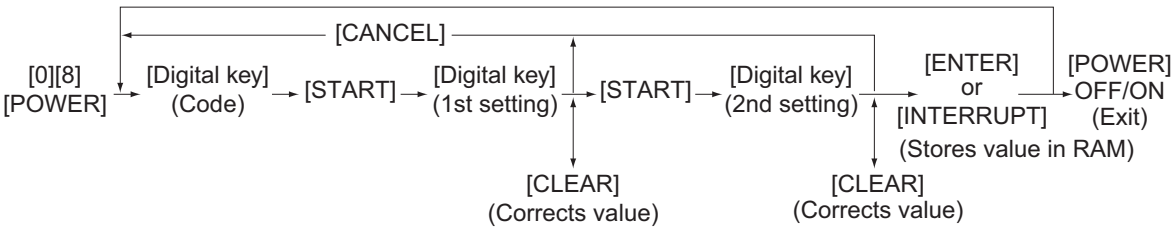
Procedure 7



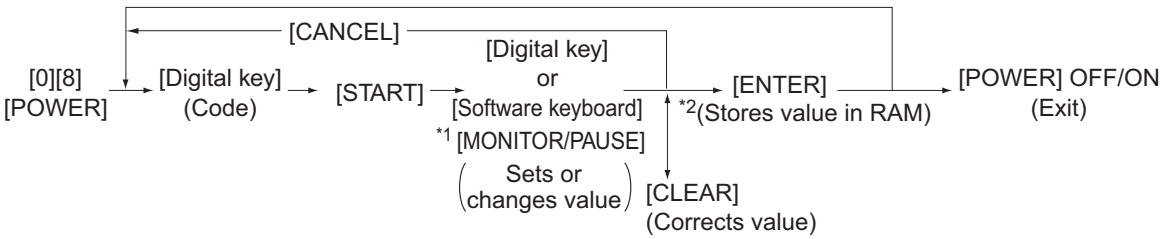
Procedure 9



Procedure 10

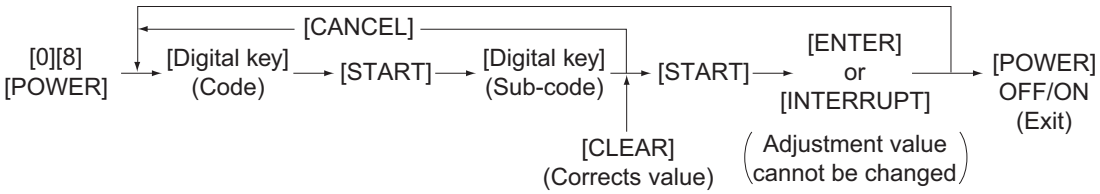


Procedure 11 and 12



*1 Press [MONITOR/PAUSE] to enter "-", when entering telephone number.
*2 The data are stored in SYS-RAM in procedure 11 and stored in NIC-RAM in procedure 12.

Procedure 14



25.3 Process

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
400	Fuser	Fuser unit error status counter	ALL	0 <0-51>	M	0: No error 1: C411 2: C412 3: C443 4: - 5: C445, C465 6: C446, C466 7: C447 8: C468 9: C449 10 to 17: - 18: C468 19: C449 20: C468 21: C449 22: C449 23: C449 24: C447 25: C449 26: C468 27: C449 28: C468 29: C449 30: - 31: C4D0 32: C448 33: C467 34: C467 35 to 37: - 38: C450 39: C450 40: - 41: C451 42: C451 43: - 44 to 47: - 48: C450 49: C450 50: C452 51: C452	1
409	Fuser	Fusing temperature in the low power mode (Center)	ALL	3 <0-25>	M	0: OFF 1: 40°C 2: 45°C 3: 50°C 4: 55°C 5: 60°C 6: 65°C 7: 70°C 8: 75°C 9: 80°C 10: 85°C 11: 90°C 12: 95°C 13: 100°C 14: 105°C 15: 110°C 16: 115°C 17: 120°C 18: 125°C 19: 130°C 20: 135°C 21: 140°C 22: 145°C 23: 150°C 24: 155°C 25: 160°C	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
410-0	Fuser	Fusing temperature during printing (Center / Plain paper)	At normal temperatures	ALL (black)	Refer to content <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C 410-0 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 6 e-STUDIO3530C / 4520C: 7 410-1 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 6 e-STUDIO4520C: 7 410-2 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 7 e-STUDIO3530C: 8 e-STUDIO4520C: EUR: 9 UC: 9 JPN: 8 410-3 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 7 e-STUDIO4520C: EUR: 9 UC: 9 JPN: 8	4
410-1	Fuser			ALL (color)	Refer to content <0-16>	M		4
410-2	Fuser		At low temperatures	ALL (black)	Refer to content <0-16>	M		4
410-3	Fuser			ALL (color)	Refer to content <0-16>	M		4
412-0	Fuser	Fusing temperature during printing (Center / Thick paper 3)	Normal length paper	ALL	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
412-1			Extra long size paper	ALL	7 <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
413-0	Fuser	Fusing temperature during printing (Center / Thick paper 1)	Normal length paper	ALL (black)	6 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
413-1			Extra long size paper	ALL (black)	6 <0-16>	M		4
417-0	Fuser	Pre-running time for first printing (Thick paper 3)	Normal length paper	ALL	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
417-1			Extra long size paper	ALL	0 <0-16>	M		4
434-0	Fuser	Abnormality process starting temperature setting Plain paper/ Normal temperature (Center & side thermistors)		ALL (black)	Refer to content <0-12>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: Disable <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 4 e-STUDIO4520C: 5	4
434-1				ALL (color)	Refer to content <0-12>	M		4
437-0	Fuser	Fusing temperature during printing (Center / Thick paper 2)	Normal length paper	ALL	6 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
437-1			Extra long size paper	ALL	6 <0-16>	M		4
438	Fuser	Fusing temperature during printing (Center / OHP film)		ALL	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	1
439-0	Fuser	Pre-running time for first printing (Thick paper 2)	Normal length paper	ALL	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
439-1			Extra long size paper	ALL	0 <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
440-0	Fuser	Pre-running time for first printing (Plain paper / At low temperatures)		ALL (black)	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
440-1				ALL (color)	0 <0-16>	M		4
441-0	Fuser	Pre-running time for first printing (Thick paper 1)	Normal length paper	ALL	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
441-1			Extra long size paper	ALL	0 <0-16>	M		4
448	Fuser	Fusing temperature in the low power mode (Side)		ALL	3 <0-25>	M	0: OFF 1: 40°C 2: 45°C 3: 50°C 4: 55°C 5: 60°C 6: 65°C 7: 70°C 8: 75°C 9: 80°C 10: 85°C 11: 90°C 12: 95°C 13: 100°C 14: 105°C 15: 110°C 16: 115°C 17: 120°C 18: 125°C 19: 130°C 20: 135°C 21: 140°C 22: 145°C 23: 150°C 24: 155°C 25: 160°C	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
450-0	Fuser	Fusing temperature during printing (Side / Plain paper)	At normal temperatures	ALL (black)	Refer to content <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C 450-0 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 6 e-STUDIO3530C / 4520C: 7 450-1 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 6 e-STUDIO4520C: 7 450-2 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 7 e-STUDIO3530C: 8 e-STUDIO4520C: EUR: 9 UC: 9 JPN: 8 450-3 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 7 e-STUDIO4520C: EUR: 9 UC: 9 JPN: 8	4
450-1				ALL (color)	Refer to content <0-16>	M		4
450-2			At low temperatures	ALL (black)	Refer to content <0-16>	M		4
450-3				ALL (color)	Refer to content <0-16>	M		4
451-0	Fuser	Fusing temperature during printing (Side / Thick paper 1)	Normal length paper	ALL	6 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
451-1			Extra long size paper	ALL	6 <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
452-0	Fuser	Fusing temperature during printing (Side / Thick paper 2)	Normal length paper	ALL	6 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
452-1			Extra long size paper	ALL	6 <0-16>	M		4
453	Fuser	Fusing temperature during printing (Side / Overhead transparencies)		ALL	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	1
461-0	Fuser	Applicable period of pre-running time for first printing (At low temperatures)	Plain paper	ALL (black)	8 <0-11>	M	0: Invalid (always ON) 1: 0min. 2: 0.5min. 3: 1min. 4: 2min. 5: 3min. 6: 5min. 7: 7min. 8: 10min. 9: 15min. 10: 30min. 11: 60min.	4
461-1				ALL (color)	8 <0-11>	M		4
461-2			Recycled paper	ALL (black)	8 <0-11>	M		4
461-3				ALL (color)	8 <0-11>	M		4
517	Fuser	Pre-running time	At normal temperatures	ALL	0 <0-6>	M	0: Invalid 1: 5 sec. 2: 10 sec. 3: 15 sec. 4: 20 sec. 5: 25 sec. 6: 30 sec.	1
518-0	Fuser	Fusing temperature during printing (Side / Thick paper 3)	Normal length paper	ALL	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
518-1			Extra long size paper	ALL	7 <0-16>	M		4
526	Fuser	Pre-running time for first printing (OHP film)		ALL	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
531-0	Fuser	Abnormality process starting temperature setting Plain paper/ Low temperature		ALL (black)	Refer to content <0-12>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: Disable <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 5 e-STUDIO4520C: EUR:6 UC:6 JPN:5	4
531-1				ALL (color)	Refer to content <0-12>	M		4
534-0	Fuser	Temperature drop control during printing	Plain paper	ALL (black)	1 <0-4>	M	0: Disabled 1: Enabled - Fuser roller and pressure roller at the normal or low temperature 2: Enabled - Fuser roller at the normal or low temperature 3: Enabled - Fuser roller at the normal temperature 4: Enabled - Fuser roller and pressure roller at the normal temperature	4
534-1	Fuser			ALL (color)	1 <0-4>	M		4
534-2	Fuser		Thick paper 1	ALL (color)	1 <0-4>	M		4
534-3	Fuser		Recycled paper	ALL (black)	0 <0-4>	M		4
534-4	Fuser			ALL (color)	0 <0-4>	M		4
548	Transfer	Setting of 2nd transfer bias table (for each destination/ paper thickness)		ALL	EUR:0 UC:1 JPN:2 <0-5>	M	0:80 g/m2 (21.3 lb.)/ EUR 1: 75 g/m2 (20 lb.)/UC 2: 64 g/m2 (17.1 lb.)/ JPN 3: - 4: - 5: -	1
556	Image control	Image quality closed-loop control/Contrast voltage		ALL	1 <0-1>	M	Sets whether or not correcting the contrast voltage in closed-loop control. 0: Invalid 1: Valid	1
557	Image control	Image quality closed-loop control/Laser power		ALL	1 <0-1>	M	Sets whether or not correcting the laser power in closed-loop control. 0: Invalid 1: Valid	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
559	Image control	Image quality closed-loop control automatic start-up / At the first power-ON in the morning	ALL (color)	2 <0-2>	M	Sets whether performing closed-loop control automatically at power-ON when the fuser roller temperature becomes below the specified level. 0: Invalid 1: Valid (mode1: for Quick Image Quality Control) 2: Valid (mode2: for Standard Image Quality Control)	1
565	Image control	Image quality closed-loop control automatic start-up/ Relative humidity variation	ALL (color)	2 <0-2>	M	Sets whether or not performing closed-loop control automatically when the relative humidity becomes below the specified level from the previous control. 0: Invalid 1: Valid (mode1: for Quick Image Quality Control) 2: Valid (mode2: for Standard Image Quality Control)	1
566	Image control	Image quality closed-loop control automatic start-up/ Period of time unattended	ALL (color)	2 <0-2>	M	Sets whether or not performing closed-loop control automatically at the operation start when the equipment has not been used for a specified period of time in the energy saving mode. 0: Invalid 1: Valid (mode1: for Quick Image Quality Control) 2: Valid (mode2: for Standard Image Quality Control)	1
567	Image control	Image quality closed-loop control automatic start-up/ Accumulated print volume	ALL (color)	2 <0-2>	M	Sets whether or not performing closed-loop control automatically when the specified number of sheets has been printed out from the previous control. 0: Invalid 1: Valid (mode1: for Quick Image Quality Control) 2: Valid (mode2: for Standard Image Quality Control)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
568	Image control	Image quality closed-loop control automatic start-up/ When recovered from “Toner empty”	ALL (color)	2 <0-2>	M	Sets whether or not performing closed-loop control automatically when recovered from “Toner empty”. 0: Invalid 1: Valid (mode1: for Quick Image Quality Control) 2: Valid (mode2: for Standard Image Quality Control)	1
569	Image control	Image quality closed-loop control automatic start-up/ Temperature setting of fuser unit at power-ON	ALL (color)	8 <0-20>	M	Sets the fuser unit temperature to perform closed-loop control when “1” or “2” (valid) is set in 08-559. 0: 20°C 1: 25°C 2: 30°C 3: 35°C 4: 40°C 5: 45°C 6: 50°C 7: 55°C 8: 60°C 9: 65°C 10: 70°C 11: 75°C 12: 80°C 13: 85°C 14: 90°C 15: 95°C 16: 100°C 17: 105°C 18: 110°C 19: 115°C 20: 120°C	1
570	Image control	Image quality closed-loop control automatic start-up/ Relative humidity difference setting	ALL (color)	2 <0-6>	M	Sets the relative humidity difference to perform the closed-loop control when “1” or “2” (valid) is set in 08-565. 0: 0% 1: 5% 2: 10% 3: 15% 4: 20% 5: 25% 6: 30%	1
571	Image control	Image quality closed-loop control automatic start-up/ Setting of period of time unattended	ALL (color)	10 <0-15>	M	0: 3 1: 5 2: 7 3: 10 4: 15 5: 20 6: 30 7: 45 8: 60 9: 90 10: 120 11: 150 12: 180 13: 240 14: 300 15: 360 (Unit: Minute)	1
572	Image control	Image quality closed-loop control automatic start-up/ Setting of accumulated print volume	ALL (color)	10 <0-30>	M	Sets the number of accumulated print volume to perform closed-loop control when “1” or “2” (valid) is set in 08-567. Setting value x 100 (pages)	1
573	Image control	Abnormality detection count (Y) Display/0 clearing	ALL	0 <0-16>	M	Counts the abnormality detection of image quality control. Accumulating total of [CE10], [CE20] and [CE40]	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
574	Image control	Abnormality detection count (M) Display/0 clearing		ALL	0 <0-16>	M	Counts the abnormality detection of image quality control. Accumulating total of [CE10], [CE20] and [CE40]	1
575	Image control	Abnormality detection count (C) Display/0 clearing		ALL	0 <0-16>	M	Counts the abnormality detection of image quality control. Accumulating total of [CE10], [CE20] and [CE40]	1
576	Image control	Abnormality detection count (K) Display/0 clearing		ALL	0 <0-16>	M	Counts the abnormality detection of image quality control. Accumulating total of [CE10], [CE20] and [CE40]	1
584	Fuser	Fuser motor speed of pre-running at ready status		ALL	1 <0-1>	M	0: 150mm/s 1: 75mm/s	1
808	Main charger	Main charger / Slit glass cleaning cycle setting		ALL	4 <0-9>	M	0: Invalid 1: 3000pages 2: 5000pages 3: 7500pages 4: 10000pages 5: 15000pages 6: 20000pages 7: 25000pages 8: 30000pages 9: 35000pages	1
816	Transfer	1st transfer roller bias resistance detection control		ALL	1 <0-1>	M	0: Disabled 1: Enabled	1
855	Fuser	Pre-running control setting when recovering to warming-up		ALL	0 <0-8>	M	0: Invalid 1: 5sec. 2: 7sec. 3: 10sec. 4: 15sec. 5: 20sec. 6: 25sec. 7: 30sec. 8: warming-up control	1
1415	Image processing	Detection/control that the toner cartridge is nearly empty		ALL	1 <0-1>	M	Sets ON or OFF of the detection/control that the toner cartridge is nearly empty. 0: OFF 1: ON	1
2017-0	Fuser	Fusing temperature (Center / Special paper)	Special paper 1 / Normal	ALL	4 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
2017-1			Special paper 2 / Normal	ALL	4 <0-16>	M		4
2017-2			Special paper 1 / Extra long size paper	ALL	9 <0-16>	M		4
2017-3			Special paper 2 / Extra long size paper	ALL	9 <0-16>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2018-0	Fuser	Fusing temperature (Side / Special paper)	Special paper 1 / Normal	ALL	4 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
2018-1			Special paper 2 / Normal	ALL	4 <0-16>	M		4
2018-2			Special paper 1 / Extra long size paper	ALL	9 <0-16>	M		4
2018-3			Special paper 2 / Extra long size paper	ALL	9 <0-16>	M		4
2019-0	Fuser	Fusing temperature (Pressure roller / Special paper)	Special paper 1 / Normal	ALL	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
2019-1			Special paper 2 / Normal	ALL	6 <0-16>	M		4
2019-2			Special paper 1 / Extra long size paper	ALL	8 <0-16>	M		4
2019-3			Special paper 2 / Extra long size paper	ALL	8 <0-16>	M		4
2020-0	Fuser	Pre-running time for first printing (Special paper)	Special paper 1 / Normal	ALL	0 <0-16>	M	0: Invalid 1: 0sec. 2: 2sec. 3: 3sec. 4: 4sec. 5: 5sec. 6: 6sec. 7: 7sec. 8: 8sec. 9: 10sec. 10: 12sec. 11: 14sec. 12: 16sec. 13: 18sec. 14: 20sec. 15: 25sec. 16: 30sec.	4
2020-1			Special paper 2 / Normal	ALL	0 <0-16>	M		4
2020-2			Special paper 1 / Extra long size paper	ALL	0 <0-16>	M		4
2020-3			Special paper 2 / Extra long size paper	ALL	0 <0-16>	M		4
2151-0	Fuser	Fusing temperature during printing (Pressure roller / Plain paper)	At normal temperatures	ALL (black)	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
2151-1				ALL (color)	6 <0-16>	M		4
2151-2			At low temperatures	ALL (black)	6 <0-16>	M		4
2151-3				ALL (color)	6 <0-16>	M		4
2153-0	Fuser	Fusing temperature during printing (Pressure roller / Thick paper 1)	Normal length paper	ALL	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
2153-1			Extra long size paper	ALL	6 <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2155-0	Fuser	Fusing temperature during printing (Pressure roller / Thick paper 2)	Normal length paper	ALL	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
2155-1			Extra long size paper	ALL	6 <0-16>	M		4
2159-0	Fuser	Fusing temperature during printing (Pressure roller / Thick paper 3)	Normal length paper	ALL	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
2159-1			Extra long size paper	ALL	6 <0-16>	M		4
2161	Fuser	Fusing temperature during printing (Pressure roller / Overhead transparencies)		ALL	6 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	1
2255	Fuser	Fusing temperature in the low power mode (Pressure roller)		ALL	19 <0-25>	M	0: OFF 1: 40°C 2: 45°C 3: 50°C 4: 55°C 5: 60°C 6: 65°C 7: 70°C 8: 75°C 9: 80°C 10: 85°C 11: 90°C 12: 95°C 13: 100°C 14: 105°C 15: 110°C 16: 115°C 17: 120°C 18: 125°C 19: 130°C 20: 135°C 21: 140°C 22: 145°C 23: 150°C 24: 155°C 25: 160°C	1
2367	Cleaner	ON/OFF setting of drum reverse rotation amount control		ALL	1 <0-1>	M	0: OFF 1: ON	1
2370	Cleaner	High-speed rotation period of exhaust fan in ready status		ALL	6 <0-10>	M	0: No control 1: 10 sec.2: 20 sec. 3: 30 sec.4: 40 sec. 5: 50 sec.6: 1 min. 7: 2 min. 8: 3 min. 9: 7 min. 10: 15 min.	1
2380	Cleaner	Prevention of drum rotation without fusing in standby mode		ALL	1 <0-1>	M	0: OFF 1: ON	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
2381	Cleaner	Starting time of drum rotation in standby mode		ALL	Refer to content <0-6>	M	0: 10 sec. 1: 20 sec. 2: 30 sec. 3: 1 min. 4: 2 min. and 50 sec. 5: 6 min. and 50 sec. 6: 9 min. and 50 sec. <Default value> e-STUDIO2020C: MJD: 2 Other: 5 e-STUDIO2330C/2820C/2830C/3520C/3530C/4520C: 5	1
2382	Cleaner	Time interval for drum rotation control in standby mode		ALL	0 <0-7>	M	0: 10 sec. 1: 20 sec. 2: 30 sec. 3: 1 min. 4: 2 min. 5: 3 min. 6: 5 min. 7: 7 min.	1
2383	Cleaner	Maximum number for drum rotation control in standby mode		ALL	0 <0-6>	M	0: Once 1: Twice 2: 3 times 3: 4 times 4: 5 times 5: 7 times 6: 10 times	1
2384	Cleaner	Humidity setting for drum rotation control in standby mode		ALL	0 <0-5>	M	0: All humidity area 1: 60%RH or less 2: 50%RH or less 3: 40%RH or less 4: 30%RH or less 5: 20%RH or less	1
2411-0	Developer	Enforced toner supply / Motor ON setting value	Transport speed: Normal speed	ALL	60 <0-255>	M		4
2411-1			Transport speed: Decelerating	ALL	40 <0-255>	M		4
2411-2			Transport speed: High speed	ALL	60 <0-255>	M		4
2412-0	Developer	Enforced toner supply / Motor OFF setting value	Transport speed: Normal speed	ALL	70 <0-255>	M		4
2412-1			Transport speed: Decelerating	ALL	150 <0-255>	M		4
2412-2			Transport speed: High speed	ALL	70 <0-255>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2413-0	Developer	Enforced toner supply / Setting value of the number of repetition times	Transport speed: Normal speed	ALL	6 <0-10>	M		4
2413-1			Transport speed: Decelerating	ALL	10 <0-10>	M		4
2413-2			Transport speed: High speed	ALL	6 <0-10>	M		4
2490	Transfer	2nd transfer bias resistance detection control		ALL	1 <0-1>	M	0: Invalid 1: Valid	1
2510	Transfer	Transfer bias control		ALL	1 <0-1>	M	0: Invalid 1: Valid	1
2511	Transfer	Main charger open-loop control for resistance detection		ALL	1 <0-1>	M	0: Invalid 1: Valid	1
2512	Transfer	1st transfer life count control switching		ALL	1 <0-1>	M	0: Invalid 1: Valid	1
2513-0	Image control	Contrast voltage offset correction setting (Normal speed)	Y	ALL	5 <0-10>	M	0: -100 1: -80 2: -60 3: -40 4: -20 5: 0 6: +20 7: +40 8: +60 9: +80 10: +100 (Unit: V)	4
2513-1			M	ALL	5 <0-10>	M		4
2513-2			C	ALL	5 <0-10>	M		4
2513-3			K	ALL	5 <0-10>	M		4
2514-0		Contrast voltage offset correction setting (Decelerating)	Y	ALL	5 <0-10>	M		4
2514-1			M	ALL	5 <0-10>	M		4
2514-2			C	ALL	5 <0-10>	M		4
2514-3			K	ALL	5 <0-10>	M		4
2515	Image control	Contrast voltage offset correction setting (High speed)		ALL	5 <0-10>	M		1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2525-0	Image control	Laser power offset correction setting (Normal speed)	Y	ALL	5 <0-10>	M	0: -100 1: -80 2: -60 3: -40 4: -20 5: 0 6: +20 7: +40 8: +60 9: +80 10: +100 (Unit: µW)	4
2525-1			M	ALL	5 <0-10>	M		4
2525-2			C	ALL	5 <0-10>	M		4
2525-3			K	ALL	5 <0-10>	M		4
2526-0		Laser power offset correction setting (Decelerating)	Y	ALL	5 <0-10>	M		4
2526-1			M	ALL	5 <0-10>	M		4
2526-2			C	ALL	5 <0-10>	M		4
2526-3			K	ALL	5 <0-10>	M		4
2527		Laser power offset correction setting (High speed)		ALL	5 <0-10>	M		1
2548-0	Image control	Potential on white background correction setting	Y	ALL	6 <0-12>	M	Normal speed 0: -30 1: -25 2: -20 3: -15 4: -10 5: -5 6: 0 7: 5 8: 10 9: 15 10: 20 11: 25 12: 30	4
2548-1			M	ALL	6 <0-12>	M		4
2548-2			C	ALL	6 <0-12>	M		4
2548-3			K	ALL	6 <0-12>	M		4
2549-0	Image control	Potential on white background correction setting (deceleration)	Y	ALL	6 <0-12>	M	Deceleration 0: -30 1: -25 2: -20 3: -15 4: -10 5: -5 6: 0 7: 5 8: 10 9: 15 10: 20 11: 25 12: 30	4
2549-1			M	ALL	6 <0-12>	M		4
2549-2			C	ALL	6 <0-12>	M		4
2549-3			K	ALL	6 <0-12>	M		4
2553	Cleaner	Switchover on discharge blade bias output		ALL	0 <0-1>	M	0: Enabled 1: Disabled	1
2554	Image control	Potential on white background correction setting (High speed)		ALL	6 <0-12>	M	e-STUDIO3520C/ 3530C/4520C only High speed 0: -30 1: -25 2: -20 3: -15 4: -10 5: -5 6: 0 7: 5 8: 10 9: 15 10: 20 11: 25 12: 30	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
2692	Development	Prevention of color toner low density / ON/OFF setting		ALL	0 <0-1>	M	Prevents color toner low density which occurs when the ratio of black printing is high. Since toner density in the color developer unit is checked at every number of sheets set in 08-2693, the performance will be lowered. 0: OFF 1: ON (Use this setting when the ratio of black printing is 95% or more.)	1
2693	Development	Prevention of color toner low density / Judged number of sheets setting		ALL	20 <1-255>	M	Sets the timing to check toner density in the color developer unit when 08-2692 is "1: ON". Setting value x 10 sheets	1
2707-0	Development	Toner density ratio manual offset control	Y	ALL	0 <0-8>	M	0: Invalid 1: +2bit 2: +4bit 3: +6bit 4: +8bit 5: -2bit 6: -4bit 7: -6bit 8: -8bit	4
2707-1			M	ALL	0 <0-8>	M		4
2707-2			C	ALL	0 <0-8>	M		4
2707-3			K	ALL	0 <0-8>	M		4
5241-0	Fuser	Temperature correction in ready status	Fuser roller (at normal temperatures)	ALL	2 <0-4>	M	0: -10°C 1: -5°C 2: 0°C 3: +5°C 4: +10°C	4
5241-1			Pressure roller (at normal temperatures)	ALL	2 <0-4>	M		4
5241-2			Fuser roller (at low temperatures)	ALL	2 <0-4>	M		4
5241-3			Pressure roller (at low temperatures)	ALL	2 <0-4>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
5277-0	Fuser	Fusing temperature during printing (Thick paper 4)	Center / Normal length paper	ALL (black)	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
5277-1			Side / Normal length paper	ALL (black)	7 <0-16>	M		4
5277-2			Fuser roller / Normal length paper	ALL (black)	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
5277-3			Center / Extra long size paper	ALL (black)	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
5277-4			Side / Extra long size paper	ALL (black)	7 <0-16>	M		4
5277-5			Fuser roller / Extra long size paperormal	ALL (black)	6 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
5280-0	Fuser	Pre-running time for first printing (Thick paper 4)	Normal length paper	ALL	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
5280-1			Extra long size paper	ALL	0 <0-16>	M		4
5285-0	Fuser	Fusing temperature during printing (Sub heater)	At normal temperatures	ALL (black)	7 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
5285-1	Fuser			ALL (color)	7 <0-16>	M		4
5285-2	Fuser		At low temperatures	ALL (black)	EUR: 9 UC: 9 JPN: 8 <0-16>	M		4
5285-3	Fuser			ALL (color)	EUR: 9 UC: 9 JPN: 8 <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5293-0	Fuser	Fusing temperature during printing (Center / Recycled paper)	At normal temperatures	ALL (black)	Refer to content <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C 5293-0 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 4 e-STUDIO3530C / 4520C: 5 5293-1 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 4 e-STUDIO4520C: 5 5293-2 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 6 e-STUDIO3530C / 4520C: 7 5293-3 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 6 e-STUDIO4520C: 7	4
5293-1	Fuser			ALL (color)	Refer to content <0-16>	M		4
5293-2	Fuser		At low temperatures	ALL (black)	Refer to content <0-16>	M		4
5293-3	Fuser			ALL (color)	Refer to content <0-16>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5294-0	Fuser	Fusing temperature during printing (Side / Recycled paper)	At normal temperatures	ALL (black)	Refer to content <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C 5294-0 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 4 e-STUDIO3530C / 4520C: 5 5294-1 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 4 e-STUDIO4520C: 5 5294-2 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C: 6 e-STUDIO3530C / 4520C: 7 5294-3 <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 6 e-STUDIO4520C: 7	4
5294-1				ALL (color)	Refer to content <0-16>	M		4
5294-2			At low temperatures	ALL (black)	Refer to content <0-16>	M		4
5294-3				ALL (color)	Refer to content <0-16>	M		4
5295-0	Fuser	Fusing temperature during printing/ Recycled paper(Sub heater)	At normal temperatures	ALL (black)	5 <0-16>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: 180°C 13: 185°C 14: 190°C 15: 195°C 16: 200°C	4
5295-1				ALL (color)	5 <0-16>	M		4
5295-2			At low temperatures	ALL (black)	7 <0-16>	M		4
5295-3				ALL (color)	7 <0-16>	M		4

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Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5296-0	Fuser	Fusing temperature during printing (Pressure roller / Recycled paper)	At normal temperatures	ALL (black)	4 <0-16>	M	0: 90°C 1: 95°C 2: 100°C 3: 105°C 4: 110°C 5: 115°C 6: 120°C 7: 125°C 8: 130°C 9: 135°C 10: 140°C 11: 145°C 12: 150°C 13: 155°C 14: 160°C 15: 165°C 16: 170°C	4
5296-1				ALL (color)	4 <0-16>	M		4
5296-2			At low temperatures	ALL (black)	4 <0-16>	M		4
5296-3				ALL (color)	4 <0-16>	M		4
5299-0	Fuser	Pre-running time for first printing (Recycled paper / At low temperatures)		ALL (black)	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
5299-1				ALL (color)	0 <0-16>	M		4
5308-0	Fuser	Pre-running time for first printing (Plain paper / At normal temperatures)		ALL (black)	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
5308-1				ALL (color)	0 <0-16>	M		4
5309-0	Fuser	Pre-running time for first printing (Recycled paper / At normal temperatures)		ALL (black)	0 <0-16>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 10 sec. 10: 12 sec. 11: 14 sec. 12: 16 sec. 13: 18 sec. 14: 20 sec. 15: 25 sec. 16: 30 sec.	4
5309-1				ALL (color)	0 <0-16>	M		4
5310-0	Fuser	Applicable period of pre-running time for first printing (At normal temperatures)	Plain paper	ALL (black)	8 <0-11>	M	0: Invalid (always ON) 1: 0min. 2: 0.5min. 3: 1min. 4: 2min. 5: 3min. 6: 5min. 7: 7min. 8: 10min. 9: 15min. 10: 30min. 11: 60min.	4
5310-1				ALL (color)	8 <0-11>	M		4
5310-2			Recycled paper	ALL (black)	8 <0-11>	M		4
5310-3				ALL (color)	8 <0-11>	M		4
5409-0	Fuser	Abnormality process starting temperature setting/ Recycled paper(Center & side thermistors)	At normal temperatures	ALL (black)	Refer to content <0-12>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: Disable <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 2 e-STUDIO4520C: 3	4
5409-1				ALL (color)	Refer to content <0-12>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5410-0	Fuser	Abnormality process starting temperature setting/ Recycled paper(Center & side thermistors)	At low temperatures	ALL (black)	Refer to content <0-12>	M	0: 120°C 1: 125°C 2: 130°C 3: 135°C 4: 140°C 5: 145°C 6: 150°C 7: 155°C 8: 160°C 9: 165°C 10: 170°C 11: 175°C 12: Disable <Default value> e-STUDIO2020C/ 2330C / 2820C / 2830C / 3520C / 3530C: 4 e-STUDIO4520C: 5	4
5410-1				ALL (color)	Refer to content <0-12>	M		4
5449-0	Fuser	Intermittence setting	Thick paper 1	ALL	0 <0-1>	M	0: Valid 1: Invalid	4
5449-1			Thick paper 2	ALL	0 <0-1>	M		4
5449-2			Thick paper 3	ALL	0 <0-1>	M		4
5449-3			Thick paper 4	ALL	0 <0-1>	M		4
5449-4			Special paper 1	ALL	0 <0-1>	M		4
5449-5			Special paper 2	ALL	0 <0-1>	M		4
5449-6			OHP film	ALL	0 <0-1>	M		4

25.4 Scanner

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
462	RADF	Setting for switchback operation in mixed-size copying using RADF	ALL	0 <0-1>	SYS	This setting is whether the original length is detected or not by transporting without scanning in reverse when A4-R/FOLIO paper or LT-R/LG paper is detected in a mixed-size copying. 0: Disabled - AMS: A series - Judges as A4-R without transporting in reverse with no scanning. LT series - Judges whether it is LT-R or LG by its length without transporting in reverse with no scanning. APS: A series - Judges whether it is A4-R or FOLIO without transporting in reverse with no scanning. LT series - Judges whether it is LT-R or LG without transporting in reverse with no scanning. 1: Enable 1 AMS: A series - Judges whether it is A4-R or FOLIO by transporting without scanning in reverse to detect its length. LT series - Judges whether it is LT-R or LG by transporting without scanning in reverse to detect its length. APS: The same as that of APS in 0: Disabled.	1
3015	Scanner	Pre-scan setting switchover	ALL	1 <0-1>	SYS	0: Not performing pre-scanning 1: Performing pre-scanning	1

25.5 Printer

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
210	Paper feeding	Paper size (A6-R) feeding/widthwise direction	PRT	148/105 <148-432/105-297>	M		10
224	Paper feeding	Paper size for bypass feed	PPC	UNDEF (255) <0-255>	SYS	Press the button on the LCD to select the size.	9
225	Paper feeding	Paper size for 1st drawer	ALL	EUR: A4 UC: LT JPN: A4	M	Press the button on the LCD to select the size.	9
226	Paper feeding	Paper size for 2nd drawer	ALL	EUR: A3 UC: LD JPN: A3	M	Press the button on the LCD to select the size.	9
227	Paper feeding	Paper size for PFP upper drawer	ALL	EUR: A4-R UC: LT-R JPN: A4-R	M	Press the button on the LCD to select the size.	9
228	Paper feeding	Paper size for PFP lower drawer	ALL	EUR: A4 UC: LG JPN: B4	M	Press the button on the LCD to select the size.	9
229	Paper feeding	Paper size (A3-R) feeding/widthwise direction	ALL	420/297 <182-432/140-297>	M		10
230	Paper feeding	Paper size (A4-R) feeding/widthwise direction	ALL	297/210 <182-432/140-297>	M		10
231	Paper feeding	Paper size (A5-R) feeding/widthwise direction	ALL	210/148 <182-432/140-297>	M		10
232	Paper feeding	Paper size (B4-R) feeding/widthwise direction	ALL	364/257 <182-432/140-297>	M		10
233	Paper feeding	Paper size (B5-R) feeding/widthwise direction	ALL	257/182 <182-432/140-297>	M		10
234	Paper feeding	Paper size (LT-R) feeding/widthwise direction	ALL	279/216 <182-432/140-297>	M		10
235	Paper feeding	Paper size (LD) feeding/widthwise direction	ALL	432/279 <182-432/140-297>	M		10
236	Paper feeding	Paper size (LG) feeding/widthwise direction	ALL	356/216 <182-432/140-297>	M		10
237	Paper feeding	Paper size (ST-R) feeding/widthwise direction	ALL	216/140 <182-432/140-297>	M		10

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
238	Paper feeding	Paper size (COMPUTER) feeding/widthwise direction		ALL	356/257 <182-432/140-297>	M		10
239	Paper feeding	Paper size (FOLIO) feeding/widthwise direction		ALL	330/210 <182-432/140-297>	M		10
240	Paper feeding	Paper size (13”LG) feeding/widthwise direction		ALL	330/216 <182-432/140-297>	M		10
241	Paper feeding	Paper size (8.5”X8.5”) feeding/widthwise direction		ALL	216/216 <182-432/140-297>	M		10
242	Paper feeding	Paper size (Non-standard) feeding/widthwise direction		ALL	432/279 <148-432/105-297>	SYS		10
244	Paper feeding	Paper size (8K) feeding/widthwise direction		ALL	390/270 <182-432/140-297>	M		10
245	Paper feeding	Paper size (16K-R) feeding/widthwise direction		ALL	270/195 <182-432/140-297>	M		10
246	Paper feeding	Paper size (A3-wide) feeding/widthwise direction		ALL	457/305 <182-457/140-305>	M		10
255	Paper feeding	PFP/LCF installation		ALL	0 <0-4>	M	0: Automatic 1: PFP single-drawer type installed 2: PFP dual-drawer type installed 3: LCF installed 4: Not installed	1
256	Paper feeding	Paper size setting /LCF		ALL	EUR: A4 UC: LT JPN: A4	M	Press the icon on the LCD to select the size.	9
449	Paper feeding	Switching for incorrect paper size jam detection		ALL	0 <0-1>	M	0: Enabled 1: Disabled	1
463-0	Paper feeding	Feeding retry number setting (1st drawer)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the 1st drawer.	4
463-1			Others	ALL	5 <0-5>	M		4
464-0	Paper feeding	Feeding retry number setting (2nd drawer)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the 2nd drawer.	4
464-1			Others	ALL	5 <0-5>	M		4
465-0	Paper feeding	Feeding retry number setting (PFP upper drawer)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the PFP upper drawer.	4
465-1			Others	ALL	5 <0-5>	M		4
466-0	Paper feeding	Feeding retry number setting (PFP lower drawer)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the PFP lower drawer.	4
466-1			Others	ALL	5 <0-5>	M		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
467-0	Paper feeding	Feeding retry number setting (bypass feed)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the bypass tray.	4
467-1			Others	ALL	5 <0-5>	M		4
468-0	Paper feeding	Feeding retry number setting (LCF)	Plain paper	ALL	5 <0-5>	M	Sets the number of times of the feeding retry from the LCF.	4
468-1			Others	ALL	5 <0-5>	M		4
470	Paper feeding	Paper size (475x305 mm) feeding/widthwise direction		ALL	457/305 <148-457/105-305>	M		10
471	Paper feeding	Paper size (Post card) feeding/widthwise direction		ALL	148/100 <148-432/100-297>	M	* Post card is supported only for JPN model.	10
478	Laser	Judged number of polygonal motor rotation error (Normal rotation)		ALL	0 <0-2>	M	Displays the error [CA10] when the set number of rotation error has been detected. 0: 2 times 1: 10 times 2: 20 times	1
480	Paper feeding	Default setting of paper source		PPC	0 <0-5>	SYS	0: A4/LT 1: LCF 2: 1st drawer 3: 2nd drawer 4: PFP upper drawer 5: PFP lower drawer	1
481	Paper feeding	Paper of different direction		PPC	1 <0-2>	SYS	Sets whether or not changing the drawer automatically to the other drawer with the paper of the same size when paper in the selected drawer has run out. 0: Enabled when a drawer is specified 1: ON (Changes to the drawer with the same paper direction and size: ex. A4 to A4) 2: ON (Changes to the drawer with the same paper size. Paper with the different direction is acceptable as long as the size is the same: ex., A4 to A4-R, LT-R to LT. “1” is applied when the staple/holepunch is specified.)	1
482	Paper feeding	Feeding retry setting		ALL	0 <0-1>	M	0: ON 1: OFF	1
482 (EFI)	Paper feeding	Feeding retry setting		ALL	1 <0-1>	M	0: ON 1: OFF	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
483	Laser	Pre-running rotation of polygonal motor	ALL	0 <0-2>	SYS	Sets whether or not switching the polygonal motor from the standby rotation to the normal rotation when the original is set on the RADF or the platen cover is opened. 0: Valid (when using RADF and the original is set manually) 1: Invalid 2: Valid (when using RADF only)	1
484	Laser	Polygonal motor rotational status switching at the Auto Clear Mode	ALL	0 <0-1>	SYS	Sets whether or not switching the polygonal motor from the normal rotation to the standby rotation at the Auto Clear Mode. 0: Valid 1: Invalid	1
485	Laser	Rotational status of polygonal motor on standby	ALL	0 <0-1>	SYS	Sets the rotational status of polygonal motor on standby. 0: Rotated (The rotational speed is set at 08-490.) 1: Stopped	1
486	Laser	Timing of auto-clearing of polygonal motor pre-running rotation	ALL	3 <0-6>	SYS	Switches the polygonal motor to the standby rotation when a certain period of time has passed from the pre-running. At this code, the period to switch the status to the standby rotation is set. 0: 15 sec. 1: 20 sec. 2: 25 sec. 3: 30 sec. 4: 35 sec. 5: 40 sec. 6: 45 sec. * This setting is effective when “0” or “2” is set at 08-483.	1
489	Laser	Polygonal motor rotation number on standby	ALL	3 <0-3>	M	0: 38090.55rpm 1: 35000rpm 2: 30000rpm 3: 25000rpm 4: 20000rpm 5: 10000rpm	1
490	Laser	Polygonal motor rotation in the energy saving mode	ALL	0 <0-3>	M	0: Stopped 1: 10000rpm.	1
1902	Fuser	Fusing error temperature (Temperature of the fuser roller center thermopiles)	ALL	0 <0-255>	M		1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1903	Fuser	Fusing error temperature (Temperature of the fuser roller rear thermopiles)		ALL	0 <0-255>	M		1
1904	Fuser	Fusing error temperature (Temperature of the fuser roller front thermopiles)		ALL	0 <0-255>	M		1
1905	Fuser	Fusing error temperature (Temperature of the pressure roller center thermopiles)		ALL	0 <0-255>	M		1
1911	Paper feeding	Manual stapling time-out period		ALL	15 <0-30>	M	3-30sec. (In increments of 1sec.)	1
1912	Paper feeding	Finisher model switching setting value		ALL	0 <0-1>	M	0: MJ-1030, MJ-1031 1: MJ-1101	1
4016-0	Paper feeding	ACC function when a drawer is specified	Copying	ALL	0 <0-1>	SYS	Sets whether the ACC function is enabled only for automatic drawer selection or enabled when a particular drawer is specified as well. 0: Enabled when a drawer is specified 1: Enabled only for automatic drawer selection	4
4016-1			Printing / BOX printing	ALL	0 <0-1>	SYS		4
4545	Fuser	Fusing error temperature (Temperature of the pressure roller rear thermistor)		ALL	0 <0-255>	M		1
4546	Paper feeding	Color registration adjustment control mode setting		ALL	5 <0-5>	M	0: Not performed automatically 1: (a) 2: (b) 3: (a) + (b) 4: (b) + (c) 5: (a) + (b) + (c) [Description] (a) Performs the adjustment automatically at warming-up. (b) Performs the adjustment automatically when printing after a specified period of time has been completed. (c) Performs the adjustment automatically at a ready status after a specified period of time, or at a forcible interruption of large amount of printing.	1
4549	Fuser	Judgment of new or used fuser unit		ALL	0 <0-1>	M	0: Valid 1: Invalid	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4550-0	Paper feeding	Start-up time setting value for color registration adjustment	1st start-up	ALL	3 <3-255>	M	1st color registration adjustment start-up time [unit: minute] automatically set when the color registration adjustment has not been performed automatically at power ON, recovery from the ready status or recovery from the sleep mode.	4
4550-1			2nd or subsequent start-ups	ALL	30 <3-255>	M	Start-up time [unit: minute] for 2nd or subsequent color registration adjustment start-ups automatically set when the color registration adjustment has been automatically performed after a specified period of time.	4
4551-0	Development	Used toner mixing paddle setting (during printing)	Mixing start	ALL	1 <0-6>	M	0: 600 counts 1: 1200 counts 2: 2400 counts 3: 3000 counts 4: 3600 counts 5: 6000 counts 6: 300 counts	4
4551-1			Rotation period	ALL	3 <0-6>	M	0: Not agitated 1: Agitated for 1 sec. 2: Agitated for 2 sec. 3: Agitated for 3 sec. 4: Agitated for 4 sec. 5: Agitated for 5 sec. 6: Agitated for 6 sec.	4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4553-0	Paper feeding	Pausing of pushing paper	1st drawer	ALL	1 <0-3>	M	0: Disabled 1: Enabled (recycled paper only) 2: Enabled (plain paper only) 3: Enabled (plain paper and recycled paper) Note: When paper is incorrectly placed in the drawer, it will be skewed when it reaches the registration roller. Though it is then aligned by that roller, it may still be slightly skewed because its trailing edge is pulled during the rotation of the roller. In such a case, reduce the gap between the drawer side guide and the paper as much as possible. Do the same for bypass feeding.	4
4553-1			2nd drawer	ALL	1 <0-3>	M		4
4553-2			PFP upper drawer	ALL	1 <0-3>	M		4
4553-3			PFP lower drawer	ALL	1 <0-3>	M		4
4553-4			Bypass feed	ALL	1 <0-3>	M		4
4554-0	Development	Used toner mixing paddles setting (during warming-up)	At normal status	ALL	3 <0-5>	M	0: Not mixing 1: Mix for 1 second 2: Mix for 2 seconds 3: Mix for 3 seconds 4: Mix for 5 seconds 5: Mix for 8 seconds	4
4554-1			During warming-up after used toner full status detection	ALL	2 <0-5>	M	0: Not mixing 1: Mix for 5 second 2: Mix for 8 seconds 3: Mix for 10 seconds 4: Mix for 15 seconds 5: Mix for 20 seconds	4
4561	Development	Detection of the lockup of used toner mixing paddles		ALL	1 <0-1>	M	0: Valid 1: Invalid	1
4562	Paper feeding	Time of pausing continuous printing for icolor registration control		ALL	5 <1-60>	M	Sets the time from reaching the start-up for color registration control to pausing the printing (Unit: Minute)	1
4563	Development	Paper exit speed control switching		ALL	0 <0-1>	M	0: Disabled 1: Enabled	1
4564	Development	Duplex reversing position correction control		ALL	0 <0-1>	M	0: No correction 1: Correction	1
4565	General	S-ACS level coefficient		ALL	0 <0-99>	M		2
4567	Paper feeding	Paper size (SRA3) feeding/widthwise direction		ALL	450/320 <148-460/105-320>	M		10
4568	Paper feeding	Paper size (460 mm x 320 mm) feeding/widthwise direction		ALL	460/320 <148-460/105-320>	M		10

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4569	Fuser	Fuser reverse rotation setting		ALL	1 <0-4>	M	0: Disable 1: Enable (Paper length reference) 2: Enable (Speed reference) 3: Enable (Paper length & sensor reference) 4: Enable (Speed & sensor reference)	1
4586	General	Checking of SRAM board data on LGC board No. 1 (Models)		ALL	Refer to content <450-457>	M	<Default value> 450:e-STUDIO2820C 451:e-STUDIO2830C 452:e-STUDIO3520C 453:e-STUDIO3530C 454:e-STUDIO4520C 455:e-STUDIO2330C 457:e-STUDIO2020C	2
4587-0	General	Checking of SRAM board data on LGC board No. 2 (0 x 00)	Check data 1	ALL	0 <0-255>	M	Hexadecimal number (0 x 00)	14
4587-1			Check data 2	ALL	0 <0-255>	M		14
4587-2			Check data 3	ALL	0 <0-255>	M		14
4587-3			Check data 4	ALL	0 <0-255>	M		14
4587-4			Check data 5	ALL	0 <0-255>	M		14
4587-5			Check data 6	ALL	0 <0-255>	M		14
4587-6			Check data 7	ALL	0 <0-255>	M		14
4587-7			Check data 8	ALL	0 <0-255>	M		14
4587-8			Check data 9	ALL	0 <0-255>	M		14
4587-9			Check data 10	ALL	0 <0-255>	M		14
4587-10			Check data 11	ALL	0 <0-255>	M		14
4587-11			Check data 12	ALL	0 <0-255>	M		14
4587-12			Check data 13	ALL	0 <0-255>	M		14
4587-13			Check data 14	ALL	0 <0-255>	M		14
4587-14			Check data 15	ALL	0 <0-255>	M		14
4587-15			Check data 16	ALL	0 <0-255>	M		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
4588-0	General	Checking of SRAM board data on LGC board No. 3 (0 x 55)	Check data 1	ALL	85 <0-255>	M	Hexadecimal number (0 x 55)	14
4588-1			Check data 2	ALL	85 <0-255>	M		14
4588-2			Check data 3	ALL	85 <0-255>	M		14
4588-3			Check data 4	ALL	85 <0-255>	M		14
4588-4			Check data 5	ALL	85 <0-255>	M		14
4588-5			Check data 6	ALL	85 <0-255>	M		14
4588-6			Check data 7	ALL	85 <0-255>	M		14
4588-7			Check data 8	ALL	85 <0-255>	M		14
4588-8			Check data 9	ALL	85 <0-255>	M		14
4588-9			Check data 10	ALL	85 <0-255>	M		14
4588-10			Check data 11	ALL	85 <0-255>	M		14
4588-11			Check data 12	ALL	85 <0-255>	M		14
4588-12			Check data 13	ALL	85 <0-255>	M		14
4588-13			Check data 14	ALL	85 <0-255>	M		14
4588-14			Check data 15	ALL	85 <0-255>	M		14
4588-15			Check data 16	ALL	85 <0-255>	M		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4589-0	General	Checking of SRAM board data on LGC board No. 4 (0 x AA)	Check data 1	ALL	170 <0-255>	M	Hexadecimal number (0 x AA)	14
4589-1			Check data 2	ALL	170 <0-255>	M		14
4589-2			Check data 3	ALL	170 <0-255>	M		14
4589-3			Check data 4	ALL	170 <0-255>	M		14
4589-4			Check data 5	ALL	170 <0-255>	M		14
4589-5			Check data 6	ALL	170 <0-255>	M		14
4589-6			Check data 7	ALL	170 <0-255>	M		14
4589-7			Check data 8	ALL	170 <0-255>	M		14
4589-8			Check data 9	ALL	170 <0-255>	M		14
4589-9			Check data 10	ALL	170 <0-255>	M		14
4589-10			Check data 11	ALL	170 <0-255>	M		14
4589-11			Check data 12	ALL	170 <0-255>	M		14
4589-12			Check data 13	ALL	170 <0-255>	M		14
4589-13			Check data 14	ALL	170 <0-255>	M		14
4589-14			Check data 15	ALL	170 <0-255>	M		14
4589-15			Check data 16	ALL	170 <0-255>	M		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4590-0	General	Checking of SRAM board data on LGC board No. 5 (0 x FF)	Check data 1	ALL	255 <0-255>	M	Hexadecimal number (0 x FF)	14
4590-1			Check data 2	ALL	255 <0-255>	M		14
4590-2			Check data 3	ALL	255 <0-255>	M		14
4590-3			Check data 4	ALL	255 <0-255>	M		14
4590-4			Check data 5	ALL	255 <0-255>	M		14
4590-5			Check data 6	ALL	255 <0-255>	M		14
4590-6			Check data 7	ALL	255 <0-255>	M		14
4590-7			Check data 8	ALL	255 <0-255>	M		14
4590-8			Check data 9	ALL	255 <0-255>	M		14
4590-9			Check data 10	ALL	255 <0-255>	M		14
4590-10			Check data 11	ALL	255 <0-255>	M		14
4590-11			Check data 12	ALL	255 <0-255>	M		14
4590-12			Check data 13	ALL	255 <0-255>	M		14
4590-13			Check data 14	ALL	255 <0-255>	M		14
4590-14			Check data 15	ALL	255 <0-255>	M		14
4590-15			Check data 16	ALL	255 <0-255>	M		14
4591	Fuser	Fuser unit voltage determination		ALL	EUR: 1 UC: 0 JPN: 0 <0-1>	M	0: 100 V series 1: 200 V series	2
4595	Developer	Auger lock detection Enable/Disable		ALL	1 <0-1>	M	0: Disable 1: Enable	1
4604	Laser	Polygonal motor standby rotationShift waiting time		ALL	6 <0-9>	M	0: 0 sec. 1 to 9: Setting value x 5 sec.	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4605	Paper feeding	Number of color registration controls Accumulated counter	ALL	0 <8 digits>	M	Counts the number of color registration controls for each mode. Those not performed at the specified interval are counted as 2. 05 mode forcible control: 2 counts Controls enforced by a user: 2 counts At warming-up: 2 counts Pre-heating at recovery: 2 counts In ready status: 1 count When a job is ended: 1 count When a print job is paused: 1 count	1
4621	Paper feeding	Bypass paper size detection setting	PPC/ PRT	0 <0-1>	M	Detects whether the size of paper fed by bypass feeding is the same as the paper size set on the control panel. If the sizes are not the same, the warning message is displayed (Paper jam does not occur). When the bypass paper size detection is broken, the equipment can be used without the size detection by disabling this setting. After repair, enable this setting. 0: Enabled 1: Disabled	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
4621 (EFI)	Paper feeding	Bypass paper size detection setting	PPC/ PRT	1 <0-1>	M	Detects whether the size of paper fed by bypass feeding is the same as the paper size set on the control panel. If the sizes are not the same, the warning message is displayed (Paper jam does not occur). When the bypass paper size detection is broken, the equipment can be used without the size detection by disabling this setting. After repair, enable this setting. 0: Enabled 1: Disabled	1
4622	Paper feeding	Bypass paper size detection counter	PPC/ PRT	0 <0-65535>	M	This is a counter for bypass paper size detection setting. If the printing is executed with the paper size that differs from the paper size set on the control panel, the counter is counted up.	1
4766	Paper feeding	RAM phase adjustment control setting	ALL	1 <0-1>	M	0: Invalid 1: Valid	1

25.6 Counter

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
223	Maintenance	Switching of output pages/ driving counts at PM	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.) 2: Whichever comes faster	1
251	Maintenance	Setting value of PM sheet counter / K	ALL (black)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
252	Maintenance	Current value of PM driving counter Display/0 clearing / K	ALL (black)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
301-0	Counter	Number of output pages at Full Color Mode in Copier Function	A3	PPC (color)	0 <8 digits>	SYS	Counts the output pages at the Full Color Mode in the Copier Function for each paper size according to the setting for the count setting of large sized paper (08-352) and the definition setting of large-sized paper (08-353). 301-18: SRA3 (320 x 450 mm), 320 x 460 mm 301-21: Feeding direction: 460<n≤800 mm 301-22: Feeding direction: 800<n≤1200 mm 301-23: Feeding direction: 148<n≤460 mm	4
301-1			A4					
301-2			A5					
301-3			A6					
301-4			B4					
301-5			B5					
301-6			FOLIO					
301-7			LD					
301-8			LG					
301-9			LT					
301-10			ST					
301-11			COMP					
301-12			13”LG					
301-13			8.5” x 8.5”					
301-14			16K					
301-15			8K					
301-16			A3Wide					
301-17			LDWide					
301-18			SRA3					
301-19			13 x 19”					
301-21			Extra long size paper a					
301-22			Extra long size paper b					
301-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
303-0	Counter	Number of output pages at Full Color Mode in Printer Function	A3	PRT (color)	0 <8 digits>	SYS	Counts the output pages at the Full Color Mode in the Printer Function for each paper size according to the setting for the count setting of large sized paper (08-352) and the definition setting of large-sized paper (08-353). 303-18: SRA3 (320 x 450 mm), 320 x 460 mm 303-21: Feeding direction: 460<n≤800 mm 303-22: Feeding direction: 800<n≤1200 mm 303-23: Feeding direction: 148<n≤460 mm	4
303-1			A4					
303-2			A5					
303-3			A6					
303-4			B4					
303-5			B5					
303-6			FOLIO					
303-7			LD					
303-8			LG					
303-9			LT					
303-10			ST					
303-11			COMP					
303-12			13”LG					
303-13			8.5” x 8.5”					
303-14			16K					
303-15			8K					
303-16			A3Wide					
303-17			LDWide					
303-18			SRA3					
303-19			13 x 19”					
303-21			Extra long size paper a					
303-22			Extra long size paper b					
303-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
304-0	Counter	Number of output pages at Twin Color / Monocolor Mode in Copier Function	A3	PPC (color)	0 <8 digits>	SYS	Counts the output pages at the Twin Color Mode in the Copier Function for each paper size according to the setting for the count setting of large sized paper (08-352) and the definition setting of large-sized paper (08-353). 304-18: SRA3 (320 x 450 mm), 320 x 460 mm 304-21: Feeding direction: 460<n≤800 mm 304-22: Feeding direction: 800<n≤1200 mm 304-23: Feeding direction: 148<n≤460 mm	4
304-1			A4					
304-2			A5					
304-3			A6					
304-4			B4					
304-5			B5					
304-6			FOLIO					
304-7			LD					
304-8			LG					
304-9			LT					
304-10			ST					
304-11			COMP					
304-12			13”LG					
304-13			8.5” x 8.5”					
304-14			16K					
304-15			8K					
304-16			A3Wide					
304-17			LDWide					
304-18			SRA3					
304-19			13 x 19”					
304-21			Extra long size paper a					
304-22			Extra long size paper b					
304-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
305-0	Counter	Number of output pages at Black Mode in Copier Function	A3	PPC (black)	0 <8 digits>	SYS	Counts the output pages at the Black Mode in the Copier Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 305-18: SRA3 (320 x 450 mm), 320 x 460 mm 305-21: Feeding direction: 460<n≤800 mm 305-22: Feeding direction: 800<n≤1200 mm 305-23: Feeding direction: 148<n≤460 mm	4
305-1			A4					
305-2			A5					
305-3			A6					
305-4			B4					
305-5			B5					
305-6			FOLIO					
305-7			LD					
305-8			LG					
305-9			LT					
305-10			ST					
305-11			COMP					
305-12			13”LG					
305-13			8.5” x 8.5”					
305-14			16K					
305-15			8K					
305-16			A3Wide					
305-17			LDWide					
305-18			SRA3					
305-19			13 x 19”					
305-21			Extra long size paper a					
305-22			Extra long size paper b					
305-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
306-0	Counter	Number of output pages at Black Mode in Printer Function	A3	PRT (black)	0 <8 digits>	SYS	Counts the output pages at the Black Mode in the Printer Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 306-18: SRA3 (320 x 450 mm), 320 x 460 mm 306-21: Feeding direction: 460<n≤800 mm 306-22: Feeding direction: 800<n≤1200 mm 306-23: Feeding direction: 148<n≤460 mm	4
306-1			A4					
306-2			A5					
306-3			A6					
306-4			B4					
306-5			B5					
306-6			FOLIO					
306-7			LD					
306-8			LG					
306-9			LT					
306-10			ST					
306-11			COMP					
306-12			13”LG					
306-13			8.5” x 8.5”					
306-14			16K					
306-15			8K					
306-16			A3Wide					
306-17			LDWide					
306-18			SRA3					
306-19			13 x 19”					
306-21			Extra long size paper a					
306-22			Extra long size paper b					
306-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
307-0	Counter	Number of output pages at List Print Mode	A3	PRT (black)	0 <8 digits>	SYS	Counts the output pages at the List Print Mode for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large sized paper (08-353). 307-18: SRA3 (320 x 450 mm), 320 x 460 mm 307-21: Feeding direction: 460<n≤800 mm 307-22: Feeding direction: 800<n≤1200 mm 307-23: Feeding direction: 148<n≤460 mm	4
307-1			A4					
307-2			A5					
307-3			A6					
307-4			B4					
307-5			B5					
307-6			FOLIO					
307-7			LD					
307-8			LG					
307-9			LT					
307-10			ST					
307-11			COMP					
307-12			13”LG					
307-13			8.5” x 8.5”					
307-14			16K					
307-15			8K					
307-16			A3Wide					
307-17			LDWide					
307-18			SRA3					
307-19			13 x 19”					
307-21			Extra long size paper a					
307-22			Extra long size paper b					
307-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
308-0	Counter	Number of output pages in FAX Function	A3	FAX	0 <8 digits>	SYS	Counts the output pages in the FAX Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 308-18: SRA3 (320 x 450 mm), 320 x 460 mm 308-21: Feeding direction: 460<n≤800 mm 308-22: Feeding direction: 800<n≤1200 mm 308-23: Feeding direction: 148<n≤460 mm	4
308-1			A4					
308-2			A5					
308-3			A6					
308-4			B4					
308-5			B5					
308-6			FOLIO					
308-7			LD					
308-8			LG					
308-9			LT					
308-10			ST					
308-11			COMP					
308-12			13”LG					
308-13			8.5” x 8.5”					
308-14			16K					
308-15			8K					
308-16			A3Wide					
308-17			LDWide					
308-18			SRA3					
308-19			13 x 19”					
308-21			Extra long size paper a					
308-22			Extra long size paper b					
308-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
309-0	Counter	Number of scanning pages at Full Color Mode in Copier Function	A3	PPC (color)	0 <8 digits>	SYS	Counts the scanning pages at the Full Color Mode in the Copier Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 309-18: SRA3 (320 x 450 mm), 320 x 460 mm 309-21: Feeding direction: 460<n≤800 mm 309-22: Feeding direction: 800<n≤1200 mm 309-23: Feeding direction: 148<n≤460 mm	4
309-1			A4					
309-2			A5					
309-3			A6					
309-4			B4					
309-5			B5					
309-6			FOLIO					
309-7			LD					
309-8			LG					
309-9			LT					
309-10			ST					
309-11			COMP					
309-12			13”LG					
309-13			8.5” x 8.5”					
309-14			16K					
309-15			8K					
309-16			A3Wide					
309-17			LDWide					
309-18			SRA3					
309-19			13 x 19”					
309-21			Extra long size paper a					
309-22			Extra long size paper b					
309-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
310-0	Counter	Number of scanning pages at Full Color Mode in Scanning Function	A3	SCN (color)	0 <8 digits>	SYS	Counts the scanning pages at the Full Color Mode in the Scanning Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 310-18: SRA3 (320 x 450 mm), 320 x 460 mm 310-21: Feeding direction: 460<n≤800 mm 310-22: Feeding direction: 800<n≤1200 mm 310-23: Feeding direction: 148<n≤460 mm	4
310-1			A4					
310-2			A5					
310-3			A6					
310-4			B4					
310-5			B5					
310-6			FOLIO					
310-7			LD					
310-8			LG					
310-9			LT					
310-10			ST					
310-11			COMP					
310-12			13”LG					
310-13			8.5” x 8.5”					
310-14			16K					
310-15			8K					
310-16			A3Wide					
310-17			LDWide					
310-18			SRA3					
310-19			13 x 19”					
310-21			Extra long size paper a					
310-22			Extra long size paper b					
310-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
311-0	Counter	Number of scanning pages at Twin Color / Monocolor Mode in Copier Function	A3	PPC (color)	0 <8 digits>	SYS	Counts the scanning pages at the Twin Color Mode in the Copier Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 311-18: SRA3(320 x 450 mm), 320 x 460 mm 311-21: Feeding direction: 460<n≤800 mm 311-22: Feeding direction: 800<n≤1200 mm 311-23: Feeding direction: 148<n≤460 mm	4
311-1			A4					
311-2			A5					
311-3			A6					
311-4			B4					
311-5			B5					
311-6			FOLIO					
311-7			LD					
311-8			LG					
311-9			LT					
311-10			ST					
311-11			COMP					
311-12			13”LG					
311-13			8.5” x 8.5”					
311-14			16K					
311-15			8K					
311-16			A3Wide					
311-17			LDWide					
311-18			SRA3					
311-19			13 x 19”					
311-21			Extra long size paper a					
311-22			Extra long size paper b					
311-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
312-0	Counter	Number of scanning pages at Black Mode in Copier Function	A3	PPC (black)	0 <8 digits>	SYS	Counts the scanning pages at the Black Mode in the Copier Function for each paper size according to the setting for the count setting of large sized paper (08-352) and the definition setting of large-sized paper (08-353). 312-18: SRA3 (320 x 450 mm), 320 x 460 mm 312-21: Feeding direction: 460<n≤800 mm 312-22: Feeding direction: 800<n≤1200 mm 312-23: Feeding direction: 148<n≤460 mm	4
312-1			A4					
312-2			A5					
312-3			A6					
312-4			B4					
312-5			B5					
312-6			FOLIO					
312-7			LD					
312-8			LG					
312-9			LT					
312-10			ST					
312-11			COMP					
312-12			13”LG					
312-13			8.5” x 8.5”					
312-14			16K					
312-15			8K					
312-16			A3Wide					
312-17			LDWide					
312-18			SRA3					
312-19			13 x 19”					
312-21			Extra long size paper a					
312-22			Extra long size paper b					
312-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
313-0	Counter	Number of scanning pages in Scanning Function	A3	SCN (black)	0 <8 digits>	SYS	Counts the scanning pages at the Black Mode in the Scanning Function for each paper size according to the setting for the count setting of large sized paper (08-352) and the definition setting of large-sized paper (08-353). 313-18: SRA3 (320 x 450 mm), 320 x 460 mm 313-21: Feeding direction: 460<n≤800 mm 313-22: Feeding direction: 800<n≤1200 mm 313-23: Feeding direction: 148<n≤460 mm	4
313-1			A4					
313-2			A5					
313-3			A6					
313-4			B4					
313-5			B5					
313-6			FOLIO					
313-7			LD					
313-8			LG					
313-9			LT					
313-10			ST					
313-11			COMP					
313-12			13”LG					
313-13			8.5” x 8.5”					
313-14			16K					
313-15			8K					
313-16			A3Wide					
313-17			LDWide					
313-18			SRA3					
313-19			13 x 19”					
313-21			Extra long size paper a					
313-22			Extra long size paper b					
313-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
314-0	Counter	Number of scanning pages in FAX Function	A3	FAX	0 <8 digits>	SYS	Counts the scanning pages in the FAX Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large sized paper (08-353). 314-18: SRA3 (320 x 450 mm), 320x460 mm 314-21: Feeding direction: 460<n≤800 mm 314-22: Feeding direction: 800<n≤1200 mm 314-23: Feeding direction: 148<n≤460 mm	4
314-1			A4					
314-2			A5					
314-3			A6					
314-4			B4					
314-5			B5					
314-6			FOLIO					
314-7			LD					
314-8			LG					
314-9			LT					
314-10			ST					
314-11			COMP					
314-12			13”LG					
314-13			8.5” x 8.5”					
314-14			16K					
314-15			8K					
314-16			A3Wide					
314-17			LDWide					
314-18			SRA3					
314-19			13 x 19”					
314-21			Extra long size paper a					
314-22			Extra long size paper b					
314-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
315-0	Counter	Number of transmitted pages in FAX Function	A3	FAX	0 <8 digits>	SYS	Counts the transmitted pages in the FAX Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large sized paper (08-353). 315-18: SRA3 (320 x 450 mm), 320x460 mm 315-21: Feeding direction: 460<n≤800 mm 315-22: Feeding direction: 800<n≤1200 mm 315-23: Feeding direction: 148<n≤460 mm	4
315-1			A4					
315-2			A5					
315-3			A6					
315-4			B4					
315-5			B5					
315-6			FOLIO					
315-7			LD					
315-8			LG					
315-9			LT					
315-10			ST					
315-11			COMP					
315-12			13”LG					
315-13			8.5” x 8.5”					
315-14			16K					
315-15			8K					
315-16			A3Wide					
315-17			LDWide					
315-18			SRA3					
315-19			13 x 19”					
315-21			Extra long size paper a					
315-22			Extra long size paper b					
315-23			Others					

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
316-0	Counter	Number of received pages in FAX Function	A3	FAX	0 <8 digits>	SYS	Counts the received pages in the FAX Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large sized paper (08-353). 316-18: SRA3 (320 x 450 mm), 320 x 460 mm 316-21: Feeding direction: 460<n≤800 mm 316-22: Feeding direction: 800<n≤1200 mm 316-23: Feeding direction: 148<n≤460 mm	4
316-1			A4					
316-2			A5					
316-3			A6					
316-4			B4					
316-5			B5					
316-6			FOLIO					
316-7			LD					
316-8			LG					
316-9			LT					
316-10			ST					
316-11			COMP					
316-12			13”LG					
316-13			8.5” x 8.5”					
316-14			16K					
316-15			8K					
316-16			A3Wide					
316-17			LDWide					
316-18			SRA3					
316-19			13 x 19”					
316-21			Extra long size paper a					
316-22			Extra long size paper b					
316-23			Others					
317-0	Counter	Display of number of output pages at Full Color Mode in Copier Function	Large	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages at the Full Color Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
317-1	Counter		Small	PPC (color)	0 <8 digits>	SYS		14
317-2	Counter		Total	PPC (color)	0 <8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
318-0	Counter	Display of number of output pages at Full Color Mode in Printer Function	Large	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages at the Full Color Mode in the Printer Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
318-1	Counter		Small	PRT (color)	0 <8 digits>	SYS		14
318-2	Counter		Total	PRT (color)	0 <8 digits>	SYS		14
319-0	Counter	Display of number of output pages at Twin Color / Monocolor Mode in Copier Function	Large	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages at the Twin Color Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
319-1	Counter		Small	PPC (color)	0 <8 digits>	SYS		14
319-2	Counter		Total	PPC (color)	0 <8 digits>	SYS		14
320-0	Counter	Display of number of output pages at Black Mode in Copier Function	Large	PPC (black)	0 <8 digits>	SYS	Counts the number of output pages at the Black Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
320-1	Counter		Small	PPC (black)	0 <8 digits>	SYS		14
320-2	Counter		Total	PPC (black)	0 <8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
321-0	Counter	Display of number of output pages at Black Mode in Printer Function	Large	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages at the Black Mode in the Printer Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
321-1	Counter		Small	PRT (black)	0 <8 digits>	SYS		14
321-2	Counter		Total	PRT (black)	0 <8 digits>	SYS		14
322-0	Counter	Display of number of output pages at List Print Mode	Large	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages at the List Print Mode Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
322-1	Counter		Small	PRT (black)	0 <8 digits>	SYS		14
322-2	Counter		Total	PRT (black)	0 <8 digits>	SYS		14
323-0	Counter	Display of number of output pages in FAX Function	Large	FAX	0 <8 digits>	SYS	Counts the number of output pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
323-1	Counter		Small	FAX	0 <8 digits>	SYS		14
323-2	Counter		Total	FAX	0 <8 digits>	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
324-0	Counter	Display of number of scanning pages at Full Color Mode in Copier Function	Large	PPC (color)	0 <8 digits>	SYS	Counts the number of scanning pages at the Full Color Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
324-1	Counter		Small	PPC (color)	0 <8 digits>	SYS		14
324-2	Counter		Total	PPC (color)	0 <8 digits>	SYS		14
325-0	Counter	Display of number of scanning pages at Full Color Mode in Scanning Function	Large	SCN (color)	0 <8 digits>	SYS	Counts the number of scanning pages at the Full Color Mode in the Scanning Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
325-1	Counter		Small	SCN (color)	0 <8 digits>	SYS		14
325-2	Counter		Total	SCN (color)	0 <8 digits>	SYS		14
326-0	Counter	Display of number of scanning pages at Twin Color / Monocolor Mode in Copier Function	Large	PPC (color)	0 <8 digits>	SYS	Counts the number of scanning pages at the Twin Color Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
326-1	Counter		Small	PPC (color)	0 <8 digits>	SYS		14
326-2	Counter		Total	PPC (color)	0 <8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
327-0	Counter	Display of number of scanning pages at Black Mode in Copier Function	Large	PPC (black)	0 <8 digits>	SYS	Counts the number of scanning pages at the Black Mode in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
327-1	Counter		Small	PPC (black)	0 <8 digits>	SYS		14
327-2	Counter		Total	PPC (black)	0 <8 digits>	SYS		14
328-0	Counter	Display of number of scanning pages in FAX Function	Large	FAX	0 <8 digits>	SYS	Counts the number of scanning pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
328-1	Counter		Small	FAX	0 <8 digits>	SYS		14
328-2	Counter		Total	FAX	0 <8 digits>	SYS		14
329-0	Counter	Display of number of scanning pages in Scanning Function	Large	SCN (black)	0 <8 digits>	SYS	Counts the number of scanning pages in the Scanning Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
329-1	Counter		Small	SCN (black)	0 <8 digits>	SYS		14
329-2	Counter		Total	SCN (black)	0 <8 digits>	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
330-0	Counter	Display of number of transmitted pages in FAX Function	Large	FAX	0 <8 digits>	SYS	Counts the number of transmitted pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
330-1	Counter		Small	FAX	0 <8 digits>	SYS		14
330-2	Counter		Total	FAX	0 <8 digits>	SYS		14
332-0	Counter	Display of number of received pages in FAX Function	Large	FAX	0 <8 digits>	SYS	Counts the number of received pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	14
332-1	Counter		Small	FAX	0 <8 digits>	SYS		14
332-2	Counter		Total	FAX	0 <8 digits>	SYS		14
333-0	Counter	Display of total number of pages at Full Color Mode	Large	ALL (color)	0 <8 digits>	SYS	Displays the total number of pages at Full Color Mode in the Copier/Printer/ Scanning Functions.	14
333-1	Counter		Small	ALL (color)	0 <8 digits>	SYS		14
333-2	Counter		Total	ALL (color)	0 <8 digits>	SYS		14
334-0	Counter	Display of total number of pages at Twin Color / Monocolor Mode	Large	ALL (color)	0 <8 digits>	SYS	Displays the total number of pages at Twin Color Mode in the Copier Function.	14
334-1	Counter		Small	ALL (color)	0 <8 digits>	SYS		14
334-2	Counter		Total	ALL (color)	0 <8 digits>	SYS		14
335-0	Counter	Display of total number of pages at Black Mode	Large	ALL (black)	0 <8 digits>	SYS	Displays the total number of pages at Black Mode in the Copier/Printer/ Scanning/FAX Functions.	14
335-1	Counter		Small	ALL (black)	0 <8 digits>	SYS		14
335-2	Counter		Total	ALL (black)	0 <8 digits>	SYS		14
344	Counter	Count setting of tab paper (PM)		ALL	1 <0-1>	M	0: Counted as 1 1: Counted as 2	1
346	Counter	Count setting of large-sized paper (PM)		ALL	1 <0-1>	M	0: Counted as 1 1: Counted as 2	1
347	Counter	Definition setting of large sized paper (PM)		ALL	1 <0-1>	M	0: A3/LD 1: A3/LD/B4/LG/ FOLIO/COMP	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
348	Counter	Count setting of thick paper (PM)	ALL	1 <0-1>	M	0: Counted as 1 1: Counted as 2	1
349	Counter	Count setting of OHP film (PM)	ALL	1 <0-1>	M	0: Counted as 1 1: Counted as 2	1
352	Counter	Count setting of large-sized paper (Fee charging system counter)	ALL	JPN: 0 OTHER: 1 <0-2>	M	0: Counted as 1 1: Counted as 2 2: Counted as 1 (Mechanical counter is double counter)	1
353	Counter	Definition setting of large sized paper (Fee charging system counter)	ALL	0 <0-1>	M	0: A3/LD 1: A3/LD/B4/LG/FOLIO/COMP/8k	1
356	Counter	Counter for 1st drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from 1st drawer	2
357	Counter	Counter for 2nd drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from 2nd drawer	2
358	Counter	Counter for bypass feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from bypass feed	2
359	Counter	Counter for LCF feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from LCF	2
360	Counter	Counter for PFP upper drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from PFP upper drawer	2
370	Counter	Counter for PFP lower drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from PFP lower drawer	2
372	Counter	Counter for ADU	ALL	0 <8 digits>	M	Counts the number of output pages of duplex printing.	2
374	Counter	Counter for RADF	ALL	0 <8 digits>	SYS	Counts the number of originals fed from RADF	2
375	Maintenance	Setting value of PM driving counter display/0 clearing / K	ALL (black)	170000 <8 digits>	M	Time accumulating counter	1
376	Maintenance	Current value of PM driving counter / K	ALL (black)	0 <8 digits>	M	Counts the drum driving time.	1
390	Counter	Number of errors in HDD (Copying)	PPC	0 <8 digits>	SYS	The number of error is reset at HDD formatting.	2
391	Counter	Number of errors in HDD (FAX)	FAX	0 <8 digits>	SYS		2
392	Counter	Number of errors in HDD (Scanning)	SCN	0 <8 digits>	SYS		2
393	Counter	Number of errors in HDD (Printer)	PRT	0 <8 digits>	SYS		2
398	Laser	Number of polygonal motor rotational speed switching	ALL	0 <8 digits>	M	Counts the number of time the polygonal motor has switched its rotational speed between normal rotation and standby rotation	2
399	Laser	Accumulated time of polygonal motor at normal rotation	ALL	0 <8 digits>	M	Accumulates the time the polygonal motor has rotated at normal rotation.	2

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1371	Image processing	Accumulated counter of output pages since the performing of image quality control		ALL	0 <4 digits>	M	Cleared to “0” by the image quality closed-loop control. Counts up with the number of printing job received after this control.	2
1372	Image processing	Heater and energizing time accumulating counter Display/0 clearing		ALL	0 <8 digits>	M	Counts up the heater lamp control time accumulated (when power of the copier is ON) but does not count at the Sleep Mode. When the counter value of the fuser belt is cleared, this counter value is also cleared in sync at PM support mode.	1
1376-0	Development	Toner cartridge rotation counter	Y	ALL	0 <8 digits>	M	Counts the number of rotations of the auger in the toner cartridge of each color (Y, M, C, K) after they are installed.	4
1376-1			M	ALL	0 <8 digits>	M		4
1376-2			C	ALL	0 <8 digits>	M		4
1376-3			K	ALL	0 <8 digits>	M		4
1378	Image processing	Fuser roller ready temperature time accumulating counter		ALL	0 <8 digits>	M	Counts up the heater lamp control time accumulated (on standby). When the counter value of the fuser belt is cleared, this counter value is also cleared in sync at PM support mode.	1
1380	Image processing	Fuser roller printing temperature time accumulating counter		ALL	0 <8 digits>	M	Counts up the heater lamp control time accumulated (during printing). When the counter value of the fuser belt is cleared, this counter value is also cleared in sync at PM support mode.	1
1382	Image processing	Fuser roller energy saving temperature time accumulating counter Display/0 clearing		ALL	0 <8 digits>	M	Counts up the heater lamp control time accumulated (at energy saving mode). When the counter value of the fuser belt is cleared, this counter value is also cleared in sync at PM support mode.	1
1383	Image processing	Number of output pages (Thick paper 4)		ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the thick paper 4 mode.	1
1385	Image processing	Number of output pages (Thick paper 1)		ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the thick paper 1 mode.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1386	Image processing	Number of output pages (Thick paper 2)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the thick paper 2 mode.	1
1387	Image processing	Number of output pages (Thick paper 3)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the thick paper 3 mode.	1
1388	Image processing	Number of output pages (OHP film)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the OHP film mode.	1
1389	Main charger	Main charger needle electrode cleaning counter display/0 clearing	ALL	0 <8 digits>	M	Does not count up when cleaning is not effective.	1
1390	Paper feeding	Feeding retry counter (1st drawer)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the 1st drawer.	1
1391	Paper feeding	Feeding retry counter (2nd drawer)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the 2nd drawer.	1
1392	Paper feeding	Feeding retry counter (PFP upper drawer)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the PFP upper drawer.	1
1393	Paper feeding	Feeding retry counter (PFP lower drawer)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the PFP lower drawer.	1
1394	Paper feeding	Feeding retry counter (bypass feed)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the bypass tray.	1
1395	Paper feeding	Feeding retry counter (LCF)	ALL	0 <8 digits>	M	Counts the number of times of the feeding retry from the LCF.	1
1396	Paper feeding	Feeding retry counter upper limit value (1st drawer)	ALL	10 <8 digits>	M	When the number of feeding retry (08-1390 to 08-1395) exceeds the setting value, the feeding retry will not be performed subsequently. In case “0” is set as a setting value, however, the feeding retry continues regardless of the counter setting value. Refer to (Note 1).	1
1397	Paper feeding	Feeding retry counter upper limit value (2nd drawer)	ALL	10 <8 digits>	M		1
1398	Paper feeding	Feeding retry counter upper limit value (PFP upper drawer)	ALL	10 <8 digits>	M		1
1399	Paper feeding	Feeding retry counter upper limit value (PFP lower drawer)	ALL	10 <8 digits>	M		1
1400	Paper feeding	Feeding retry counter upper limit value (bypass feed)	ALL	20 <8 digits>	M		1
1401	Paper feeding	Feeding retry counter upper limit value (LCF)	ALL	10 <8 digits>	M		1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1410-0	Counter	Counter for period of toner cartridge rotation time	Y	ALL	0 <8 digits>	M	Counts up the period of rotation time of toner cartridge.	4
1410-1			M	ALL	0 <8 digits>	M		4
1410-2			C	ALL	0 <8 digits>	M		4
1410-3			K	ALL	0 <8 digits>	M		4
1412	Counter	Counter for tab paper		ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the tab paper mode.	1
1416-0	Image processing	Threshold for detecting that black toner cartridge is nearly empty	Threshold to display the near-empty message	ALL	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 91531 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 136800	4
1416-1			Remaining level threshold: 75	ALL	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 29260 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 41800	4
1416-2			Remaining level threshold: 50	ALL	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 58520 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 83600	4
1416-3			Remaining level threshold: 25	ALL	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 87780 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 125400	4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1530-0	Counter	Number of output pages in black mode	1-UP / Duplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4
1530-1			2-UP / Duplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
1530-2			2-UP / Simplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
1530-3			4-UP / Duplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [4IN1].	4
1530-4			4-UP / Simplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [4IN1].	4
1530-7			1-UP / Simplex printing	PPC (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4
1531-0	Counter	Number of output pages in full color mode	1-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
1531-1			2-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
1531-2			2-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
1531-3			4-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [4IN1].	4
1531-4			4-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [4IN1].	4
1531-7			1-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1532-0	Counter	Number of output pages at Twin Color / Monocolor Mode in Copier Function	1-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
1532-1			2-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
1532-2			2-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
1532-3			4-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [4IN1].	4
1532-4			4-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [4IN1].	4
1532-7			1-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1533-0	Counter	Number of output pages of the printer or BOX	1-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode.	4
1533-1			2-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [2IN1] or [MAGAZINE SORT]. * When printing is performed using a Windows driver, the 1-UP image will be output.	4
1533-2			2-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
1533-3			4-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [4IN1].	4
1533-4			4-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [4IN1].	4
1533-5			N-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [N IN1].	4
1533-6			N-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [N IN1].	4
1533-7			1-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1534-0	Counter	Number of output pages of the printer or BOX (Full color)	1-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
1534-1			2-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [2IN1] or [MAGAZINE SORT]. * When printing is performed using a Windows driver, the 1-UP image will be output.	4
1534-2			2-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
1534-3			4-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [4IN1].	4
1534-4			4-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [4IN1].	4
1534-5			N-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [N IN1].	4
1534-6			N-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [N IN1].	4
1534-7			1-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
1535-0	Counter	Number of output pages of the FAX printing (1-UP / Duplex printing)	1-UP / Duplex printing	FAX (black)	0 <8 digits>	SYS	Counts the number of output pages in the default settings.	4
1535-7			1-UP / Simplex printing	FAX (black)	0 <8 digits>	SYS		4
5550	Maintenance	Setting value of PM sheet counter / M		ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
5551	Maintenance	Setting value of PM driving counter display/0 clearing / M		ALL (color)	170000 <8 digits>	M	Time accumulating counter	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5552	Maintenance	Setting value of PM sheet counter / C	ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
5553	Maintenance	Setting value of PM driving counter display/0 clearing / C	ALL (color)	170000 <8 digits>	M	Time accumulating counter	1
5554	Maintenance	Setting value of PM sheet counter / Developer material (K)	ALL (black)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
5555	Maintenance	Setting value of PM driving counter display/0 clearing / Developer material (K)	ALL (black)	125000 <8 digits>	M	Time accumulating counter	1
5556	Maintenance	Setting value of PM sheet counter / Developer material (Y)	ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
5557	Maintenance	Setting value of PM driving counter display/0 clearing / Developer material (Y)	ALL (color)	125000 <8 digits>	M	Time accumulating counter	1
5558	Maintenance	Setting value of PM sheet counter / Developer material (M)	ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
5559	Maintenance	Setting value of PM driving counter display/0 clearing / Developer material (M)	ALL (color)	125000 <8 digits>	M	Time accumulating counter	1
5560	Maintenance	Setting value of PM sheet counter / Developer material (C)	ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
5561	Maintenance	Setting value of PM driving counter display/0 clearing / Developer material (C)	ALL (color)	125000 <8 digits>	M	Time accumulating counter	1
5562	Maintenance	Setting value of PM sheet counter / Parts	ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 80000 e-STUDIO2330C: 92000 e-STUDIO2820C / 2830C: 112000 e-STUDIO3520C / 3530C / 4520C: 140000 [Unit. page]	1
5563	Maintenance	Setting value of PM driving counter display/0 clearing / Parts	ALL (color)	340000 <8 digits>	M	Time accumulating counter	1
5564	Maintenance	Current value of PM sheet counter Display/0 clearing / M	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5565	Maintenance	Current value of PM driving counter / M	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5566	Maintenance	Current value of PM sheet counter Display/0 clearing / C	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5567	Maintenance	Current value of PM driving counter / C	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5568	Maintenance	Current value of PM sheet counter Display/0 clearing / Developer material (K)	ALL (black)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5569	Maintenance	Current value of PM driving counter / Developer material (K)	ALL (black)	0 <8 digits>	M	Counts the drum driving time.	1
5570	Maintenance	Current value of PM sheet counter Display/0 clearing / Developer material (Y)	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5571	Maintenance	Current value of PM driving counter / Developer material (Y)	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5572	Maintenance	Current value of PM sheet counter Display/0 clearing / Developer material (M)	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
5573	Maintenance	Current value of PM driving counter / Developer material (M)	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5574	Maintenance	Current value of PM sheet counter Display/0 clearing / Developer material (C)	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5575	Maintenance	Current value of PM driving counter / Developer material (C)	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5576	Maintenance	Current value of PM sheet counter Display/0 clearing / Parts	ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
5577	Maintenance	Current value of PM driving counter / Parts	ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
5578	Maintenance	Switching of output pages/ driving counts at PM / Y	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter(The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.) 2: Whichever comes faster	1
5579	Maintenance	Switching of output pages/ driving counts at PM / M	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.) 2: Whichever comes faster	1
5580	Maintenance	Switching of output pages/ driving counts at PM / C	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.) 2: Whichever comes faster	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
5581	Maintenance	Switching of output pages/ driving counts at PM / Developer material (K)	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter(The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.)	1
5582	Maintenance	Switching of output pages/ driving counts at PM / Developer material (Y)	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.)	1
5583	Maintenance	Switching of output pages/ driving counts at PM / Developer material (M)	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter(The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.)	1
5584	Maintenance	Switching of output pages/ driving counts at PM / Developer material (C)	ALL	1 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.)	1
5585	Maintenance	Switching of output pages/ driving counts at PM / Parts	ALL	0 <0-2>	M	Selects the reference to notify the PM timing. (The message is displayed on the LCD screen.) 0: PM sheet counter (The number of output pages is set at 08-251.) 1: PM driving counter (The timing is set at 08-375.)	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6018	Counter	Count setting of special paper (PM)		ALL	1 <0-1>	M	0: Counted as 1 1: Counted as 2	1
6027-0	Counter	Number of output pages at Twin Color / Monocolor Mode in Printer Function	A3	PRT (color)	0 <8 digits>	SYS	Counts the output pages at the Twin Color Mode in the Printer Function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353). 6027-18: SRA3 (320 x 450 mm), 320 x 460 mm 6027-21: Feeding direction: 460<n≤800 mm 6027-22: Feeding direction: 800<n≤1200 mm 6027-23: Feeding direction: 148<n≤460 mm	4
6027-1			A4					
6027-2			A5					
6027-3			A6					
6027-4			B4					
6027-5			B5					
6027-6			FOLIO					
6027-7			LD					
6027-8			LG					
6027-9			LT					
6027-10			ST					
6027-11			COMP					
6027-12			13"LG					
6027-13			8.5"SQ					
6027-14			16k					
6027-15			8k					
6027-16			A3Wide					
6027-17			LDWide					
6027-18			SRA3					
6027-19			13 x 19"					
6027-21			Extra long size paper a					
6027-22			Extra long size paper b					
6027-23			Others					
6078-0	Counter	Display of number of output pages at Twin Color / Monocolor Mode in Printer Function	Large	PRT (color)	0 <8 digits>	SYS	Displays the total number of pages at Twin Color Mode in the Copier Function.	14
6078-1			Small	PRT (color)				14
6078-2			Total	PRT (color)				14
6192	Maintenance	Setting value of PM sheet counter / Y		ALL (color)	Refer to content <8 digits>	M	<Default value> e-STUDIO2020C: 40000 e-STUDIO2330C: 46000 e-STUDIO2820C / 2830C: 56000 e-STUDIO3520C / 3530C / 4520C: 70000 [Unit. page]	1
6193	Maintenance	Setting value of PM driving counter display/0 clearing / Y		ALL (color)	170000 <8 digits>	M	Time accumulating counter	1
6196	Maintenance	Current value of PM sheet counter Display/0 clearing / Y		ALL (color)	0 <8 digits>	M	Counts up when the registration sensor is ON.	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6197	Maintenance	Current value of PM driving counter / Y		ALL (color)	0 <8 digits>	M	Counts the drum driving time.	1
6209-0	Development	Counter setting of used toner mixing paddles rotation	During printing	PRT (color)	0 <8 digits>	M	1 count per 1 mixing operation	4
6209-1			During warming-up					4
6209-2			During warming-up after used toner full status detection					4
6243	Counter	Counter for special paper		ALL	0 <8 digits>	M	Counts up when the registration sensor is ON in the special paper mode.	1
6452-0	Image processing	Threshold for detecting that Y toner cartridge is nearly empty	Threshold to display the near-empty message	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 91531 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 136800	4
6452-1			Remaining level threshold: 75	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 29260 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 41800	4
6452-2			Remaining level threshold: 50	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 58520 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 83600	4
6452-3			Remaining level threshold: 25	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 87780 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 125400	4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6453-0	Image processing	Threshold for detecting that M toner cartridge is nearly empty	Threshold to display the near-empty message	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 91531 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 136800	4
6453-1			Remaining level threshold: 75	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 29260 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 41800	4
6453-2			Remaining level threshold: 50	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 58520 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 83600	4
6453-3			Remaining level threshold: 25	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 87780 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 125400	4
6454-0	Image processing	Threshold for detecting that C toner cartridge is nearly empty	Threshold to display the near-empty message	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 91531 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 136800	4
6454-1			Remaining level threshold: 75	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 29260 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 41800	4
6454-2			Remaining level threshold: 50	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 58520 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 83600	4
6454-3			Remaining level threshold: 25	ALL	Refer to content <8 digits>	M	e-STUDIO2020C: 87780 e-STUDIO2330C/ 2820C/2830C/3520C/ 3530C/4520C: 125400	4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6806-0	Counter	Number of output pages in printing / BOX printing (Twin color / Monocolor)	1-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
6806-1			2-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6806-2			2-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6806-3			4-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [4IN1].	4
6806-4			4-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [4IN1].	4
6806-5			N-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [N IN1].	4
6806-6			N-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [N IN1].	4
6806-7			1-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
6810-0	Counter	Number of output pages in black mode / Large size	1-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4
6810-1			2-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
6810-2			2-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
6810-3			4-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [4IN1].	4
6810-4			4-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [4IN1].	4
6810-7			1-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6811-0	Counter	Number of output pages in full color mode / Large	1-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
6811-1			2-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
6811-2			2-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
6811-3			4-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [4IN1].	4
6811-4			4-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [4IN1].	4
6811-7			1-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
6812-0	Counter	Number of output pages at Twin Color / Monocolor Mode (Large)	1-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
6812-1			2-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6812-2			2-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6812-3			4-UP / Duplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [4IN1].	4
6812-4			4-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [4IN1].	4
6812-7			1-UP / Simplex printing	PPC (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6813-0	Counter	Number of output pages of the printer or BOX / Large	1-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode.	4
6813-1			2-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
6813-2			2-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [2IN1] or [MAGAZINE SORT].	4
6813-3			4-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [4IN1].	4
6813-4			4-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [4IN1].	4
6813-5			N-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed in the black mode using [N IN1].	4
6813-6			N-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of sheets printed in the black mode using [N IN1].	4
6813-7			1-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages printed only in the black mode.	4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6814-0	Counter	Number of output pages of the printer or BOX / Large (Full color)	1-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
6814-1			2-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
6814-2			2-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [2IN1] or [MAGAZINE SORT].	4
6814-3			4-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [4IN1].	4
6814-4			4-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [4IN1].	4
6814-5			N-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the full color mode using [N IN1].	4
6814-6			N-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the full color mode using [N IN1].	4
6814-7			1-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the full color mode.	4
6815-0	Counter	Number of output pages of the FAX printing / Large	1-UP / Simplex printing	PRT (black)	0 <8 digits>	SYS	Counts the number of output pages in the default settings.	4
6815-7			1-UP / Duplex printing	PRT (black)	0 <8 digits>	SYS		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6816-0	Counter	Number of output pages in printing / BOX printing (Large) (Twin color / Monocolor)	1-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
6816-1			2-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6816-2			2-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [2IN1] or [MAGAZINE SORT].	4
6816-3			4-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [4IN1].	4
6816-4			4-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [4IN1].	4
6816-5			N-UP / Duplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed in the twin color mode using [N IN1].	4
6816-6			N-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of sheets printed in the twin color mode using [N IN1].	4
6816-7			1-UP / Simplex printing	PRT (color)	0 <8 digits>	SYS	Counts the number of output pages printed only in the twin color mode.	4
6817	Counter	Calibration counter		ALL	0 <8 digits>	SYS	Displays the number of times a calibration chart is printed. When “0” is set for this code, and also when in the line adjustment mode or when the fee charging counter is reset, this counter is reset. The counter value goes up every time a calibration chart is printed, regardless of the setting value of the code 08-9894 (Calibration chart charging method).	1
6850-0	Counter	ACS job counter	ACS copier job counter	PPC (color)	0 <8 digits>	SYS	Counts up when an ACS job is printed.	4
6850-1			ACS printer job counter	PRT (color)	0 <8 digits>	SYS		4
6850-2			Total ACS job counter	PPC/ PRT (color)	0 <8 digits>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6851-0	Counter	Color job counter	Color copier job counter	PPC (color)	0 <8 digits>	SYS	Counts up when a color job is printed.	4
6851-1			Color printer job counter	PRT (color)	0 <8 digits>	SYS		4
6851-2			Total color job counter	PPC/ PRT (color)	0 <8 digits>	SYS		4
6852-0	Counter	Black job counter	Black copier job counter	PPC (black)	0 <8 digits>	SYS	Counts up when a black job is printed.	4
6852-1			Black printer job counter	PRT (black)	0 <8 digits>	SYS		4
6852-2			Total black job counter	PPC/ PRT (black)	0 <8 digits>	SYS		4
6853-0	Counter	ACS copier color counter	Large	PPC (color)	0 <8 digits>	SYS	Displays each value of ACS copier color counters (large, small and total).	4
6853-1			Small	PPC (color)	0 <8 digits>	SYS		4
6853-2			Total	PPC (color)	0 <8 digits>	SYS		4
6854-0	Counter	ACS copier black counter	Large	PPC (black)	0 <8 digits>	SYS	Displays each value of ACS copier black counters (large, small and total).	4
6854-1			Small	PPC (black)	0 <8 digits>	SYS		4
6854-2			Total	PPC (black)	0 <8 digits>	SYS		4
6855-0	Counter	ACS printer color counter	Large	PRT (color)	0 <8 digits>	SYS	Displays each value of ACS printer color counters (large, small and total).	4
6855-1			Small	PRT (color)	0 <8 digits>	SYS		4
6855-2			Total	PRT (color)	0 <8 digits>	SYS		4
6856-0	Counter	ACS printer black counter	Large	PRT (black)	0 <8 digits>	SYS	Displays each value of ACS printer black counters (large, small and total).	4
6856-1			Small	PRT (black)	0 <8 digits>	SYS		4
6856-2			Total	PRT (black)	0 <8 digits>	SYS		4
6857-0	Counter	ACS counter	ACS total color counter	ALL (color)	0 <8 digits>	SYS	Displays each value of ACS total counters.	4
6857-1			ACS total black counter	ALL (black)	0 <8 digits>	SYS		4
6857-2			ACS total counter	ALL	0 <8 digits>	SYS		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6858-0	Counter	ACS K(4) counter	ACS copier K(4) counter	PPC (color)	0 <8 digits>	SYS	Displays each value of ACS counter in the K(4) mode.	4
6858-1			ACS printer K(4) counter	PRT (color)	0 <8 digits>	SYS		4
6858-2			ACS K(4) total counter	PPC/ PRT (color)	0 <8 digits>	SYS		4
6859-0	Counter	ACS Counter for mode change when copy data are entered	ACS copy mode change (Color -> Black) Counter IN	PPC	0 <8 digits>	SYS	Displays the number of ACS copy mode changes (color-and black mixed) when copy data are entered.	4
6859-1			ACS copy mode change (Black -> Color) Counter IN	PPC	0 <8 digits>	SYS		4
6859-2			ACS copy mode change Total counter IN	PPC	0 <8 digits>	SYS		4
6860-0	Counter	ACS Counter for mode change when print data are entered	ACS print mode change (Color -> Black) Counter IN	PRT	0 <8 digits>	SYS	Displays the number of ACS print mode changes (color-and black mixed) when print data are entered.	4
6860-1			ACS print mode change (Black -> Color) Counter IN	PRT	0 <8 digits>	SYS		4
6860-2			ACS print mode change Total counter IN	PRT	0 <8 digits>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6861-0	Counter	ACS Counter for mode change	ACS mode change (Color -> Black) Total counter IN	ALL	0 <8 digits>	SYS	Displays the number of ACS mode changes (color-and black mixed) when data are printed.	4
6861-1			ACS mode change (Black -> Color) Total counter IN	ALL	0 <8 digits>	SYS		4
6861-2			ACS mode changeTotal counter IN	ALL	0 <8 digits>	SYS		4
6862-0	Counter	ACS Counter for mode change when copy data are printed	ACS copy mode change (Color -> Black) Counter OUT	PPC	0 <8 digits>	SYS	Displays the number of ACS copy mode changes (color-and black mixed) when copy data are printed.	4
6862-1			ACS copy mode change (Black -> Color) Counter OUT	PPC	0 <8 digits>	SYS		4
6862-2			ACS copy mode change Total counter OUT	PPC	0 <8 digits>	SYS		4
6863-0	Counter	ACS Counter for mode change when print data are printed	ACS print mode change (Color -> Black) Counter OUT	PRT	0 <8 digits>	SYS	Displays the number of ACS print mode changes (color-and black mixed) when print data are printed.	4
6863-1			ACS print mode change (Black -> Color) Counter OUT	PRT	0 <8 digits>	SYS		4
6863-2			ACS print mode change Total counter OUT	PRT	0 <8 digits>	SYS		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
6864-0	Counter	Counter for mode change when data are printed	ACS mode change (Color -> Black) Counter OUT	ALL	0 <8 digits>	SYS	Displays the number of ACS mode changes (color-and black mixed) when data are printed.	4
6864-1			ACS mode change (Black -> Color) Counter OUT	ALL	0 <8 digits>	SYS		4
6864-2			ACS mode change Total counter OUT	ALL	0 <8 digits>	SYS		4
6900	Counter	Total counter (in Thick paper decelerating mode)		ALL	0 <8 digits>	M	Displays the current value of the total counter. Counts up when the registration sensor is ON.	1
6901	Counter	Total counter (in Plain paper Black Mode : e-STUDIO3530C only)		ALL	0 <8 digits>	M		1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6905-0	Counter	Decelerating mode counter: Photoconductive drum (K)	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6905-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6905-2			Present drive counts	ALL	0 <8 digits>	M		4
6905-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6906-0	Counter	Decelerating mode counter: Photoconductive drum (Y)	Present number of output pages	ALL	0 <8 digits>	M		4
6906-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6906-2			Present drive counts	ALL	0 <8 digits>	M		4
6906-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6907-0	Counter	Decelerating mode counter: Photoconductive drum (M)	Present number of output pages	ALL	0 <8 digits>	M		4
6907-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6907-2			Present drive counts	ALL	0 <8 digits>	M		4
6907-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6908-0	Counter	Decelerating mode counter: Photoconductive drum (C)	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6908-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6908-2			Present drive counts	ALL	0 <8 digits>	M		4
6908-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6925-0	Counter	Decelerating mode counter: Developer material (K)	Present number of output pages	ALL	0 <8 digits>	M		4
6925-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6925-2			Present drive counts	ALL	0 <8 digits>	M		4
6925-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6926-0	Counter	Decelerating mode counter: Developer material (Y)	Present number of output pages	ALL	0 <8 digits>	M		4
6926-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6926-2			Present drive counts	ALL	0 <8 digits>	M		4
6926-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6927-0	Counter	Decelerating mode counter: Developer material (M)	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6927-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6927-2			Present drive counts	ALL	0 <8 digits>	M		4
6927-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6928-0	Counter	Decelerating mode counter: Developer material (C)	Present number of output pages	ALL	0 <8 digits>	M		4
6928-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6928-2			Present drive counts	ALL	0 <8 digits>	M		4
6928-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6929-0	Counter	Decelerating mode counter: Transfer unit (K) (Needle electrode / roller / 1st transfer power supply roller)	Present number of output pages	ALL	0 <8 digits>	M		4
6929-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6929-2			Present drive counts	ALL	0 <8 digits>	M		4
6929-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6930-0	Counter	Decelerating mode counter: Transfer unit (Y) (Needle electrode / roller / 1st transfer power supply roller)	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6930-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6930-2			Present drive counts	ALL	0 <8 digits>	M		4
6930-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6931-0	Counter	Decelerating mode counter: Transfer unit (M) (Needle electrode / roller / 1st transfer power supply roller)	Present number of output pages	ALL	0 <8 digits>	M		4
6931-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6931-2			Present drive counts	ALL	0 <8 digits>	M		4
6931-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6932-0	Counter	Decelerating mode counter: Transfer unit (C) (Needle electrode / roller / 1st transfer power supply roller)	Present number of output pages	ALL	0 <8 digits>	M		4
6932-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6932-2			Present drive counts	ALL	0 <8 digits>	M		4
6932-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6933-0	Counter	Decelerating mode counter: Transfer belt	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6933-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6933-2			Present drive counts	ALL	0 <8 digits>	M		4
6933-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6935-0	Counter	Decelerating mode counter: 2nd transfer roller	Present number of output pages	ALL	0 <8 digits>	M		4
6935-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6935-2			Present drive counts	ALL	0 <8 digits>	M		4
6935-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6950-0	Counter	Accelerating mode counter: Photoconductive drum (K)	Present number of output pages	ALL	0 <8 digits>	M		4
6950-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6950-2			Present drive counts	ALL	0 <8 digits>	M		4
6950-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6955-0	Counter	Accelerating mode counter: Developer material (K)	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6955-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6955-2			Present drive counts	ALL	0 <8 digits>	M		4
6955-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6956-0	Counter	Accelerating mode counter: Transfer unit (K) (Wire / roller / 1st transfer power supply roller)	Present number of output pages	ALL	0 <8 digits>	M		4
6956-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6956-2			Present drive counts	ALL	0 <8 digits>	M		4
6956-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4
6960-0	Counter	Accelerating mode counter: Transfer belt	Present number of output pages	ALL	0 <8 digits>	M		4
6960-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6960-2			Present drive counts	ALL	0 <8 digits>	M		4
6960-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
6962-0	Counter	Accelerating mode counter: 2nd transfer roller	Present number of output pages	ALL	0 <8 digits>	M	Present number of output pages: Displays the accumulated number of sheets that have been printed at present. Only “0” is acceptable. When “0” is entered, the counter is reset. Number of output pages at the last replacement: Displays the total number of output pages at the last replacement. “0” is displayed if no replacement was performed. Present drive counts: Displays the accumulated driving time at present. Only “0” is acceptable. When “0” is entered, the counter is reset. (1 count = 4 seconds) Drive counts at the last replacement: Displays the total driving time at the last replacement. “0” is displayed if no replacement was performed. (1 count = 4 seconds)	4
6962-1			Number of output pages at the last replacement	ALL	0 <8 digits>	M		4
6962-2			Present drive counts	ALL	0 <8 digits>	M		4
6962-3			Drive counts at the last replacement	ALL	0 <8 digits>	M		4

Note:

In this equipment, a toner image is formed on the transfer belt prior to a paper feeding.
When the feeding retry occurs and the transport timing is delayed, the toner image on the transfer belt is cleaned off without the 2nd transfer since the paper cannot be reached for the 2nd transfer process.
After that, the toner image formation is retried while the paper is waited.
In this case, the toner for this image formation is consumed wastefully since the toner image on the transfer belt is already cleaned off, even though the printing is normally completed.
Therefore, note that the excessive toner will be consumed consequently when the upper limit value of feeding retry counter is set larger or set as “0” (no limit).
The toner is also consumed wastefully when the paper misfeeding occurs. Replace the roller at earlier timing if the paper misfeedings have occurred frequently.

25.7 Image Processing

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
506	User interface	User mode setting	PPC (color)	0 <0-1>	SYS	0: Unused 1: TEXT/PHOTO base	1
508	User interface	User mode setting	PPC (black)	0 <0-1>	SYS	0: Unused 1: TEXT/PHOTO base	1
560	Image	Process switching for image smoothing (Text/ Photo)	PPC (black)	1 <0-1>	SYS	Sets whether or not performing a smoothing process (primary scanning direction, 2,400 dpi or equivalent). 0: Invalid 1: Valid	1
562	Image	Process switching for image smoothing (Text)	PPC (black)	1 <0-1>	SYS	Sets whether or not performing a smoothing process (primary scanning direction, 2,400 dpi or equivalent). 0: Invalid 1: Valid	1
580	User interface	User custom mode setting	SCN (black)	0 <0-3>	SYS	0: Unused 1: B/W TEXT/PHOTO base 2: B/W TEXT base 3: B/W PHOTO base	1
590	User interface	User custom mode setting	SCN (color)	0 <0-4>	SYS	0: Unused 1: TEXT base 2: Printed image base 3: Photo base 4: e-document base	1
595	Image	Scanning operation switching at automatic calibration	PPC (color)	0 <0-1>	SYS	0: Scanning color/ black integrated pattern 1: Scanning color pattern only	1
7000	Image	Clearing of adjustment values of all image process (PPC) related 05 codes	PPC	-	SYS	Clears the gamma correction table values and the adjustment values of the following 05 codes: 05-503, 504, 505, 507, 508, 510, 514, 515, 580, 590-0 to 2, 591-0 to 2, 592-0 to 2, 605, 606, 648, 649, 667-0 to 4, 922, 925, 931, 934, 937, 940, 949-0 to 2, 7025, 7033, 7034, 7041, 7042, 7043, 7044, 7048, 7049, 604, 7102, 7103, 7236, 7237, 7279, 7280, 7283, 7284, 7286, 7287, 7295, 7296	3

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
7001	Image	Clearing of all gamma correction table values (PPC related areas only)	PPC	-	SYS	Clears all the gamma correction table values in the PPC related areas of the HDD.	3
7300	Image	Clearing of adjustment values of all image process (network print) related 05 codes	PRT	-	SYS	Clears the gamma correction table values and the adjustment values of the following 05 codes: 05-1004-0 to 8, 1008, 8010-0 to 2, 8011-0 to 2, 8012-0 to 2, 8013-0 to 2, 8014-0 to 2, 8015-0 to 2, 8042-0 to 2, 8043-0 to 2, 8044-0 to 2, 8045-0 to 2, 8046-0 to 2, 8047-0 to 2, 8048-0 to 2, 8049-0 to 2, 8050-0 to 2, 8051-0 to 2, 8052-0 to 2, 8053-0 to 2, 8054-0 to 2, 8055-0 to 2, 8056-0 to 2, 8057-0 to 2, 8058-0 to 2, 8059-0 to 2, 8060-0 to 2, 8061-0 to 2, 8062-0 to 2, 8063-0 to 2, 8064-0 to 2, 8065-0 to 2, 8070-0 to 9, 8071-0 to 9, 8102-0 to 2, 8103-0 to 3, 8110-0 to 2, 8111-0 to 2, 8112-0 to 2, 8113-0 to 2, 8118-0 to 2, 8119-0 to 2, 8130, 8131, 8132, 1050, 1055-0 to 2, 8176, 8179, 8210-0 to 3, 8211-0 to 3, 8212-0 to 3, 8213, 8214, 8215, 8218, 8249-0 to 4, 8250-0 to 4, 8251-0 to 4, 8252-0 to 4, 8253-0 to 4, 8254-0 to 4	3

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
7301	Image	Clearing of all gamma correction table values (network print related areas only)		PRT	-	SYS	Clears all the gamma correction table values in the network print related areas of the HDD.	3
7400	Image	Clearing of adjustment values of all image process (network scan) related 05 codes		SCN	-	SYS	Clears the adjustment values of the following 05 codes: 05-1070, 1071, 1072, 1075, 1076, 1077, 1080, 1081, 1082, 8325, 8326, 8327, 8330, 8331, 8332, 8334, 1086, 1087, 1088, 8340, 8341, 8342, 8344, 8345, 8346, 8348, 8349, 8350, 8361, 8362, 8363, 8365, 8370, 8371, 8372, 8373, 8375, 8380, 8381, 8382, 8385, 8386, 8387, 8389, 8390, 8391, 8392, 8394, 8395	3
7500	Image	Clearing of adjustment values of all image process (Fax) related 05 codes		FAX	-	SYS	Clears the adjustment values of the following codes: 678, 700, 710, 714, 725, 729	3
7612	Image	Image repeat gap		ALL	5 <0-10>	SYS	Unit: mm	1
8011	Image	Outlining of white text on colored background ON/OFF setting	Print	PRT (color)	0 <0-1>	SYS	Sets this code to suppress colored smudging appearing inside of the outline of white text. 0: Outlining OFF 1: Outlining ON	1
8304-0	Image	Quantized coefficient correction value / Standard JPEG images	High quality	SCN (color)	128 <0-255>	SYS	Changes the JPEG compression ratio. The smaller the value is, the higher the compression ratio becomes and the larger the value is, the lower the compression ratio becomes.	4
8304-1			Standard	SCN (color)	128 <0-255>	SYS		4
8304-2			Low quality	SCN (color)	128 <0-255>	SYS		4

25.8 System

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
200	General	Date and time setting	ALL	- <13 digits>	-	Year/month/date/day/ hour/minute/second Example: 03 07 0 13 13 27 48 “Day” - “0” is for “Sunday”. Proceeds Monday through Saturday from “1” to “6”.	1
201	General	Destination selection	ALL	EUR: 0 UC: 1 JPN: 2 <0-3>	M	0: EUR 1: UC 2: JPN 3: Other	1
202	User interface	Counter installed externally	ALL	0 <0-3>	M	0: No external counter 1: Coin controller (If the value of 08-588 is "0" (ACS), it is changed to "2" (Full color).) 2: Copy key card (This value is valid only when “2” is set to 08-201.) 3: Key copy counter	1
203	General	Line adjustment mode	ALL	0 <0-1>	M	0: For factory shipment 1: For line * Field: “0” must be selected	1
204	User interface	Auto-clear timer setting	ALL	3 <0-10>	SYS	Timer to return the equipment to the default settings when the [START] button is not pressed after the function and the mode are set 0: Not cleared 1 to 10: Set number x 15 sec.	1
205	User interface	Auto power save mode timer setting	ALL	6 <0, 6-15>	SYS	Timer to automatically switch to the energy saving mode when the equipment has not been used 0: Invalid 6: 3min. 7: 4min. 8: 5min. 9: 7min. 10: 10min. 11: 15min. 12: 20min. 13: 30min. 14: 45min. 15: 60min.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
206	User interface	Auto Shut Off Mode timer setting (Sleep Mode)	ALL	e-STUDIO2830C/3520C: 0 e-STUDIO2020C/2330C/2820C/3530C/4520C: 2 <0-20>	SYS	Timer to enter the Sleep Mode automatically when the equipment has not been used 0: 3min. 1: 5min. 2: 10min. 3: 15min. 4: 20min. 5: 25min. 6: 30min. 7: 40min. 8: 50min. 9: 60min. 10: 70min. 11: 80min. 12: 90min. 13: 100min. 14: 110min. 15: 120min. 16: 150min. 17:180min. 18: 210min. 19:240min. 20: Not used	1
207	User interface	Highlighting display on LCD	ALL	0 <0-1>	SYS	0: Black letter on white background 1: White letter on black background	1
209	User interface	Default setting of filing format when E-mailing (black mode)	ALL (color)	1 <0-6>	SYS	0: TIFF (Multi) 1: PDF (Multi) 2: Not used 3: TIFF (Single) 4: PDF (Single) 5: XPS (Multi) 6: XPS (Single)	1
218	User interface	Default setting of filing format when storing files (at color/ACS modes)	SCN (color)	1 <0-8>	SYS	0: TIFF (Multi) 1: PDF (Multi) 2: JPG 3: TIFF (Single) 4: PDF (Single) 5: SLIM PDF (Multi) 6: SLIM PDF (Single) 7: XPS (Multi) 8: XPS (Single)	1
219	User interface	Default setting of filing format when storing files (at black mode)	ALL (black)	MJD: 1 Other: 0 <0-6>	SYS	0: TIFF (Multi) 1: PDF (Multi) 3: TIFF (Single) 4: PDF (Single) 5: XPS (Multi) 6: XPS (Single)	1
220	User interface	Language displayed at power-ON	ALL	EUR: 0 UC: 0 JPN: 5 <0-6>	SYS	0: Language 1 1: Language 2 2: Language 3 3: Language 4 4: Language 5 5: Language 6 6: Language 7	1
221	User interface	Language selection in UI data at Web power ON	ALL	EUR: 0 UC: 0 JPN: 5 <0-6>	SYS	0: Language 1 1: Language 2 2: Language 3 3: Language 4 4: Language 5 5: Language 6 6: Language 7	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
243	Paper feeding	Memory 1 Paper size (bypass feeding/non-standard type) feeding/widthwise direction	ALL	148/100 <148-432/100-297>	SYS	Registers the paper size of bypass feed (non-standard type) into [MEMORY 1].	10
247	Paper feeding	Memory 2 Paper size (bypass feeding/non-standard type) feeding/widthwise direction	ALL	148/100 <148-432/100-297>	SYS	Registers the paper size of bypass feed (non-standard type) into [MEMORY 2].	10
248	Paper feeding	Memory 3 Paper size (bypass feeding/non-standard type) feeding/widthwise direction	ALL	148/100 <148-432/100-297>	SYS	Registers the paper size of bypass feed (non-standard type) into [MEMORY 3].	10
249	Paper feeding	Memory 4 Paper size (bypass feeding/non-standard type) feeding/widthwise direction	ALL	148/100 <148-432/100-297>	SYS	Registers the paper size of bypass feed (non-standard type) into [MEMORY 4].	10
250	Maintenance	Service technician telephone number	ALL	0 <32 digits>	SYS	A telephone number can be entered up to 32 digits. Use the [MONITOR/PAUSE] button to enter a hyphen(-).	11
253	Maintenance	Error history display	ALL	-	SYS	Displays the latest 20 errors data	2
254	Paper feeding	LT↔A4/LD↔A3	PRT	0 <0-1>	SYS	Sets whether the data is printed on the different but similar size paper or not when the paper of corresponding size is not available. 0: Valid (The data is printed on A4/A3 when LT/LD is selected or vice versa.) 1: Invalid (The message to use the selected paper size is displayed.)	1
259	Network	Storage period at trail and private	PRT	14 <0-35>	SYS	0: No limits 1 to 30: 1 to 30 days 31: 1 hour 32: 2 hours 33: 4 hours 34: 8 hours 35: 12 hours	1
260	Network	Web data retention period	ALL	10 <3 digits>	SYS	When a certain period of time has passed without operation after accessing TopAccess, the data being registered is automatically reset. This period is set at this code. (Unit: Minute)	1
263	User interface	Administrator's password (Maximum 10 digits)	ALL	123456 <10 digits>	-	The password can be entered in alphabets and figures (A-Z, a-z and 0-9) within 10 digits.	11

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
264	Network	File retention period	ALL	30 <0-999>	SYS	0: No limits 1 to 999: 1 to 999 days	1
265	Network	Maximum data capacity at E-mailing	ALL	30 <2-100>	SYS	2 to 100 MB	1
266	Network	Maximum data capacity at Internet FAX	ALL	30 <2-100>	SYS	2 to 100 MB	1
267	Electronic filing	e-Filing document guarantee mode	ALL	1 <0-1>	SYS	Sets the file retention level during edition in e-Filing (when the document cut/save command is used) 0: Not retained (Documents could be lost due to We session timeout / electricity cutoff during document cut/save.) 1: Full retained - Documents are retained until cut/ save command completion. * When “1” is set, documents are not lost even if disk full occurs during command execution.	1
268	User interface	Binarizing level selection (When judging as black in the ACS Mode)	ALL	3 <1-5>	SYS	0: Step -2 1: Step -1 2: Step 0 (center) 3: Step 1 4: Step 2 * The binarizing level of each step is set at 08-609.	1
270	Electronic filing	Default setting of user box retention period	ALL	0 <0-999>	SYS	Sets the data retention period when creating a user box. 0: Not deleted 1 to 999: Retention period (Unit: Day)	1
271	General	Warning notification of the File Share and e-Filling partitions are filled	ALL	90 <0-100>	SYS	Sets the percentage of HDD partition filled when warning notification is sent. 0 to 100: 0 to 100% * Related code 08-288	1
272	Scanning	Notification setting of E-mail saving time limit	ALL	3 <0-99>	SYS	Sets the days left the notification of E-mail saving time limit appears 0 to 99: 0 to 99 days	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
273	Scanning	Default setting of partial size when transmitting E-mail	ALL	0 <0-6>	SYS	Sets the default value for the partial size of E-mail to be transmitted when creating a template. 0: Not divided 1: 64 2: 128 3: 256 4: 512 5: 1024 6: 2048 (Unit: KB)	1
274	FAX	Default setting of page by page when transmitting Internet FAX	ALL	0 <0-4>	SYS	Sets the default value for the page by page of Internet FAX to be transmitted when creating a template. 0: Not divided 1: 256 2: 512 3: 1024 4: 2048 (Unit: KB)	1
276	User interface	Default setting of density adjustment (Black)	SCN (black)	0 <0-11>	SYS	0: Automatic density 1: Step -5 2: Step -4 3: Step -3 4: Step -2 5: Step -1 6: Step 0 (center) 7: Step +1 8: Step +2 9: Step +3 10: Step +4 11: Step +5 (1 to 11: Manual density)	1
277	User interface	Default setting of background adjustment (Full Color)	SCN (color)	5 <1-9>	SYS	1: Step -2 2: Step -1 3: Step 0 (center) 4: Step +1 5: Step +2	1
278	User interface	Default setting of color mode	SCN	0 <0-4>	SYS	0: Black 1: Gray Scale 2: Unused 3: Full Color 4: Auto Color	1
279	User interface	Default setting of resolution (Full Color)	SCN (color)	2 <0-5>	SYS	0: 100 dpi 1: 150 dpi 2: 200 dpi 3: 300dpi 4: 400 dpi 5: 600dpi	1
280	User interface	Default setting of resolution (Gray Scale)	SCN (black)	2 <0-5>	SYS	0: 100 dpi 1: 150 dpi 2: 200 dpi 3: 300dpi 4: 400 dpi 5: 600 dpi	1
281	User interface	Default setting of resolution (Black)	SCN (black)	1 <0-5>	SYS	0: 150 dpi 1: 200 dpi 2: 300 dpi 3: 400 dpi 4: 600 dpi 5: 100 dpi	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
282	User interface	Default setting of original mode (Full Color)	SCN (color)	0 <0-3>	SYS	0: Text 1: Photo 2: Print 3: Custom (Valid only when other than “0” is set in 08-590)	1
283	User interface	Default setting of original mode (Black)	SCN (black)	0 <0-3>	SYS	0: Text 1: Text/Photo 2: Photo 3: Custom (Valid only when other than “0” is set in 08-580)	1
284	User interface	Default setting of scanning mode	SCN	0 <0-2>	SYS	0: Single 1: Book 2: Tablet	1
285	User interface	Default setting of rotation mode	SCN	0 <0-3>	SYS	0: 0 degree 1: 90 degrees 2: 180 degrees 3: 270 degrees	1
286	User interface	Default setting of original paper size	SCN	0 <0-22>	SYS	0: Automatic 1: A3 2: A4 3: LD 4: LT 5: A4-R 6: A5-R 7: LT-R 8: LG 9: B4 10: B5 11: ST-R 12: COMP 13: B5-R 14: FOLIO 15: 13"LG 16: 8.5"x 8.5" 18: A6-R 19: Size mixed 20: 8K 21: 16K 22: 16K-R	1
288	General	Searching interval of deleting expired files and checking capacity of HDD partitions	SCN	12 <1-24>	SYS	Sets the search interval of deleting expired files and checking capacity of HDD partitions. (Unit: Hour) * Related code 08-271	1
289	User interface	Default setting of background adjustment (Gray Scale)	SCN	5 <1-9>	SYS	1: Step -4 2: Step -3 3: Step -2 4: Step -1 5: Step 0 (Center) 6: Step +1 7: Step +2 8: Step +3 9: Step +4	1
290	Network	Raw printing job (Duplex)	PRT	1 <0-1>	SYS	0: Valid 1: Invalid	1
291	Network	Raw printing job (Paper size)	PRT	EUR: 6 UC: 2 JPN: 6 <0 -13>	SYS	0: LD 1: LG 2: LT 3: COMP 4: ST 5: A3 6: A4 7: A5 8: A6 9: B4 10: B5 11: FOLIO 12: 13"LG 13: 8.5" x 8.5"	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
292	Network	Raw printing job (Paper type)	PRT	0 <0-7>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 4: OHP film 5: Thick paper 4 6: - 7: Recycled paper	1
293	Network	Raw printing job (Paper direction)	PRT	0 <0-1>	SYS	0: Portrait 1: Landscape	1
294	Network	Raw printing job (Staple)	PRT	1 <0-1>	SYS	0: Valid 1: Invalid	1
295	Network	Raw printing job (Exit tray)	PRT	0 <0-6>	SYS	0: Inner Tray 1: Finisher Tray1 2: Finisher Tray2 3: Unused 4: Job Separator Upper 5: Job Separator Lower 6: Exit Tray	1
296	Network	Raw printing job (Number of form lines)	PRT	1200 <500-12800>	SYS	Sets the number of form lines from 5 to 128. (A hundredfold of the number of form lines is defined as the setting value.)	1
297	Network	Raw printing job (PCL font pitch)	PRT	1000 <44-9999>	SYS	Sets the font pitch from 0.44 to 99.99. (A hundredfold of the font pitch is defined as the setting value.)	1
298	Network	Raw printing job (PCL font size)	PRT	1200 <400-99975>	SYS	Sets the font size from 4 to 999.75. (A hundredfold of the font size is defined as the setting value.)	1
299	Network	Raw printing job (PCL font number)	PRT	0 <0-79>	SYS	Sets the PCL font number.	1
300	User interface	Maximum number of copy volume (MAX9)	PPC	0 <0-2>	SYS	0: 999 1: 99 2: 9	1
302	User interface	Original counter display	PPC	EUR: 2 UC: 0 JPN: 0 <0, 2, 4>	SYS	Sets whether the original counter is displayed or not. 0: Not displayed 2: Displayed 4: Displayed (Double sized original is counted as 2.)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
331	User interface	Default setting of screen	ALL	0 <0-8>	SYS	Sets the screen to be displayed after the auto-clear time has passed or it has recovered from the energy saving mode or sleep mode. 0: Copier 1: Fax 2: Scan 3: Box 4: Print 5: Template 6: MENU 7: JOB STATUS 8: EWB * "8: EWB" can be set only when EWB is enabled ("0" to "7" when EWB is disabled). If EWB is disabled while "8: EWB" is set, this setting is reset to "0: Copier" (no change for "0" to "7"). The default value of this code is set to "8: EWB" during an automatic upgrade if EWB is enabled. The value is unchanged if EWB is disabled. The value of this code is changed to "8: EWB" when switching EWB from disabled to enabled.	1
342	User interface	Displaying number of original pages placed on original glass	PPC	0 <0-1>	SYS	This setting is whether the number of pages of originals placed on the original glass is displayed or not. 0: Not displayed 1: Displayed	1
343	User interface	Black-free function	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled If this code is set to "1" (enabled), 08-588 is automatically set to "1" (black) and "0" (ACS) and "2" (Full color) cannot be selected. If 08-629 is set to "0" (OFF) and 08-1482 is set to "1" (ON), this code is set to "0" (Disabled) and "1" (ON) cannot be set.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
381	Counter	Setting for counter installed externally	ALL	1 <0-7>	M	Selects the job to count up for the external counter. 0: Not selected 1: Copier 2: FAX 3: Copier/FAX 4: Printer 5: Copier/Printer 6: Printer/FAX 7: Copier/Printer/FAX	1
503	General	Image quality density adjustment at power-ON Default setting	PPC (black)	0 <0-1>	SYS	0: Auto 1: Manual	1
550	General	Original modeDefault setting	PPC (black)	0 <0-4>	SYS	0: Text/Photo 1: Text 2: Photo 3: Gray Scale 4: User custom mode	1
585	General	Original modeDefault setting	PPC (color)	0 <0-5>	SYS	0: Text/Photo 1: Text 2: Printed image 3: Photo 4: Map 5: User custom mode	1
587	General	Image quality density adjustment at power-ON (ACS& full color) (PPC)	PPC (color)	1 <0-1>	SYS	0: Auto 1: Manual	1
588	General	Color mode priority(ACS & black & full color)	PPC (color)	2 <0-2>	SYS	0: ACS 1: Black 2: Full color When the value of 08-343 is “1”, the value of this code automatically becomes “1: Black”. In this case “0” and “2” are not selectable.	1
602	User interface	Screen setting for automatic energy saver/ automatic power OFF	ALL	EUR:0 UC:1 JPN:1 <0-1>	SYS	0: OFF 1: ON	1
603	User interface	Setting for automatic duplexing mode	ALL	0 <0-3>	SYS	0: Invalid 1: Single-sided to duplex copying 2: Two-sided to duplex copying 3: User selection	1
604	User interface	Default setting for APS/ AMS	ALL	0 <0-2>	SYS	0: APS (Automatic Paper Selection) 1: AMS (Automatic Magnification Selection) 2: Not selected	1
605	User interface	Centering printing of primary/secondary direction at AMS	PPC	1 <0-1>	SYS	0: Invalid 1: Valid	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
607	User interface	Default setting of RADF mode		PPC	0 <0-1>	SYS	0: Continuous feeding (by pressing the [START] button) 1: Single feeding (by setting original on the tray)	1
609-0	Image	Binarizing level setting (When judging as black in the ACS Mode)	Step -2	ALL	88 <0-255>	SYS	Sets the binarizing level of each step. When the value increases, the image becomes darker. When the value decreases, the image becomes lighter. * Refer to 08-268.	4
609-1			Step -1	ALL	108 <0-255>	SYS		4
609-2			Step 0 (center)	ALL	148 <0-255>	SYS		4
609-3			Step +1	ALL	178 <0-255>	SYS		4
609-4			Step +2	ALL	208 <0-255>	SYS		4
610	User interface	Key touch sound of control panel		ALL	1 <0-1>	SYS	0: OFF 1: ON	1
611	User interface	Book type original priority		PPC	0 <0-1>	SYS	0: Left page to right page 1: Right page to left page	1
613	User interface	Paper size selection for [OTHER] button		PPC	EUR: FOLIO UC: COMP JPN: A5-R	SYS	Press the icon on the LCD to select the size.	9
614	Network	Local I/F time-out period		ALL	6 <1-50>	SYS	Sets the period of time when the job is judged as completed in local I/F printing (USB or parallel). 1: 1.0 sec. 2: 1.5 sec. 50: 25.5 sec. (in increments of 0.5 sec.)	1
615	General	Size information of main memory and page memory		ALL	-	SYS	Displays the sizes of the main memory and page memory. Enables to check if each memory is properly recognized.	2
616	Counter	Counting method in Twin Color Mode (Limitation Function)		ALL	JPN: 1 UC: 0 EUR: 0 <0-1>	SYS	Sets the counting method in Twin Color Mode with the Limitation Function. 0: Count as color 1: Count as black	1
617	User interface	Print setting without department code		ALL	1 <0-2>	SYS	0: Printed forcibly 1: Not printed 2: Deleted forcibly	1
618	User interface	Default setting of RADF original size		PPC	0 <0-1>	SYS	0: Same size originals 1: Mixed size originals	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
619	Paper feeding	Time lag before auto-start of bypass feeding	ALL	4 <0-10>	SYS	Sets the time taken to add paper feeding when paper in the bypass tray has run out during the bypass feed copying. 0: Paper is not drawn in unless the [START] button is pressed. 1-10: Setting value x 0.5sec.	1
620	User interface	Department management setting (Copier)	PPC	1 <0-1>	SYS	0: Invalid 1: Valid	1
621	User interface	Department management setting (FAX)	FAX	1 <0-1>	SYS	0: Invalid 1: Valid	1
622	User interface	Department management setting (Printer)	PRT	1 <0-1>	SYS	0: Invalid 1: Valid	1
623	User interface	Department management setting (Scanner)	SCN	1 <0-1>	SYS	0: Invalid 1: Valid	1
624	User interface	Department management setting (List print)	PRT	1 <0-1>	SYS	0: Invalid 1: Valid	1
625	User interface	Blank copying prevention mode during RADF jamming	PPC	0 <0-1>	SYS	0: OFF 1: ON (Start printing when the scanning of each page is finished)	1
627	User interface	Rotation printing at the nonsorting	ALL	0 <0-1>	SYS	0: Not rotating 1: Rotating	1
628	User interface	Direction priority of original image	PPC	0 <0-1>	SYS	0: Automatic 1: Portrait	1
629	User interface	Department management setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
632	User interface	Automatic calibration disclosure level	PPC	1 <0-2>	SYS	Sets the disclosing level of automatic calibration. 0: Service technician 1: Administrator 2: User	1
634	User interface	Inner receiving tray priority at Non-sort Mode	ALL	0 <0-1>	SYS	0: Normal 1: Inner receiving tray	1
636	User interface	Width setting for image shift copying (linkage of front side and back side)	PPC	0 <0-1>	SYS	0: ON 1: OFF	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
638	General	Time differences	ALL	EUR: 24 UC: 40 JPN: 6 <0-47>	SYS	0: +12.0h 1: +11.5h 2: +11.0h 3: +10.5h 4: +10.0h 5: 9.5h 6: +9.0h 7: +8.5h 8: +8.0h 9: +7.5h 10: +7.0h 11: +6.5h 12: +6.0h 13: +5.5h 14: +5.0h 15: +4.5h 16: +4.0h 17: +3.5h 18: +3.0h 19: +2.5h 20: +2.0h 21: +1.5h 22: +1.0h 23: +0.5h 24: 0.0h 25:-0.5h 26: -1.0h 27: -1.5h 28: -2.0h 29: -2.5h 30: -3.0h 31: -3.5h 32: -4.0h 33: -4.5h 34: -5.0h 35: -5.5h 36: -6.0h 37: -6.5h 38: -7.0h 39: -7.5h 40: -8.0h 41: -8.5h 42: -9.0h 43: -9.5h 44: -10.0h 45: -10.5h 46: -11.0h 47: -11.5h	1
640	User interface	Date display format	ALL	EUR:1 UC:2 JPN:0 <0-2>	SYS	0: YYYY.MM.DD. 1: DD.MM.YYYY 2: MM.DD.YYYY	1
641	User interface	Automatic Sorting Mode setting (RADF)	PPC	2 <0-4>	SYS	0: Invalid 1: STAPLE 2: SORT 3: GROUP 4: ROTATE SORT	1
642	User interface	Default setting of Sorter Mode	PPC	0 <0-4>	SYS	0: NON-SORT 1: STAPLE 2: SORT 3: GROUP 4: ROTATE SORT	1
643	User interface	Color 1 at twin color selection (Select what color black in original is copied)	PPC (color)	0 <0-6>	SYS	0: K 1: Y 2: M 3: C 4: R 5: G 6: B	1
644	User interface	Color 2 at twin color selection (Select what color other than black in original is copied)	PPC (color)	4 <0-6>	SYS	0: K 1: Y 2: M 3: C 4: R 5: G 6: B	1
645	User interface	Correction of reproduction ratio in editing copy	PPC	10 <0-10>	SYS	Sets the reproduction ratio for the “X in 1” printing (including magazine sort) to the “Reproduction ratio x Correction ratio”. 0: 90% 1: 91% 2: 92% 3: 93% 4: 94% 5: 95% 6: 96% 7: 97% 8: 98% 9: 99% 10: 100%	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
646	User interface	Image position in editing	ALL	2 <0-3>	SYS	Sets the page pasted position for “X in 1” to the upper left corner/ center. 0: Cornering (PPC)/ Cornering (PRT) 1: Centering (PPC)/ Cornering (PRT) 2: Cornering (PPC)/ Centering (PRT) 3: Centering (PPC)/ Centering (PRT)	1
648	User interface	Returning finisher tray when printing is finished	ALL	0 <0-1>	SYS	Sets whether or not returning the finisher tray to the bin 1 when printing is finished. 0: Not returned 1: Returned	1
649	User interface	Magazine sort setting	PPC	0 <0-1>	SYS	0: Left page to right page 1: Right page to left page	1
650	User interface	2 in 1/4 in 1 page allocating order setting	PPC	0 <0-1>	SYS	0: Horizontal 1: Vertical	1
651	User interface	Printing format setting for Time Stamp and Page Number	PPC	0 <0-1>	SYS	Hyphen 0: OFF 1: ON **Note:** Hyphen printing format ON: -1- OFF: 1	1
652	User interface	Cascade operation setting	PPC	0 <0-2>	SYS	0: OFF 1: ON (Stop) 2: ON (Circulation)	1
653	User interface	Cascade operation setting	PRT	0 <0-2>	SYS	0: OFF 1: ON (Stop) 2: ON (Circulation)	1
657	User interface	Default setting of printing direction for Time Stamp and Page Number	PPC	0 <0-1>	SYS	0: Short edge 1: Long edge	1
658	User interface	Auto-start setting for bypass feed printing (Remote)	PRT	0 <0-1>	SYS	Sets whether or not feeding a paper automatically into the copier when it is placed on the bypass tray. 0: OFF (Press the [START] button to start feeding.) 1: ON (Automatic feeding)	1
659	User interface	Auto-start setting for bypass feed printing (Local)	PPC	1 <0-1>	SYS	Sets whether or not feeding a paper automatically into the copier when it is placed on the bypass tray. 0: OFF (Press the [START] button to start feeding.) 1: ON (Automatic feeding)	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
660	Network	Auto-forwarding setting of received FAX	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
661	Network	Auto-forwarding setting of received E-mail	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
662	General	Clearing of SMS partition	ALL	-	SYS	Clears SMS partition. (Performs when the service call [F106] has occurred.)	3
663	Counter	Counting method in Twin Color Mode	PPC	0 <0-2>	SYS	Sets the counting method of fee charging or duplexing count in the Twin Color Mode. 0: Count as Twin Color Mode 1: Count as Black Mode 2: Count as Full Color Mode	1
666	General	BOX partition clearing	ALL	-	SYS	Initializes the Electronic Filing.	3
667	General	/SHA partition clearing	ALL	-	SYS	Initializes the shared folder.	3
670	General	HDD diagnostic menu display	ALL	-	SYS	Display the HDD information (Ch.21.2.2)	2
671	User interface	Size indicator	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
672	General	Initialization of department management information	-	-	SYS	Initializing of the department management information * Enter the code with the digital keys and press the [INITIALIZE] button to perform the initialization. If the area storing the department management information is destroyed for some reason, “Enter Department Code” is displayed on the control panel even if the department management function is not set on. In this case, initialize the area with this code. This area is normally initialized at the factory.	3

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
675-0	Paper feeding	Coated Paper Mode setting for paper source	1st drawer	ALL	0 <0-1>	SYS	Sets whether or not applying the Coated Paper Mode to each paper source. 0: Normal mode 1: Coated Paper Mode * Coated Paper Mode - This mode is selected when the paper which often causes the misfeeding (ex. coated paper) is used. The occurrence of misfeeding is reduced by lengthening the jam detection time. However, the printing speed is lowered since the printing cycle is also lengthened with the lengthened jam detection time.	4
675-1			2nd drawer	ALL	0 <0-1>	SYS		4
675-2			PFP upper drawer	ALL	0 <0-1>	SYS		4
675-3			PFP lower drawer	ALL	0 <0-1>	SYS		4
675-4			LCF	ALL	0 <0-1>	SYS		4
678	General	Setting of banner advertising display		ALL	0 <0-1>	SYS	Sets whether or not displaying the banner advertising. The setting contents of 08-679 and 08-680 are displayed at the time display section on the right top of the screen. When both are set, each content is displayed alternately. 0: Not displayed 1: Displayed	1
679	General	Banner advertising display 1		ALL	-	SYS	Maximum 27 letters (one-byte character)	11
680	General	Banner advertising display 2		ALL	-	SYS	Maximum 27 letters (one-byte character)	11
681	General	Display of [BANNER MESSAGE] button		ALL	0 <0-1>	SYS	0: Not displayed 1: Displayed * This button enables the entry of “Banner advertising display 1 (08-679)” and “Banner advertising display 2 (08-680)” on the control panel.	1
682	Use interface	Offsetting between jobs		ALL	1 <0-1>	SYS	0: Invalid 1: Valid	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
683	General	Duplex printing setting when coin controller is used	ALL	1 <0-1>	SYS	When the duplex printing is short paid with a coin controller, reverse side of the original is not printed and is considered as a defect (printing job may be cleared). To solve this problem, the selection of printing method is enabled with this setting. 0: Invalid (Only one side printed) 1: Valid (Both sides printed/One side printed)	1
684	General	Rebuilding all databases	ALL	-	SYS	Rebuilds all databases.	3
685	General	Rebuilding all databases related to Address Book	ALL	-	SYS	Rebuilds all databases related to the Address Book.	3
686	General	Rebuilding all databases related to log	ALL	-	SYS	Rebuilds all databases related to the logs.	3
689	FAX	Adaptation of paper source priority selection	FAX	0 <0-1>	SYS	0: Not subjected for APS judgment 1: Subjected for APS judgment	1
690	General	HDD formatting	ALL	2 <2>	SYS	2: Normal formatting	7
691	General	HDD type display	ALL	- <0-2>	SYS	0: Not formatted 1: Not used 2: Normal format	7
692	Maintenance	Performing panel calibration	ALL	-	SYS	Performs the calibration of the pressing position on the touch panel (LCD screen). The calibration is performed by pressing 2 reference positions after this code is started up.	1
693	General	Initialization of NIC information	ALL	-	SYS	Returns the value to the factory shipping default value.	3
694	General	Performing HDD testing	ALL	-	SYS	Checks the bad sector.	3
700	General	Default setting of the EFI Printer Board	ALL	-	-	Performs when the EFI Printer Board is used	3

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
701	FAX	Destination setting for FAX		FAX	EUR: 5 UC: 4 JPN: 0 Other: 1 <0-25>	SYS	0: Japan 1: Asia 2: Australia 3: Hong Kong 4: U.S.A./Canada 5: Germany 6: U.K. 7: Italy 8: Belgium 9: Netherlands 10: Finland 11: Spain 12: Austria 13: Switzerland 14: Sweden 15: Denmark 16: Norway 17: Portugal 18: France 19: Greece 20: Poland 21: Hungary 22: Czech 23: Turkey 24: South Africa 25: Taiwan	1
702	Maintenance	Remote-controlled service function		ALL	2 <0-2>	SYS	0: Valid (Remote-controlled server) 1: Valid (L2) 2: Invalid	1
703	Maintenance	Remote-controlled service HTTP server URL setting		ALL	-	SYS	Maximum 256 Bytes	11
704-0		Interruption of stapling operation (no staple)	Copying	ALL	1 <0-1>	SYS	0: Continues printing by switching sort setting 1: Interrupts printing	4
704-1			Printing / BOX printing	ALL	0 <0-1>	SYS	0: Continues printing by switching sort setting 1: Interrupts printing	4
707	Maintenance	Remote-controlled service HTTP initially-registered server URL setting		ALL	https://device.mfp-support.com:443/device/firstregist.ashx	SYS	Maximum 256 Bytes	11
710	Maintenance (Remote)	Short time interval setting of recovery from Emergency Mode		ALL	24 <1-48>	SYS	Sets the time interval to recover from the Emergency Mode to the Normal Mode. (Unit: Hour)	1
711	Maintenance	Short time interval setting of Emergency Mode		ALL	60 <30-360>	SYS	Unit: Minute	1
715	Maintenance	Remote-controlled service periodical polling timing (Hour/Hour/Minute/Minute)		ALL	1230	SYS	0 (0:00) to 2359 (23:59)	1
716	Maintenance	Remote-controlled service Writing data of self-diagnostic code		ALL	0 <0-1>	SYS	0: Prohibited 1: Accepted	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
717	Maintenance	Remote-controlled service response waiting time (Timeout)	ALL	3 <1-30>	SYS	Unit: Minute	1
718	Maintenance	Remote-controlled service initial registration	ALL	0 <0-3>	SYS	0: OFF 1: Start 2: Only certification is scanned 3: Satellite communication starts	1
719	Maintenance	Remote-controlled service tentative password	ALL	-	SYS	Maximum 10 letters	11
720	Maintenance	Status of remote-controlled service initial registration (Display only)	ALL	0 <0-1>	SYS	0: Not registered 1: Registered	2
721	Maintenance	Service center call function	ALL	JPD : 1 NAD: 2 MJD: 2 <0-2>	SYS	0: OFF 1: Notifies all service calls 2: Notifies all but paper jams	1
723	Maintenance	Service center call HTTP server URL setting	ALL	-	SYS	Maximum 256 letters	11
726	Maintenance	HTTP proxy setting	ALL	1 <0-1>	SYS	0: Valid 1: Invalid	1
727	Maintenance	HTTP proxy IP address setting	ALL	-	SYS	Input IP address or FQDN. 000.000.000.000 - 255.255.255.255 (Default value 000.000.000.000)	11
728	Maintenance	HTTP proxy port number setting	ALL	0 <0-65535>	SYS		1
729	Maintenance	HTTP proxy ID setting	ALL	-	SYS	Maximum 30 letters	11
730	Maintenance	HTTP proxy password setting	ALL	-	SYS	Maximum 30 letters	11
731	Maintenance	HTTP proxy panel display	ALL	1 <0-1>	SYS	0: Valid 1: Invalid	1
732	Maintenance (Remote)	Automatic ordering function of supplies	ALL	3 <0-3>	SYS	0: Ordered by FAX 1: Ordered by E-mail 2: Ordered by HTTP 3: OFF	1
733	Maintenance (Remote)	Automatic ordering function of supplies FAX number	ALL	-	SYS	Maximum 32 digits Enter hyphen with the [Monitor/Pause] button	11
734	Maintenance (Remote)	Automatic ordering function of supplies E-mail address	ALL	-	SYS	Maximum 192 letters List: 256 digits	11
738	Maintenance (Remote)	Automatic ordering function of supplies User's name	ALL		SYS	Maximum 50 letters	11
739	Maintenance (Remote)	Automatic ordering function of supplies User's telephone number	ALL		SYS	Maximum 32 digits Enter hyphen with the [Monitor/Pause] button	11
740	Maintenance (Remote)	Automatic ordering function of supplies User's E-mail address	ALL		SYS	Maximum 192 letters List: 256 digits	11

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
741	Maintenance (Remote)	Automatic ordering function of supplies User's address	ALL		SYS	Maximum 100 letters	11
742	Maintenance (Remote)	Automatic ordering function of supplies Service number	ALL		SYS	Maximum 5 digits	11
743	Maintenance (Remote)	Automatic ordering function of supplies Service technician's name	ALL		SYS	Maximum 50 letters	11
744	Maintenance (Remote)	Automatic ordering function of supplies Service technician's telephone number	ALL		SYS	Maximum 32 digits Enter hyphen with the [Monitor/Pause] button	11
745	Maintenance (Remote)	Automatic ordering function of supplies Service technician's E-mail address	ALL		SYS	Maximum 192 letters List: 256 digits	11
746	Maintenance (Remote)	Automatic ordering function of supplies Supplier's name	ALL		SYS	Maximum 50 letters	11
747	Maintenance (Remote)	Automatic ordering function of supplies Supplier's address	ALL		SYS	Maximum 100 letters	11
748	Maintenance (Remote)	Automatic ordering function of supplies Notes	ALL		SYS	Maximum 128 letters	11
749	Maintenance (Remote)	Information about supplies Part number of toner cartridge C	ALL		SYS	Maximum 20 digits	11
750	Maintenance (Remote)	Information about supplies Order quantity of toner cartridge C	ALL	1 <1-99>	SYS		1
751	Maintenance (Remote)	Information about supplies Condition number of toner cartridge C	ALL	1 <1-99>	SYS		1
752	Maintenance (Remote)	Information about supplies Part number of toner cartridge M	ALL		SYS	Maximum 20 digits	11
753	Maintenance (Remote)	Information about supplies Order quantity of toner cartridge M	ALL	1 <1-99>	SYS		1
754	Maintenance (Remote)	Information about supplies Condition number of toner cartridge M	ALL	1 <1-99>	SYS		1
755	Maintenance (Remote)	Information about supplies Part number of toner cartridge Y	ALL	-	SYS	Maximum 20 digits	11
756	Maintenance (Remote)	Information about supplies Order quantity of toner cartridge Y	ALL	1 <1-99>	SYS		1
757	Maintenance (Remote)	Information about supplies Condition number of toner cartridge Y	ALL	1 <1-99>	SYS		1
758	Maintenance (Remote)	Information about supplies Part number of toner cartridge K	ALL	-	SYS	Maximum 20 digits	11
759	Maintenance (Remote)	Information about supplies Order quantity of toner cartridge K	ALL	1 <1-99>	SYS		1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
760	Maintenance (Remote)	Information about supplies Condition number of toner cartridge K	ALL	1 <1-99>	SYS		1
761	Maintenance (Remote)	Information about supplies Part number of waste toner box	ALL	-	SYS	Maximum 20 digits	11
762	Maintenance (Remote)	Information about supplies Order quantity of waste toner box	ALL	1 <1-99>	SYS		1
763	Maintenance (Remote)	Information about supplies Condition number of waste toner box	ALL	1 <1-99>	SYS		1
764	Maintenance (Remote)	Automatic ordering supplies Result table printout	ALL	1 <0-2>	SYS	0: OFF 1: Always 2: ON Error	1
765	Maintenance (Remote)	Automatic ordering supplies Display	ALL	EUR: 2 UC: 0 JPN: 2 <0-2>	SYS	0: Valid (FAX/Internet FAX) 1: Valid (FAX/Internet FAX/ HTTP) 2: Invalid	1
767	Maintenance (Remote)	Service Notification setting	ALL	0 <0-2>	SYS	Enables to set up to 3 E-mail addresses to be sent. (08-768, 777, 778) 0: Invalid 1: Valid (E-mail) 2: Valid (FAX)	1
768	Maintenance (Remote)	Destination E-mail address 1	ALL	-	SYS	Maximum 192 letters	11
769	Maintenance (Remote)	Total counter information transmission setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
770	Maintenance (Remote)	Total counter transmission date setting	ALL	0 <0-31>	SYS	0 to 31	1
771	Maintenance (Remote)	PM counter notification setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
772	Maintenance	Dealer's name	ALL	-	SYS	Maximum 100 letters Needed at initial registration	11
773	Maintenance	Login name	ALL	-	SYS	Maximum 20 letters Needed at initial registration	11
774	Maintenance (Remote)	Display setting of [Service Notification] button	ALL	NAD, MJD: 1 Other: 0 <0-1>	SYS	0: Not displayed 1: Displayed	1
775	Maintenance (Remote)	Sending error contents of equipment	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
776	Maintenance (Remote)	Setting total counter transmission interval (Hour/Hour/Minute/Minute)	ALL	-	SYS		1
777	Maintenance (Remote)	Destination E-mail address 2	ALL	-	SYS	Maximum 192 letters	11

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
778	Maintenance (Remote)	Destination E-mail address 3	ALL	-	SYS	Maximum 192 letters	11
780	Maintenance	Remote-controlled service polling day selection Day-1	ALL	0 <0-31>	SYS	0: OFF 1 to 31: 1st to 31st of a month	1
781	Maintenance	Remote-controlled service polling day selection Day-2	ALL	0 <0-31>	SYS	0: OFF 1 to 31: 1st to 31st of a month	1
782	Maintenance	Remote-controlled service polling day selection Day-3	ALL	0 <0-31>	SYS	0: OFF 1 to 31: 1st to 31st of a month	1
783	Maintenance	Remote-controlled service polling day selection Day-4	ALL	0 <0-31>	SYS	0: OFF 1 to 31: 1st to 31st of a month	1
784	Maintenance	Remote-controlled service polling day selection Sunday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
785	Maintenance	Remote-controlled service polling day selection Monday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
786	Maintenance	Remote-controlled service polling day selection Tuesday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
787	Maintenance	Remote-controlled service polling day selection Wednesday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
788	Maintenance	Remote-controlled service polling day selection Thursday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
789	Maintenance	Remote-controlled service polling day selection Friday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
790	Maintenance	Remote-controlled service polling day selection Saturday	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
791	Maintenance	Information of supplies setting of toner cartridge C	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
792	Maintenance	Information of supplies setting of toner cartridge M	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
793	Maintenance	Information of supplies setting of toner cartridge Y	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
794	Maintenance	Information of supplies setting of toner cartridge K	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
795	Maintenance	Information of supplies setting of waste toner box	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
796	Maintenance	Remote-controlled service lengthened interval polling (End of month)	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
900	Version	System firmware ROM version	ALL	-	-	JPN: T450SY0JXXX UC: T450SY0UXXX EUR: T450SY0EXXX Others: T450SY0XXXX	2
903	Version	Engine ROM version	ALL	-	-	450M-XXX	2
905	Version	Scanner ROM version	ALL	-	-	450S-XXX	2
907	Version	RADF ROM version	ALL	-	-	DF-XXXX	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
908	Version	Finisher ROM version	ALL	-	-	SDL-XXX FIN-XXX	2
911	Version	Finisher punch ROM version	ALL	-	-	PUN-XXX	2
915	Version	FAX board ROM version	FAX	-	-	F562-XXX	2
920	Version	FROM basic section software version	ALL	-	-	VX.XX/X.XX	2
921	Version	System firmware ROM internal program version	ALL	-	-	VXXX.XXX X	2
922	Version	UI data fixed section version	ALL	-	-	VXXX.XXX X	2
923	Version	UI data common section version	ALL	-	-	VXXX.XXX X	2
924	Version	Version of UI data language 1 in HDD	ALL	-	-	VXXX.XXX X	2
925	Version	Version of UI data language 2 in HDD	ALL	-	-	VXXX.XXX X	2
926	Version	Version of UI data language 3 in HDD	ALL	-	-	VXXX.XXX X	2
927	Version	Version of UI data language 4 in HDD	ALL	-	-	VXXX.XXX X	2
928	Version	Version of UI data language 5 in HDD	ALL	-	-	VXXX.XXX X	2
929	Version	Version of UI data language 6 in HDD	ALL	-	-	VXXX.XXX X	2
930	Version	Version of UI data in FROM displayed at power-ON	ALL	-	-	VXXX.XXX X	2
931	Version	Version of UI data language 7 in HDD	ALL	-	-	VXXX.XXX X	2
933	Version	Web data whole version	ALL	-	-	VXXX.XXX X	2
934	Version	Web UI data in HDD Version: Language 1	ALL	-	-	VXXX.XXX X	2
935	Version	Web UI data in HDD Version: Language 2	ALL	-	-	VXXX.XXX X	2
936	Version	Web UI data in HDD Version: Language 3	ALL	-	-	VXXX.XXX X	2
937	Version	Web UI data in HDD Version: Language 4	ALL	-	-	VXXX.XXX X	2
938	Version	Web UI data in HDD Version: Language 5	ALL	-	-	VXXX.XXX X	2
939	Version	Web UI data in HDD Version: Language 6	ALL	-	-	VXXX.XXX X	2
944	Version	HDD version	ALL	-	-	JPN: T450HD0JXXX UC: T450HD0UXXX EUR: T450HD0EXXX Others: T450HD0XXXX	2
945	Network	Two-way setting of RawPort 9100	ALL	2 <1-2>	UTY	1: Valid 2: Invalid	12
947	General	Initialization after software version upgrade	ALL	-	SYS	Perform this code when the software in this equipment has been upgraded.	3
949	General	Automatic interruption page number setting for printing	ALL	5 <0-100>	SYS	Sets the number of pages to interrupt the printing automatically. 0-100: 0 to 100 pages	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
950	Electronic filing	Start-up method of Electronic Filing	ALL	0 <0-2>	SYS	Sets the start-up method of the Electronic Filing. 0: Standard 1: Forced start-up (Not recovered) 2: Forced start-up (Recovered)	1
951	User interface	Image setting for Electronic Filing printing (Only for color image)	ALL	0 <0-3>	SYS	0: General 1: Photograph 2: Presentation 3: Line art	1
953	User interface	Access code entry for Electronic Filing printing	ALL	0 <0-1>	SYS	0: Renewed automatically 1: Enter every time	1
954	User interface	Clearing timing for files and Electronic Filing Agent	ALL	1 <0-1>	SYS	0: Immediately after the completion of scanning 1: Cleared by Auto Clear	1
969	User interface	Error sound	ALL	1 <0-1>	SYS	0: OFF 1: ON	1
970	User interface	Sound setting when switching to Energy Saving Mode	ALL	EUR: 1 UC: 1 JPN: 0 <0-1>	SYS	0: OFF 1: ON	1
973	Network	PCL line feed code setting	PRT	0 <0-3>	SYS	Sets the PCL line feed code. 0: Automatic setting 1: CR=CR, LF=LF 2: CR=CR+LF, LF=LF 3: CR=CR, LF=CR+LF	1
975	General	Job handling when printing is short paid with coin controller	ALL	1 <0-1>	SYS	Sets whether pause or stop the printing job when it is short paid using a coin controller. 0: Pause the job 1: Stop the job	1
976	Scanning	Equipment name and user name setting to a folder when saving files	ALL	0 <0-2>	SYS	Sets whether or not adding the equipment name and user name to the folder when saving files. 0: Not add 1: Add the equipment name 2: Add the user name	1
978	Network	Raw printing job (Paper feeding drawer)	PRT	0 <0-5>	SYS	0: AUTO 1: 1st drawer 2: 2nd drawer 3: PFP upper drawer 4: PFP lower drawer 5: LCF	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
979	Network	Raw printing job (PCL symbol set)	PRT	0 <0-39>	SYS	0: Roman-8 1: ISO 8859/1 Latin 1 2: ISO 8859/2 Latin 2 3: ISO 8859/9 Latin 5 4: PC-8, Code Page 437 5: PC-8 D/N, Danish/ Norwegian 6: PC-850, Multilingual 7: PC-852, Latin2 8: PC-8 Turkish 9: Windows 3.1 Latin 1 10: Windows 3.1 Latin 2 11: Windows 3.1 Latin 5 12: DeskTop 13: PS Text 14: Ventura International 15: Ventura US 16: Microsoft Publishing 17: Math-8 18: PS Math 19: Ventura Math 20: Pi Font 21: Legal 22: ISO 4: United Kingdom 23: ISO 6: ASCII 24: ISO 11 25: ISO 15: Italian 26: ISO 17 27: ISO 21: German 28: ISO 60: Danish/ Norwegian 29: ISO 69: French 30: Windows 3.0 Latin 1 31: MC Text 32: PC Cyrillic 33: ITC Zapf Dingbats 34: ISO 8859/10 Latin 6 35: PC-775 36: PC-1004 37: Symbol 38: Windows Baltic 39: Wingdings	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
983	User interface	Default setting of print menu	ALL	0 <0-3>	SYS	0: Private print screen (Job list of log-in user is displayed if user authentication is enabled.) 1: Hold print screen (Job list of log-in user is displayed if user authentication is enabled.) 2: Private print screen (If the private print screen is displayed when user authentication is enabled, user list is displayed if user logs in as GUEST, and job list of log-in user is displayed if user logs in as general user.) 3: Hold print screen (If the private print screen is displayed when user authentication is enabled, user list is displayed if user logs in as GUEST, and job list of log-in user is displayed if user logs in as general user.) * If user data department management (08-1482) is changed from OFF to ON, the value in this code changes from "0" to "1", and "2" to "3". The value does not change if it is "1" or "3". Reset this value as necessary when changing user data department management (08-1482) from OFF to ON.	1
986	General	Copy function setting	PPC	0 <0-1>	SYS	Sets the copy function to be invalid. 0: Valid 1: Invalid	1
988	Paper feeding	Setting of paper size switching to 13" LG	ALL	0 <0-2>	SYS	0: Not switched 1: LG→13"LG 2: FOLIO→13"LG	1
995	Maintenance	Equipment number (serial number) display	ALL	- <10 digits>	SYS	This code can be also keyed in from the adjustment mode (05-976). 10 digits	11

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
999	Maintenance	FSMS total counter	ALL	0 <8 digits>	SYS	Refer to values of total counter.	1
1002	Network	Selection of NIC board status information	ALL	1 <1-2>	NIC	1: Not printed out when the copier is restarted 2: Printed out when the copier is restarted	12
1003	Network	Communication speed and settings of Ethernet	ALL	1 <1-5>	NIC	1: Auto 2: 10MBPS Half Duplex 3: 10MBPS Full Duplex 4: 100MBPS Half Duplex 5: 100MBPS Full Duplex	12
1006	Network	Address Mode	ALL	2 <1-3>	NIC	1: Fixed IP address 2: Dynamic IP address 3: Dynamic IP address without AutoIP	12
1006 (EFI)	Network	Address Mode	ALL	1 <1-3>	NIC	1: Fixed IP address 2: Dynamic IP address 3: Dynamic IP address without AutoIP * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1007	Network	Domain name	ALL	-	NIC	Maximum 96 letters	12
1008	Network	IP address	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1008 (EFI)	Network	IP address	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 10.250.250.249) * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1009	Network	Subnet mask	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1009 (EFI)	Network	Subnet mask	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 255.255.255.252) * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1010	Network	Gateway	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1010 (EFI)	Network	Gateway	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 10.250.250.250) * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1011	Network	Availability of IPX	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1011 (EFI)	Network	Availability of IPX	ALL	2 <1-2>	NIC	1: Available 2: Not available * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1012	Network	Network frame type	ALL	1 <1-5>	NIC	1: Automatic 2: IEEE802.3 3: Ethernet II 4: IEEE802.3 SNAP 5: IEEE802.2	12
1014	Network	Availability of AppleTalk	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1014 (EFI)	Network	Availability of AppleTalk	ALL	2 <1-2>	NIC	1: Available 2: Not available * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1015	Network	Zone setting of AppleTalk	ALL	*	NIC	Maximum 32 letters *: Wildcard character	12
1016	Network	Availability of LDAP	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1017	Network	Availability of DNS	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1018	Network	IP address to DNS server (Primary)	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1019	Network	IP address to DNS server (Secondary)	ALL	-	NIC	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1020	Network	DDNS Desired level	ALL	1 <1-5>	NIC	1: Invalid 2: Valid 3: Valid 4: Valid 5: Valid	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1021	Network	Availability of SLP	ALL	1 <1-2>	NIC	Sets the availability of SLP on NetWare. 1: Enabled 2: Disabled	12
1021 (EFI)	Network	Availability of SLP	ALL	2 <1-2>	NIC	Sets the availability of SLP on NetWare. 1: Enabled 2: Disabled	12
1022	Network	From Name Creation setting in SMTP authentication	ALL	0 <0-2>	SYS	0: Not edited 1: Account name of From Address +Device name 2: LDAP searching	1
1023	Network	NetBios name	ALL	MFP_ serial	UTY	Maximum 15 letters The network-related serial number of the equipment appears at “serial”	12
1024	Network	Name of WINS server or IP address (Primary)	ALL	-	UTY	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1025	Network	Name of WINS server or IP address (Secondary)	ALL	-	UTY	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1026	Network	Availability of Bindery	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1027	Network	Availability of NDS	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1028	Network	Directory service context	ALL	-	NIC	Maximum 127 letters	12
1029	Network	Directory service tree	ALL	-	NIC	Maximum 47 letters	12
1030	Network	Availability of HTTP server	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1031	Network	Port number to NIC HTTP server	ALL	80 <1-65535>	NIC		12
1032	Network	Port number to system HTTP server	ALL	8080 <1-65535>	NIC		12
1037	Network	Availability of SMTP client	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1038	Network	FQDN or IP address to SMTP server	ALL	-	NIC	Maximum 128 Bytes	12
1039	Network	TCP port number of SMTP client	ALL	25 <1-65535>	NIC		12
1040	Network	Availability of SMTP server	ALL	1 <1-2>	UTY	1: Available 2: Not available	12
1041	Network	TCP port number of SMTP server	ALL	25 <1-65535>	UTY		12
1042	Network	E-mail box name to SMTP server	ALL	-	UTY	Maximum 192 letters	12
1043	Network	Availability of Offramp	ALL	2 <1-2>	UTY	1: Available 2: Not available	12
1044	Network	Offramp security	ALL	1 <1-2>	UTY	1: Available 2: Not available	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1045	Network	Printing at Offramp	ALL	1 <1-2>	UTY	1: Available 2: Not available	12
1046	Network	Availability of POP3 clients	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1047	Network	FQDN or IP address to POP3 server	ALL	-	NIC	Maximum 128 Bytes	12
1048	Network	Types of POP3 server	ALL	1 <1-3>	NIC	1: Automatic 2: POP3 3: APOP	12
1049	Network	Login name to POP3 server	ALL	-	NIC	Maximum 96 letters	12
1050	Network	Login password to POP3	ALL	-	NIC	Maximum 96 letters	12
1051	Network	E-mail reception interval	ALL	5 <0-4096>	NIC	Unit: Minute	12
1052	Network	TCP port number of POP3 client	ALL	110 <1-65535>	NIC		12
1055	Network	TCP port number of FTP client	ALL	21 <1-65535>	UTY		12
1059	Network	Availability of FTP server	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1060	Network	TCP port number of FTP server	ALL	21 <1-65535>	UTY		12
1060 (EFI)	Network	TCP port number of FTP server	ALL	50021 <1-65535>	UTY	* The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1063	Network	MIB function	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1065	Network	Setting of read Community	ALL	public	NIC	Maximum 31 letters	12
1066	Network	Setting of read/Write Community	ALL	private	NIC	Maximum 31 letters	12
1069	Network	TRAP destination IP address	ALL	-	UTY	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	12
1070	Network	Community setting of TRAP (via IP)	ALL	public	NIC	Maximum 31 letters	12
1073	Network	Availability of Raw/TCP	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1073 (EFI)	Network	Availability of Raw/TCP	ALL	2 <1-2>	NIC	1: Valid 2: Invalid * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1074	Network	TCP port number of Raw	ALL	9100 <1-65535>	NIC		12

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1075	Network	Availability of LPD client	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1075 (EFI)	Network	Availability of LPD client	ALL	2 <1-2>	NIC	1: Valid 2: Invalid * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1076	Network	TCP port number of LPD	ALL	515 <1-65535>	NIC		12
1077	Network	LPD queue name	ALL	-	NIC	Maximum 31 letters	12
1078	Network	Availability of IPP	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1078 (EFI)	Network	Availability of IPP	ALL	2 <1-2>	NIC	1: Valid 2: Invalid * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1079	Network	Availability of IPP port number “80”	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1080	Network	TCP port number of IPP	ALL	631 <1-65535>	NIC		12
1081	Network	IPP printer name	ALL	MFP_ serial	NIC	Maximum 127 letters The network-related serial number of the equipment appears at “serial”	12
1082	Network	IPP printer location	ALL	-	NIC	Maximum 127 letters	12
1083	Network	IPP printer information	ALL	-	NIC	Maximum 127 letters	12
1084	Network	IPP printer information (more)	ALL	http:// www.e-studioseries.com	NIC	Maximum 127 letters	12
1085	Network	Installer of IPP printer driver	ALL	http:// www.e-studioseries.com	NIC	Maximum 127 letters	12
1086	Network	IPP printer “Make and Model”	ALL	-	NIC	Maximum 127 letters	12
1087	Network	IPP printer information (more) MFGR	ALL	-	NIC	Maximum 127 letters	12
1088	Network	IPP message from operator	ALL	-	NIC	Maximum 127 letters	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1089	Network	Availability of FTP print	ALL	1 <1-2>	NIC	1: Available 2: Not available	12
1089 (EFI)	Network	Availability of FTP print	ALL	2 <1-2>	NIC	1: Available 2: Not available * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1090	Network	Printer user name of FTP	ALL	print	NIC	Maximum 31 letters	12
1091	Network	Printer user password of FTP	ALL	-	NIC	Maximum 31 letters	12
1092	Network	TCP port number to FTP print server	ALL	21 <1-65535>	NIC		12
1093	Network	Login name to Novell print server	ALL	MFP_ serial	NIC	Maximum 47 letters The network-related serial number of the equipment appears at “serial”	12
1094	Network	Login password to Novell print server	ALL	-	NIC	Maximum 31 letters	12
1095	Network	Name of SearchRoot server	ALL	-	NIC	Maximum 31 letters	12
1096	Network	Scan rate setting of print queue	ALL	5 <1-255>	NIC	Unit: Second	12
1097	Network	Page number limitation for printing text of received Email	ALL	5 <1-99>	UTY		12
1098	Network	MDN return mail setting when receiving E-mail	ALL	2 <1-2>	UTY	1: Valid 2: Invalid	12
1099	Network	Trap destination of IPX	ALL	-	UTY	24 letters (Valid from 0 to 9 and from A to F)	12
1100	Network	Method of SMTP server authentication	ALL	1 <1-7,10>	NIC	1: Disable 2: Plain 3: Login 4; Cram-MD5 5: Digest MD5 6: Kerberos 7: NTLM 10: Auto	12
1101	Network	Login name for SMTP server authentication	ALL	-	NIC	Maximum 64 letters	12
1102	Network	Login password for SMTP server authentication	ALL	-	NIC	Maximum 64 letters	12
1103	Network	Bonjour setting	ALL	1 <1-2>	NIC	1: Valid 2: Invalid	12
1103 (EFI)	Network	Bonjour setting	ALL	2 <1-2>	NIC	1: Valid 2: Invalid * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1104	Network	Link local host name	ALL	MFP_ serial	NIC	Maximum 127 letters The network-related serial number of the equipment appears at “serial”	12
1105	Network	Service name setting	ALL	Refer to contents	NIC	Maximum 63 letters The network-related serial number of the equipment appears at “serial” <Default value> e-STUDIO2830C: TOSHIBA e-STUDIO2830C_serial e-STUDIO3520C: TOSHIBA e-STUDIO3520C_serial e-STUDIO4520C: TOSHIBA e-STUDIO4520C_serial	12
1111	Network	POP Before SMTP setting	ALL	2 <1-2>	NIC	1: Valid 2: Invalid	12
1112	Network	Host name	ALL	MFP_ serial	NIC	Maximum 63 letters The network-related serial number of the equipment appears at “serial”	12
1113	Network	Windows domain No.1 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1114	Network	Sending mail text of InternetFAX	ALL	1 <0-1>	SYS	0: Invalid 1: Valid	1
1117	Network	SMB time-out period	ALL	60 <1-9999>	SYS	Unit: Second	1
1118	General	Clearing of TAT partition	ALL	-	SYS		3
1119	Network	Initialization of NIC information	ALL	-	-	Initializes only the information of the Network setting items.	3
1121	Network	PDC (Primary Domain Controller) name No.1 of authentication	ALL	-	UTY	Maximum 128 letters	12
1122	Network	BDC (Backup Domain Controller) name No.1 of authentication	ALL	-	UTY	Maximum 128 letters	12
1123	Network	Windows domain of device authentication	ALL	4 <3-4>	UTY	3: ON (Domain selected) 4: OFF (Work group selected)	12
1124	Network	Workgroup name	ALL	workgroup	UTY	Maximum 15 letters	12
1125	General	Data writing of address book data import (overwriting method)	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
1126	Counter	Validity of interrupt copying when external counters are installed	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
1130	User interface	Job Build Function	ALL	1 <0-1>	SYS	Sets the Job Build Function. 0: Invalid 1: Valid	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1131	User interface	Maximum number of time job build performed	ALL	1000 <5-1000>	SYS	Sets the maximum number of time a job build has been performed. 5-1000: 5 to 1000 times	1
1135	Paper feeding	Default setting of drawers (Printer/BOX)	ALL	1 <1-5>	SYS	1: LCF 2: 1st drawer 3: 2nd drawer 4: PFP upper drawer 5: PFP lower drawer	1
1138	Network	LDAP search method setting	ALL	0 <0-3>	SYS	Sets the search method when performing a LDAP search. 0: Partial match 1: Prefix match 2: Suffix match 3: Full match	1
1140	User interface	Restriction of the template function with the administrator privilege	ALL	0 <0-1>	SYS	Selects the restriction of the template function usage setting. 0: No restriction 1: Only available with the administrator privilege.	1
1141	Network	Display of MAC address	ALL	-	SYS	(**:**:**:**:**:**) The address is displayed as above (6-byte data is divided by a colon at every 1 bytes).	2
1145	Maintenance (Remote)	Counter notification Remote FAX setting	ALL	-	SYS	Maximum 32 digits Enter a hyphen with the [MONITOR/PAUSE] button.	11
1149	General	Enhanced bold for PCL6	PRT	0 <0-1>	SYS	0: OFF 1: ON(Enhanced bold for PCL6.)	1
1422	Data overwrite enabler	HDD data overwriting type setting	ALL	0 <0-2>	SYS	Select the type of the overwriting level; LOW, MEDIUM, or HIGH for deleting HDD data. (This setting is enabled only when the GP-1070 is installed.) 0: LOW 1: MEDIUM 2: HIGH	1
1424	Data overwrite enabler	HDD data clearing type setting (forcible clearing)	ALL	0 <0-2>	SYS	Select the type of the overwriting level; LOW, MEDIUM, or HIGH for deleting HDD data. (This setting is enabled only when the GP-1070 is installed.) 0: LOW 1: MEDIUM 2: HIGH	1
1426	General	Forcible HDD data clearing	ALL	-	-	HDD data is cleared in the procedure set in 08-1424.	3

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1428	Data overwrite enabler	Forcible SRAM backup data all clearing	ALL	-	-	When this code is performed, the equipment cannot be started up. * This setting is enabled only when the GP-1070 is installed.	3
1429	User interface	Margin width (Top/Bottom, Left/Right)	ALL	Front: 7/ Back: 7 <2-100/ -100-100>	SYS	This setting is not reflected in “Right”, even if the value less than 2 is set for “Back”.	10
1430	User interface	Margin width (Bookbinding margin)	ALL	14 <2-30>	SYS		1
1431	Paper feeding	ACC (AT_CASETTE_CHANGE) for Printer/Box printing	ALL	1 <0-2>	SYS	0 Enabled when a drawer is specified 1: Only in the same paper direction 2: In both same direction and different directions	1
1432	Network	Private-print-only mode	ALL	0 <0-3>	SYS	0: Normal 1: Private-print-only mode 2: Hold-print-only mode 3: Private/Hold-print-only mode * If this code is set to anything other than "0" and user data department management is changed from OFF to ON, the value in this code becomes "2". Only "0" or "2" is selectable for this code while user data department management is ON.	1
1435	Network	“Disable private and proof print save” function	ALL	0 <0-1>	SYS	0: Function OFF (no restriction on data saving or other operations) 1: Function ON (Data saving or other operations are restricted)	1
1436	Network	“Disable fax save” function	ALL	0 <0-1>	SYS	0: Function OFF (no restriction on data saving or other operations) 1: Function ON (Data saving or other operations are restricted	1
1438	Paper feeding	Tab paper automatic feeding setting(Remote)	ALL	1 <0-1>	SYS	0: Invalid 1: Valid	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1440	Network	IP Conflict Detect	ALL	1 <1-2>	-	OFF/ON 1: Valid 2: Invalid	12
1441	Network	SNTP Enable	ALL	2 <1-2>	-	OFF/ON 1: Valid 2: Invalid	12
1442	Network	SNTP Polling rate	ALL	24 <1-168>	-	Data obtaining interval (Unit: Hour)	12
1444	Network	Primary SNTP Address	ALL	-	-	SNTP server IP Address (Primary)	12
1445	Network	Secondary SNTP Address	ALL	-	-	SNTP server IP Address (Secondary)	12
1446	Network	Port number to SNTP	ALL	123 <1-65535>	-		12
1447	Network	IPP administrator name	ALL	-	-	This should be an account which can control all IPP jobs.	12
1448	Network	IPP administrator password	ALL	-	-	This should be the password of an account which can control all IPP jobs.	12
1449	Network	IPP authentication method	ALL	1 <1-2>	-	1: Disabled 2: Basic	12
1450	Network	User name for IPP authentication	ALL	-	-	This should be the account at the time IPP authentication was performed.	12
1451	Network	Password for IPP authentication	ALL	-	-	This should be the password of the account at the time IPP authentication was performed.	12
1464	Network	Samba server ON/OFF setting	ALL	1 <1-4>	NIC	1: Samba enabled 2: Samba disabled 3: Print Share disabled 4: File Share disabled	12
1464 (EFI)	Network	Samba server ON/OFF setting	ALL	2 <1-4>	NIC	1: Samba enabled 2: Samba disabled 3: Print Share disabled 4: File Share disabled * The default value is reflected by performing 08-700 when the EFI Printer Board is connected.	12
1468	General	User data management limitation setting	ALL (color)	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1469	General	User data management limitation Setting by number of printouts	ALL (color)	0 <7 digits>	SYS	0-9,999,999: 0-9,999,999 sheets	1
1470	General	Device authentication function setting	ALL	0 <0-1>	SYS	0: OFF 1: ON	1
1471	General	User authentication method	ALL	0 <0-2>	SYS	0: Local authentication 1: Windows domain authentication 2: LDAP authentication	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1472	General	User data management automatic registration function setting	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1473	General	User data management limitation setting	ALL (black)	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1474	General	User data management limitation Setting by number of printouts	ALL (black)	0 <7 digits>	SYS	0-9,999,999: 0-9,999,999 sheets	1
1476	Network	Restriction on Address book operation by administrator	ALL	0 <0-1>	SYS	Some restrictions can be given on the administrator for operating the Address book. 0: No restriction 1: Can be operated only under the administrator's authorization	1
1477	Network	Restriction on "To"/"cc" ("bcc") address	ALL	0 <0-4>	SYS	0: No restriction 1: Can be set from both of the Address book and LDAP server 2: Can be set only from the Address book 3: Can be set only from the LDAP server 4: Can be set only from the authenticated LDAP server * This setting is available when the user authentication or E-mail authentication is enabled.	1
1478	User interface	Display of paper size setting by installation operation of drawers	ALL	JPN/ MJD: 0 Other: 1 <0-1>	SYS	0: Not displayed 1: Displayed	1
1481	General	User data management clearing	ALL	-	-	All the user data in the database and backup files can be deleted.	3
1482	General	User data department management	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1483	General	User data recovery	ALL	-	-	The data in the database is overwritten with the data in the backup file.	3
1484	Network	Authentication method of “Scan to Email”	ALL	0 <0-2>	SYS	0: Disabled 1: SMTP authentication 2: LDAP authentication	1
1485	Network	Setting whether use of the Internet FAX is permitted at the time of authentication	ALL	0 <0-1>	SYS	0: Not permitted 1: Permitted	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1487	Network	"From" address assignment method at the time of authentication	ALL	0 <0-2>	SYS	0: User name + @ + Domain name 1: LDAP searching 2: Use the address registered at "From" field of E-mail setting	1
1489	Network	Setting for "From" address edit at "Scan to Email"	ALL	0 <0-1>	SYS	0: Not permitted 1: Permitted	1
1491	Network	E-mail domain name	ALL	-	SYS	96 + 2 (delimiter) character * ASCII sequence only	11
1492	Paper feeding	Detection method of 13" LG for single-size document	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1493	Network	Role Base Access Function	ALL	0 <0-1>	SYS	0: Function off (No restriction on data saving and other operations) 1: Function on (Data saving and other operations have some restrictions)	1
1495	Maintenance	Service call checking period setting	ALL	6 <0-12>	SYS	0: No checking period specified (= Calls service technician immediately) 0: 10 minutes 1: 30 minutes 3: 1 hour 4: 6 hours 5: 12 hours 6: 24 hours 7: 48 hours 8: 7 days 9: 1 month 10: 1 year 11: 5 years 12: Not limited (= Calls service technician if such error has occurred in the past even once or more)	1
1496	General	Operation setting for User authentication/registration	ALL	1 <0-1>	SYS	0: Disables operation setting for User authentication/ registration 1: Enables operation setting for User authentication/ registration	1
1497	Electronic Filing	e-Filing Access Mode (for Client)	ALL	0 <0-2>	SYS	0: Mode 1 1: Mode 2 2: Mode 3	1
1498	FAX	Inbound FAX function (Forwarding by TSI)	FAX	1 <0-1>	SYS	0: OFF (Function disabled) 1: ON (Function enabled)	1
1661	Wireless LAN	Wireless LAN driver SSID	ALL	-	-	Maximum 32 letters	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1662	Wireless LAN	Wireless LAN driver Network type	ALL	1 <1-2>	-	1: Infrastructure 2: Ad-Hoc	12
1663	Wireless LAN	Wireless LAN driver Security	ALL	4 <1-7>	-	1: 802.1x 2: WPA-PSK 3: WEP 4: NONE 5: WPA 6: WPA2 7: WPA2PSK	12
1664	Wireless LAN	Wireless LAN driver Encryption system	ALL	1 <1-3>	-	1: TKIP 2: AES 3: Dynamic WEP	12
1665	Wireless LAN	Wireless LAN driver Transmission output power	ALL	1 <1-5>	-	1: 100% 2: 50% 3: 25% 4: 12.5% 5: min	12
1666	Wireless LAN	Wireless LAN driver Transmission rate	ALL	1 <1-2>	-	1: Auto 2: Manual	12
1667	Wireless LAN	Wireless LAN driver Transmission rate value	ALL	1 <1-12>	-	1: 1 2: 2 3: 5.5 4: 11 5: 6 6: 9 7: 12 8: 18 9: 24 10: 36 11: 48 12: 54	12
1668	Wireless LAN	Wireless LAN driver Operation channel	ALL	1 <1-2>	-	1: Auto 2: Manual	12
1669	Wireless LAN	Wireless LAN driver Operation channel value	ALL	1 <1-11>	-		12
1670	Wireless LAN	Wireless LAN driver WEP bit number	ALL	1 <1-3>	-	1: 64 2: 128 3: 152	12
1671	Wireless LAN	Wireless LAN driver WEP key entry system	ALL	2 <1-2>	-	1: Hex 2: ASCII	12
1672	Wireless LAN	Wireless LAN driver WEP key value	ALL	-	-	Maximum 32 letters	12
1673	Wireless LAN	Wireless LAN driver WPA-PSK passphrase	ALL	-	-	Maximum 64 letters	12
1674	Wireless LAN	Wireless LAN driver Sleep mode setting	ALL	1 <1-3>	-	1: Off 2: Max 3: Normal	12
1675	Wireless LAN	Wireless LAN driver Slot-time limitation	ALL	1 <1-2>	-	1: Long 2: Short	12
1676	Wireless LAN	Wireless LAN driver Number of times of software retry	ALL	5 <0-1000>	-		12
1677	Wireless LAN	Wireless LAN driver Preamble	ALL	1 <1-2>	-	1: Long 2: Longshort	12
1678	Wireless LAN	Wireless LAN driver Operation mode	ALL	1 <1-3>	-	1: All 2: 11b 3: 11g	12
1679	Wireless LAN	Wireless LAN supplicant Wireless LAN setting	ALL	1 <1-3>	-	This setting is whether the wireless LAN connection is enabled or disabled. 1: Unset 2: Enabled 3: Disabled	12
1681	Wireless LAN	Wireless LAN supplicant Path name for client certificate	ALL	-	-	This should be the path name in full where the client certificate is located. (Maximum 255 letters)	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1682	Wireless LAN	Wireless LAN supplicant Path name for secret key of client certificate	ALL	-	-	This should be the path name in full where the client certificate is located. (Maximum 255 letters)	12
1684	Wireless LAN	Wireless LAN supplicant Path name for CA self-certificate	ALL	-	-	This should be the path name in full where the CA self-certificate is located. (Maximum 255 letters)	12
1685	Wireless LAN	Wireless LAN supplicant EAP user name	ALL	-	-	This should be the user name when the EAP-TLS is used.	12
1686	Wireless LAN	Wireless LAN supplicant EAP user name	ALL	-	-	This should be the user name when the PEAP is used.	12
1689	Wireless LAN	Wireless LAN supplicant Authentication interval	ALL	30 <30-65535>	-	This should be the time-out interval between EAP responses. 30: 30 seconds	12
1690	Wireless LAN	Wireless LAN supplicant Holding interval	ALL	60 <60-65535>	-	The EAP authentication will start after having been waited in this period when an EAP failure was received. 60: 60 seconds	12
1691	Wireless LAN	Wireless LAN supplicant EAPOL-Start Number of times of packet retry	ALL	3 <1-65535>	-	When an EAPOL-Start packet has been sent and the request ID cannot be received, this EAPOL-Start packet will be re-sent for the number of times set in this code. 3: 3 times	12
1692	Wireless LAN	Wireless LAN supplicant Session resume	ALL	2 <1-2>	-	This setting is whether the pre-master key should be updated or not upon a TLS re-negotiation. 1: Session is resumed 2: Session is not resumed	12
1693	Wireless LAN	Wireless LAN supplicant MAC Frame size	ALL	1398 <1-1398>	-	This is a MAC frame size used in the wireless LAN connection. The data is fragmented into this size. 1398: 1398 bytes	12
1696	Wireless LAN	Wireless LAN supplicant Device file setting for obtaining random number	ALL	/AGB/dev/random	-	This should be the device file name which can obtain a seed to initialize the WEP PRNG for xsupplicant. (Maximum 255 letters)	12
1697	Wireless LAN	Wireless LAN supplicant CRL directory designation	ALL	-	-	This should be the path name of the directory in full where the CRL file is located. (Maximum 255 letters)	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1699	Wireless LAN	Wireless LAN supplicant EAP authentication type	ALL	1 <1-3>	-	This setting is for the EAP authentication type which xsupplicant can authenticate. 1: EAP-TLS 2: PEAP 3: EAP-TLS and PEAP	12
1700	Wireless LAN	Wireless LAN supplicant CN name	ALL	-	-	This should be an authentication server name (basically a domain name in full). (Maximum 255 letters)	12
1701	Wireless LAN	Wireless LAN supplicant CN name check	ALL	1 <1-2>	-	1: NO 2: YES	12
1704	Wireless LAN	Wireless LAN supplicant Update interval of PTK (Pairwise Transient Key)	ALL	0 <0-720>	-	The update interval of a secret key across AP (Access Point) and STA (Station) can be set. This interval is for updating the secret key from STA. 0: Not updated 1-720: 1-720 minutes of interval	12
1705	Wireless LAN	Wireless LAN supplicant Strict packet check	ALL	1 <1-2>	-	The Ack bit and request bit of EAPOL-Key is checked. 1: Not checked 2: Checked	12
1706	Wireless LAN	Wireless LAN supplicant Priority change at 4-way handshake	ALL	1 <1-2>	-	A higher priority is given to the xsupplicant task when a 4-way handshake is started. 1: Priority not changed 2: Priority changed	12
1707	Wireless LAN	Wireless LAN supplicant Security level	ALL	1 <1-3>	-	The encryption capability output in TLS client Hello message can be selected. 1: LOW 2: MIDDLE 3: HIGH	12
1708		Selectable security level (EAP-TLS)	ALL	1 <1-3>	-	These are the security level which can be selected from the user interface. This setting is not applied in case of PEAP. (“LOW” and “MIDDLE” is mandatory for PEAP) 1: LOW + MIDDLE + HIGH 2: MIDDLE + HIGH 3: HIGH	12
1710	Bluetooth	Bluetooth ON/OFF setting	ALL	1 <0-1>	SYS	0: OFF 1: ON	1
1711	Bluetooth	Bluetooth Device name	ALL	MFP	SYS	Maximum 32 letters	11
1712	Bluetooth	Bluetooth Discovery	ALL	1 <0-1>	SYS	0: Not allowed 1: Allowed	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1713	Bluetooth	Bluetooth Security	ALL	1 <0-1>	SYS	0: Security function OFF 1: Security function ON	1
1714	Bluetooth	Bluetooth PIN	ALL	0000	SYS	Maximum 8 digits (8-digit sequence) This setting is valid only when the bluetooth security function is ON.	11
1715	Bluetooth	Bluetooth Data encryption	ALL	1 <0-1>	SYS	0: Not encrypted 1: Encrypted This setting is valid only when the bluetooth security function is ON.	1
1719	Bluetooth	Bluetooth BIP Print type	ALL	0 <0-3>	SYS	0: Fit page 1: 1/2 size 2: 1/4 size 3: 1/8 size	1
1720	Network	IP address range for IP filter (Minimum area 1)	ALL	-	-	IP filter minimum area 1 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1721	Network	IP address range for IP filter (Maximum area 1)	ALL	-	-	IP filter maximum area 1 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1722	Network	IP address range for IP filter I (Minimum area 2)	ALL	-	-	IP filter minimum area 2 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1723	Network	IP address range for IP filter (Maximum area 2)	ALL	-	-	IP filter maximum area 2 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1724	Network	IP address range for IP filter (Minimum area 3)	ALL	-	-	IP filter minimum area 3 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1725	Network	IP address range for IP filter (Maximum area 3)	ALL	-	-	IP filter maximum area 3 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1726	Network	IP address range for IP filter (Minimum area 4)	ALL	-	-	IP filter minimum area 4 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1727	Network	IP address range for IP filter (Maximum area 4)	ALL	-	-	IP filter maximum area 4 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1728	Network	IP address range for IP filter (Minimum area 5)	ALL	-	-	IP filter minimum area 5 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1729	Network	IP address range for IP filter (Maximum area 5)	ALL	-	-	IP filter maximum area 5 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1730	Network	IP address range for IP filter (Minimum area 6)	ALL	-	-	IP filter minimum area 6 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1731	Network	IP address range for IP filter (Maximum area 6)	ALL	-	-	IP filter maximum area 6 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1732	Network	IP address range for IP filter (Minimum area 7)	ALL	-	-	IP filter minimum area 7 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1733	Network	IP address range for IP filter (Maximum area 7)	ALL	-	-	IP filter maximum area 7 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1734	Network	IP address range for IP filter (Minimum area 8)	ALL	-	-	IP filter minimum area 8 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1735	Network	IP address range for IP filter (Maximum area 8)	ALL	-	-	IP filter maximum area 8 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1736	Network	IP address range for IP filter (Minimum area 9)	ALL	-	-	IP filter minimum area 9 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1737	Network	IP address range for IP filter (Maximum area 9)	ALL	-	-	IP filter maximum area 9 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1738	Network	IP address range for IP filter (Minimum area 10)	ALL	-	-	IP filter minimum area 10 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1739	Network	IP address range for IP filter (Maximum area 10)	ALL	-	-	IP filter maximum area 10 000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12
1740	Network	SSL setting SSL ftp server OFF/ON	ALL	2 <1-2>	-	1: Enabled 2: Disabled	12
1741	Network	SSL setting HTTP server port number	ALL	10443 <1-65535>	-	SSL HTTP server port number	12
1742	Network	SSL setting IPP server OFF/ON setting	ALL	2 <1-2>	-	1: Enabled 2: Disabled	12
1743	Network	SSL setting IPP server port number	ALL	443 <1-65535>	-	SSL IPP server port number	12
1744	Network	SSL setting SSL ftp server OFF/ON	ALL	2 <1-2>	-	OFF/ON 1: Valid 2: Invalid	12
1745	Network	SSL setting SSL ftp server Port	ALL	990 <1-65535>	-	Port number to FTP Server	12
1746	Network	SSL setting SSL LDAP Client OFF/ON	ALL	2 <1-3>	-	OFF/ON 1: Valid (Accepts all the certification of the server) 2: Invalid 3: Use the imported certification.	12
1747	Network	SSL setting SSL LDAP Client Port	ALL	636 <1-65535>	-	Port number to LDAP Server	12
1748	Network	SSL setting SSL POP3 Client OFF/ON	ALL	2 <1-3>	-	OFF/ON 1: Valid (Accepts all the certification of the server) 2: Invalid 3: Use the imported certification.	12
1749	Network	SSL setting SSL POP3 Client Port	ALL	995 <1-65535>	-	Port number to POP3 Server	12

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1750	Network	SSL setting SSL SMTP Client OFF/ON		ALL	2 <2-6>	-	OFF/ON 2: Invalid 3: SMTP with TLS (STARTTLS) Accept all the certification of the server. 4: SMTPS (SMTP over SSL) Accept all the certification of the server. 5: SMTP with TLS (STARTTLS) Use the imported certification. 6: SMTPS (SMTP over SSL) Use the imported certification.	12
1755	Network	Enabling server's IP address acquired by DHCP		ALL	1 <1-2>	-	Domain Name Server option (6) 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	12
1756	Network	Enabling server's IP address acquired by DHCP		ALL	1 <1-2>	-	NetBIOS over TCP/IP Name Server option (44) = Primary and Secondary Wins NAME 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	12
1757	Network	Enabling server's IP address acquired by DHCP		ALL	2 <1-2>	-	The Host Name Vendor Extension option (12) 1: Enabled 2: Disabled This value is used only when DHCP is enabled.	12
1759	Network	Enabling server's IP address acquired by DHCP	SMTP Server Option (69) Simple Mail Server Address	ALL	2 <1-2>	-	OFF/ON 1: Valid 2: Invalid	12
1760			POP3 Server Option (70) Post Office Server Address	ALL	2 <1-2>	-	OFF/ON 1: Valid 2: Invalid	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1762	Network	Enabling server's IP address acquired by DHCP	ALL	2 <1-2>	-	SNTP Server Option (42) NTP Server Address 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	12
1764	Wireless LAN	Wireless LAN supplicant Control sequence setting of “Cipher Suite”	ALL	-	-	Maximum 255 letters	12
1765	Wireless LAN	Wireless LAN supplicant Path name for user certificate	ALL	-	-	Maximum 63 letters	12
1766	Wireless LAN	Wireless LAN supplicant Path name entered for CA self-certificate	ALL	-	-	Maximum 63 letters	12
1767	Network	Enabling server's IP address acquired by DHCP	ALL	1 <1-2>	-	DNS domain name Option (15) DNS domain name of the client 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	12
1768	Network	Previous IP address	ALL	-	-	000.000.000.000-255.255.255.255 (Default value: 000.000.000.000)	12

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1772	General	Card reading device setting	ALL	0 <10 digits>	SYS	To enable the e-Bridge ID Gate, a card reading device should be set in the order of “ABYYZZZZ”. (Enter the corresponding values to “A”, “B”, “YY” and “ZZZZ”.) - AB:Special setting - A :Debugging NIC 0: Not used 1: Used - B :Interface 0: USB connection 1: N/A - YY: Authentication 00: No authentication using a noncontact IC card 02: Authentication using a noncontact IC card (KP-2003) 03: Authentication using a noncontact IC card (KP-2005) 04: Authentication using a noncontact IC card (KP-2004) - ZZZZ: Sub-code 0000: No authentication using a noncontact IC card 0001: Use CSN (Card Serial Number) of a noncontact IC card 0002: Use the Data Area Address Information of a noncontact IC card	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1773	General	Card reader format information -1	ALL	0 <10 digits>	SYS	To access the data in the noncontact IC card, the Key Information “LLLL” and the Sector Number “MMMM” should be set. The “LLLL” should be set first, and then “MMMM”. KP-2003: LLLL: System code (hexadecimal number) MMMM: Service code (hexadecimal number) KP-2005: LLLL : Key information MMMM: Sector number (hexadecimal number) * This setting is not printed in the list print mode because it contains customer information.	5

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1774	General	Card reader format information -2	ALL	0 <10 digits>	SYS	The data of the block number in the noncontact IC is set. KP-2003: <PPQRSSTU (hexadecimal number)> PP:1st block Q: 1st block beginning byte R: 1st block endingbyte SS:2nd block T: 2nd block beginning byte U: 2nd block ending byte KP-2005: <RRBSEbse (hexadecimal number)> RR:00 (Fixed) B: 1st area block number S: 1st area beginning byte offset E: 1st area ending byte offset b: 2nd area block number s: 2nd area beginning byte offset e: 2nd area ending byte offset * If the 2nd block/area is not used, set the SSTU to “FFFF” (hexadecimal number), the bse to “FFF” (hexadecimal number). * This setting is not printed in the list print mode because it contains customer information.	5
1775	General	Card reader format information -3	ALL	0 <20 digits>	SYS	Security key * in the [Key Information] of the [Sector Number] for KP-2005 set in the code 08-1773 should be entered. * Earlier than V1.14: "KKKKKKKKKKKK" (12 digits) <hexadecimal number> V1.14 or later: "0000KKKKKKKKKKKK" (16 digits) <hexadecimal number> * This setting is not printed in the list print mode because it contains customer information.	5

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1776-0	General	Card authentication LDAP server	Card authentication LDAP server 1	ALL	0 <0-100>	SYS	LDAP server number for the card authentication when a noncontact IC card is used should be set.	4
1776-1			Card authentication LDAP server 2	ALL	0 <0-100>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1776-2	General	Card authentication LDAP server	Card authentication LDAP server 3	ALL	0 <0-100>	SYS	LDAP server number for the card authentication when a noncontact IC card is used should be set.	4
1776-3			Card authentication LDAP server 4	ALL	0 <0-100>	SYS		4
1776-4			Card authentication LDAP server 5	ALL	0 <0-100>	SYS		4
1776-5			Card authentication LDAP server 6	ALL	0 <0-100>	SYS		4
1776-6			Card authentication LDAP server 7	ALL	0 <0-100>	SYS		4
1776-7			Card authentication LDAP server 8	ALL	0 <0-100>	SYS		4
1776-8			Card authentication LDAP server 9	ALL	0 <0-100>	SYS		4
1776-9			Card authentication LDAP server 10	ALL	0 <0-100>	SYS		4
1776-10			Card authentication LDAP server 11	ALL	0 <0-100>	SYS		4
1776-11			Card authentication LDAP server 12	ALL	0 <0-100>	SYS		4
1776-12			Card authentication LDAP server 13	ALL	0 <0-100>	SYS		4
1776-13			Card authentication LDAP server 14	ALL	0 <0-100>	SYS		4
1776-14			Card authentication LDAP server 15	ALL	0 <0-100>	SYS		4
1776-15			Card authentication LDAP server 16	ALL	0 <0-100>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1778	General	Period for locking the control panel when an incorrect administrator password has been entered 3 consecutive times		ALL	1 <0-7>	SYS	0: 0 min. 1: 0.5 min. (30 sec.) 2: 1 min. 3: 3 min. 4: 5 min. 5: 10 min. 6: 15 min. 7: 30 min.	1
1779	Network	Default data saving directory of “Scan to File”		ALL	0 <0-2>	SYS	0: Local directory 1: REMOTE 1 2: REMOTE 2	1
1779 (EFI)	Network	Default data saving directory of “Scan to File”		ALL	0 <0-2>	SYS	0: Local directory 1: REMOTE 1 2: REMOTE 2 * This setting will not be initialized after performing the code 08-9952.	1
1780	User interface	Converting 1-byte katakana into 2 byte-katakana at e-mail transmission		ALL	0 <0-1>	SYS	0: Non-conversion 1: With conversion	1
1781-0	Network	Notification of scan job	When job completed	ALL	0 <0-1>	SYS	Sets the notification method of scan job completion. 0: Invalid 1: Valid	4
1781-1			On error	ALL	0 <0-1>	SYS		4
1782	Network	File name format of “Save as file” and Email transmission		ALL	0 <0-6>	SYS	Sets the file naming method for “Save as file” and Email transmission. 0: [FileName]-[Data]-[Page] 1: [FileName]-[Page]-[Data] 2: [Data]-[FileName]-[Page] 3: [Data]-[Page]-[File-Name] 4: [Page]-[FileName]-[Data] 5: [Page]-[Data]-[File-Name] 6: [HostName]_[Data]-[Page]	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1783	Network	Date display format of the file name of “Save as file” and Email transmission		ALL	0 <0-5>	SYS	Sets the data display format of the file for “Save as file” and Email transmission. 0: [YYYY][MM][DD][HH][mm][SS] 1: [YY][MM][DD][HH][mm][SS] 2: [YYYY][MM][DD] 3: [YY][MM][DD] 4: [HH][mm][SS] 5: [YYYY][MM][DD][HH][mm][SS][mm0] The order of [YY], [MM] and [DD] varies depending on the setting of the code 08-640 (Data display format).	1
1784	Network	Single page data saving directory at “Save as file”		ALL	0 <0-1>	SYS	Sets the directory where the file of “Save as file” is saved. 0: Save it under a subfolder 1: Save it without creating a subfolder	1
1785	Network	Page number display format of the file of “Save as file” and Email transmission		ALL	4 <3-6>	SYS	Sets the digit of a page number attached on the file. 3-6: 3-6 digits	1
1786	Network	Extension (suffix) format of the file of “Save as file”		ALL	3 <3-6>	SYS	Sets the extension digits of the file to be saved. 3: Auto 4: 4 digits 5: 5 digits 6: 6 digits	1
1790-0	General	Available profile display	MS_OP_00.icc	PRT	-	SYS	Displaying the current Output Profile and PG CIE Based Pure GrayTRC attribute (PG CIE Based PureGray TRC attribute in the same sub-code is displayed at the same time.)	14
1790-1			MS_OP_01.icc	PRT	-	SYS		14
1790-2			MS_OP_02.icc	PRT	-	SYS		14
1790-3			MS_OP_03.icc	PRT	-	SYS		14
1790-4			MS_OP_04.icc	PRT	-	SYS		14
1790-5			MS_OP_05.icc	PRT	-	SYS		14
1790-6			MS_OP_06.icc	PRT	-	SYS		14
1790-7			MS_OP_07.icc	PRT	-	SYS		14
1790-8			MS_OP_08.icc	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1790-9	General	Available profile display	MS_OP_09.icc	PRT	-	SYS	Displaying the current Output Profile and PG CIE Based Pure GrayTRC attribute (PG CIE Based PureGray TRC attribute in the same sub-code is displayed at the same time.)	14
1790-10			MS_OP_10.icc	PRT	-	SYS		14
1790-11			MS_OP_11.icc	PRT	-	SYS		14
1790-12			MS_OP_12.icc	PRT	-	SYS		14
1790-13			MS_OP_13.icc	PRT	-	SYS		14
1790-14			MS_OP_14.icc	PRT	-	SYS		14
1790-15			MS_OP_15.icc	PRT	-	SYS		14
1790-16			MS_OP_16.icc	PRT	-	SYS		14
1790-17			MS_OP_17.icc	PRT	-	SYS		14
1790-18			MS_OP_18.icc	PRT	-	SYS		14
1790-19			MS_OP_19.icc	PRT	-	SYS		14
1790-20			MS_OP_20.icc	PRT	-	SYS		14
1790-21			MS_OP_21.icc	PRT	-	SYS		14
1790-22			MS_OP_22.icc	PRT	-	SYS		14
1790-23			MS_OP_23.icc	PRT	-	SYS		14
1790-24			MS_OP_24.icc	PRT	-	SYS		14
1790-25			MS_OP_25.icc	PRT	-	SYS		14
1790-26			MS_OP_26.icc	PRT	-	SYS		14
1790-27			MS_OP_27.icc	PRT	-	SYS		14
1790-28			MS_OP_28.icc	PRT	-	SYS		14
1790-29			MS_OP_29.icc	PRT	-	SYS		14
1790-30			MS_OP_30.icc	PRT	-	SYS		14
1790-31			MS_OP_31.icc	PRT	-	SYS		14
1790-32			MS_OP_32.icc	PRT	-	SYS		14
1790-33			MS_OP_33.icc	PRT	-	SYS		14
1790-34			MS_OP_34.icc	PRT	-	SYS		14
1790-35			MS_OP_35.icc	PRT	-	SYS		14

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1791	General	Recovery of the profile at the shipment	PRT	0 <0-35>	SYS	Recovers the default Output Profile and PG CIE Based Pure GrayTRC (PG CIE Based PureGray TRC in the same sub-code is recovered to the default.) 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1792	General	Copying the profile at the shipment to USB memory	PRT	0 <0-35>	SYS	Copies the default Output Profile and PG CIE Based Pure Gray TRC to the USB memory. 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1793	General	Uploading the profile at the shipment from UBS memory		PRT	0 <0-35>	SYS	Uploads the default Output Profile and PG CIE Based Pure GrayTRC from the USB memory. 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1
1794-0	General	Displaying the attribute of the profile at the shipment	MS_OP_00.000	PRT	-	SYS	Displays the default Output Profile and PG CIE Based Pure Gray TRC attribute. (PG CIE Based Pure Gray TRC attribute in the same sub-code is displayed at the same time.)	14
1794-1			MS_OP_01.000	PRT	-	SYS		14
1794-2			MS_OP_02.000	PRT	-	SYS		14
1794-3			MS_OP_03.000	PRT	-	SYS		14
1794-4			MS_OP_04.000	PRT	-	SYS		14
1794-5			MS_OP_05.000	PRT	-	SYS		14
1794-6			MS_OP_06.000	PRT	-	SYS		14
1794-7			MS_OP_07.000	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1794-8	General	Displaying the attribute of the profile at the shipment	MS_OP_08.000	PRT	-	SYS	Displays the default Output Profile and PG CIE Based Pure Gray TRC attribute. (PG CIE Based Pure Gray TRC attribute in the same sub-code is displayed at the same time.)	14
1794-9			MS_OP_09.000	PRT	-	SYS		14
1794-10			MS_OP_10.000	PRT	-	SYS		14
1794-11			MS_OP_11.000	PRT	-	SYS		14
1794-12			MS_OP_12.000	PRT	-	SYS		14
1794-13			MS_OP_13.000	PRT	-	SYS		14
1794-14			MS_OP_14.000	PRT	-	SYS		14
1794-15			MS_OP_15.000	PRT	-	SYS		14
1794-16			MS_OP_16.000	PRT	-	SYS		14
1794-17			MS_OP_17.000	PRT	-	SYS		14
1794-18			MS_OP_18.000	PRT	-	SYS		14
1794-19			MS_OP_19.000	PRT	-	SYS		14
1794-20			MS_OP_20.000	PRT	-	SYS		14
1794-21			MS_OP_21.000	PRT	-	SYS		14
1794-22			MS_OP_22.000	PRT	-	SYS		14
1794-23			MS_OP_23.000	PRT	-	SYS		14
1794-24			MS_OP_24.000	PRT	-	SYS		14
1794-25			MS_OP_25.000	PRT	-	SYS		14
1794-26			MS_OP_26.000	PRT	-	SYS		14
1794-27			MS_OP_27.000	PRT	-	SYS		14
1794-28			MS_OP_28.000	PRT	-	SYS		14
1794-29			MS_OP_29.000	PRT	-	SYS		14
1794-30			MS_OP_30.000	PRT	-	SYS		14
1794-31			MS_OP_31.000	PRT	-	SYS		14
1794-32			MS_OP_32.000	PRT	-	SYS		14
1794-33			MS_OP_33.000	PRT	-	SYS		14
1794-34			MS_OP_34.000	PRT	-	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1794-35	General	Displaying the attribute of the profile at the shipment	MS_OP_35.000	PRT	-	SYS	Displays the default Output Profile and PG CIE Based Pure Gray TRC attribute. (PG CIE Based Pure Gray TRC attribute in the same sub-code is displayed at the same time.)	14
1795	General	Making the profile available		PRT	0 <0-35>	SYS	Selecting a profile Overwrites the adjusted Output Profile on the current area (PG CIE Based Pure Gray TRC in the same sub-code is replaced with the adjusted profile at the same time.) 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1796	General	Copying the adjusted profile to USB memory	PRT	0 <0-35>	SYS	Copies the adjusted Output Profile and PG CIE Based Pure GrayTRC to the USB memory. (PG CIE Based PureGray TRC in the same sub-code is copied to the USB memory at the same time.) 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1797	General	Uploading the adjusted profile from USB memory		PRT	0 <0-35>	SYS	Uploads the Output Profile and PG CIE Based Pure Gray TRC from the USB memory. 0: MS_OP_00 1: MS_OP_01 2: MS_OP_02 3: MS_OP_03 4: MS_OP_04 5: MS_OP_05 6: MS_OP_06 7: MS_OP_07 8: MS_OP_08 9: MS_OP_09 10: MS_OP_10 11: MS_OP_11 12: MS_OP_12 13: MS_OP_13 14: MS_OP_14 15: MS_OP_15 16: MS_OP_16 17: MS_OP_17 18: MS_OP_18 19: MS_OP_19 20: MS_OP_20 21: MS_OP_21 22: MS_OP_22 23: MS_OP_23 24: MS_OP_24 25: MS_OP_25 26: MS_OP_26 27: MS_OP_27 28: MS_OP_28 29: MS_OP_29 30: MS_OP_30 31: MS_OP_31 32: MS_OP_32 33: MS_OP_33 34: MS_OP_34 35: MS_OP_35	1
1798-0	General	Displaying the attribute of the profile at the shipment	MS_OP_00.001	PRT	-	SYS	Displays the adjusted Output Profile and PG CIE Based Pure GrayTRC attribute in the same sub-code.	14
1798-1			MS_OP_01.001	PRT	-	SYS		14
1798-2			MS_OP_02.001	PRT	-	SYS		14
1798-3			MS_OP_03.001	PRT	-	SYS		14
1798-4			MS_OP_04.001	PRT	-	SYS		14
1798-5			MS_OP_05.001	PRT	-	SYS		14
1798-6			MS_OP_06.001	PRT	-	SYS		14
1798-7			MS_OP_07.001	PRT	-	SYS		14
1798-8			MS_OP_08.001	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1798-9	General	Displaying the attribute of the profile at the shipment	MS_OP_09.001	PRT	-	SYS	Displays the adjusted Output Profile and PG CIE Based Pure GrayTRC attribute in the same sub-code.	14
1798-10			MS_OP_10.001	PRT	-	SYS		14
1798-11			MS_OP_11.001	PRT	-	SYS		14
1798-12			MS_OP_12.001	PRT	-	SYS		14
1798-13			MS_OP_13.001	PRT	-	SYS		14
1798-14			MS_OP_14.001	PRT	-	SYS		14
1798-15			MS_OP_15.001	PRT	-	SYS		14
1798-16			MS_OP_16.001	PRT	-	SYS		14
1798-17			MS_OP_17.001	PRT	-	SYS		14
1798-18			MS_OP_18.001	PRT	-	SYS		14
1798-19			MS_OP_19.001	PRT	-	SYS		14
1798-20			MS_OP_20.001	PRT	-	SYS		14
1798-21			MS_OP_21.001	PRT	-	SYS		14
1798-22			MS_OP_22.001	PRT	-	SYS		14
1798-23			MS_OP_23.001	PRT	-	SYS		14
1798-24			MS_OP_24.001	PRT	-	SYS		14
1798-25			MS_OP_25.001	PRT	-	SYS		14
1798-26			MS_OP_26.001	PRT	-	SYS		14
1798-27			MS_OP_27.001	PRT	-	SYS		14
1798-28			MS_OP_28.001	PRT	-	SYS		14
1798-29			MS_OP_29.001	PRT	-	SYS		14
1798-30			MS_OP_30.001	PRT	-	SYS		14
1798-31			MS_OP_31.001	PRT	-	SYS		14
1798-32			MS_OP_32.001	PRT	-	SYS		14
1798-33			MS_OP_33.001	PRT	-	SYS		14
1798-34			MS_OP_34.001	PRT	-	SYS		14
1798-35			MS_OP_35.001	PRT	-	SYS		14
1913	General	Addition of the page number to the multi-page file name of a File/Email		ALL	0 <0-1>	SYS	0: Valid (Page number not added) 1: Invalid (Page number added)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1914	General	Maximum number of decimals in the extension fields	ALL	2 <0-6>	SYS	0 to 6 digits	1
1916	General	The default value of the stored/attached file name of a File/Email	ALL	0 <0-1>	SYS	0: DOCYYMMDD 1: NetBios name	1
1920	Network	Domain name of Windows Domain Authentication	ALL	-	UTY	Maximum 128 letters	12
1921	Network	Windows domain No. 2 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1922	Network	Windows domain No. 3 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1923	Network	LDAP authentication Server type	ALL	1 <1-2>	NIC	1: Windows Server 2: Not Windows Server	12
1924	Network	LDAP authentication User attribute	ALL	-	NIC	Sets a user attribute name.	12
1925	Network	Execution of user authentication when the user ID is not entered	ALL	2 <0-2>	SYS	0: Forcible execution 1: Execution impossible (pooled in the invalid queue) 2: Forcible deletion	1
1926	FAX	Tab/cover sheet printing at FAX reception Printing stop function	ALL	0 <0-1>	SYS	Sets on or off of the printing function of special sheets such as tab or cover sheet of FAX, Email or list print. 0: Function off 1: Function on	1
1927	Network	LDAP server attribute name settings for the card authentication	ALL	eBMUserCard	SYS	Up to 32 letters	11
1928	Network	Role Based Access LDAP search index	ALL	0 <0-4294967295>	SYS	This code is used to specify the ID for the LDAP server to implement Role-Based Access Control.	1
1929	User interface	Key arrangement for language 1	ALL	0 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1
1930	User interface	Key arrangement for language 2	ALL	1 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1
1931	User interface	Key arrangement for language 3	ALL	EUR: 2 UC: 0 JPN: 0 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1
1932	User interface	Key arrangement for language 4	ALL	0 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1
1933	User interface	Key arrangement for language 5	ALL	0 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1935	User interface	Key arrangement for language 7	ALL	0 <0-2>	SYS	0: QWERTY layout (for EUR) 1: QWERTZ layout 2: AZERTY layout	1
1936	Network	AppleTalk device name	ALL	MFP-serial	UTY	Maximum 32 letters The Network-related serial number of the equipment appears at “serial”.	12
1937	Network	User name and password at user authentication or “Save as file”	ALL	0 <0-2>	SYS	0: User name and password of the device 1: User name and password at the user authentication (Template registration information comes first when a template is retrieved.) 2: User name and password at the user authentication (User information of the authentication comes first when a template is retrieved.)	1
1940	General	STAGE port number	SCN	20080 <0-65535>	SYS	Port number used for the remote scanning is set.	1
1941	Bluetooth	Bluetooth BIP Paper size	ALL	EUR: 6 UC: 2 JPN: 6 <0-13>	SYS	0: LD 1: LG 2: LT 3: COMP 4: ST 5: A3 6: A4 7: A5 8: A6 9: B4 10: B5 11: FOLIO 12: 13"LG 13: 8.5" x 8.5"	1
1950	Network	SMB signature for SMB server	ALL	1 <1-3>	UTY	1: Auto 2: Valid 3: Invalid	12
1951	Network	SMB signature for SMB client	ALL	1 <1-3>	UTY	1: Auto 2: Valid 3: Invalid	12
1952	Network	Logon User Name of Windows Domain Authentication	ALL	-	UTY	Maximum 128 letters	12
1953	Network	Logon User Name Password of Windows Domain Authentication	ALL	-	UTY	Maximum 128 letters	12
1954	Network	PDC2 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1955	Network	BDC2 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1956	Network	PDC3 of user authentication	ALL	-	UTY	Maximum 128 letters	12
1957	Network	BDC3 of user authentication	ALL	-	UTY	Maximum 128 letters	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1958	Network	PDC of Windows Domain Authentication	ALL	-	UTY	Maximum 128 letters	12
1959	Network	BDC of device authentication	ALL	-	UTY	Maximum 128 letters	12
1960	General	KS Filter operation mode	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
1961	General	KS/KSSM setting all clearing	ALL	-	-	Does not reset the value of the code 08-1960 but resets those of the codes 08-1963 to 1994.	3
1963	General	KS Filter Emulation Mode	ALL	0 <0-2>	SYS	0: Auto 1: KS 2: KSSM	1
1964	General	KS Filter Paper Size	ALL	1 <0-5>	SYS	0: A3 1: A4 2: B4 3: B5 4: Letter 5: Legal	1
1965	General	KS Filter Orientation	ALL	0 <0-1>	SYS	0: Portrait 1: Landscape	1
1966	General	KS Filter Copies	ALL	0 <1-999>	SYS		1
1967	General	KS Paper Source	ALL	0 <0-1>	SYS		1
1968	General	KS Duplex Mode	ALL	0 <0-2>	SYS		1
1970	General	KS CPI (English CPI/ Hangle CPI)	ALL	1 <0-10>	SYS	0: (5/10) 1: (6/12) 2: (6.7/13.3) 3: (6.9/13.8) 4: (7.5/15) 5: (8.3/16.7) 6: (9/18) 7: (10/10) 8: (10/20) 9: (12/24) 10: (15/30)	1
1971	General	KS LPI	ALL	60 <30-160>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “45” for a font size 4.5.)	1
1972	General	KS Type Face	ALL	0 <0-5>	SYS	0: MYUNGJO 1: GOTHIC 2: GUNGSEO 3: GULLIM 4: GRAPH 5: SAMMUL	1
1973	General	KS Font Size	ALL	96 <96-160>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “100” for a font size 10.0.)	1
1974	General	KS Zoom	ALL	100 <20-400>	SYS		1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1975	General	KS CR/LF Mode	ALL	2 <0-3>	SYS	0: CR->CR, LF->LF 1: CR->CR+LF, LF->LF 2: CR->CR, LF->CR+LF 3: CR->CR+LF, LF->CR+LF	1
1976	General	KS Top Margin	ALL	0 <0-50>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “40” for a font size 4.0.)	1
1977	General	KS Left Margin	ALL	0 <0-50>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “40” for a font size 4.0.)	1
1978	General	KS Auto Wrap	ALL	0 <0-1>	SYS	0: OFF 1: ON	1
1979	General	KS Han Mode	ALL	1 <0-1>	SYS	0: OFF 1: ON	1
1980	General	KS Han Code	ALL	0 <0-1>	SYS	0: Wansung 1: Johap	1
1984	General	KSSM CPI (English CPI/ Hangle CPI)	ALL	1 <0-10>	SYS	0: (5/10) 1: (6/12) 2: (6.7/13.3) 3: (6.9/13.8) 4: (7.5/15) 5: (8.3/16.7) 6: (9/18) 7: (10/10) 8: (10/20) 9: (12/24) 10: (15/30)	1
1985	General	KSSM LPI	ALL	60 <30-160>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “45” for a font size 4.5.)	1
1986	General	KSSM Type Face	ALL	0 <0-5>	SYS	0: MYUNGJO 1: GOTHIC 2: GUNGSEO 3: GULLIM 4: GRAPH 5: SAMMUL	1
1987	General	KSSM Font Size	ALL	96 <96-160>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “100” for a font size 10.0.)	1
1988	General	KSSM Zoom	ALL	100 <20-400>	SYS		1
1989	General	KSSM CR/LF Mode	ALL	2 <0-3>	SYS	0: CR->CR, LF->LF 1: CR->CR+LF, LF->LF 2: CR->CR, LF->CR+LF 3: CR->CR+LF, LF->CR+LF	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1990	General	KSSM Top Margin	ALL	0 <0-50>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “40” for a font size 4.0.)	1
1991	General	KSSM Left Margin	ALL	0 <0-50>	SYS	Key in the value 10 times as the desired font size. (e.g.: Key in “40” for a font size 4.0.)	1
1992	General	KSSM Auto Wrap	ALL	0 <0-1>	SYS	0: OFF 1: ON	1
1993	General	KSSM Han Mode	ALL	1 <0-1>	SYS	0: OFF 1: ON	1
1994	General	KSSM Han Code	ALL	0 <0-1>	SYS	0: Wansung 1: Johap	1
3508	General	Maximum number of records in address book	ALL	0 <0-1>	SYS	0: 1000 records 1: 3000 records	1
3520	General	Semiconductor company mode	ALL	0 <0-1>	SYS	0: Normal mode 1: Semiconductor company mode	1
3521	General	Card reader device B	ALL	0 <0-4294967295>	SYS	ABYYZZZZ (4 bytes containing 8-digit decimal numbers) - AB:Special setting - A :Presence of DgbNIC 0: No 1: Yes - B :Connection interface 0: No connection 1: Serial connection 2: USB (serial conversion) (reserved) 3: USB (reserved) - YY: Authentication 00: No card authentication 01: Magnetic card (reserved) 02: FeliCa 03: Mifare (reserved) - ZZZZ: Sub-code 0000: No card authentication 0001: Magnetic card (when YY = 01)	5
3522	General	Card reader format information B1	ALL	0 <0-4294967295>	SYS	LLLLMMMM (hexadecimal) LLLL: System code MMMM:Service code	5

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3523	General	Card reader format information B2		ALL	0 <0-4294967295>	SYS	PPQRSSTU block specification PP : 1st block Q : 1st block starting byte R : 1st block ending byte SS : 2nd block T : 2nd block starting byte U : 2nd block ending byte	5
3524	General	Card reader format information B3		ALL	0 <0-2^64>	SYS	Sets key information of the card.	5
3600-0	General	Available profile display	MS_IS34_00.icc	PRT	-	SYS	Displays PG Device Pure Gray TRC attribute for the current RGB Ink Sim profile and the same sub-code.	14
3600-1			MS_IS34_01.icc	PRT	-	SYS		14
3600-2			MS_IS34_02.icc	PRT	-	SYS		14
3600-3			MS_IS34_03.icc	PRT	-	SYS		14
3600-4			MS_IS34_04.icc	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3600-5	General	Available profile display	MS_IS34_05.icc	PRT	-	SYS	Displays PG Device Pure Gray TRC attribute for the current RGB Ink Sim profile and the same sub-code.	14
3600-6			MS_IS34_06.icc	PRT	-	SYS		14
3600-7			MS_IS34_07.icc	PRT	-	SYS		14
3600-8			MS_IS34_08.icc	PRT	-	SYS		14
3600-9			MS_IS34_09.icc	PRT	-	SYS		14
3600-10			MS_IS34_10.icc	PRT	-	SYS		14
3600-11			MS_IS34_11.icc	PRT	-	SYS		14
3600-12			MS_IS34_12.icc	PRT	-	SYS		14
3600-13			MS_IS34_13.icc	PRT	-	SYS		14
3600-14			MS_IS34_14.icc	PRT	-	SYS		14
3600-15			MS_IS34_15.icc	PRT	-	SYS		14
3600-16			MS_IS34_16.icc	PRT	-	SYS		14
3600-17			MS_IS34_17.icc	PRT	-	SYS		14
3600-18			MS_IS34_18.icc	PRT	-	SYS		14
3600-19			MS_IS34_19.icc	PRT	-	SYS		14
3600-20			MS_IS34_20.icc	PRT	-	SYS		14
3600-21			MS_IS34_21.icc	PRT	-	SYS		14
3600-22			MS_IS34_22.icc	PRT	-	SYS		14
3600-23			MS_IS34_23.icc	PRT	-	SYS		14
3600-24			MS_IS34_24.icc	PRT	-	SYS		14
3600-25			MS_IS34_25.icc	PRT	-	SYS		14
3600-26			MS_IS34_26.icc	PRT	-	SYS		14
3600-27			MS_IS34_27.icc	PRT	-	SYS		14
3600-28			MS_IS34_28.icc	PRT	-	SYS		14
3600-29			MS_IS34_29.icc	PRT	-	SYS		14
3600-30			MS_IS34_30.icc	PRT	-	SYS		14
3600-31			MS_IS34_31.icc	PRT	-	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3600-32	General	Available profile display	MS_IS34_32.icc	PRT	-	SYS	Displays PG Device Pure Gray TRC attribute for the current RGB Ink Sim profile and the same sub-code.	14
3600-33			MS_IS34_33.icc	PRT	-	SYS		14
3600-34			MS_IS34_34.icc	PRT	-	SYS		14
3600-35			MS_IS34_35.icc	PRT	-	SYS		14
3601	General	Recovery of the profile at the shipment		PRT	0 <0-35>	SYS	Recovers the default RGB Ink Sim profile and PG Device Pure Gray TRC in the same sub-code. 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3602	General	Copying the profile at the shipment to USB memory	PRT	0 <0-35>	SYS	Copies the default RGB Ink Sim profile and PG Device Pure Gray TRC in the same sub-code to the USB memory. 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3603	General	Updating the profile at the shipment from UBS memory		PRT	0 <0-35>	SYS	Uploads the default RGB Ink Sim profile and PG Device PureGray TRC in the same sub-code from the USB memory. 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1
3604-0	General	Displaying the attribute of the profile at the shipment	MS_IS34_00.000	PRT	-	SYS	Displays the default RGB Ink Sim profile and PG Device PureGray TRC attribute in the same sub-code.	14
3604-1			MS_IS34_01.000	PRT	-	SYS		14
3604-2			MS_IS34_02.000	PRT	-	SYS		14
3604-3			MS_IS34_03.000	PRT	-	SYS		14
3604-4			MS_IS34_04.000	PRT	-	SYS		14
3604-5			MS_IS34_05.000	PRT	-	SYS		14
3604-6			MS_IS34_06.000	PRT	-	SYS		14
3604-7			MS_IS34_07.000	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3604-8	General	Displaying the attribute of the profile at the shipment	MS_IS34_08.000	PRT	-	SYS	Displays the default RGB Ink Sim profile and PG Device PureGray TRC attribute in the same sub-code.	14
3604-9			MS_IS34_09.000	PRT	-	SYS		14
3604-10			MS_IS34_10.000	PRT	-	SYS		14
3604-11			MS_IS34_11.000	PRT	-	SYS		14
3604-12			MS_IS34_12.000	PRT	-	SYS		14
3604-13			MS_IS34_13.000	PRT	-	SYS		14
3604-14			MS_IS34_14.000	PRT	-	SYS		14
3604-15			MS_IS34_15.000	PRT	-	SYS		14
3604-16			MS_IS34_16.000	PRT	-	SYS		14
3604-17			MS_IS34_17.000	PRT	-	SYS		14
3604-18			MS_IS34_18.000	PRT	-	SYS		14
3604-19			MS_IS34_19.000	PRT	-	SYS		14
3604-20			MS_IS34_20.000	PRT	-	SYS		14
3604-21			MS_IS34_21.000	PRT	-	SYS		14
3604-22			MS_IS34_22.000	PRT	-	SYS		14
3604-23			MS_IS34_23.000	PRT	-	SYS		14
3604-24			MS_IS34_24.000	PRT	-	SYS		14
3604-25			MS_IS34_25.000	PRT	-	SYS		14
3604-26			MS_IS34_26.000	PRT	-	SYS		14
3604-27			MS_IS34_27.000	PRT	-	SYS		14
3604-28			MS_IS34_28.000	PRT	-	SYS		14
3604-29			MS_IS34_29.000	PRT	-	SYS		14
3604-30			MS_IS34_30.000	PRT	-	SYS		14
3604-31			MS_IS34_31.000	PRT	-	SYS		14
3604-32			MS_IS34_32.000	PRT	-	SYS		14
3604-33			MS_IS34_33.000	PRT	-	SYS		14
3604-34			MS_IS34_34.000	PRT	-	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3604-35	General	Displaying the attribute of the profile at the shipment	MS_IS34_35.000	PRT	-	SYS	Displays the default RGB Ink Sim profile and PG Device PureGray TRC attribute in the same sub-code.	14
3605	General	Making the profile available		PRT	0 <0-35>	SYS	Selecting a profile Overwrites the adjusted RGB Ink Sym profile on the current area (PG CIE Based PureGray TRC in the same sub-code is overwritten to the current area.) 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3606	General	Copying the adjusted profile to USB memory	PRT	0 <0-35>	SYS	Copies the adjusted RGB Ink Sim profile and PG CIE BasedPure Gray TRC in the same sub-code to USB memory. 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3607	General	Uploading the adjusted profile from USB memory		PRT	0 <0-35>	SYS	Uploads the adjusted RGBInkSim profile and PG CIE Based PureGray TRC in the same sub-code from the USB memory. 0: MS_IS34_00 1: MS_IS34_01 2: MS_IS34_02 3: MS_IS34_03 4: MS_IS34_04 5: MS_IS34_05 6: MS_IS34_06 7: MS_IS34_07 8: MS_IS34_08 9: MS_IS34_09 10: MS_IS34_10 11: MS_IS34_11 12: MS_IS34_12 13: MS_IS34_13 14: MS_IS34_14 15: MS_IS34_15 16: MS_IS34_16 17: MS_IS34_17 18: MS_IS34_18 19: MS_IS34_19 20: MS_IS34_20 21: MS_IS34_21 22: MS_IS34_22 23: MS_IS34_23 24: MS_IS34_24 25: MS_IS34_25 26: MS_IS34_26 27: MS_IS34_27 28: MS_IS34_28 29: MS_IS34_29 30: MS_IS34_30 31: MS_IS34_31 32: MS_IS34_32 33: MS_IS34_33 34: MS_IS34_34 35: MS_IS34_35	1
3608-0	General	Displaying the attribute of the profile at the shipment	MS_IS34_00.001	PRT	-	SYS	Displays the adjusted Output Profile and PG CIE Based Pure GrayTRC attribute in the same sub-code.	14
3608-1			MS_IS34_01.001	PRT	-	SYS		14
3608-2			MS_IS34_02.001	PRT	-	SYS		14
3608-3			MS_IS34_03.001	PRT	-	SYS		14
3608-4			MS_IS34_04.001	PRT	-	SYS		14
3608-5			MS_IS34_05.001	PRT	-	SYS		14
3608-6			MS_IS34_06.001	PRT	-	SYS		14
3608-7			MS_IS34_07.001	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3608-8	General	Displaying the attribute of the profile at the shipment	MS_IS34_08.001	PRT	-	SYS	Displays the adjusted Output Profile and PG CIE Based Pure GrayTRC attribute in the same sub-code.	14
3608-9			MS_IS34_09.001	PRT	-	SYS		14
3608-10			MS_IS34_10.001	PRT	-	SYS		14
3608-11			MS_IS34_11.001	PRT	-	SYS		14
3608-12			MS_IS34_12.001	PRT	-	SYS		14
3608-13			MS_IS34_13.001	PRT	-	SYS		14
3608-14			MS_IS34_14.001	PRT	-	SYS		14
3608-15			MS_IS34_15.001	PRT	-	SYS		14
3608-16			MS_IS34_16.001	PRT	-	SYS		14
3608-17			MS_IS34_17.001	PRT	-	SYS		14
3608-18			MS_IS34_18.001	PRT	-	SYS		14
3608-19			MS_IS34_19.001	PRT	-	SYS		14
3608-20			MS_IS34_20.001	PRT	-	SYS		14
3608-21			MS_IS34_21.001	PRT	-	SYS		14
3608-22			MS_IS34_22.001	PRT	-	SYS		14
3608-23			MS_IS34_23.001	PRT	-	SYS		14
3608-24			MS_IS34_24.001	PRT	-	SYS		14
3608-25			MS_IS34_25.001	PRT	-	SYS		14
3608-26			MS_IS34_26.001	PRT	-	SYS		14
3608-27			MS_IS34_27.001	PRT	-	SYS		14
3608-28			MS_IS34_28.001	PRT	-	SYS		14
3608-29			MS_IS34_29.001	PRT	-	SYS		14
3608-30			MS_IS34_30.001	PRT	-	SYS		14
3608-31			MS_IS34_31.001	PRT	-	SYS		14
3608-32			MS_IS34_32.001	PRT	-	SYS		14
3608-33			MS_IS34_33.001	PRT	-	SYS		14
3608-34			MS_IS34_34.001	PRT	-	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
3608-35	General	Displaying the attribute of the profile at the shipment	MS_IS34_35.001	PRT	-	SYS	Displays the adjusted Output Profile and PG CIE Based Pure GrayTRC attribute in the same sub-code.	14
3612	General	Date of unpacking		ALL	- <13 digits>	SYS	Year/month/date/day/hour/minute/second Example: 03 07 0 13 13 27 48 “Day” - “0” is for “Sunday”. Proceeds Monday through Saturday from “1” to “6”.	11
3615	General	List print USB storage setting		ALL	0 <0-1>	SYS	0: Enable (USB storage available) 1: Disable (USB storage not available)	1
3619	General	Clearing of service history list file		ALL	-	SYS	Initializes the service history list file.	3
3623	General	Job filtering setting for real time log notification function		ALL	0 <0-255>	SYS	Changes target type of job for notification in real time log notification function.	1
3624	General	Log item filtering setting for real time log notification function		ALL	2147483921 <1-4294967295>	SYS	Changes target log items for notification in real time log notification function.	5
3625	General	Storage device information		ALL	0 <0-3>	SYS	0: Not connected 1: HDD 2: SSD 3: Device Memory	1
3626	General	Department information transmission setting for real time log notification function		ALL	0 <0-2>	SYS	0: Department number/ Department name/ Department code 1: Department number/ Department name 2: Department information not transmitted	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3630	Maintenance	Default setting automation after remote update	ALL	0 <0-6>	SYS	0: Normal startup 1: Remote update in process 2: Remote update failed 3: Remote update completed 4: Self-diagnostic mode initialization completed (initialization performed) 5: Self-diagnostic mode initialization completed (initialization not performed) 6: Self-diagnostic mode initialization completed (initialization failed)	2
3631	Network	RemoteAccess (SNMP)	ALL	0 <0-1>	SYS	Sets the restriction of operation to the specified OID when sending a SetRequest in the SNMP communication. 0: Disabled (ReadOnly operation) 1: Enabled (Read/Write operation)	1
3635	User interface	Trial copy function	ALL	1 <0-1>	SYS	0: Disabled 1: Enabled	1
3722	Network	PDC/BDC timeout value of Windows Domain Authentication (Unit: Seconds)	ALL	60 <1-180>	NIC	Applied to the device authentication	12
3723	Network	User authentication PDC/BDC time-out period (Unit: Seconds)	ALL	30 <1-180>	NIC	Applied to the user authentication	12
3724	Network	Windows Domain Authentication method of Windows Domain/User Authentication	ALL	1 <1-3>	NIC	1: Auto 2: Kerberos 3: NTLMv2	12
3725	Network	IPP max connection	ALL	16 <1-16>	NIC		12
3726	Network	IPP active connection	ALL	10 <1-16>	NIC		12
3727	Network	LPD max connection	ALL	10 <1-16>	NIC		12
3728	Network	LPD active connection	ALL	10 <1-16>	NIC		12
3729	Network	ATalk PS max Connection	ALL	10 <1-16>	NIC		12
3730	Network	ATalk PS active Connection	ALL	10 <1-16>	NIC		12
3731	Network	Raw TCP max Connection	ALL	10 <1-16>	NIC		12
3732	Network	Raw TCP active connection	ALL	10 <1-16>	NIC		12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3736	Network	DNS client TimeOut	ALL	60 <1-180>	NIC	Use when a timeout occurred at DNS client connection	12
3737	Network	DDNS client TimeOut	ALL	60 <1-180>	NIC	Use when a timeout occurred at DDNS client connection	12
3738	Network	HTTP Client TimeOut (EWB and Satellite)	ALL	60 <1-180>	NIC	Use when a timeout occurred at HTTP client connection	12
3739	Network	FTP Client TimeOut (SCAN)	ALL	30 <1-180>	NIC	Use when a timeout occurred at DNS client connection	12
3740	Network	SNTP Client TimeOut	ALL	30 <1-180>	NIC	Use when a timeout occurred at SNTP client connection	12
3741	Network	SMTP Client TimeOut	ALL	30 <1-180>	NIC	Use when a timeout occurred at SMTP client connection	12
3742	Network	POP3 Client TimeOut	ALL	30 <1-180>	NIC	Use when a timeout occurred at POP3 client connection	12
3743	Network	LDAP client TimeOut	ALL	1 <5-180>	NIC	Use when a timeout occurred at LDAP client connection	12
3744	Network	POP3 Authentication method	ALL	1 <1-3>	NIC	POP3 authentication method setting 1: Disable (Default) 2: NTLM 3: Kerberos	12
3745	Network	Secure DDNS Primary Login Name	ALL	- <1-128>	NIC	User Name for Secure DDNS for Primary	12
3746	Network	Secure DDNS Primary Password	ALL	- <1-128>	NIC	Password for Secure DDNS for Primary	12
3747	Network	Secure DDNS Secondary Login Name	ALL	- <1-128>	NIC	User Name for Secure DDNS for Secondary	12
3748	Network	Secure DDNS Secondary Password	ALL	- <1-128>	NIC	Password for Secure DDNS for Secondary	12
3749	General	DPWS Friendly Name	ALL	-	NIC	MFP name indicated in DPWS search result <Default value> TOSHIBA e-STUDIOxxx [NIC serial number]	12
3750	General	DPWS Printer Name	ALL	-	NIC	Printer name used for installing the printer with DPWS <Default value> TOSHIBA e-STUDIOxxx Printer- [NIC serial number]	12
3751	General	DPWS Scanner Name	ALL	-	NIC	Scanner name used for installing the printer with DPWS <Default value> TOSHIBA e-STUDIOxxx Scanner- [NIC serial number]	12
3752	General	DPWS Printer Information	ALL	-	NIC	Information regarding DPWS printer <Default value> NULL	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3753	General	DPWS Scanner Information	ALL	-	NIC	Information regarding DPWS scanner <Default value> NULL	12
3754	Network	Switching DPWS Printer setting	ALL	1 <1-3>	NIC	DPWS printer function is switched. 1: Enabled 2: Disabled 3: Security system enabled	12
3754 (EFI)	Network	Switching DPWS Printer setting	ALL	2 <1-3>	NIC	DPWS printer function is switched. 1: Enabled 2: Disabled 3: Security system enabled	12
3755	Network	Switching DPWS Scanner setting	ALL	1 <1-2>	NIC	DPWS scanner function is switched. 1: Enabled 2: Disabled	12
3757	Network	DPWS Discovery Port Number	ALL	3702 <1-65535>	NIC	Port number used for DPWS Discovery	12
3758	Network	DPWS Metadata Exchange Port Number	ALL	50081 <1-65535>	NIC	Port number used for DPWS Metadata Exchange	12
3759	Network	DPWS Print Port Number	ALL	50082 <1-65535>	NIC	Port number used for DPWS Print	12
3760	Network	DPWS Scan Port Number	ALL	50083 <1-65535>	NIC	Port number used for DPWS Scan	12
3765	Network	DPWS Print Max numbers of connection	ALL	10 <1-20>	NIC	Maximum numbers received from more than one connection request in the DPWS print	12
3766	Network	DPWS Print Max numbers of reception	ALL	10 <1-20>	NIC	Maximum numbers of data received from more than one clients in the DPWS print	12
3767	Network	Switching IPv6 setting	ALL	2 <1-2>	NIC	IPv6 function is switched. 1: Enabled 2: Disabled	12
3767 (EFI)	Network	Switching IPv6 setting	ALL	2 <1-2>	NIC	IPv6 function is switched. 1: Enabled 2: Disabled	12
3768	Network	Switching IP(IPv6) Address Acquisition	ALL	2 <1-2>	NIC	IP(IPv6) Address Acquisition setting is switched. 1: Manual 2: Auto configuration	12
3770	Network	IPv6 Address	ALL	0 <0-16>	NIC	DHCPv6 Address in Manual/Auto configuration is displayed.	12
3771	Network	Prefix display setting	ALL	0 <0-128>	NIC	The range of Prefix display is set.	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3772	Network	Default Gateway setting	ALL	0 <0-16>	NIC	Default Gateway of DHCPv6 Address in Manual/Auto configuration is set.	12
3773	Network	Displaying previous DHCPv6 Address	ALL	0 <0-16>	NIC	The previous DHCPv6 Address is displayed.	12
3774	Network	DHCPv6 Option setting	ALL	2 <1-2>	NIC	DHCPv6 Option is switched when the Manual is set. 1: Enabled 2: Disabled	12
3775	Network	Stateless Address Auto Configuration	ALL	1 <1-2>	NIC	Stateless Address Auto Configuration is switched. 1: Enabled 2: Disabled	12
3776	Network	Stateless Address setting continuation	ALL	2 <1-2>	NIC	When Prefix sent from router is changed, Stateless Address is continued to be set. 1: Enabled 2: Disabled	12
3777	Network	Stateless Address setting	ALL	2 <1-2>	NIC	IP Address is acquired by both Stateless and State full Address. 1: Enabled 2: Disabled	12
3778	Network	Acquiring DHCPv6 Option	ALL	2 <1-2>	NIC	When Stateless Address is selected, an option is acquired from DHCPv6 server. 1: Enabled 2: Disabled	12
3779	Network	State full Address setting	ALL	2 <1-2>	NIC	IP Address is acquired from DHCPv6 server. 1: Enabled 2: Disabled	12
3780	Network	State full Option setting	ALL	2 <1-2>	NIC	An option is acquired from DHCPv6 server. 1: Enabled 2: Disabled	12
3781	Network	Primary DNS Server Address Registration (IPv6)	ALL	0 <0-16>	NIC	Registration of Primary DNS Server Address	12
3782	Network	Secondary DNS Server Address Registration (IPv6)	ALL	0 <0-16>	NIC	Registration of Secondary DNS Server Address	12
3783	Network	Selecting SAMBA Protocol	ALL	2 <2-3>	NIC	Either IPv6 or IPv4 is selected to use SAMBA. 2: IPv6 3: IPv4	12

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3784	Network	DSN Server resolve type		ALL	4 <1-4>	NIC	Either “ip6.arpa” or “ip6.int” is selected for the name resolution in DNS. 1: “ip6.arpa” only 2: “ip6.int” only 3: In case of error with “ip6.int”, “ip6.arpa” is requested. 4: In case of error with “ip6.arpa”, “ip6.int” is requested.	12
3785	Network	DPWS IPv4 or IPv4 with IPv6		ALL	2 <1-2>	NIC	Either IPv4 only or IPv6 together with it is selected to operate Print, Scan and Security related with DPWS. 1: Multi (IPv4 and IPv6) 2: IPv4	12
3789	Network	SOAP data cloning setting		ALL	1 <1-2>	NIC	1: Enabled 2: Disabled	12
3793	Network	LLTD function setting		ALL	1 <1-2>	NIC	Sets the LLTD function. 1: Enabled 2: Disabled	12
3796	Network	DPWS event rate		ALL	5 <1-600>	NIC	Sets the value of DPWS event rate from 1 to 600.	12
3797	General	Response to PJL job commands		ALL	1 <0-1>	SYS	During bidirectional communication, the next job will not be accepted until the printing of the sent data (all pages) is finished. If the next job must be accepted during bidirectional communication, set the value at “0: (Solicited)”. 0: (Solicited) - Immediately responds to the host side after the completion of RIP. 1: (Unsolicited) - Responds to the host side after the printing is finished.	1
3800-0	Counter	Extra long size paper count switching setting	Feeding direction 461-800 mm	ALL	2 <1-30>	SYS	Sets the number of multiples. A sheet is counted as N sheets when extra long size paper is used for printing.	4
3800-1			Feeding direction 801-1200 mm	ALL	3 <1-30>	SYS		4

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3802	General	USB media direct printing Paper size	ALL	EUR: 6 UC: 2 JPN: 6 <0-13>	SYS	0: Ledger 1: Legal 2: Letter 3: Computer 4: Statement 5: A3 6: A4 7: A5 8: A6 9: B4 10: B5 11: FOLIO 12: Legal13" 13: Letter Square	1
3803	General	USB media direct printing function setting	ALL	1 <0-1>	SYS	Sets the USB media direct printing function. 0: Disabled 1: Enabled	1
3804	Network	List analyzing logic of San to File (FTP)	ALL	0 <0-1>	SYS	0: NLST 1: LIST	1
3805	Scanner	Department Management setting by Remote Scan	ALL	3 <0-3>	SYS	Sets the department management with remote scanning as follows: 0: w/o GUI OFF, w/ GUI OFF 1: w/o GUI ON, w/ GUI OFF 2: w/o GUI OFF, w/ GUI ON 3: w/o GUI ON, w/ GUI ON w/o GUI: Remote scanning is operated on SSOP application of eCOPY Inc. w/ GUI: Remote scanning is operated on TTEC-specific GUI. This setting is only for department management with remote scanning. When GUI is set ON, a department code dialog is displayed at the start-up of remote scanning. This code is valid only when the code 08-629 is set “1 (Valid)”.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3810	Network	Direct SMTP communication setting	ALL	0 <0-1>	SYS	When an Internet Fax is sent, Direct SMTP communication is set. 0: Disabled 1: Enabled When “0: Disabled” is set, an Internet Fax is sent using an SMTP server. When “1: Enabled” is set, direct SMTP communication is enabled and an Internet Fax is sent to MFPs on the intranet without using an SMTP server. Since no SMTP server is used, the SSL encryption and SMTP-AUTH function cannot be used for internet Fax transmission. If “1: Enabled” is set in 08-3810, set “1: Enabled” in 08-3812 as well.	1
3811	Network	Image encrypting at the Direct SMTP communication	ALL	0 <0-1>	SYS	When Direct SMTP communication is performed, an attached image is encrypted. 0: Disabled 1: Enabled	1
3812	Scanner	Dummy full mode at the Internet Fax transmission	ALL	0 <0-1>	SYS	When an Internet Fax is sent, the resolution ratio and the paper size of an attached image are set to the full mode. 0: Disabled 1: Enabled If “1: Enabled” is set in 08-3810, set “1: Enabled” in 08-3812 as well.	1
3815	Scanner	XPS file thumbnail addition	ALL	1 <0-1>	SYS	Thumbnail is added to the XPS file produced by the Scan function. 0: Not added 1: Only the top page added	1
3816	Scanner	XPS file paper size setting	ALL	1 <0-1>	SYS	The paper size of the XPS file produced by the Scan function is set. 0: Scanned image size 1: Standard size	1
3817	Scanner	PDF file version setting	ALL	0 <0-1>	SYS	The version of PDF file produced by the Scan function is set. 0: PDF V1.3 1: PDF V1.4 4: PDF V1.7	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3818	Scanner	DPWS Scan operation mode	ALL	1 <0-1>	SYS	The operation mode in the DPWS Scan function is switched. 0: Batch type 1: Serial type	1
3833	General	Home directory function	ALL	0 <0-1>	SYS	Function to store a file in the user's home directory 0: Disabled 1: Enabled	1
3834	General	Backup file encryption	ALL	0 <0-1>	SYS	When the backup file is created from TopAccess, it is encrypted. 0: Enabled (Encryption) 1: Disabled (No encryption)	1
3837	General	Display switching for the machine name shown in the notification	ALL	0 <0-1>	SYS	The display method of the machine name shown in the eventrelated notification is switched. 0: URL 1: NetBIOS name	1
3840	General	Electronic key registration	ALL	-	-	Registers electronic keys for setting related optional items (e.g. when the equipment is delivered). Electronic keys already registered are not displayed in a list.	3
3841	General	License return of one-time dongle	ALL	-	-	Returns the license file in the equipment to the one-time dongle. The license file that has the same ID as the ID in the one-time dongle is returned.	3
3842	General	Display of electronic keys in USB media	ALL	-	-	Displays all the electronic keys stored in a USB media connected to the equipment in a list.	3
3845	Network	SNMP Trap Enterprise OID mode setting	ALL	0 <0-1>	SYS	Sets the compatibility of Enterprise OID of Trap with the old models. 0: Standard 1: Compatibility with the old models.	1
3846	FAX	Setting for receiving confidential data on each line	FAX	0 <0-1>	SYS	Remotely registers the received confidential fax data into a confidential box provided for each line. 0: OFF 1: ON	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
3847	FAX	FAX mistransmission prevention	FAX	0 <0-1>	SYS	FAX mistransmission prevention function is switched. 0: OFF (Disabled) 1: ON (Enabled)	1
3848	FAX	Restriction on Address Book destination setting	FAX	0 <0-1>	SYS	Availability of destination selection from the Address Book is switched as one of FAX mistransmission prevention functions when setting FAX destinations. 0: OFF (Disabled) 1: ON (Enabled)	1
3849	FAX	Restriction on destination direct entry	FAX	0 <0-1>	SYS	Availability of direct entry is switched as one of FAX mistransmission prevention functions when setting FAX destinations. 0: OFF (Disabled) 1: ON (Enabled)	1
3850	Scanner	user authentication by Remote Scan	ALL	3 <0-3>	SYS	Sets the user authentication with remote scanning as follows: 0: w/o GUI OFF, w/ GUI OFF 1: w/o GUI ON, w/ GUI OFF 2: w/o GUI OFF, w/ GUI ON 3: w/o GUI ON, w/ GUI ON w/o GUI: Remote scanning is operated on SSOP application of eCOPY Inc. w/ GUI: Remote scanning is operated on TTEC-specific GUI. This setting is only for user authentication with remote scanning. When GUI is set ON, a dialog for user ID and password is displayed at the start-up of remote scanning. This code is valid only when the code 08-1482 is set “1 (Enabled)”.	1
3851	General	Template display	ALL	0 <0-1>	SYS	0: ID number order 1: Alphabetical order	1
3852	General	Summer timeAutomatic change function	ALL	NAD, MJD: 1 Other: 0 <0-1>	SYS	0: Disabled 1: Enabled	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3853	General	Summer time Offset value	ALL	0 <0-7>	SYS	0: +2:00 1: +1:30 2: +1:00 3: +0:30 4: -0:30 5: -1:00 6: -1:30 7: -2:00	1
3854	General	Summer time Setting value (Starting month)	ALL	NAD, MJD: 3 Other: 1 <1-12>	SYS	1: Jan 2: Feb 3: Mar 4: Apr 5: May 6: Jun 7: Jul 8: Aug 9: Sep 10: Oct 11: Nov 12: Dec	1
3855	General	Summer time Setting value (Starting week)	ALL	NAD: 2 MJD: 5 Other: 1 <1-5>	SYS	1: 1st 2: 2nd 3: 3rd 4: 4th 5: Last	1
3856	General	Summer time Setting value (Starting day)	ALL	0 <0-6>	SYS	0: Sun 1: Mon 2: Tue 3: Wed 4: Thu 5: Fri 6: Sat	1
3857	General	Summer time Setting value (Starting hour)	ALL	NAD, MJD: 2 Other: 0 <0-23>	SYS	0 to 23	1
3858	General	Summer time Setting value (Starting minute)	ALL	0 <0-59>	SYS	0 to 59	1
3859	General	Summer time Setting value (Ending month)	ALL	NAD: 11 MJD: 10 Other: 1 <1-12>	SYS	1: Jan 2: Feb 3: Mar 4: Apr 5: May 6: Jun 7: Jul 8: Aug 9: Sep 10: Oct 11: Nov 12: Dec	1
3860	General	Summer time Setting value (Ending week)	ALL	MJD: 5 Other: 1 <1-5>	SYS	1: 1st 2: 2nd 3: 3rd 4: 4th 5: Last	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
3861	General	Summer time Setting value (Ending day)	ALL	0 <0-6>	SYS	0: Sun 1: Mon 2: Tue 3: Wed 4: Thu 5: Fri 6: Sat	1
3862	General	Summer time Setting value (Starting hour)	ALL	NAD: 2 MJD: 3 Other: 0 <0-23>	SYS	0 to 23	1
3863	General	Summer time Setting value (Starting minute)	ALL	0 <0-59>	SYS	0 to 59	1
3864	Network	Disclosure of telnet function	ALL	0 <0-1>	SYS	0: Not disclosed 1: Disclosed When this value is set at “1”, the value of code 08-9834 must be “0”. When this value is set at “0”, the value of code 08-3865 must be “0”.	1
3865	Network	Availability of telnet server	ALL	2 <1-2>	NIC	1: Enable 2: Disable	12
3866	Network	Telnet server TCP port number	ALL	23 <1-65535>	NIC		12
3867	Network	Telnet server administrator User name	ALL	Admin -	NIC	Maximum 15 letters	12
3868	Network	Telnet server administrator Administrator password	ALL	System -	NIC	Maximum 15 letters	12
3869	General	Number of times of EWB display for its restart	ALL	20 <0-256>	SYS	EWB is restarted when the EWB is displayed for the preset number of times. Perform this code when you change the number of times of display for resetting the EWB. EWB (Embedded Web Browser) - Displays a web page on the control panel. For displaying EWB, the External Interface Enabler (GS-1020, optional) is required.	1
3870	General	Display of electronic keys registered in the equipment	ALL	-	-	Displays electronic keys registered in the equipment.	3
3871	Network	Setting for RBAC guest user privilege	ALL	0 <0-1>	SYS	0: Does not provide any user with guest user privilege 1: Provides all users with guest user privilege	1
8504	General	Feeding method of odd page number in duplex printing (Raw print)	ALL	0 <0-1>	SYS	0: One side 1: Both sides	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8506	General	Forcible mode change in cartridge empty status	ALL	1 <0-2>	SYS	0: SLEEP MODE 1: AUTO POWER SAVE 2: READY	1
8508	General	Controlling method for print image position adjustment in secondary scanning direction	PRT	2 <0-2>	SYS	0: No control 1: Cuts the image 2: Shifts the image	1
8508 (EFI)	General	Controlling method for print image position adjustment in secondary scanning direction	PRT	0 <0-2>	SYS	0: No control 1: Cuts the image 2: Shifts the image	1
8509	General	Controlling amount for print image position adjustment in secondary scanning direction	PRT	12 <0-36>	SYS	0-36	1
8509 (EFI)	General	Controlling amount for print image position adjustment in secondary scanning direction	PRT	0 <0-36>	SYS	0-36	1
8510	General	Menu display for controlling print image position adjustment in secondary scanning direction	PRT	0 <0-1>	SYS	0: Menu not displayed 1: Menu displayed	1
8510 (EFI)	General	Menu display for controlling print image position adjustment in secondary scanning direction	PRT	0 <0-1>	SYS	0: Menu not displayed 1: Menu displayed	1
8511	General	Wide A4 Mode (for PCL)	PRT	0 <0-1>	SYS	0: Disable 1: Enable	1
8512	General	Number of jobs in batch processing	ALL	10 <2-10>	SYS	2-10:From 2 to jobs can be specified	1
8513-0	General	Overprint function setting	ALL	2 <0-2>	SYS	Enables or disables the overprinting function setting when printing PDF files. 0: OFF 1: ON 2: ON (only for PDF/X files)	4
8514	General	Threshold value setting for RIP standard paper judgment	ALL	20 <5-30>	SYS	This code is used for changing the range in which the non-standard paper size is judged as standard paper size. If the page size information is within standard paper size ± setting value, the page size is judged as standard paper size when PS/PDF printing. If the page size information is out of the range, the page size is judged as non-standard paper size. The unit of setting value is PS point. 1 PS point is approx. 0.35 mm.	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8515	General	Outside eraseJudgment threshold (Default)	PPC	PPC	0 <-3-3>	SYS	The larger the value is, area to be erased increases. The smaller the value is, area to be erased decreases.	1
8516			SCN	SCN	0 <-3-3>	SYS		1
8517	General	Remote Scan User authentication automatic login		ALL	1 <0-1>	SYS	0: OFF (A user always enters manually (current method)) 1: ON (Previous authentication information will be used)	1
8518	General	Overwriting mode for scanned files		ALL	0 <0-3>	SYS	0: Always OFF 1: Meta Scan function ON / Normal scan function OFF 2: Meta Scan function OFF / Normal scan function ON 3: Always ON	1
8519	General	Scan PDF file Paper size		ALL	1 <0-1>	SYS	0: Equivalent to scan image size 1: Fitted into any standard size	1
8523	Image processing	Toner near-empty status Message display		ALL	0 <0-1>	SYS	0: ON 1: OFF	1
8524	General	No paper Message display		ALL	0 <0-1>	SYS	0: ON 1: OFF	1
8526	General	Scan Preview Default setting		ALL	0 <0-1>	SYS	0: OFF 1: ON	1
8527	General	Scan Preview Default display type		ALL	0 <0-1>	SYS	0: Page Fit 1: Width Fit	1
8528	General	CPU clock control in sleep mode		ALL	0 <0-1>	SYS	0: Control performed 1: Control not performed	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8529-0	General	Transfer belt release threshold in ACS (Short size)	Number of pages released (Copier)	PPC	Refer to content <0-9>	SYS	Sets a threshold (the number of pages) for switching from ACS to the black mode. When the specified number of pages has been printed in the black mode only, the transfer belt is released and ACS shifts to the black mode. <Default value> e-STUDIO2020C/ 2330C / 2820C: 4 e-STUDIO2830C / 3520C: 5 e-STUDIO3530C / 4520C: 6 [Unit. page]	4
8529-1			Number of pages released (Printer)	PRT	Refer to content <0-9>	SYS		4
8529-2			Number of pages released (Box print)	PRT	Refer to content <0-9>	SYS		4
8530-0	General	ACS release factorPaper size percentage	Short size	ALL	10 <1-99>	SYS	Sets a percentage of each paper size in the total number of pages for the transfer belt release threshold in ACS. The larger the value is, the earlier the transfer belt is released. The smaller the value is, the later the transfer belt is released. 8530-1 <Default value> e-STUDIO2020C/ 2330C / 2820C: 14 e-STUDIO2830C / 3520C: 13 e-STUDIO3530C: 12 e-STUDIO4520C: 15 8530-2 <Default value> e-STUDIO2020C/ 2330C / 2820C: 14 e-STUDIO2830C / 3520C: 17 e-STUDIO3530C: 15 e-STUDIO4520C: 20 Paper size x 10	4
8530-1			Medium size	ALL	Refer to content <1-99>	SYS		4
8530-2			Large size	ALL	Refer to content <1-99>	SYS		4

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8531-0	General	Transfer belt release media type setting in ACS (Percentage of each paper size)	Media short size	ALL	Refer to content <1-99>	SYS	Sets a percentage of each paper size in the total number of pages for the transfer belt release threshold in ACS according to the media type. The larger the value is, the earlier the transfer belt is released. The smaller the value is, the later the transfer belt is released. <Default value> e-STUDIO2020C/ 2330C / 2820C: 14 e-STUDIO2830C / 3520C: 17 e-STUDIO3530C / 4520C: 20 Paper size x 10	4
8531-1			Media medium size	ALL	Refer to content <1-99>	SYS		4
8531-2			Media large size	ALL	Refer to content <1-99>	SYS		4
8532	General	Control panel Brightness level adjustment		ALL	4 <1-7>	SYS	1-7:Brightness level	1
8533	General	2nd transfer roller contact/ release setting when printing thick paper (countermeasure against image jittering in the black mode)		PRT	0 <0-2>	SYS	When jittering occurs during the printing of thick paper in the black mode with the 1st transfer roller released from the transfer belt, this setting makes the rolles contact. 0: Disabled 1: Enabled only for thick paper and special paper 2: Enabled for all media types	1
8534	General			PPC	0 <0-2>	SYS		1
8535	Network	Storing network logs in the HDD		ALL	2 <1-2>	SYS	Stores the network logs of SRAM in the HDD when network-related trouble occurred. 1: Enabled 2: Disabled	1
8536	Network	Data size when storing network logs in the HDD		ALL	30 <1-30>	SYS	Specifies the size of network logs to be stored in the HDD. 1-30:1-30 MB	1
8537	General	Sorting method for displaying private print jobs		PRT	0 <0-1>	SYS	Changes the sorting order for print jobs on the private print list. 0: Descending order 1: Ascending order	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
8540	Scanner	Date/time format in the Meta Scan XML file		SCN	1 <0-1>	SYS	0: YYYY/MM/DDhh:mm:ss.mmm 1: YYYY-MMDDThh:mm:ss.mmmTZD	1
8546	User interface	Input setting of minus value for image shift when copying		PPC	0 <0-1>	SYS	0: Inputting minus value is disabled. 1: Inputting minus value is enabled.	1
8548	Paper feeding	Change of the paper size setting on the touch panel when printing is interrupted by size mismatch		PRT	0 <0-1>	SYS	0: Change of the paper size setting on the touch panel is disabled. 1: Change of the paper size setting on the touch panel is enabled. When the firmware is upgraded, the size is automatically set to the default.	1
8549	Counter	Hardware key control when external counter is installed		ALL	0 <0-1>	SYS	0: No control 1: Mode switch key is disabled.	1
8584	Network	Email subject setting		ALL	1 <0-1>	SYS	0: Disabled 1: Enabled	1
8585	Network	Email subject edit setting		ALL	1 <0-1>	SYS	0: Not allowed 1: Allowed	1
8586	Network	Date and time setting to Email subject		ALL	1 <0-1>	SYS	0: Not added 1: Added	1
8587	Network	Email subject character string setting		ALL	0 <0-1>	SYS	0: Character string at the shipment 1: Character string specified by users	1
8588	Network	Sending Email when the subject is not entered		ALL	0 <0-1>	SYS	0: Blank 1: Sends with asterisks	1
8589	Network	Authentication server auto-search		ALL	0 <0-2>	SYS	0: Disabled (no auto-search) 1: Enabled (display the server list at successful multiple authentication) 2: Enabled (no display of the server list at successful multiple authentication)	1
8590-0	Network	Document or file name display form for the exported log list	Document name	ALL	0 <0-2>	SYS	0: Outputs with the document or file name 1: Blank 2: Outputs with asterisks	4
8590-1			User name	ALL	0 <0-2>	SYS		4
8590-2			Recipient/ file name	ALL	0 <0-2>	SYS		4
8590-3			Sender name	ALL	0 <0-2>	SYS		4
8590-4			Print/ agent type	ALL	0 <0-2>	SYS		4

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8591	User interface	ACC function switching	ALL	1 <0-1>	SYS	0: Selectable ACC setting values when the automatic drawer is specified in UI (ACC is disabled when a drawer is specified) 1: Selectable ACC setting values when a drawer is specified in UI (ACC is enabled when a drawer is automatically selected)	1
8594	Counter	Switches the message when external options are installed	ALL	1 <0-1>	SYS	0: Disabled 1: Enabled	1
8595	General	Switches the message when the ID Gate is installed	ALL	1 <0-1>	SYS	0: Disabled 1: Enabled	1
8596	General	Display in "Status" during image data creation	ALL	0 <0-1>	SYS	0: "Suspend" is displayed. 1: "Process" is displayed.	1
8597	General	Updates the Private/Hold Print job list automatically	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
8598	General	Selects the template icon layout on the touch panel	ALL	0 <0-1>	SYS	0: Pattern 1 (1) (2) (3) (4) (5) (6) 1: Pattern 2 (1) (2) (9) (10) (5) (6)	1
8599	General	Converts spaces of folder name into underscores	ALL	1 <0-1>	SYS	0: Not converted 1: Converted into underscores	1
8600	General	Selects the default setting for OUTSIDE ERASE	ALL	0 <0-1>	SYS	0: Disabled 1: Enabled	1
8601	General	Identifies a user who performs Private/Hold Print	ALL	JPD: 0 NAD: 1 MJD: 0 <0-1>	SYS	0: Identifies the user as a different one by the difference between a name in lower-case and capital letters 1: Identifies the user as the same one by the difference between a name in lower-case and capital letters	1
8602	General	Adding "backslash" when creating the files of ScanToFile (Samba)	ALL	0 <0-3>	SYS	0: Backslash not added 1: Backslash added when "file name" is specified 2: Backslash added when "folder and file name" is specified 3: Backslash added when "file name" and "folder and file name" are specified	1
8603	General	Special usage of external options I/F	ALL	0 <0-2>	SYS	0: None 1: Usage 1 2: Usage 2	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8604	General	Setting of Job Status Display	ALL	1 <0-2>	SYS	0: Disabled (Only administrators allowed) 1: Enabled (General users allowed) 2: Setting disabled (Grayed out on TopAccess)	1
8605	Network	Setting of Logs Display	ALL	1 <0-2>	SYS	0: Disabled (Only administrators allowed) 1: Enabled (General users allowed) 2: Setting disabled (Grayed out on TopAccess)	1
8606	Network	Setting of Logs Export	ALL	1 <0-2>	SYS	0: Disabled 1: Enabled 2: Setting disabled (Grayed out on TopAccess)	1
8608	Network	Prioritized Windows authentication server - Windows	ALL	0 <0-100>	SYS	Index of prioritized authentication server to be searched	1
8609	Network	Prioritized Windows authentication server - LDAP	ALL	0 <0-100>	SYS	Index of prioritized authentication server to be searched	1
8610	Network	Prioritized Windows authentication server - Card	ALL	0 <0-100>	SYS	Index of prioritized authentication server to be searched	1
8611	General	RFC1759 (hr.Printer status support printing)support	ALL	MJD:2 Other:1 <1-2>	SYS	Switches hrPrinterTable mode when using an specialized application. 1: Normal mode 2: Special mode 1	1
8612	FAX	Enabling / Disabling of time stamp on Received Fax Forward file name	FAX	0 <0-1>	SYS	0: Disabled 1: Enabled	1
8613	e-Filing	e-Filing storing data mode setting	ALL	1 <1-2>	SYS	1: Normal mode 2: PDF mode Erase all contents of e-Filing when switching the mode.	1
8615	General	Enabling / Disabling of log store	ALL	1 <0-1>	SYS	Sets whether the logs that can be accessed on the control panel or by the TopAccess are saved or not. 0: Disabled 1: Enabled	1
8616	General	Department counter / limitation counter clear base month	ALL	1 <1-12>	SYS	Month to clear counters (optional): Integer between 1 and 12 (month).	1
8617	General	Department counter / limitation counter clear day	ALL	1 <1-31>	SYS	Day in the month to automatically clear counters (optional): Integer between 1 and 31 (day).	1

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
8618	General	Department counter / limitation counter clear hour	ALL	0 <0-23>	SYS	Hour to automatically clear counters (optional): Integer between 0 and 23 (hour).	1
8619	General	Department counter / limitation counter clear minutes	ALL	0 <0-59>	SYS	Minutes to automatically clear counters (optional): Integer between 0 and 59 (minutes).	1
8620	General	Printing after department counter / limitation counter limit	ALL	0 <0-1>	SYS	Sets whether to print after reaching the limit (optional). 0: Printing impossible 1: Printing possible	1
8622	General	Date and time addition setting to file name of Scan to File/Email	ALL	1 <0-1>	SYS	0: Disabled 1: Enabled	1
8623	Network	Print domain check at user authentication	ALL	1 <0-1>	SYS	Sets whether or not to check domain membership of the client PC during print job authentication if the user specifies Windows Domain, LDAP, or MFP Local as the user authentication method. 0: Disabled 1: Enabled * Specify "0" (Disabled) if the client PC is not registered to the domain. Printing from a client PC without domain membership is permitted if "0" (Disabled) is set. This setting is effective only when the user specifies Windows Domain, LDAP, or MFP Local for user authentication. Also, the department management must be disabled.	1
8624	User Interface	Switching display method of file name	PRT	0 <0-2>	SYS	Switches the display method for file names in the print job log display 0: Displays from the top 1: Displays the bottom 2: Displays the top and the bottom	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8625	User Interface	Switching file name form for exporting	PRT	0 <0-2>	SYS	Switches the file name display form for the exported print log or SNMP. 0: Exports from the top 1: Exports the bottom 2: Exports the top and the bottom	1
8626	User Interface	Private print/Hold print job continue operation	PRT	0 <0-1>	SYS	Switches whether or not a transition to the Private print/Hold print selection screen will occur after printing necessary files at the operation of Private print/Hold print. 0: Disabled 1: Enabled (a screen transition occurs)	1
8628	General	Operation of machine when coin controller is used	ALL	0 <0-1>	SYS	This setting is available when "1" is set at 08-202. When "1: Enabled" is set, a transition from the copy screen to Job status display and an operation of machine are possible. 0: Disabled 1: Enabled	1
8629	General	Default setting of color mode	ALL	0 <0-1>	SYS	0: "Auto Color" is selected as a color mode when no setting is made to color mode. 1: "Black" is selected as a color mode when no setting is made to color mode.	1
8633	User Interface	Switching the initial display of the print job list	ALL	0 <0-1>	SYS	When the [JOB] tab in the job status menu is displayed, the initial screen can be switched. 0: Display with the first job selected 1: Display with the first job not selected	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8634	User Interface	Selecting the auto color print control when the number of sheets reaches the limit	ALL	0 <0-1>	SYS	When department management or user management is enabled, the color limitation setting is ON and the available number of sheets reaches “0”, you can select whether to use the duplex mode to print a document with the 1st page in color and the 2nd page in black. 0: Printed 1: Stored in invalid jobs	1
8635	User Interface	Switching the import control for Meta Scan Template	ALL	0 <0-1>	SYS	The import control for the Meta Scan Template can be switched. 0: A template to be imported has priority. 1: A template registered in the MFP has priority.	1
8800	Network	Enabling / Disabling of 802.1X	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8800 (EFI)	Network	Enabling / Disabling of 802.1X	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8801	Network	802.1X fallbackNumber of retry	ALL	3 <3-10>	NIC	3-10:3-10 times	12
8802	Network	Enabling / Disabling of IPsec	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8802 (EFI)	Network	Enabling / Disabling of IPsec	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8803	Network	Enabling / Disabling of SNMPv3	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8804	Network	Enabling / Disabling of IP filtering	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8804 (EFI)	Network	Enabling / Disabling of IP filtering	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8805	Network	Enabling / Disabling of MAC address filtering	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8805 (EFI)	Network	Enabling / Disabling of MAC address filtering	ALL	2 <1-2>	NIC	1: Enabled 2: Disabled	12
8806	Network	SCEP CA Server Address1	ALL	-	NIC	Maximum 128 letters	12
8807	Network	SCEP CA Server Address2	ALL	-	NIC	Maximum 128 letters	12
8808	Network	SCEP CA Server Address3	ALL	-	NIC	Maximum 128 letters	12
8809	Network	SCEP Timeout1	ALL	30 <1-300>	NIC	Timeout period (second)	12
8810	Network	SCEP Timeout2	ALL	30 <1-300>	NIC	Timeout period (second)	12
8811	Network	SCEP Timeout3	ALL	30 <1-300>	NIC	Timeout period (second)	12

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
8812	Network	SCEP Common Name Address1	ALL	1 <1-2>	NIC	1: IP Address 2: FQDN	12
8813	Network	SCEP Common Name Address2	ALL	1 <1-2>	NIC	1: IP Address 2: FQDN	12
8814	Network	SCEP Common Name Address3	ALL	1 <1-2>	NIC	1: IP Address 2: FQDN	12
8815	Network	Installation method of IPsec certificate	ALL	2 <2-3>	NIC	2: Import(Default) 3: SCEP	12
8816	Network	Installation method of IEEE 802.1X certificate	ALL	2 <2-3>	NIC	2: Import(Default) 3: SCEP	12
8817	Network	Enabling / Disabling of WS Pull Scan when user authentication is enabled	ALL	2 <1-2>	NIC	1: Enable 2: Disable(Default)	12
8818	Network	Enabling / Disabling of WS Pull Scan when department management is enabled	ALL	2 <1-2>	NIC	1: Enable 2: Disable(Default)	12
8819	Network	Enabling / Disabling of 802.1X fallback	ALL	2 <1-2>	NIC	1: Enable 2: Disabled	12
8820	Network	IPsec NAT-Traversal setting	ALL	1 <1-3>	NIC	1: Default (IKEv1: Disabled, IKEv2: Enabled) 2: Enable IKEv1 & IKEv2 3: Disable IKEv1 & IKEv2	12
8821	Network	IPsec CRL setting	ALL	2 <1-2>	NIC	1: Enable CRL 2: Disable CRL	12
8823	General	Enables/Disables Port 139 for user authentication	ALL	1 <1-2>	NIC	1: Enable 2: Disabled	12
9047	General	Process control flag setting of easy setup (manual unpacking adjustment)	ALL	0 <0-2>	SYS	0: No change of manual unpacking adjustment 1: OFF status of manual unpacking adjustment flag 2: Returns to the initial unpacking mode	1
9051	User interface	Panel calibration setting value display	ALL	0 <0-1>	SYS	Switches whether the screen for displaying panel calibration setting values is displayed or not. 0: Disabled (screen not displayed) 1: Enabled (screen displayed)	1
9059	Maintenance	Display switchover for user calibration	ALL	MJD: 1 Other: 0 <0-1>	SYS	Switches whether or not to display a menu for paper selection at user calibration (automatic gamma adjustment). 0: Not displayed 1: Displayed (for both copy and print)	1
9117	General	Raw printing job Do not Print Blank Pages	ALL	0 <0-1>	SYS	0: OFF 1: ON	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
9185-0	User interface	Feeding paper media	Copier	ALL	3 <1-3>	SYS	Sets a media type for APS drawer searching in the copier functions. <Acceptable value (decimal number)> 1, 2, 3 Each bit 0: Excluded from feeding target media Each bit 1: Feeding target media bit 0:Plain paper bit 1:Recycled paper	4
9185-1	User interface		Printer/ Box	ALL	1 <1-3>	SYS	Sets a media type to print on plain paper in the printer/box functions. This setting is used for drawer searching or media type inconsistency judgment. The setting result does not affect other media types, other than plain paper. <Acceptable value (decimal number)> 1 only Each bit 0: Excluded from feeding target media Each bit 1: Feeding target media bit 0:Plain paper bit 1:N/A (Always set “0”)	4
9300	Paper feeding	Drawer 1 Paper information		ALL	0 <0-8>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 8: Recycled paper Only “0”, “1”, “2”, “3” and “8” are acceptable.	1
9301	Paper feeding	Drawer 2 Paper information		ALL	0 <0-8>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 8: Recycled paper Only “0”, “1”, “2”, “3” and “8” are acceptable.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9302	Paper feeding	PFP 1 Paper information	ALL	0 <0-8>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 8: Recycled paper Only “0”, “1”, “2”, “3” and “8” are acceptable.	1
9303	Paper feeding	PFP 2 Paper information	ALL	0 <0-8>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 8: Recycled paper Only “0”, “1”, “2”, “3” and “8” are acceptable.	1
9304	Paper feeding	LCF Paper information	ALL	0 <0-8>	SYS	0: Plain paper 8: Recycled paper Only “0” and “8” are acceptable.	1
9305	Paper feeding	Bypass tray Paper information	ALL	0 <0-135>	SYS	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: Thick paper 3 4: Thick paper 4 6: Special paper 1 7: Special paper 2 8: Recycled paper 16: OHP film 129: Thick paper 1 / reverse 130: Thick paper 2 / reverse 131: Thick paper 3 / reverse 132: Thick paper 4 / reverse 134: Special paper 1 / reverse 135: Special paper 2 / reverse Only “0-4”, “6-8”, “16”, “129-132” and “134-135” are acceptable.	1
9359	User interface	Printing resume after jam releasing	ALL	0 <0-1>	SYS	0: Auto resume 1: Resume by users	1
9379	User interface	AES data encryption function setting (Except for CND)	ALL	0 <0-2>	SYS	0: Encryption invalid 1: Encryption valid (Security priority) Encrypts all of the user's data. 2: Encryption valid (Performance priority) Encrypts the user's data except the files temporarily created and deleted in the image processing such as copying or printing.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9381	General	Custom size (Photo size) Feeding / Widthwise	ALL	148 <10-434> 100 <10-300>	SYS	Feeding Widthwise	10
9382	Image	Erasing leading edge shade on A3-wide (full-page copying)	ALL	0 <0-1>	SYS	0: Whole page copied (No void) 1: Leading edge masked	1
9384	Network	Default E-mail file format (Color/ACS mode)	ALL	1 <0-8>	SYS	0: TIFF (Multi) 1: PDF (Multi) 2: JPG 3: TIFF (Single) 4: PDF (Single) 5: SLIM PDF (Multi) 6: SLIM PDF (Single) 7: XPS (Multi) 8: XPS (Single)	1
9394	Network	Single-page option for storing File and sending Email	ALL	0 <0-1>	SYS	0: Sets 1 page as 1 file 1: Makes a file based on the original	1
9629	Network	Attribute name for LDAP Role Based Access	ALL	eBMUserR <->	SYS		11
9698	User interface	Color mode notification setting at ACS	ALL	0 <0-1>	SYS	0: Color 1: Black	1
9739	Maintenance	Remote service Toner-end notification	ALL	0 <0-2>	SYS	0: RDMS toner empty notified immediately 1: RDMS toner empty notified once a day 2: RDMS toner empty not notified	1
9746	Network	802.1X/Dynamic WEP selecting button display	ALL	0 <0-1>	SYS	Switches whether a selecting button for Security mode 802.1X/ Dynamic WEP is displayed or not. 1: Not displayed 2: Displayed	1
9747	Network	PMK Cache setting	ALL	1 <1-2>	NIC	Sets whether PMK Cache is enabled or disabled when WPA2 is selected. Set “1” (Enable) when the PMK Cache function need to be ON. 1: Disable (Default) 2: Enable	12
9748	Network	Number of PMKID	ALL	2 <0-2>	SYS	Sets the number of PMKID when “1” (Enable) is set for 08-9747.	1
9749	Network	WIA Scan Driver	SCN	2 <1-2>	NIC	Selects WIA Scan Driver. 1: TTEC 2: Microsoft	12
9789	General	Default repeat count	ALL	2 <2-8>	SYS	Unit: times	1
9791	Network	FTP data cloning setting	ALL	1 <1-2>	SYS	1: Enable 2: Disabled	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
9798	Network	Temporary communication password setting		ALL	-	SYS	Sets a temporary communication password. The password can be entered in alphanumeric characters (A to Z, a to z, 0 to 9) up to 10 digits. The entered password is displayed with "*" on the touch panel and the self-diagnostic lists. (Maximum 10 digits, minimum 5 digits)	11
9799	General	Local authentication mode switchover		ALL	0 <0-1>	SYS	Sets the authentication mode when "0: (Internal authentication)" is selected in the code 08-1471. 0: Card ID differs from the User ID 1: Card ID is the same as the User ID	1
9804	Image processing	Forcible mode change in toner empty status		ALL	1 <0-2>	SYS	0: READY 1: AUTO POWER SAVE 2: READY	1
9805	Laser	Polygonal motor standby rotation Shift waiting time at job end		ALL	3 <0-9>	SYS	0: 0 sec. (current setting) (Polygonal motor ready rotation at job end) 1 to 9: Setting value x 5 sec.	1
9811-0	Finisher	Stapling setting Maximum number of sheets acceptable exceeding upper limit / Long size	Plain/ Recycled	ALL	0 <-50-50>	SYS	-50 to 50	4
9811-1			Thick1	ALL	0 <-50-50>	SYS		4
9811-2			Thick2	ALL	0 <-50-50>	SYS		4
9811-3			Thick3	ALL	0 <-50-50>	SYS		4
9814	General	Number of output pages for pausing continuous printing for 2nd transfer resistance detection control	At normal temperatures	ALL	4 <0-100>	SYS	When the setting value of this code is "1" or higher, the 2nd transfer resistance detection is performed every time the number of pages of (setting value X 100) have output.	1
9815	General		At low temperatures	ALL	10 <0-100>	SYS	When the setting value of this code is "1" or higher, the 2nd transfer resistance detection is performed every time the number of pages of (setting value X 10) have output.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9819	General	STAGE SSL	ALL	1 <0-1>	SYS	When remote scanning is performed, the SSL communication is carried out. 0: Disabled 1: Enabled (SSL communication)	1
9822	General	STAGE SSL port number	ALL	20443 <0-65535>	SYS	When remote scanning is performed using SSL communication, the SSL port number is set.	1
9825	Image	Image quality of the black part in the ACS mode	ALL	0 <0-1>	SYS	0: Black 1: Gray scale	1
9826	General	Disabling Media File Save	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
9828	General	Remote scanning mode	ALL	1 <0-1>	SYS	0: Batch 1: Sequential	1
9829	General	Department management limitation setting	ALL	0 <0-3>	SYS	Decide the default limitation setting when the new department code is created. 0: No limit 1: Limited only in the black mode 2: Limited in the color mode 3: Limited in the black/color mode	1
9847	Finisher	Hole punching setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
9848	General	Registration disclosure level setting	ALL	1 <0-2>	SYS	Displays no icons 1: ADMIN 2: USER	1
9880	General	Total counter data transmission date 2	ALL	0 <0-31>	SYS	0 to 31	1
9881	General	Day of the total counter data transmission	ALL	0 <0-127>	SYS	1 byte 00000000(0)-01111111(127) From the 2nd bit - Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	1
9882	General	Display mode of the used capacity on the e-Filing administrator page	ALL	1 <0-1>	SYS	0: All files search mode 1: Performance priority mode	1
9883	General	Hardcopy security printing	ALL	0 <0-1>	SYS	0: Disable1 1: Enable	1
9884	General	Hardcopy security printing / Counting method switchover	ALL	0 <0-1>	SYS	0: Counted as 1 1: Counted as 2	1
9886	General	Decimal point indication for Enhanced Scan Template	ALL	EUR: 0 UC: 1 JPN: 1 <0-1>	SYS	0: Comma 1: Full stop	1
9888	General	Permission setting for changing the scan parameter when recalling an extension	ALL	0 <0-1>	SYS	0: Prohibited 1: Accepted	1
9889	General	Status display of the USB data cloning permission	ALL	0 <0-1>	SYS	0: Accepted 1: Prohibited	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9891	User interface	Warning message on the touch panel when PM (Periodic Maintenance) time has come	ALL	1 <0-1>	SYS	0: No warning notification 1: Warning notification	1
9892	General	Monocolor counting method	ALL	0 <0-2>	SYS	Sets the counting method of fee charging or duplexing count in the Monocolor mode. Department and user counters are not applicable. 0: Mono/Twin Color 1: Black 2: Full Color	1
9893	General	Limitation Monocolor counting method	ALL	EUR: 0 UC: 0 JPN: 1 <0-1>	SYS	0: Count as color 1: Count as black	1
9894	General	Calibration chart charging method	ALL	0 <0-1>	SYS	Decide whether the calibration chart printing is charged or not 0: No charge 1: Charge	1
9897	Image	Default value setting of background peak adjustment (Black)	ALL	5 <1-9>	SYS	1: -4 2: -3 3: -2 4: -1 5: 0 6: +1 7: +2 8: +3 9: +4	1
9898	Image	Default value setting of density in the scan mode (Color)	ALL	6 <1-11>	SYS	1: -5 2: -4 3: -3 4: -2 5: -1 6: 0 7: +1 8: +2 9: +3 10: +4 11: +5	1
9899	Image	Default value setting of density in the scan mode (Gray)	ALL	6 <1-11>	SYS	1: -5 2: -4 3: -3 4: -2 5: -1 6: 0 7: +1 8: +2 9: +3 10: +4 11: +5	1
9933	Network	Domain participation confirmation of printing when LDAP authentication is used	ALL	1 <0-1>	SYS	When LDAP is selected as authentication method for user authentication, checking of domain participation of client computer for print job authentication is set. This function is enabled only when department management is enabled. 0: Disabled 1: Enabled	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
9934-0	General	S-ACS operation setting	Copy	ALL	1 <1-9>	SYS	1: The number of contact control: 1 Continuous color control: 1 sheet 2: The number of contact control: 2 Continuous color control: 2 sheets 3: The number of contact control: 3 Continuous color control: 3 sheets 4: The number of contact control: 4 Continuous color control: 4 sheets 5: The number of contact control: 5 Continuous color control: 5 sheets 6: The number of contact control: 6 Continuous color control: 6 sheets 7: The number of contact control: 7 Continuous color control: 7 sheets 8: The number of contact control: 8 Continuous color control: 8 sheets 9: The number of contact control: 9 Continuous color control: 9 sheets	4
9934-1	General		Print	ALL	1 <1-9>	SYS		4
9934-2	General		Box, Others	ALL	1 <1-9>	SYS		4
9937-0	Finisher	Stapling setting Acceptable number of sheets exceeding upper limit / Short size	Plain/ Recycled	ALL	0 <-100-100>	SYS	-100 to 100	4
9937-1			Thick1	ALL	0 <-100-100>	SYS		4
9937-2			Thick2	ALL	0 <-100-100>	SYS		4
9937-3			Thick3	ALL	0 <-100-100>	SYS		4
9938-0	Finisher	Stapling Acceptable number of sheets exceeding upper limit / Saddle stitch	Plain/ Recycled	ALL	0 <-15-15>	SYS	-15 to 15	4
9938-1			Thick1	ALL	0 <-15-15>	SYS		4
9938-2			Thick2	ALL	0 <-15-15>	SYS		4
9938-3			Thick3	ALL	0 <-15-15>	SYS		4
9945	Version	Finisher Converter ROM version		ALL	-	-	CNV-XXX	2
9946	General	Number of Email transmission retries		ALL	3 <0-14>	SYS	0 to 14 times	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9947	General	Email transmission retry interval	ALL	1 <0-15>	SYS	0 to 15 min.	1
9950	General	EFI Printer Board setting confirmation	ALL	0 <0-1>	SYS	0: Not initialized 1: Initializing completed	2
9952	General	Restore setting of the EFI Printer Board	ALL	-	-	-	3
9954	General	Control box counter / job list printing operation (Individual customer)	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
9955	User interface	Name of [EXTENSION] button	ALL	EXTENSION	SYS	Changes the name of [EXTENSION] on the menu screen. "EXTENSION" is displayed if no setting is performed. 2-byte codes (Japanese, Chinese, Korean and Taiwanese) and European special characters are not supported. Maximum 10 letters (10 bytes)	11
9956	General	Changing wording for the Fiery controller setting icon when the EFI controller is connected	ALL	Fiery	SYS	Changes the wording for the Fiery controller setting icon displayed on the menu screen. Maximum 10 letters (10 bytes)	11
9957	Network	E-mail address specifying method	ALL	0 <0-1>	SYS	Selects the E-mail address specifying method on the Email submenu of the Setup menu in TopAccess. 0: To/Cc 1: To/Bcc	1
9958	Network	Bcc address display ON/ OFF setting (Job Log / Job Status)	ALL	0 <0-1>	SYS	Sets whether the Bcc address is displayed or not on the Job Log or Job Status when "1: To/ Bcc" is selected in the code 08-9957. 0: OFF (Bcc address not displayed) 1: ON (Bcc address displayed)	1
9959	Network	Bcc address display ON/ OFF setting (Job Notification)	ALL	1 <0-1>	SYS	Sets whether the Bcc address is displayed or not on all the Job Notifications except for the administrator when "1: To/Bcc" is selected in the code 08-9957. 0: OFF (Bcc address not displayed) 1: ON (Bcc address displayed)	1
9965	Version	Imaging Acceleration Board SROM version	ALL	-	-	I-XX.X.X	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
9966	General	Imaging Acceleration Board operation check	ALL	-	-	0: No abnormality detected -1: Hardware abnormality -1000: Operation check disabled during the operation of the board -2000: Internal error	2
9972	General	Blank page judgment at power-ON Default setting	PPC	0 <-3-3>	SYS	The larger the value is, the more the paper is judged as a blank page. The smaller the value is, the less the paper is judged as a blank page.	1
9973	User interface	Blank page judgment Default setting	SCN (color/ black)	0 <-3-3>	SYS	The larger the value is, the more the paper is judged as a blank page. The smaller the value is, the less the paper is judged as a blank page.	1
9974	User interface	ACS judgment adjustmentDefault setting	PPC (color/ black)	2 <-3-3>	SYS	The larger the value is, the more the original is judged as color data.	1
9975			SCN (color/ black)	2 <-3-3>	SYS	The smaller the value is, the less the original is judged as black data.	1
9977	General	ACS original mode Default setting	PPC (color)	0 <0-2>	SYS	0: Text/Photo 1: Text 2: Printed image	1
9980	Network	Receiver's address fixing function at authentication	ALL	0 <0-4>	SYS	Fixes the receiver's address (“To: Destination” field) when the user authentication and E-mail authentication are enabled. 0: Disabled 1: "TO" is fixed, "CC" ("BCC") is unavailable 2: "TO" is available, "CC" ("BCC") is fixed 3: You can add addresses to "TO" 4: You can add addresses to "CC" ("BCC")	1
9981	Network	Sending body text of email	ALL	1 <0-1>	SYS	Sets whether the job information is output in the body of e-mail when executing e-mail send job. 0: Disabled 1: Enabled	1
9982	User interface	Switch of display attribute of [EXTENSION] icon	ALL	0 <0-1>	SYS	0: Touch is invalid when authentication is not completed. 1: Touch is valid when authentication is not completed.	1

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
9984-0	General	Display mode for the job status/log screen	Document name	ALL	0 <0-2>	SYS	0: Normal display 1: Blank 2: Displays with asterisks	4
9984-1			User name	ALL	0 <0-2>	SYS		4
9984-2			Recipient/ file name	ALL	0 <0-2>	SYS		4
9984-3			Sender name	ALL	0 <0-2>	SYS		4
9984-4			Print/ agent type	ALL	0 <0-2>	SYS		4
9985	User interface	Setting screen allocated when the MENU button is pressed		ALL	0 <0-2>	SYS	0: Menu screen 1: EWB screen 2: Meta Scan screen	1
9986	User interface	Template default setting screen		ALL	1 <0-2>	SYS	0: Registration screen 1: Recalling screen 2: Meta Scan screen	1
9987	FAX	Retains the settings after a FAX is sent		ALL	0 <0-3>	SYS	0: All cleared (Returned when the department/ user authentication is enabled) 1: All cleared (Returned to the authentication screen when the department/user authentication is enabled) 2: Only the recipient cleared 3: All kept	1

25.9 Pixel counter

25.9.1 Outline

1. Outline
   Pixel counter is a function that counts the number of dots emitted by the laser and converts it into the print ratio (%) per standard paper size. This “Print ratio (%) per standard paper size” is called Pixel count (%).

   This function enables you to know how each user uses the equipment and to grasp the tendency of toner consumption (number of output pages per cartridge).
2. Factors affecting toner consumption
   Standard number of output pages per cartridge shows the average number of output pages under the condition that the data of print ratio 6% is printed on the standard paper size (A4/LT) at a normal temperature and humidity.
   However, users do not always print under the above condition. As for the type of original, copy/print mode and environment, each user has different tendency, and as a result, the number of output pages per cartridge becomes different depending on the user.

   The major factors affecting toner consumption are as follows:
   - Original/Data coverage
   - Original/Data density
   - Original/Print mode
   - Density setting

   Also there are other factors in addition to the above, such as environment, individual difference of equipment, difference in lot quality of materials, toner density and drum surface potential.

The general relations between the above 4 factors and toner consumption per output page in the copy function are as follows:

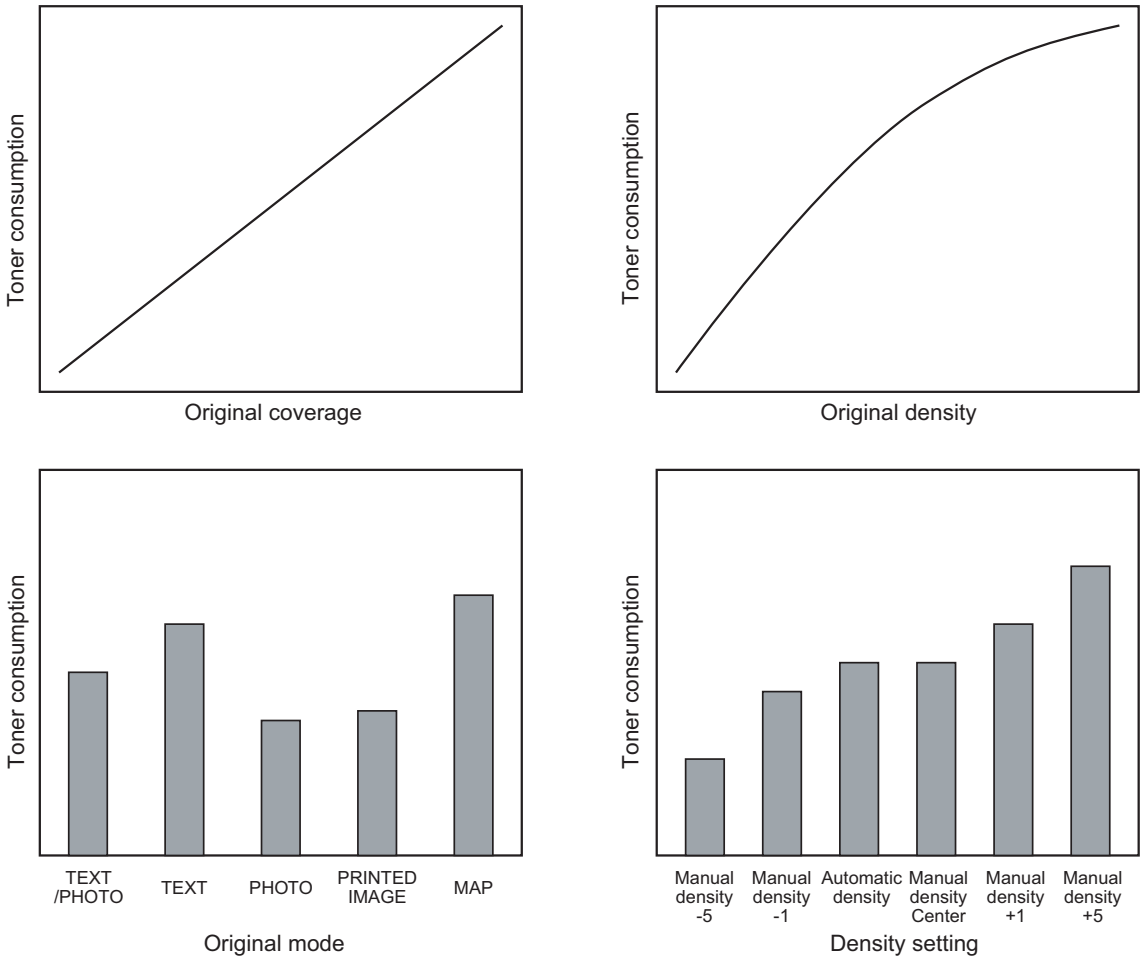


Fig. 25-1 Factors affecting toner consumption and the tendency

3. Details of pixel counter
   - Toner cartridge reference and service technician reference
     The pixel counter function in this equipment has 2 references, toner cartridge reference and service technician reference.

     Toner cartridge reference
     This is a system that accumulates data between the installation of a new toner cartridge and next installation.
     The installation of new toner cartridge is judged when the total number of pixel count or output pages after the detection of toner cartridge empty has exceeded the threshold.
     The threshold to be used is selectable in the setting mode (08-1506) between the pixel count and output pages (0: Output pages 1: Pixel counter). The threshold of pixel count is set in the setting mode (08-1508) and that of output pages is set in the setting mode (08-1507). When the new toner cartridge is judged as installed, the data related with the previous cartridge is cleared and replaced with the data after the installation of new cartridge. Clearing of the counter of the toner cartridge reference is performed in the setting mode (08-1503).

Service technician reference
This is a system that accumulates data between clearing the counter of the service technician reference by service technician and subsequently clearing the same counter.
Clearing of the counter of the service technician reference is performed in the setting mode (08-1502).

- Print count (number of output pages)
  The number of output pages shown at the pixel counter is counted after converting all paper sizes to the standard paper size (A4/LT). Printing on other than the standard size is converted by paper area ratio. The standard paper size is set in the setting mode (08-1500).
  The examples of conversion are as follows:

  Ex.)
  "1" is added to the print count when printing on A4/LT size.

  "2" is added to the print count when printing on A3/LD size. (area ratio to A4/LT: 200%)

  "1.49" is added to the print count when printing on B4 size. (area ratio to A4: 149%)

  "1.27" is added to the print count when printing on LG size. (area ratio to LT: 127%)

- Pixel count (%)
  Pixel count (%) shows the ratio of laser emitting pixels to all pixels on standard paper.
  The examples of pixel count are as follows:

Note:
In the following examples, 'solid copy' is considered to be 100%. But since the image has 4 margins, it never becomes 100% actually.

Ex.)
Printing 5 pages on A4/LT size with solid copy (Laser emits to all pixels.)
→ Pixel count: 100%, Print count: 5

Printing 5 pages on A4/LT size with blank copy (Laser never emits.)
→ Pixel count: 0%, Print count: 5

Printing 2 pages on A4/LT size with solid copy (Laser emits to all pixels.)
Printing 2 pages on A4/LT size with blank copy (Laser never emits.)
→ Pixel count: 50%, Print count: 4

Printing 3 pages on A4/LT size with 6% of laser emission
Printing 1 page on A4/LT size with 2% of laser emission
→ Pixel count: 5%, Print count: 4

Printing 2 pages on A3/LD size with solid copy (Laser emits to all pixels.)
→ Pixel count: 100%, Print count: 4

Printing 2 pages on A3/LD size with 6% of laser emission
→ Pixel count: 6%, Print count: 4

- Average pixel count (%) and latest pixel count (%)
  There are 2 types of the value calculated as the pixel count, average pixel count (%) and latest pixel count (%).

  Average pixel count (%)
  The average value of all pixel count data after each reference data is cleared is calculated and displayed.

  Latest pixel count (%)
  The value is displayed for printing just before the pixel counter is confirmed.

- Type of calculated data
  Since this is multifunctional and color equipment, the data of pixel count is calculated for each function and color.
  The following list is the information that can be confirmed by LCD screen. But actually, more information can be confirmed by the setting mode (08).
  See after-mentioned “5)-Display in the setting mode (08)” for details.

○: With data
—: Without data

	Toner cartridge reference				Service technician reference					
					Full color/Twin color					Black
	Yellow	Magenta	Cyan	Black	Total	Yellow	Magenta	Cyan	Black	
Copier function	○	○	○	○	○	○	○	○	○	○
Printer function	○	○	○	○	○	○	○	○	○	○
FAX function	-	-	-	○	-	-	-	-	-	○
Total	○	○	○	○	○	○	○	○	○	○

Table 2-201 Type of calculated data

- Setting related with the pixel counter function
  Standard paper size setting
  The standard paper size (A4 or LT) to convert it into the pixel count is selected (08-1500).

  Pixel counter display setting
  Whether or not to display the pixel counter on the LCD screen is selected (08-1504).

  Display reference setting
  The reference when displaying the pixel counter on the LCD screen (toner cartridge reference or service technician reference) is selected (08-1505).

  Determination counter of toner empty
  This is the counter to determine the replacement of new toner cartridge after the toner empty is detected.
  After the toner empty is detected by the auto-toner sensor, this counter checks if toner empty is not detected one more time while the specified number of pixel count or output pages is counted.

  Pixel counter clearing
  There are 3 types for the pixel count clear as follows:
  08-1501: All information related to the pixel count is cleared.
  08-1502: All information related to the service technician reference pixel count is cleared.
  08-1503: All information related to the toner cartridge reference pixel count is cleared.

4. Relation between pixel count and toner consumption
   The user's printing out the image with large coverage or high density may cause the large value of pixel count. And the setting that toner consumption becomes high in the original mode or density setting may cause it as well.
   In this case, the replacement cycle of toner cartridge is faster than the standard number of output pages. Therefore, this trend needs to be grasped for the service.
   The relation between pixel count and number of output pages per cartridge is as follows:

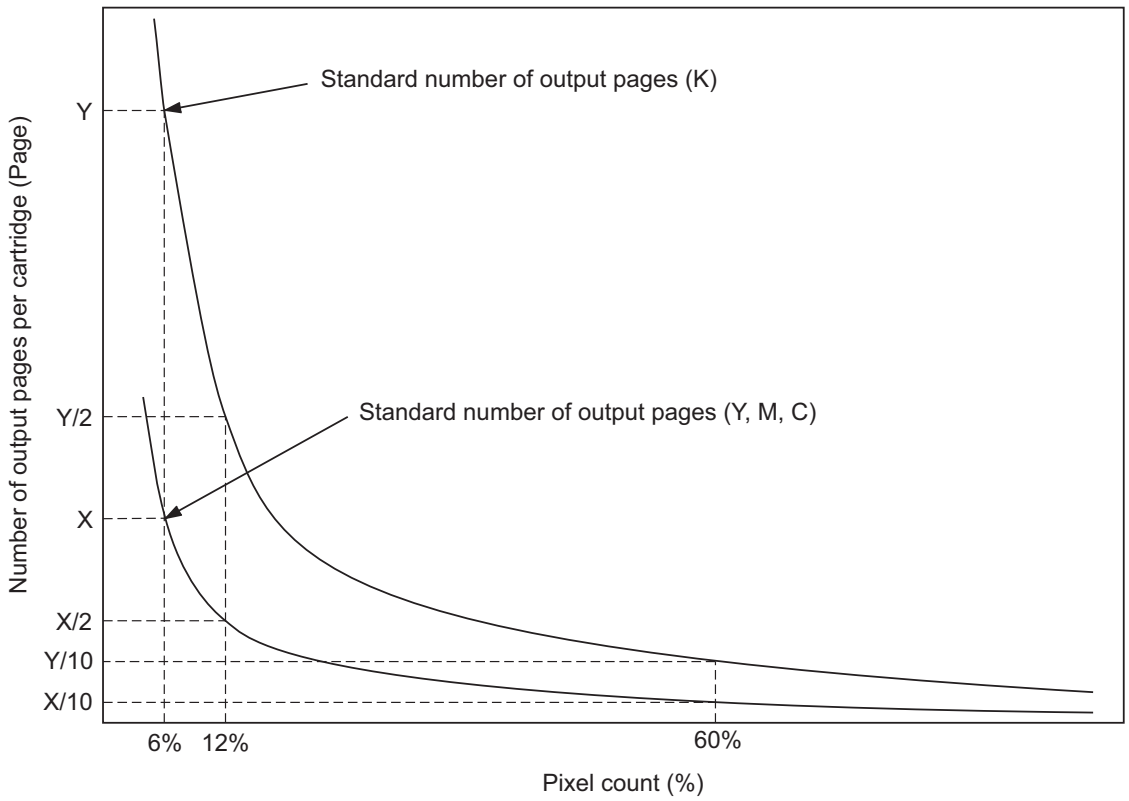


Fig. 25-2 Pixel count and number of output pages per cartridge

5. Pixel counter confirmation
   - Display on LCD screen
     Whether or not to display the pixel counter on the LCD screen is selected (0: Displayed, 1: Not displayed) in the setting mode (08-1504), and whether or not to display it at the service technician reference or toner cartridge reference is selected (0: Service technician reference, 1: Toner cartridge reference) in the setting mode (08-1505).

     The following screen is displayed when the buttons, [COUNTER] and [PIXEL COUNTER] are pressed in this order after “Displayed” is selected with the code above and the power is, as usual, turned ON. (The displayed buttons are depending on the setting of 08-1505.)

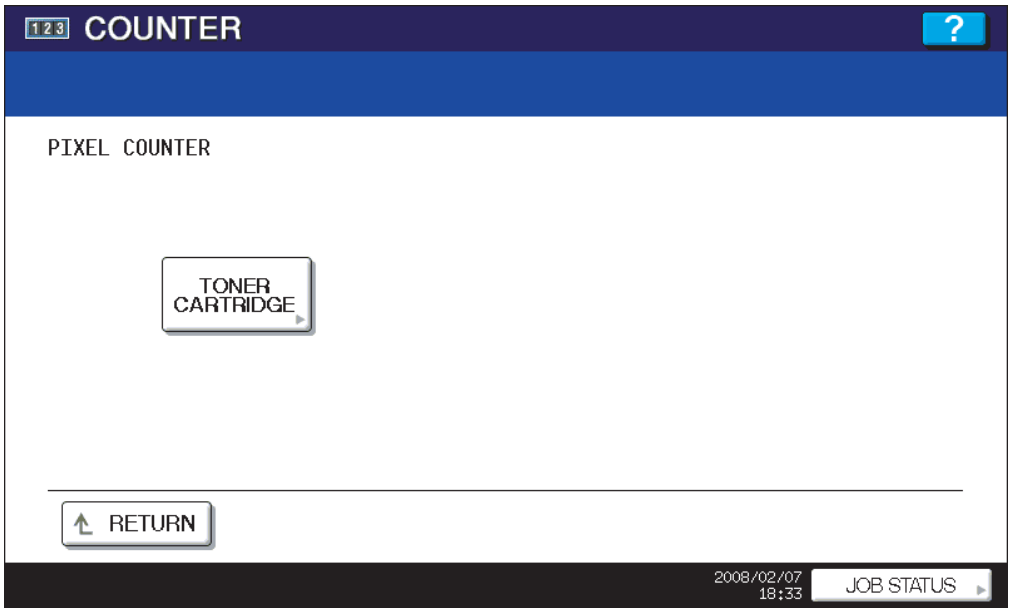


Fig. 25-3

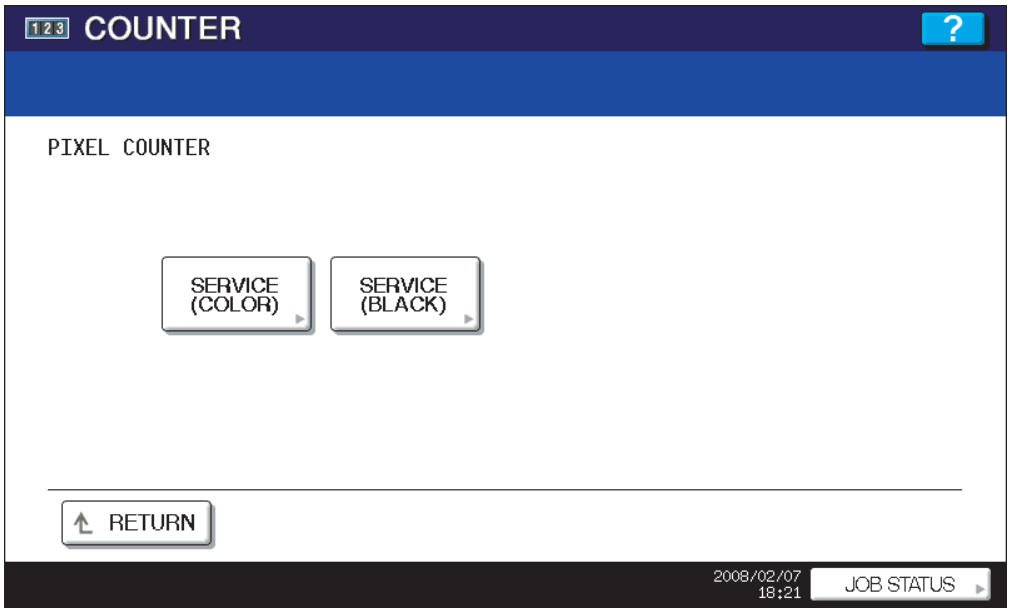


Fig. 25-4 Reference selection screen

When selecting and pressing the button in the above screen, each pixel counter screen is displayed.
[TONER CARTRIDGE] button: Information screen of toner cartridge reference is displayed.

[SERVICE (COLOR)] button: Information screen of service technician reference (full color) is displayed.
[SERVICE (BLACK)] button: Information screen of service technician reference (black) is displayed.

The following screen is displayed when pressing the [TONER CARTRIDGE] button.

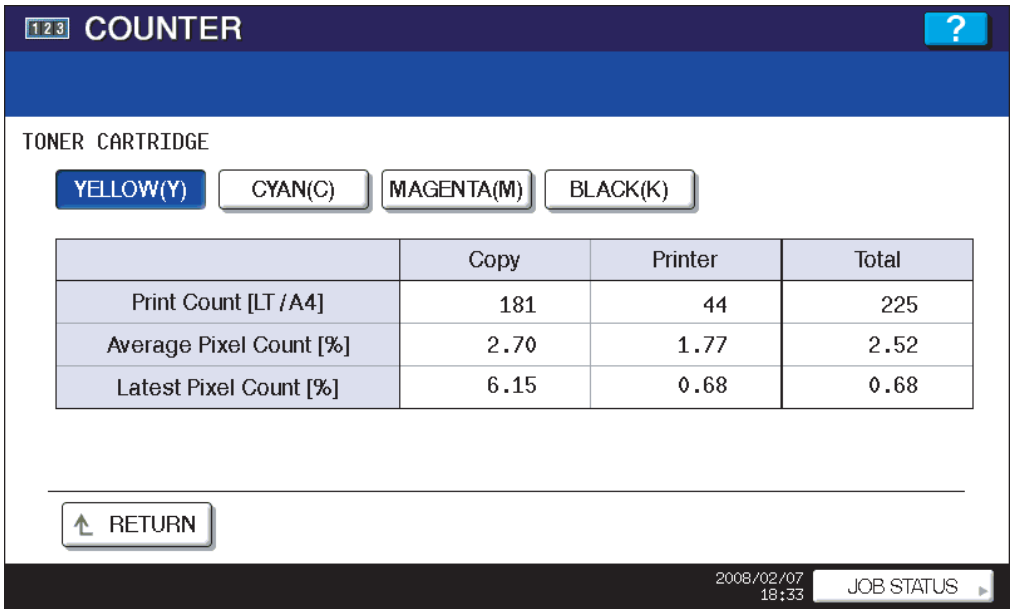


Fig. 25-5 Information screen of toner cartridge reference

The following screen is displayed when pressing the [SERVICE (COLOR)] button.

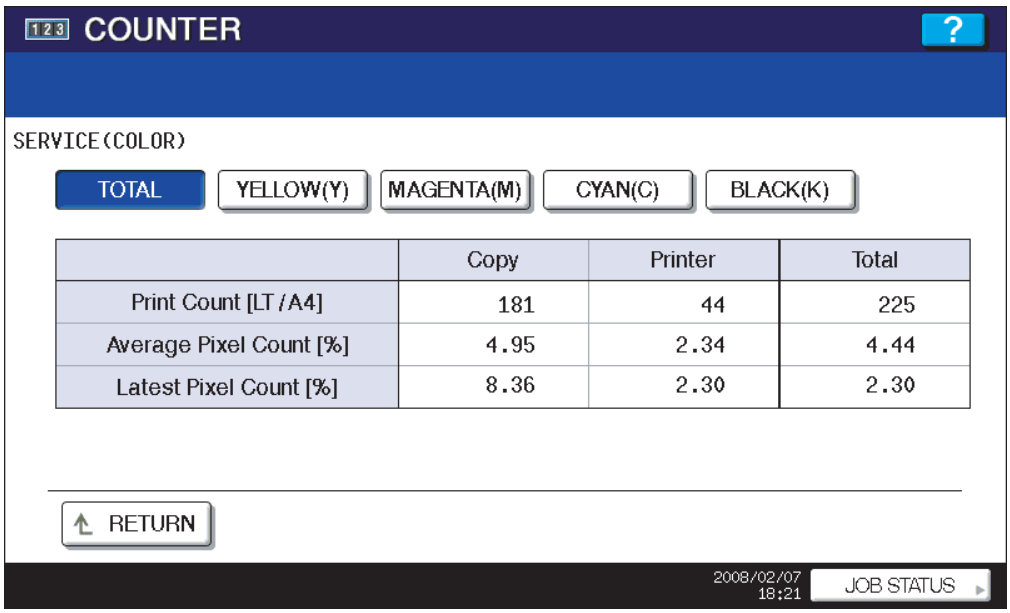


Fig. 25-6 Information screen of service technician reference (full color)

The following screen is displayed when pressing the [SERVICE (BLACK)] button.

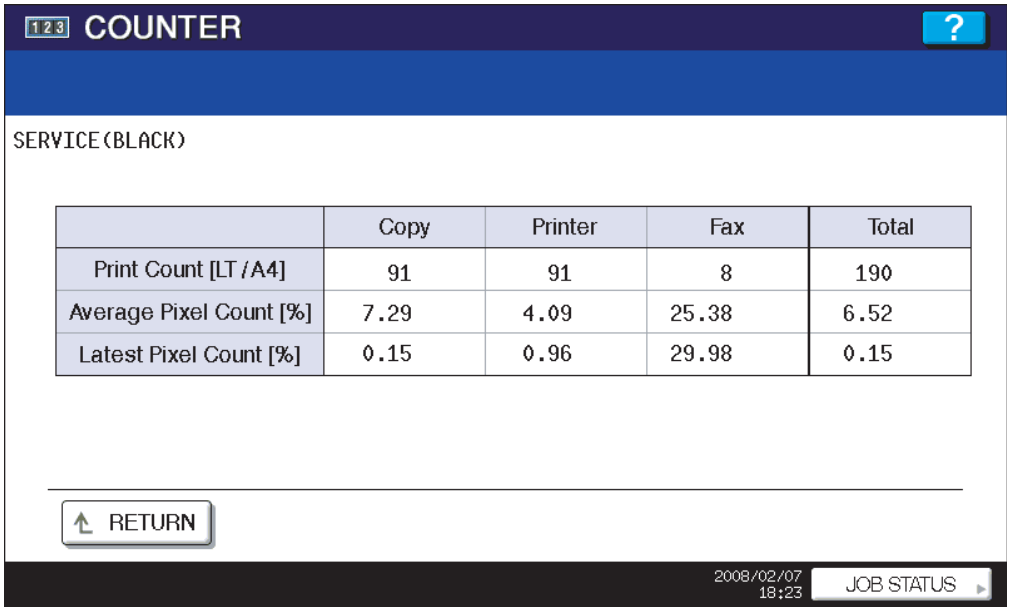


Fig. 25-7 Information screen of service technician reference (black)

- Data list printing
  The data for pixel counter can be printed in the list print mode (9S).
  9S-104: The data of the toner cartridge reference is printed.
  9S-105: The data of service technician reference is printed.

PIXEL COUNTER CODE LIST

'08-02-08 20:13

TOSHIBA e-STUDIO4520C

TONERCARTRIDGE

No	DATE	COL.		PPC	PRN	FAX	TOTAL
0	20080208	Y	Print Count[LT/A4]	181	45	---	226
1	20080208	Y	Average Pixel Count[%]	2.70	1.74	---	2.51
2	20080208	Y	Latest Pixel Count[%]	6.15	0.39	---	0.39
3	20080208	M	Print Count[LT/A4]	181	45	---	226
4	20080208	M	Average Pixel Count[%]	6.11	2	---	5.29
5	20080208	M	Latest Pixel Count[%]	6.82	2.15	---	2.15
6	20080208	C	Print Count[LT/A4]	181	45	---	226
7	20080208	C	Average Pixel Count[%]	5.46	2	---	4.81
8	20080208	C	Latest Pixel Count[%]	6.42	2.73	---	2.73
9	20080208	K	Print Count[LT/A4]	278	145	9	432
10	20080208	K	Average Pixel Count[%]	6.15	3.86	23.25	5.74
11	20080208	K	Latest Pixel Count[%]	7.32	2.19	6.25	2.19

Fig. 25-8 Data list of toner cartridge reference

PIXEL COUNTER CODE LIST

'08-02-08 20:13

TOSHIBA e-STUDIO4520C

SERVICEMAN

No	DATE	COL.		PPC	PRN	FAX	TOTAL
0	20080208	F	Print Count[LT/A4]	181	45	---	226
1	20080208	F	Average Pixel Count[%]	4.95	2.34	---	4.43
2	20080208	F	Latest Pixel Count[%]	8.36	2.34	---	2.34
3	20080208	Y	Print Count[LT/A4]	181	45	---	226
4	20080208	Y	Average Pixel Count[%]	2.7	1.74	---	2.51
5	20080208	Y	Latest Pixel Count[%]	6.15	0.39	---	0.39
6	20080208	M	Print Count[LT/A4]	181	45	---	226
7	20080208	M	Average Pixel Count[%	6.11	2	---	5.29
8	20080208	M	Latest Pixel Count[%]	6.82	2.15	---	2.15
9	20080208	C	Print Count[LT/A4]	181	45	---	226
10	20080208	C	Average Pixel Count[%]	5.46	2.18	---	4.81
11	20080208	C	Latest Pixel Count[%]	6.42	2.73	---	2.73
12	20080208	K	Print Count[LT/A4]	181	45	---	226
13	20080208	K	Average Pixel Count[%]	5.51	3.43	---	5.10
14	20080208	K	Latest Pixel Count[%]	14.05	4.10	---	4.10
15	20080208	K	Print Count[LT/A4]	97	100	9	206
16	20080208	K	Average Pixel Count[%]	7.36	4.06	23.25	6.45
17	20080208	K	Latest Pixel Count[%]	7.32	2.19	6.25	2.19

Fig. 25-9 Data list of service technician reference

- Display in the setting mode (08)
  Information of pixel count can be also checked in the setting mode (08).
  For details, see 📖 P.25-50 "25.6 Counter".

Print count, pixel count

		Full color/Twin color				Black	Black (at color) + Black
		Yellow	Magenta	Cyan	Black		
Copier function	Print count (page)	1557	1559	1561	1552	1553	-
	Average pixel count (%)	1609	1610	1611	1612	1613	1614
	Latest pixel count (%)	1626	1627	1628	1629	1639	-
Printer function	Print count (page)	1558	1560	1562	1554	1555	-
	Average pixel count (%)	1615	1616	1617	1618	1619	1620
	Latest pixel count (%)	1630	1631	1632	1633	1640	-
FAX function	Print count (page)	-	-	-	-	1556	-
	Average pixel count (%)	-	-	-	-	1625	-
	Latest pixel count (%)	-	-	-	-	1634	-
Total	Average pixel count (%)	1621	1622	1623	-	-	1624

Table 2-202 Pixel count code table (toner cartridge reference)

		Full color/Twin color					Black
		Total	Yellow	Magenta	Cyan	Black	
Copier function	Print count (page)	1547	-	-	-	-	1548
	Average pixel count (%)	1577	1578	1579	1580	1581	1592
	Latest pixel count (%)	1596	1597	1598	1599	1600	1606
Printer function	Print count (page)	1549	-	-	-	-	1550
	Average pixel count (%)	1582	1583	1584	1585	1586	1593
	Latest pixel count (%)	1601	1602	1603	1604	1605	1607
FAX function	Print count (page)	-	-	-	-	-	1551
	Average pixel count (%)	-	-	-	-	-	1594
	Latest pixel count (%)	-	-	-	-	-	1608
Total	Average pixel count (%)	1587	1588	1589	1590	1591	1595

Table 2-203 Pixel count code table (service technician reference)

Pixel count distribution

		Full color/Twin color				Black
		Yellow	Magenta	Cyan	Black	
Copier function	Print count distribution (page)	1641	1642	1643	1644	1649
Printer function	Print count distribution (page)	1645	1646	1647	1648	1650
FAX function	Print count distribution (page)	-	-	-	-	1651

Table 2-204 Pixel count code table

Note:

By entering the sub code at the above code, the pixel count distribution can be displayed dividing into 10 ranges. The sub codes are as follows.

0: 0 - 5% 1: 5.1 - 10% 2: 10.1 - 15% 3: 15.1 - 20% 4: 20.1 - 25%
5: 25.1 - 30% 6: 30.1 - 40% 7: 40.1 - 60% 8: 60.1- 80% 9: 80.1 - 100%

Other information

Toner cartridge replacement counter.
The toner cartridge replacement count is displayed.

08-1563: Toner cartridge Y
08-1564: Toner cartridge M
08-1565: Toner cartridge C
08-1566: Toner cartridge K

Toner cartridge reference count started date
The toner cartridge reference count started date is displayed.

08-1515: Toner cartridge Y
08-1516: Toner cartridge M
08-1517: Toner cartridge C
08-1518: Toner cartridge K

Service technician reference cleared date
The service technician reference cleared date (08-1510) is displayed.
The date (08-1502 was performed) is stored.

Toner cartridge reference cleared date
The toner cartridge reference cleared date is displayed.
The date (08-1503 was performed) is stored.

08-1511: Toner cartridge Y
08-1512: Toner cartridge M
08-1513: Toner cartridge C
08-1514: Toner cartridge K

25.9.2 Pixel counter related code

Note:
In the pixel counter function, the twin color copy mode is regarded as the full color mode.

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1500	Pixel counter	Standard paper size setting	ALL	EUR: 0 UC: 1 JPN: 0 <0-1>	SYS	Selects the standard paper size to convert it into the pixel count (%). 0: A4 1: LT	1
1501	Pixel counter	Pixel counter all clearing	ALL	-	SYS	Clears all information related to the pixel counter.	3
1502	Pixel counter	Service technician reference counter clearing	ALL	-	SYS	Clears all information related to the service technician reference pixel counter.	3
1503	Pixel counter	Toner cartridge reference counter clearing	ALL	-	SYS	Clears all information related to the toner cartridge reference pixel counter.	3
1504	Pixel counter	Pixel counter display setting	ALL	1 <0-1>	SYS	Selects whether or not to display the pixel counter on the LCD screen. 0: Displayed 1: Not displayed	1
1505	Pixel counter	Displayed reference setting	ALL	0 <0-1>	SYS	Selects the reference when displaying the pixel counter on the LCD screen. 0: Service technician reference 1: Toner cartridge reference	1
1506	Pixel counter	Toner empty determination counter setting	ALL	0 <0-1>	SYS	Selects the counter to determine toner empty. 0: Output pages 1: Pixel counter	1
1507	Pixel counter	Threshold setting for toner empty determination (Output pages)	ALL	500 <0-999>	SYS	Sets the number of output pages to determine toner empty. This setting is valid when “0” is set at 08-1506.	1
1508	Pixel counter	Threshold setting for toner empty determination (Pixel counter)	ALL	21500 <0-60000>	SYS	Sets the number of output pages to determine toner empty. This setting is valid when “1” is set at 08-1506.	1
1509	Pixel counter	Pixel counter clear flag/ Service technician reference	ALL	0 <0-1>	SYS	Becomes “1” when 08-1502 is performed.	2
1510	Pixel counter	Service technician reference cleared date	ALL	-	SYS	Displays the date on which 08-1502 was performed.	2
1511	Pixel counter	Toner cartridge reference cleared date (Y)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1512	Pixel counter	Toner cartridge reference cleared date (M)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2
1513	Pixel counter	Toner cartridge reference cleared date (C)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2
1514	Pixel counter	Toner cartridge reference cleared date (K)	ALL	-	SYS	Displays the date on which 08-1503 was performed.	2
1515	Pixel counter	Toner cartridge reference count started date (Y)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2
1516	Pixel counter	Toner cartridge reference count started date (M)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2
1517	Pixel counter	Toner cartridge reference count started date (C)	ALL (color)	-	SYS	Displays the date on which 08-1503 was performed.	2
1518	Pixel counter	Toner cartridge reference count started date (K)	ALL	-	SYS	Displays the date on which 08-1503 was performed.	2
1547	Pixel counter	Number of output pages/ fullcolor (Service technicianreference)	PPC (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, full color mode and service technician reference. [Unit. page]	2
1548	Pixel counter	Number of output pages/ black (Service technician reference)	PPC (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, black mode and service technician reference. [Unit. page]	2
1549	Pixel counter	Number of output pages/ fullcolor (Service technician reference)	PRT (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, full color mode and service technician reference. [Unit. page]	2
1550	Pixel counter	Number of output pages/ black (Service technician reference)	PRT (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, black mode and service technician reference. [Unit. page]	2
1551	Pixel counter	Number of output pages/ black (Service technician reference)	FAX (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the FAX function, black mode and service technician reference. [Unit. page]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1552	Pixel counter	Number of output pages/ full color (K) (Toner cartridge reference)	PPC (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, full color mode, toner K and toner cartridge reference. [Unit. page]	2
1553	Pixel counter	Number of output pages/ black (Toner cartridge reference)	PPC (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, black mode and toner cartridge reference. [Unit. page]	2
1554	Pixel counter	Number of output pages/ full color (K) (Toner cartridge reference)	PRT (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, full color mode, toner K and toner cartridge reference. [Unit. page]	2
1555	Pixel counter	Number of output pages/ black (Toner cartridge reference)	PRT (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, black mode and toner cartridge reference. [Unit. page]	2
1556	Pixel counter	Number of output pages/ black (Toner cartridge reference)	FAX (black)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the FAX function, black mode and toner cartridge reference. [Unit. page]	2
1557	Pixel counter	Number of output pages/ full color (Y) (Toner cartridge reference)	PPC (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, full color mode, toner Y and toner cartridge reference. [Unit. page]	2
1558	Pixel counter	Number of output pages/ full color (Y) (Toner cartridge reference)	PRT (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, full color mode, toner Y and toner cartridge reference. [Unit. page]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1559	Pixel counter	Number of output pages/ full color (M) (Toner cartridge reference)	PPC (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, full color mode, toner M and toner cartridge reference. [Unit. page]	2
1560	Pixel counter	Number of output pages/ full color (M) (Toner cartridge reference)	PRT (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, full color mode, toner M and toner cartridge reference. [Unit. page]	2
1561	Pixel counter	Number of output pages/ full color (C) (Toner cartridge reference)	PPC (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the copy function, full color mode, toner C and toner cartridge reference. [Unit. page]	2
1562	Pixel counter	Number of output pages/ full color (C) (Toner cartridge reference)	PRT (color)	<8 digits>	SYS	Counts the number of output pages converted to the standard paper size in the printer function, full color mode, toner C and toner cartridge reference. [Unit. page]	2
1563	Pixel counter	Toner cartridge Y replacement counter	ALL (color)	<3 digits>	SYS	Counts the number of time of the toner cartridge Y replacement.	2
1564	Pixel counter	Toner cartridge M replacement counter	ALL (color)	<3 digits>	SYS	Counts the number of time of the toner cartridge M replacement.	2
1565	Pixel counter	Toner cartridge C replacement counter	ALL (color)	<3 digits>	SYS	Counts the number of time of the toner cartridge C replacement.	2
1566	Pixel counter	Toner cartridge K replacement counter	ALL	<3 digits>	SYS	Counts the number of time of the toner cartridge K replacement.	2
1577	Pixel counter	Average pixel count/full color (Y+M+C+K) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, all toner and service technician reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	**Classification**	**Items**	**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1578	Pixel counter	Average pixel count/full color (Y) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner Y and service technician reference. [Unit: 0.01%]	2
1579	Pixel counter	Average pixel count/full color (M) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner M and service technician reference. [Unit: 0.01%]	2
1580	Pixel counter	Average pixel count/full color (C) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner C and service technician reference. [Unit: 0.01%]	2
1581	Pixel counter	Average pixel count/full color (K) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner K and service technician reference. [Unit: 0.01%]	2
1582	Pixel counter	Average pixel count/full color (Y+M+C+K) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, all toner and service technician reference. [Unit: 0.01%]	2
1583	Pixel counter	Average pixel count/full color (Y) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner Y and service technician reference. [Unit: 0.01%]	2
1584	Pixel counter	Average pixel count/full color (M) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner M and service technician reference. [Unit: 0.01%]	2
1585	Pixel counter	Average pixel count/full color (C) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner C and service technician reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1586	Pixel counter	Average pixel count/full color (K) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner K and service technician reference. [Unit: 0.01%]	2
1587	Pixel counter	Average pixel count/full color (Y+M+C+K) (Service technician reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, all toner and service technician reference. [Unit: 0.01%]	2
1588	Pixel counter	Average pixel count/full color (Y) (Service technician reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner Y and service technician reference. [Unit: 0.01%]	2
1589	Pixel counter	Average pixel count/full color (M) (Service technician reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner M and service technician reference. [Unit: 0.01%]	2
1590	Pixel counter	Average pixel count/full color (C) (Service technician reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner C and service technician reference. [Unit: 0.01%]	2
1591	Pixel counter	Average pixel count/full color (K) (Service technician reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner K and service technician reference. [Unit: 0.01%]	2
1592	Pixel counter	Average pixel count/black (Service technician reference)	PPC (black)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, black mode and service technician reference. [Unit: 0.01%]	2
1593	Pixel counter	Average pixel count/black (Service technician reference)	PRT (black)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, black mode and service technician reference. [Unit: 0.01%]	2
1594	Pixel counter	Average pixel count/black (Service technician reference)	FAX (black)	0 <0-10000>	SYS	Displays the average pixel count in the FAX function, black mode and service technician reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1595	Pixel counter	Average pixel count/black (Service technician reference)	PPC/ PRT/ FAX (black)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer/FAX function, black mode and service technician reference. [Unit: 0.01%]	2
1596	Pixel counter	Latest pixel count/full color (Y+M+C+K) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, all toner and service technician reference. [Unit: 0.01%]	2
1597	Pixel counter	Latest pixel count/full color (Y) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner Y and service technician reference. [Unit: 0.01%]	2
1598	Pixel counter	Latest pixel count/full color (M) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner M and service technician reference. [Unit: 0.01%]	2
1599	Pixel counter	Latest pixel count/full color (C) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner C and service technician reference. [Unit: 0.01%]	2
1600	Pixel counter	Latest pixel count/full color (K) (Service technician reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner K and service technician reference. [Unit: 0.01%]	2
1601	Pixel counter	Latest pixel count/full color (Y+M+C+K) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, all toner and service technician reference. [Unit: 0.01%]	2
1602	Pixel counter	Latest pixel count/full color (Y) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner Y and service technician reference. [Unit: 0.01%]	2
1603	Pixel counter	Latest pixel count/full color (M) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner M and service technician reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1604	Pixel counter	Latest pixel count/full color (C) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner C and service technician reference. [Unit: 0.01%]	2
1605	Pixel counter	Latest pixel count/full color (K) (Service technician reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner K and service technician reference. [Unit: 0.01%]	2
1606	Pixel counter	Latest pixel count/black (Service technician reference)	PPC (black)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, black mode and service technician reference. [Unit: 0.01%]	2
1607	Pixel counter	Latest pixel count/black (Service technician reference)	PRT (black)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, black mode and service technician reference. [Unit: 0.01%]	2
1608	Pixel counter	Latest pixel count/black (Service technician reference)	FAX (black)	0 <0-10000>	SYS	Displays the latest pixel count in the FAX function, black mode and service technician reference. [Unit: 0.01%]	2
1609	Pixel counter	Average pixel count/full color (Y) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner Y and toner cartridge reference. [Unit: 0.01%]	2
1610	Pixel counter	Average pixel count/full color (M) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner M and toner cartridge reference. [Unit: 0.01%]	2
1611	Pixel counter	Average pixel count/full color (C) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner C and toner cartridge reference. [Unit: 0.01%]	2
1612	Pixel counter	Average pixel count/full color (K) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color mode, toner K and toner cartridge reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1613	Pixel counter	Average pixel count/black (Toner cartridge reference)	PPC (black)	0 <0-10000>	SYS	Displays the average pixel count in the copy function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1614	Pixel counter	Average pixel count/full color (K)+black (Toner cartridge reference)	PPC	0 <0-10000>	SYS	Displays the average pixel count in the copy function, full color/black mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1615	Pixel counter	Average pixel count/full color (Y) (Toner cartridge reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner Y and toner cartridge reference. [Unit: 0.01%]	2
1616	Pixel counter	Average pixel count/full color (M) (Toner cartridge reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner M and toner cartridge reference. [Unit: 0.01%]	2
1617	Pixel counter	Average pixel count/full color (C) (Toner cartridge reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner C and toner cartridge reference. [Unit: 0.01%]	2
1618	Pixel counter	Average pixel count/full color (K) (Toner cartridge reference)	PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1619	Pixel counter	Average pixel count/black (Toner cartridge reference)	PRT (black)	0 <0-10000>	SYS	Displays the average pixel count in the printer function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1620	Pixel counter	Average pixel count/full color (K)+black (Toner cartridge reference)	PRT	0 <0-10000>	SYS	Displays the average pixel count in the printer function, full color/black mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1621	Pixel counter	Average pixel count/full color (Y) (Toner cartridge reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner Y and toner cartridge reference. [Unit: 0.01%]	2

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1622	Pixel counter	Average pixel count/full color (M) (Toner cartridge reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner M and toner cartridge reference. [Unit: 0.01%]	2
1623	Pixel counter	Average pixel count/full color (C) (Toner cartridge reference)	PPC/ PRT (color)	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer function, full color mode, toner C and toner cartridge reference. [Unit: 0.01%]	2
1624	Pixel counter	Average pixel count/full color (K)+black (Toner cartridge reference)	PPC/ PRT/ FAX	0 <0-10000>	SYS	Displays the average pixel count in the copy/ printer/FAX function, black mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1625	Pixel counter	Average pixel count/black (Toner cartridge reference)	FAX (black)	0 <0-10000>	SYS	Displays the average pixel count in the FAX function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1626	Pixel counter	Latest pixel count/full color (Y) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner Y and toner cartridge reference. [Unit:0.01%]	2
1627	Pixel counter	Latest pixel count/full color (M) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner M and toner cartridge reference. [Unit: 0.01%]	2
1628	Pixel counter	Latest pixel count/full color (C) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner C and toner cartridge reference. [Unit: 0.01%]	2
1629	Pixel counter	Latest pixel count/full color (K) (Toner cartridge reference)	PPC (color)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, full color mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1630	Pixel counter	Latest pixel count/full color (Y) (Toner cartridge reference)	PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner Y and toner cartridge reference. [Unit: 0.01%]	2

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1631	Pixel counter	Latest pixel count/full color (M) (Toner cartridge reference)		PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner M and toner cartridge reference. [Unit: 0.01%]	2
1632	Pixel counter	Latest pixel count/full color (C) (Toner cartridge reference)		PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner C and toner cartridge reference. [Unit: 0.01%]	2
1633	Pixel counter	Latest pixel count/full color (K) (Toner cartridge reference)		PRT (color)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, full color mode, toner K and toner cartridge reference. [Unit: 0.01%]	2
1634	Pixel counter	Latest pixel count/black (Toner cartridge reference)		FAX (black)	0 <0-10000>	SYS	Displays the latest pixel count in the FAX function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1639	Pixel counter	Latest pixel count/black (Toner cartridge reference)		PPC (black)	0 <0-10000>	SYS	Displays the latest pixel count in the copy function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1640	Pixel counter	Latest pixel count/black (Toner cartridge reference)		PRT (black)	0 <0-10000>	SYS	Displays the latest pixel count in the printer function, black mode and toner cartridge reference. [Unit: 0.01%]	2
1641-0	Pixel counter	Pixel count distribution/ full color (Y)	0-5%	PPC (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the copy function, full color mode and toner Y are displayed. [Unit: page]	14
1641-1			5.1-10%	PPC (color)	<8 digits>	SYS		14
1641-2			10.1-15%	PPC (color)	<8 digits>	SYS		14
1641-3			15.1-20%	PPC (color)	<8 digits>	SYS		14
1641-4			20.1-25%	PPC (color)	<8 digits>	SYS		14
1641-5			25.1-30%	PPC (color)	<8 digits>	SYS		14
1641-6			30.1-40%	PPC (color)	<8 digits>	SYS		14
1641-7			40.1-60%	PPC (color)	<8 digits>	SYS		14
1641-8			60.1-80%	PPC (color)	<8 digits>	SYS		14
1641-9			80.1-100%	PPC (color)	<8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1642-0	Pixel counter	Pixel count distribution/ full color (M)	0-5%	PPC (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the copy function, full color mode and toner M are displayed. [Unit: page]	14
1642-1			5.1-10%	PPC (color)	<8 digits>	SYS		14
1642-2			10.1-15%	PPC (color)	<8 digits>	SYS		14
1642-3			15.1-20%	PPC (color)	<8 digits>	SYS		14
1642-4			20.1-25%	PPC (color)	<8 digits>	SYS		14
1642-5			25.1-30%	PPC (color)	<8 digits>	SYS		14
1642-6			30.1-40%	PPC (color)	<8 digits>	SYS		14
1642-7			40.1-60%	PPC (color)	<8 digits>	SYS		14
1642-8			60.1-80%	PPC (color)	<8 digits>	SYS		14
1642-9			80.1-100%	PPC (color)	<8 digits>	SYS		14
1643-0	Pixel counter	Pixel count distribution/ full color (C)	0-5%	PPC (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the copy function, full color mode and toner C are displayed. [Unit: page]	14
1643-1			5.1-10%	PPC (color)	<8 digits>	SYS		14
1643-2			10.1-15%	PPC (color)	<8 digits>	SYS		14
1643-3			15.1-20%	PPC (color)	<8 digits>	SYS		14
1643-4			20.1-25%	PPC (color)	<8 digits>	SYS		14
1643-5			25.1-30%	PPC (color)	<8 digits>	SYS		14
1643-6			30.1-40%	PPC (color)	<8 digits>	SYS		14
1643-7			40.1-60%	PPC (color)	<8 digits>	SYS		14
1643-8			60.1-80%	PPC (color)	<8 digits>	SYS		14
1643-9			80.1-100%	PPC (color)	<8 digits>	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1644-0	Pixel counter	Pixel count distribution/ full color (K)	0-5%	PPC (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the copy function, full color mode and toner K are displayed. [Unit: page]	14
1644-1			5.1-10%	PPC (color)	<8 digits>	SYS		14
1644-2			10.1-15%	PPC (color)	<8 digits>	SYS		14
1644-3			15.1-20%	PPC (color)	<8 digits>	SYS		14
1644-4			20.1-25%	PPC (color)	<8 digits>	SYS		14
1644-5			25.1-30%	PPC (color)	<8 digits>	SYS		14
1644-6			30.1-40%	PPC (color)	<8 digits>	SYS		14
1644-7			40.1-60%	PPC (color)	<8 digits>	SYS		14
1644-8			60.1-80%	PPC (color)	<8 digits>	SYS		14
1644-9			80.1-100%	PPC (color)	<8 digits>	SYS		14
1645-0	Pixel counter	Pixel count distribution/ full color (Y)	0-5%	PRT (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the printer function, full color mode and toner Y are displayed. [Unit: page]	14
1645-1			5.1-10%	PRT (color)	<8 digits>	SYS		14
1645-2			10.1-15%	PRT (color)	<8 digits>	SYS		14
1645-3			15.1-20%	PRT (color)	<8 digits>	SYS		14
1645-4			20.1-25%	PRT (color)	<8 digits>	SYS		14
1645-5			25.1-30%	PRT (color)	<8 digits>	SYS		14
1645-6			30.1-40%	PRT (color)	<8 digits>	SYS		14
1645-7			40.1-60%	PRT (color)	<8 digits>	SYS		14
1645-8			60.1-80%	PRT (color)	<8 digits>	SYS		14
1645-9			80.1-100%	PRT (color)	<8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1646-0	Pixel counter	Pixel count distribution/ full color (M)	0-5%	PRT (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the printer function, full color mode and toner M are displayed. [Unit: page]	14
1646-1			5.1-10%	PRT (color)	<8 digits>	SYS		14
1646-2			10.1-15%	PRT (color)	<8 digits>	SYS		14
1646-3			15.1-20%	PRT (color)	<8 digits>	SYS		14
1646-4			20.1-25%	PRT (color)	<8 digits>	SYS		14
1646-5			25.1-30%	PRT (color)	<8 digits>	SYS		14
1646-6			30.1-40%	PRT (color)	<8 digits>	SYS		14
1646-7			40.1-60%	PRT (color)	<8 digits>	SYS		14
1646-8			60.1-80%	PRT (color)	<8 digits>	SYS		14
1646-9			80.1-100%	PRT (color)	<8 digits>	SYS		14
1647-0	Pixel counter	Pixel count distribution/ full color (C)	0-5%	PRT (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the printer function, full color mode and toner C are displayed. [Unit: page]	14
1647-1			5.1-10%	PRT (color)	<8 digits>	SYS		14
1647-2			10.1-15%	PRT (color)	<8 digits>	SYS		14
1647-3			15.1-20%	PRT (color)	<8 digits>	SYS		14
1647-4			20.1-25%	PRT (color)	<8 digits>	SYS		14
1647-5			25.1-30%	PRT (color)	<8 digits>	SYS		14
1647-6			30.1-40%	PRT (color)	<8 digits>	SYS		14
1647-7			40.1-60%	PRT (color)	<8 digits>	SYS		14
1647-8			60.1-80%	PRT (color)	<8 digits>	SYS		14
1647-9			80.1-100%	PRT (color)	<8 digits>	SYS		14

Setting mode (08)								
Code	**Classification**	**Items**		**Function**	**Default <Acceptable value>**	**RAM**	**Contents**	**Procedure**
1648-0	Pixel counter	Pixel count distribution/ full color (K)	0-5%	PRT (color)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the printer function, full color mode and toner K are displayed. [Unit: page]	14
1648-1			5.1-10%	PRT (color)	<8 digits>	SYS		14
1648-2			10.1-15%	PRT (color)	<8 digits>	SYS		14
1648-3			15.1-20%	PRT (color)	<8 digits>	SYS		14
1648-4			20.1-25%	PRT (color)	<8 digits>	SYS		14
1648-5			25.1-30%	PRT (color)	<8 digits>	SYS		14
1648-6			30.1-40%	PRT (color)	<8 digits>	SYS		14
1648-7			40.1-60%	PRT (color)	<8 digits>	SYS		14
1648-8			60.1-80%	PRT (color)	<8 digits>	SYS		14
1648-9			80.1-100%	PRT (color)	<8 digits>	SYS		14
1649-0	Pixel counter	Pixel count distribution/ black	0-5%	PPC (black)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the copy function and black mode are displayed. [Unit: page]	14
1649-1			5.1-10%	PPC (black)	<8 digits>	SYS		14
1649-2			10.1-15%	PPC (black)	<8 digits>	SYS		14
1649-3			15.1-20%	PPC (black)	<8 digits>	SYS		14
1649-4			20.1-25%	PPC (black)	<8 digits>	SYS		14
1649-5			25.1-30%	PPC (black)	<8 digits>	SYS		14
1649-6			30.1-40%	PPC (black)	<8 digits>	SYS		14
1649-7			40.1-60%	PPC (black)	<8 digits>	SYS		14
1649-8			60.1-80%	PPC (black)	<8 digits>	SYS		14
1649-9			80.1-100%	PPC (black)	<8 digits>	SYS		14

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1650-0	Pixel counter	Pixel count distribution/ black	0-5%	PRT (black)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the printer function and black mode are displayed. [Unit: page]	14
1650-1			5.1-10%	PRT (black)	<8 digits>	SYS		14
1650-2			10.1-15%	PRT (black)	<8 digits>	SYS		14
1650-3			15.1-20%	PRT (black)	<8 digits>	SYS		14
1650-4			20.1-25%	PRT (black)	<8 digits>	SYS		14
1650-5			25.1-30%	PRT (black)	<8 digits>	SYS		14
1650-6			30.1-40%	PRT (black)	<8 digits>	SYS		14
1650-7			40.1-60%	PRT (black)	<8 digits>	SYS		14
1650-8			60.1-80%	PRT (black)	<8 digits>	SYS		14
1650-9			80.1-100%	PRT (black)	<8 digits>	SYS		14
1651-0	Pixel counter	Pixel count distribution/ black	0-5%	FAX (black)	<8 digits>	SYS	The pixel count data are divided into 10 ranges. The number of output pages in each range is displayed. In this code, the distributions in the FAX function and black mode are displayed. [Unit: page]	14
1651-1			5.1-10%	FAX (black)	<8 digits>	SYS		14
1651-2			10.1-15%	FAX (black)	<8 digits>	SYS		14
1651-3			15.1-20%	FAX (black)	<8 digits>	SYS		14
1651-4			20.1-25%	FAX (black)	<8 digits>	SYS		14
1651-5			25.1-30%	FAX (black)	<8 digits>	SYS		14
1651-6			30.1-40%	FAX (black)	<8 digits>	SYS		14
1651-7			40.1-60%	FAX (black)	<8 digits>	SYS		14
1651-8			60.1-80%	FAX (black)	<8 digits>	SYS		14
1651-9			80.1-100%	FAX (black)	<8 digits>	SYS		14

25.10 PM support mode related code

The management items at PM support mode can also be operated at setting mode (08).
The following items are displayed or set by using sub-codes at PM management setting in the table below.

<Sub-codes>
0: Present number of output pages
- Means the present number of output pages.

1: Recommended number of output pages for replacement
- Means the recommended number of output pages for replacement.

2: Number of output pages at the last replacement
- Means the number of output pages at the last replacement.

3: Present driving counts
- Means the present drive counts (1 count = 2 seconds).

4: Recommended driving counts to be replaced
- Means the recommended drive counts for replacement (1 count = 2 seconds).

5: Driving counts at the last replacement
- Means the drive counts at the last replacement.

6: Present output pages for control
- Means the present number of output pages for controlling.

7: Present driving counts for control
- Means the present drive counts for controlling (1 count = 2 seconds).

8: Number of times replaced
- Counts up when clearing the counter of each unit in the PM Support Mode Screen.

Notes:
- Sub-code 0 is equivalent to sub-code 6.
- Sub-code 3 is equivalent to sub-code 7.
- When the value of sub-code 3 is changed, the value of sub-code 7 is also updated and vice versa.
- When “0” is set at one of sub-codes 0, 3, 6 and 7, the rest of them are automatically updated to “0”.

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Photoconductive drum (K)	1150-0 to 8	1151	<Default values of code 1150 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Photoconductive drum (Y)	1152-0 to 8	1153	<Default values of code 1152 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Photoconductive drum (M)	1154-0 to 8	1155	<Default values of code 1154 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Photoconductive drum (C)	1156-0 to 8	1157	<Default values of code 1156 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Drum cleaning blade (K)	1158-0 to 8	1159	<Default values of code 1158 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Drum blade cleaner (Y)	1160-0 to 8	1161	<Default values of code 1160 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Drum blade cleaner (M)	1162-0 to 8	1163	<Default values of code 1162 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Drum blade cleaner (C)	1164-0 to 8	1165	<Default values of code 1164 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Charger grid (K)	1174-0 to 8	1175	<Default values of code 1174 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Charger grid (Y)	1176-0 to 8	1177	<Default values of code 1176 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Charger grid (M)	1178-0 to 8	1179	<Default values of code 1178 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Charger grid (C)	1180-0 to 8	1181	<Default values of code 1180 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Charger (Wire/needle)(K)	1182-0 to 8	1183	<Default values of code 1182 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Charger (Wire/needle)(Y)	1184-0 to 8	1185	<Default values of code 1184 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Charger (Wire/ needle)(M)	1186-0 to 8	1187	<Default values of code 1186 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Charger (Wire/ needle)(C)	1188-0 to 8	1189	<Default values of code 1188 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Charger cleaning pad (K)	1190-0 to 8	1191	<Default values of code 1190 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Charger cleaning pad (Y)	1192-0 to 8	1193	<Default values of code 1192 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Charger cleaning pad (M)	1194-0 to 8	1195	<Default values of code 1194 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Charger cleaning pad (C)	1196-0 to 8	1197	<Default values of code 1196 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Ozone filter-1	1198-0 to 8	1199	<Default values of code 1198 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000
Developer material (K)	1200-0 to 8	1201	<Default values of code 1200 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer material (Y)	1202-0 to 8	1203	<Default values of code 1202 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer material (M)	1204-0 to 8	1205	<Default values of code 1204 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer material (C)	1206-0 to 8	1207	<Default values of code 1206 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Transfer (Wire/Roller/1st transfer K roller)	1214-0 to 8	1215	<Default values of code 1214 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Transfer (Wire/Roller/ 1st transfer Y roller)	1216-0 to 8	1217	<Default values of code 1216 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Transfer (Wire/Roller/ 1st transfer M roller)	1218-0 to 8	1219	<Default values of code 1218 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Transfer (Wire/Roller/ 1st transfer C roller)	1220-0 to 8	1221	<Default values of code 1220 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Transfer belt	1228-0 to 8	1229	<Default values of code 1228 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 40,000/46,000/56,000/ 56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/ 170,000/170,000/170,000/170,000
Transfer belt cleaning blade	1232-0 to 8	1233	<Default values of code 1232 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 160,000/184,000/224,000/ 224,000/280,000/280,000/280,000 Sub-code 4: 680,000/680,000/680,000/ 680,000/680,000/680,000/680,000
2nd transfer roller	1240-0 to 8	1241	<Default values of code 1240 (e-STUDIO2020C/2330C/2820C/2830C/ 3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/ 0 Sub-code 1: 160,000/184,000/224,000/ 224,000/280,000/280,000/280,000 Sub-code 4: 680,000/680,000/680,000/ 680,000/680,000/680,000/680,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Pressure roller	1250-0 to 8	1251	<Default values of code 1250 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/92,000/112,000/112,000/140,000/140,000/140,000 Sub-code 4: 340,000/340,000/340,000/340,000/340,000/340,000/340,000
Pressure roller separation finger	1270-0 to 8	1271	<Default values of code 1270 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/92,000/112,000/112,000/140,000/140,000/140,000 Sub-code 4: 340,000/340,000/340,000/340,000/340,000/340,000/340,000
Fuser belt	1272-0 to 8	1273	<Default values of code 1272 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/92,000/112,000/112,000/140,000/140,000/140,000 Sub-code 4: 340,000/340,000/340,000/340,000/340,000/340,000/340,000
Fuser roller	1274-0 to 8	1275	<Default values of code 1274 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/92,000/112,000/112,000/140,000/140,000/140,000 Sub-code 4: 340,000/340,000/340,000/340,000/340,000/340,000/340,000
Fuser belt guide	1276-0 to 8	1277	<Default values of code 1276 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/92,000/112,000/112,000/140,000/140,000/140,000 Sub-code 4: 340,000/340,000/340,000/340,000/340,000/340,000/340,000
Pickup roller (RADF)	1282-0, 1, 2, 8	1283	<Default values of code 1282 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 120,000/120,000/120,000/120,000/120,000/120,000/120,000
Feed roller (RADF)	1284-0,1,2,8	1285	<Default values of code 1284 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 120,000/120,000/120,000/120,000/120,000/120,000/120,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Separation roller (RADF)	1286-0, 1, 2, 8	1287	<Default values of code 1286 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 120,000/120,000/120,000/120,000/120,000/120,000/120,000
Pickup roller (1st drawer)	1290-0, 1, 2, 8	1291	<Default values of code 1290 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Pickup roller (2nd drawer)	1292-0,1,2,8	1293	<Default values of code 1292 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Pickup roller (LCF)	1294-0,1,2,8	1295	<Default values of code 1294 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000
Feed roller (1st drawer)	1298-0,1,2,8	1299	<Default values of code 1298 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Feed roller (2nd drawer)	1300-0,1,2,8	1301	<Default values of code 1300 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Feed roller (LCF)	1302-0, 1, 2, 8	1303	<Default values of code 1302 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000
Separation roller (1st drawer)	1306-0,1,2,8	1307	<Default values of code 1306 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Separation roller (2nd drawer)	1308-0,1,2,8	1309	<Default values of code 1308 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Separation roller (LCF)	1310-0,1,2,8	1311	<Default values of code 1310 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Separation roller (PFP upper drawer)	1312-0,1,2,8	1313	<Default values of code 1312 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Separation roller (PFP lower drawer)	1314-0,1,2,8	1315	<Default values of code 1314 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Separation roller (Bypass unit)	1316-0,1,2,8	1317	<Default values of code 1316 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Feed roller (PFP upper drawer)	1320-0,1,2,8	1321	<Default values of code 1320 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Feed roller (PFP lower drawer)	1322-0,1,2,8	1323	<Default values of code 1322 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Feed roller (Bypass unit)	1324-0,1,2,8	1325	<Default values of code 1324 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Pickup roller (PFP upper drawer)	1328-0,1,2,8	1329	<Default values of code 1328 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Pickup roller (PFP lower drawer)	1330-0,1,2,8	1331	<Default values of code 1330 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000
Pickup roller (Bypass unit)	1332-0,1,2,8	1333	<Default values of code 1332 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 8: 0/0/0/0/0/0/0 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Date of previous replacement <Procedure 2>	Remarks
Ozone filter-2	1340-0 to 8	1341	<Default values of code 1340 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 160,000/184,000/224,000/224,000/280,000/280,000/280,000 Sub-code 4: 680,000/680,000/680,000/680,000/680,000/680,000/680,000
2nd transfer facing roller cleaning Mylar	1342-0 to 8	1343	<Default values of code 1342 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 160,000/184,000/224,000/224,000/280,000/280,000/280,000 Sub-code 4: 680,000/680,000/680,000/680,000/680,000/680,000/680,000
Developer filter(K)	5600-0 to 8	5601	<Default values of code 5600 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer filter(Y)	5602-0 to 8	5603	<Default values of code 5602 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer filter(M)	5604-0 to 8	5605	<Default values of code 5604 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000
Developer filter(C)	5606-0 to 8	5607	<Default values of code 5606 (e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C)> Sub-codes 0, 2, 3, 5, 6, 7, 8: 0/0/0/0/0/0/0 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 125,000/125,000/125,000/125,000/125,000/125,000/125,000

25.11 Default setting / restore setting of the EFI Printer Board

The codes whose value can be changed by performing “Default setting of the EFI Printer Board (08-700)” or “Restore setting of the EFI Printer Board (08-9952)” are listed below.

Adjustment mode (05)

Code	Item		Default value when 08-700 is performed	Default value when 08-9952 is performed
7322-0	Tagbit extension processing for printing (Black mode)	PS	1	1
7322-1		PCL	1	1
7322-2		XPS	1	1
8102-0	Tagbit extension processing for printing (Color mode)	PS	1	1
8102-1		PCL	1	1
8102-2		XPS	1	1
8118-0	Sharpness adjustment / PS	Text	128	128
8118-1		Graphics	128	128
8118-2		Image	128	128

Setting mode (08)

Code	Item	Default value when 08-700 is performed	Default value when 08-9952 is performed
1006	Address Mode	1	2
1008	IP address	10 250 250 249	000 000 000 000
1009	Subnet mask	255 255 255 252	000 000 000 000
1010	Gateway	10 250 250 250	000 000 000 000
1011	Availability of IPX	2	1
1014	Availability of AppleTalk	2	1
1060	TCP port number of FTP server	50021	21
1073	Availability of Raw/TCP	2	1
1075	Availability of LPD client	2	1
1078	Availability of IPP	2	1
1089	Availability of FTP print	2	1
1103	Bonjour setting	2	1
1464	Samba server ON/OFF setting	2	1
8508	Controlling method for print image position adjustment in secondary scanning direction	0	0
8509	Controlling amount for print image position adjustment in secondary scanning direction	0	18
8510	Menu display for controlling print image position adjustment in secondary scanning direction	0	0

26. ERROR CODE AND TROUBLESHOOTING

26.1 General Descriptions

This chapter explains the procedures for solving troubles occurring in the equipment.

When a trouble occurs, check if an error code is displayed on the LCD screen of the control panel first. If displayed, refer to“26.2Error Code List” to figure out the classification and contents of the error, and then refer to “26.3Diagnosis and Prescription for Each Error Code” to remove its cause.
If not displayed and the equipment does not operate properly or images are not printed properly, refer to “26.4Other errors” or “26.5Troubleshooting for the Image” to remove its cause.

Note:
If unusual odor is detected or if smoke or fire comes out of the equipment, immediately turn the power OFF.
Even in the cases other than the above, fully observe safety precautions.
If any PC board or HDD shall be replaced, refer to“21.3Precautions for Installation of GP-1070 and Disposal of HDD/Board”.

26.1.1 If a problem continues even after performing all troubleshooting

If a problem continues even after performing all troubleshooting and technical tips, report the problem to the appropriate Toshiba service center along with the following information. This information will help the service center understand your problem and take quick action to find the solution.

1. Serial Number
2. List Print
   Refer to the appropriate Service Manual / Service Handbook for the detailed procedure to obtain a List Print
   A. Enter the value given below to obtain a List Print by CSV file.
   - 9S-300: All CSV files

   B. Enter the value given below to obtain a List Print by printing it out.
   - 9S-101: 05 code
   - 9S-102: 08 code
   - 9S-104: Pixel counter data (Toner cartridge standard)
   - 9S-106: Error history (1000 cases max)
   - 9S-108: Firmware update log (200 cases max)
   - 9S-110: Power on/off log (100 cases max)
3. For image-related problems, collect image samples with the problem areas and the feeding direction marked first. Then provide information about the media type and weight, and the print data / spool files for duplicating the problem.
4. For abnormal acoustic noise, describe the situation in as much detail as possible.
5. For hardware-related problems, provide photos of any broken parts, paper jams, etc.
   In case of paper jams, include the type of paper and its manufacturer.
6. For software-related problems, provide list prints, TopAccess Logs and the detailed procedure needed to duplicate the problem.

* This is the minimum information required to report a complaint. It would be appreciated if you could obtain additional information.

* Follow the directions of the service center if they request additional information as each issue is unique to some degree.

26.2 Error Code List

The following error codes is displayed at the upper right of the screen when the “CLEAR PAPER” or “CALL SERVICE” symbol is blinking.

26.2.1 Jam

Error code	Classification	Contents	Troubleshooting
E010	Paper exit jam	Jam not reaching the exit sensor: The paper which has passed through the fuser unit does not reach the exit sensor.	P. 26-25
E011	Other paper jam	Transfer belt paper-clinging jam: The paper after the 2nd transfer is clinging to the transfer belt, or a paper jam occurred between the registration roller and the paper clinging detection sensor.	P. 26-33
E020	Paper exit jam	Stop jam at the exit sensor: The trailing edge of the paper does not pass the exit sensor after its leading edge has reached this sensor.	P. 26-25
E030	Other paper jam	Power-ON jam: The paper is remaining on the paper transport path when power is turned ON.	P. 26-33
E061		Incorrect paper size setting for 1st drawer: The size of paper in the 1st drawer differs from size setting of the equipment.	P. 26-34
E062		Incorrect paper size setting for 2nd drawer: The size of paper in the 2nd drawer differs from size setting of the equipment.	P. 26-34
E063		Incorrect paper size setting for PFP upper drawer: The size of paper in the 3rd drawer differs from size setting of the equipment.	P. 26-34
E064		Incorrect paper size setting for PFP lower drawer: The size of paper in the 4th drawer differs from size setting of the equipment.	P. 26-34
E065		Incorrect paper size setting for bypass tray: The size of paper in the bypass tray differs from size setting of the equipment.	P. 26-34
E090		Image data delay jam: Image data to be printed cannot be prepared.	P. 26-34
E091		Motor-ON time-out jam: The equipment does not operate normally because abnormality occurred on an interface between the SYS board and engine firmware.	P. 26-34
E0A0		Image transport ready time-out jam: Image data to be printed cannot be sent.	P. 26-34
E110	Paper misfeeding	ADU misfeeding (Paper not reaching the registration sensor): The paper which has passed through ADU does not reach the registration sensor during duplex printing.	P. 26-25
E120		Bypass misfeeding (Paper not reaching the bypass feed sensor): Paper fed from the bypass tray does not reach the bypass feed sensor.	P. 26-26
E130		1st drawer misfeeding (Paper not reaching the 1st drawer feed sensor): The paper fed from the 1st drawer does not reach the 1st drawer feed sensor.	P. 26-26
E140		2nd drawer misfeeding (Paper not reaching the 2nd drawer feed sensor): The paper fed from the 2nd drawer does not reach the 2nd drawer feed sensor.	P. 26-26

Error code	Classification	Contents	Troubleshooting
E150	Paper misfeeding	PFP upper drawer misfeeding (Paper not reaching the PFP upper drawer feed sensor): The paper fed from the PFP upper drawer does not reach the PFP upper drawer feed sensor.	P. 26-27
E160		PFP lower drawer misfeeding (Paper not reaching the PFP lower drawer feed sensor): The paper fed from the PFP lower drawer does not reach the PFP lower drawer feed sensor.	P. 26-27
E190		LCF misfeeding (Paper not reaching the LCF feed sensor): The paper fed from the LCF does not reach the LCF feed sensor.	P. 26-28
E200	Paper transport jam	1st drawer transport jam (Paper not reaching the registration sensor): The paper does not reach the registration sensor after it has passed the 1st drawer feed sensor.	P. 26-29
E210		2nd drawer transport jam (Paper not reaching the registration sensor): The paper does not reach the registration sensor after it has passed the 1st drawer feed sensor.	P. 26-29
E220		2nd drawer transport jam (Paper not reaching the 1st drawer feed sensor): The paper does not reach the 1st drawer feed sensor after it has passed the 2nd drawer feed sensor.	P. 26-29
E270		Bypass transport jam (Paper not reaching the registration sensor): Paper fed from the bypass tray and passed through the bypass feed sensor does not reach the registration sensor.	P. 26-29
E300		PFP upper drawer transport jam (Paper not reaching the registration sensor): The paper does not reach the registration sensor after it has passed the 1st drawer feed sensor.	P. 26-29
E310		PFP upper drawer transport jam (Paper not reaching the 1st drawer feed sensor): The paper does not reach the 1st drawer feed sensor after it has passed the 2nd drawer feed sensor.	P. 26-29
E320		PFP upper drawer transport jam (Paper not reaching the 2nd drawer feed sensor): The paper does not reach the 2nd drawer feed sensor after it has passed the PFP upper drawer feed sensor.	P. 26-30
E330		PFP lower drawer transport jam (Paper not reaching the registration sensor): The paper does not reach the registration sensor after it has passed the 1st drawer feed sensor.	P. 26-29
E340		PFP lower drawer transport jam (Paper not reaching the 1st drawer feed sensor): The paper does not reach the 1st drawer feed sensor after it has passed the 2nd drawer feed sensor.	P. 26-29
E350		PFP lower drawer transport jam (Paper not reaching the 2nd drawer feed sensor): The paper does not reach the 2nd drawer feed sensor after it has passed the PFP upper drawer feed sensor.	P. 26-30
E360		PFP lower drawer transport jam (Paper not reaching the PFP upper drawer feed sensor): The paper does not reach the PFP upper drawer feed sensor after it has passed the PFP lower drawer feed sensor.	P. 26-30

Error code	Classification	Contents	Troubleshooting
E3C0	Paper transport jam	LCF transport jam (Paper not reaching the registration sensor): Paper fed from the LCF and passed through the 1st drawer feed sensor does not reach the registration sensor.	P. 26-29
E3D0		LCF transport jam (Paper not reaching the 1st drawer feed sensor): Paper fed from the LCF and passed through the 2nd drawer feed sensor does not reach the 1st drawer feed sensor.	P. 26-29
E3E0		LCF transport jam (Paper not reaching the 2nd drawer feed sensor): Paper fed from the LCF and passed through the LCF feed sensor does not reach the 2nd drawer feed sensor.	P. 26-30
E400	Cover open jam	Jam access cover open jam: The jam access cover has opened during printing.	P. 26-36
E410		Front cover open jam: The front cover has opened during printing.	P. 26-36
E420	Cover open jam	PFP side cover open jam: The PFP side cover has opened during printing.	P. 26-36
E430		ADU open jam: The ADU has opened during printing.	P. 26-36
E440		Side cover open jam: The side cover has opened during printing.	P. 26-36
E450		LCF side cover open jam: The LCF side cover has opened during printing.	P. 26-37
E480		Bridge unit open jam: The bridge unit has opened during printing.	P. 26-37
E4A0		Waste toner cover open jam: The waste toner cover has opened during printing.	P. 26-37
E510	Paper transport jam (ADU section)	Jam not reaching the ADU entrance sensor: The paper does not reach the ADU entrance sensor after it is switchbacked in the exit section.	P. 26-31
E520		Stop jam in the ADU: The paper does not reach the ADU exit sensor after it has passed the ADU entrance sensor.	P. 26-31
E550	Other paper jam	Paper remaining jam on the transport path: The paper is remaining on the transport path when printing is finished (caused by a multiple paper feeding).	P. 26-35
E712	RADF jam	Jam not reaching the original registration sensor: The original fed from the original feeding tray does not reach the original registration sensor.	P. 26-38
E713		Cover open jam in the read ready status: Jam caused by opening of the RADF jam access cover or front cover while the RADF is waiting for the scanning start signal from the equipment.	P. 26-38
E714		Feed signal reception jam: The feed signal is received even no original exists on the original feeding tray.	P. 26-38
E721		Jam not reaching the read sensor: The original does not reach the read sensor after it has passed the registration sensor (when scanning obverse side) or the reverse sensor (when scanning reverse side).	P. 26-38
E722		Jam not reaching the original exit/reverse sensor (during scanning): The original which passed the read sensor does not reach the original exit/reverse sensor when it is transported from the scanning section to exit section.	P. 26-38

Error code	Classification	Contents	Troubleshooting
E724	RADF jam	Stop jam at the original registration sensor: The trailing edge of the original does not pass the original registration sensor after its leading edge has reached this sensor.	P. 26-39
E725		Stop jam at the read sensor: The trailing edge of the original does not pass the read sensor after its leading edge has reached this sensor.	P. 26-39
E726		Transport/exit signal reception jam: RADF receives the transport/exit reception signal from the equipment when no original is at the exposure waiting position.	P. 26-39
E731		Stop jam at the original exit/reverse sensor: The trailing edge of the original does not pass the original exit/reverse sensor after its leading edge has reached this sensor.	P. 26-39
E860		RADF jam access cover open: The RADF jam access cover has opened during RADF operation.	P. 26-39
E870		RADF open jam: RADF has opened during RADF operation.	P. 26-40
E910	Finisher jam (Bridge unit)	Jam at the bridge unit transport sensor 1: The paper does not reach the bridge unit transport sensor 1 after it has passed the exit sensor.	P. 26-41
E920		Stop jam at the bridge unit transport sensor 1: The trailing edge of the paper does not pass the bridge unit transport sensor 1 after its leading edge has reached the sensor.	P. 26-41
E930		Jam at the bridge unit transport sensor 2: The trailing edge of the paper does not reach the bridge unit transport sensor 2 after its leading edge has reached the bridge unit transport sensor 1.	P. 26-41
E940		Stop jam at the bridge unit transport sensor 2: The trailing edge of the paper does not pass the bridge unit transport sensor 2 after its leading edge has reached the bridge unit transport sensor 2.	P. 26-41
E9F0	Finisher jam (Punch unit)	Punching jam: Punching is not performed properly. [MJ-1030 (when MJ-6004 is installed)] [MJ-1101 (when MJ-6101 is installed)]	P. 26-50
EA10	Finisher jam (Finisher section)	Paper transport delay jam: The paper which has passed the bridge unit does not reach the inlet sensor. [MJ-1030/1031/1101]	P. 26-42
EA20		Paper transport stop jam: (1) The paper does not pass through the inlet sensor. [MJ-1030/1031] (2) The paper has passed through the inlet sensor but does not reach or pass the feed path sensor or processing tray sensor. [MJ-1030] Paper transport delay jam: The paper which has passed through the inlet sensor does not reach the transport sensor. [MJ-1101]	P. 26-42
EA21		Paper size error jam: Paper does not reach the sensor because the paper is shorter than spec. [MJ-1101]	P. 26-43
EA22		Paper transport jam (Finisher paper punching edge detection sensor): The paper position sensor on the Finisher transport path detects paper shorter than the acceptable paper size. [MJ-1101]	P. 26-43

Error code	Classification	Contents	Troubleshooting
EA23	Finisher jam (Finisher section)	Paper transport jam (transport sensor) : Paper being transported on the Finisher transport path is stopped at the outlet sensor at 27.56 inches or longer. [MJ-1101]	P. 26-43
EA24		Paper transport jam (between entrance and transport sensors): The leading edge of paper which has passed the entrance sensor on the Finisher transport path does not reach the transport sensor. [MJ-1101]	P. 26-43
EA25		Paper transport jam (after paper stack exit): The finishing tray paper detection sensor detects paper after a stack of paper exits from the finishing tray. [MJ-1101]	P. 26-43
EA26		Paper transport jam (stop command request): A command to stop equipment operation is received while paper is being transported in the Finisher. [MJ-1101]	P. 26-43
EA27		Paper transport jam (paper not inserted): The equipment detects a paper-not-inserted jam but the entrance sensor is turned ON before the equipment is stopped. [MJ-1101]	P. 26-43
EA28		Paper transport jam (paper holder plate operation delay): An attempt to start the arm assisting operation for dropping paper on the finishing tray is made, but the previous arm assisting operation has not yet been finished. [MJ-1101]	P. 26-43
EA29		Paper transport jam (stack transport delay): The buffer tray is extended to drop a stack of paper on the finishing tray but the previous stack has not yet exited. [MJ-1101]	P. 26-43
EA30		Power-ON jam: (1) Paper exists at the inlet sensor when power is turned ON. [MJ-1030/1031] (2) Paper exists at the feed path sensor or processing tray sensor when power is turned ON. [MJ-1030]	P. 26-44
EA31		Transport path paper remaining jam: The paper which has passed through the inlet sensor does not reach the transport sensor. [MJ-1101]	P. 26-44
EA32		Exit paper remaining jam: The paper is remaining on the finishing tray when the power is turned ON. [MJ-1101]	P. 26-44
EA40		Door open jam: The upper/front cover of the finisher section or the upper/ front door of the puncher section has opened during printing. [MJ-1030] Joint open jam: The finisher cover opened during machine operation. [MJ-1031] Cover open error: The front cover or stationary tray cover is opened during paper transport. [MJ-1101]	P. 26-45
EA50		Stapling jam: Stapling is not performed properly. [MJ-1030/1031/1101]	P. 26-45
EA60		Early arrival jam: The inlet sensor detects the paper earlier than a specified timing. [MJ-1030/1031/1101]	P. 26-46
EA70	Finisher jam	Stack exit belt home position error: The stack exit belt is not at the home position. [MJ-1101] Stack slider home position error: The stack slider is not at the home position. [MJ-1031]	P. 26-47

Error code	Classification	Contents	Troubleshooting
EA80	Finisher jam (Saddle stitcher section)	Stapling jam: Stapling is not performed properly. [MJ-1030]	P. 26-48
EA90		Door open jam: The delivery cover or inlet cover has opened during printing [MJ-1030].	P. 26-48
EAA0		Power-ON jam: Paper exists at No.1 paper sensor, No. 2 paper sensor, No.3 paper sensor, vertical path paper sensor or delivery sensor when power is turned ON. [MJ-1030]	P. 26-48
EAB0		Transport stop jam: The paper which passed through the inlet sensor does not reach or pass No.1 paper sensor, No. 2 paper sensor, No.3 paper sensor or delivery sensor. [MJ-1030]	P. 26-48
EAC0		Transport delay jam: The paper which has reached the inlet sensor does not pass through the inlet sensor. [MJ-1030]	P. 26-49
EAD0	Other paper jam	Print end command time-out jam: The printing has not finished normally because of the communication error between the SYS board and LGC board at the end of printing.	P. 26-50
EAE0	Finisher jam	Receiving time time-out jam: The printing has been interrupted because of the communication error between the equipment and finisher when the paper is transported from the equipment to the finisher.	P. 26-50
EB30		Ready time time-out jam: The equipment judges that the paper transport to the finisher is disabled because of the communication error between the equipment and finisher at the start of printing.	P. 26-50
EB50	Paper transport jam	Paper remaining on the transport path: The multiple feeding of preceding paper caused the misfeeding of upcoming paper.	P. 26-32
EB60		Paper remaining on the transport path: The multiple feeding of preceding paper caused the misfeeding of upcoming paper (redetection after no jam is detected at [EB50]).	P. 26-32
ED10	Finisher jam	Skew adjustment motor (M1) home position detection abnormality: The Skew adjustment motor is not at the home position. [MJ-1101 (when MJ-6101 is installed)]	P. 26-51
ED11		Sideways adjustment motor (M2) home position detection error: The Sideways adjustment motor is not at the home position. [MJ-1101 (when MJ-6101 is installed)]	P. 26-51
ED12		Shutter home position error: The shutter is not at the home position. [MJ-1101]	P. 26-51
ED13		Front alignment plate home position error: The front alignment plate is not at the home position. [MJ-1101]	P. 26-51
ED14		Rear alignment plate home position error: The rear alignment plate is not at the home position. [MJ-1101]	P. 26-51
ED15		Paddle home position error: The paddle is not at the home position. [MJ-1101]	P. 26-52
ED16	Finisher jam (Finisher section)	Buffer tray home position error: The buffer tray is not at the home position. [MJ-1101]	P. 26-52

26.2.2 Service call

Error code	Classification	Contents	Troubleshooting
C040	Paper feeding system related service call	PFP motor abnormality: The PFP motor is not rotating normally. (the case that paper can be fed from any drawer except the PFP)	P. 26-53
C130		1st drawer tray abnormality: The tray-up motor is not rotating or the 1st drawer tray is not moving normally. (the case that paper can be fed from any drawer except the 1st drawer)	P. 26-54
C140		2nd drawer tray abnormality: The tray-up motor is not rotating or the 2nd drawer tray is not moving normally. (the case that paper can be fed from any drawer except the 2nd drawer)	P. 26-54
C150		PFP upper drawer tray abnormality: The PFP upper drawer tray-up motor is not rotating or the PFP upper drawer tray is not moving normally. (the case that paper can be fed from any drawer except the PFP upper drawer)	P. 26-55
C160		PFP lower drawer tray abnormality: The PFP lower drawer tray-up motor is not rotating or the PFP lower drawer tray is not moving normally. (the case that paper can be fed from any drawer except the PFP lower drawer)	P. 26-55
C180		LCF tray-up motor abnormality: The LCF tray-up motor is not rotating or the LCF tray is not moving normally. (the case that paper can be fed from any drawer except the LCF)	P. 26-56
C1A0		LCF end fence motor abnormality: The LCF end fence motor is not rotating or the LCF end fence is not moving normally. (the case that paper can be fed from any drawer except the LCF)	P. 26-57
C1B0		LCF transport motor abnormality: The LCF transport motor is not rotating normally. (the case that paper can be fed from any drawer except the LCF)	P. 26-58
C260	Scanning system related service call	Peak detection error: Lighting of the exposure lamp (white reference) is not detected when power is turned ON.	P. 26-58
C270		(1) Carriage home position sensor not turning OFF within a specified period of time: The carriage does not shift from its home position in a specified time. (2) Downloading firmware with an incorrect model.	P. 26-59
C280		Carriage home position sensor not turning ON within a specified period of time: The carriage does not reach to its home position in a specified period of time.	P. 26-59
C370	Copy process related service call	Transfer belt motor abnormality	P. 26-102
C380		Auto-toner sensor-K abnormality (upper limit)	P. 26-102
C381		Auto-toner sensor-K abnormality (lower limit)	P. 26-102
C390		Auto-toner sensor-C abnormality (upper limit)	P. 26-102
C391		Auto-toner sensor-C abnormality (lower limit)	P. 26-102
C3A0		Auto-toner sensor-M abnormality (upper limit)	P. 26-102
C3A1		Auto-toner sensor-M abnormality (lower limit)	P. 26-102
C3B0		Auto-toner sensor-Y abnormality (upper limit)	P. 26-102
C3B1		Auto-toner sensor-Y abnormality (lower limit)	P. 26-102
C411	Fuser unit related service call	Thermistor or heater lamp abnormality at power-ON: Abnormality of the thermistor is detected when power is turned ON or the temperature of the fuser roller does not rise in a specified period of time after power is turned ON.	P. 26-60

Error code	Classification	Contents	Troubleshooting
C412		Thermistor/heater lamp abnormality at power-ON: Thermistor abnormality is detected at power-ON or the fuser roller temperature does not rise within a specified period of time after power-ON.	P. 26-60
C443		Heater lamp abnormality after abnormality judgment (not reaching to intermediate temperature)	P. 26-61
C445		Heater lamp abnormality after abnormality judgment (pre-running end temperature abnormality)	P. 26-61
C446		Heater lamp abnormality after abnormality judgment (pre-running end temperature abnormality)	P. 26-61
C447		Heater lamp abnormality after abnormality judgment (temperature abnormality at ready status)	P. 26-61
C448		Heater lamp continuous lighting abnormality: Heater lamp lights continuously for a certain period of time when the pressure roller temperature during ready status is higher than the specified	P. 26-61
C449		Heater lamp abnormality after abnormality judgment (temperature abnormality at high temperature)	P. 26-61
C450		Abnormal temperature difference between the center thermopile and the edge thermistor (Not determined)	P. 26-61
C451		Abnormal temperature difference between the center thermopile and the edge thermistor (Determined)	P. 26-61
C452		Abnormal thermopile temperature difference	P. 26-61
C465		Pressure roller thermistor abnormality after entering ready status (pre-running end temperature abnormality)	P. 26-62
C466		Pressure roller thermistor abnormality after entering ready status (pre-running end temperature abnormality)	P. 26-62
C467		Pressure roller thermistor abnormality after entering ready status (temperature abnormality at ready status)	P. 26-62
C468		Pressure roller thermistor abnormality after entering ready status (overheating)	P. 26-62
C4B0		Fuser unit counter abnormality	P. 26-63
C4B1		Fuser unit destination selection abnormality	P. 26-63
C4D0		Fuser belt thermopile abnormality	P. 26-64
C550	Optional communication related service call	RADF I/F error: Communication error has occurred between the RADF and the scanner.	P. 26-64
C570		Communication error between Engine-CPU and IPC board	P. 26-64
C580		Communication error between IPC board and finisher	P. 26-64
C5A0	Circuit related service call	SRAM board not connected (LGC board)	P. 26-66
C5A1		SRAM board data abnormality (LGC board)	P. 26-66
C900		Connection error between SYS board and LGC board	P. 26-66
C940		Engine-CPU abnormality	P. 26-66
C962		LGC board ID abnormality	P. 26-67
C970	Process related service call	High-voltage transformer abnormality: Leakage of the main charger is detected.	P. 26-102
C9E0	Circuit related service call	Connection error between SLG board and SYS board	P. 26-67

Error code	Classification	Contents	Troubleshooting
CA00	Image control related service call	color registration abnormality	P. 26-89
CA10	Laser optical unit related service call	Polygonal motor abnormality: The polygonal motor is not rotating normally.	P. 26-69
CA20		H-sync detection error: H-sync detection PC board cannot detect laser beams.	P. 26-70
CB00	Finisher related service call	Finisher not connected: Communication error has occurred between the equipment and finisher. [MJ-1101]	P. 26-72
CB01		Finisher communication error: Communication error has occurred between the equipment and finisher. [MJ-1101]	P. 26-72
CB10		Entrance motor abnormality: The entrance motor is not rotating normally. [MJ-1101]	P. 26-72
CB11		Buffer tray guide motor abnormality: The buffer tray guide motor is not rotating or the buffer tray guide is not moving normally. [MJ-1101]	P. 26-73
CB12		Buffer roller drive motor abnormality: The buffer roller drive motor is not rotating or the buffer roller is not moving normally. [MJ-1101]	P. 26-73
CB30		Tray 1/Tray 2 shift motor abnormality: Tray 1/Tray 2 shift motor is not rotating or delivery tray is not moving normally. [MJ-1030] Movable tray shift motor abnormality: The movable tray shift motor is not rotating or the movable tray is not moving normally. [MJ-1101]	P. 26-73
CB31		Movable tray paper-full detection error: The actuator of the movable tray paper-full detection sensor does not move smoothly. [MJ-1101]	P. 26-74
CB40		Rear aligning plate motor abnormality: Rear aligning plate motor is not rotating or aligning plate is not moving normally. [MJ-1030] Front alignment motor abnormality: The front alignment motor is not rotating or the front alignment plate is not moving normally. [MJ-1101]	P. 26-74
CB50		Staple motor abnormality: Staple motor is not rotating or stapler is not moving normally. [MJ-1030] Staple unit abnormality: Staple unit is not moving normally. [MJ-1031] Stapler home position error: The stapler home position sensor does not work. [MJ-1101]	P. 26-75
CB51		Stapler shift home position error: The stapler is not at the home position. [MJ-1101]	P. 26-76
CB60		Stapler shift motor abnormality: Stapler shift motor is not rotating or staple unit is not moving normally. [MJ-1030/1101]	P. 26-76
CB70	Finisher related service call	Paper loading amount detection sensor abnormality [MJ-1030]	P. 26-76
CB80		Backup RAM data abnormality: 1. Abnormality of checksum value on finisher controller PC board is detected when the power is turned ON. [MJ-1030/1031/1101] 2. Abnormality of checksum value on punch controller PC board is detected when the power is turned ON. [MJ-1030 (when MJ-6004 is installed)]	P. 26-77
CB81		Flash ROM abnormality: Abnormality of checksum value on finisher controller PC board is detected when the power is turned ON. [MJ-1101]	P. 26-77

Error code	Classification	Contents	Troubleshooting
CB90	Finisher related service call	Paper pushing plate motor abnormality: Paper pushing plate motor is not rotating or paper pushing plate is not moving normally. [MJ-1030]	P. 26-78
CBA0		Stitch motor (front) abnormality: Stitch motor (front) is not rotating or rotary cam is not moving normally. [MJ-1030]	P. 26-78
CBB0		Stitch motor (rear) abnormality: Stitch motor (rear) is not rotating or rotary cam is not moving normally. [MJ-1030]	P. 26-78
CBC0		Alignment motor abnormality: Alignment motor is not rotating or aligning plate is not moving normally. [MJ-1030]	P. 26-78
CBD0		Guide motor abnormality: Guide motor is not rotating or guide is not moving normally. [MJ-1030]	P. 26-78
CBE0		Paper folding motor abnormality: Paper folding motor or paper folding roller is not rotating normally. [MJ-1030]	P. 26-79
CBF0		Paper positioning plate motor abnormality: Paper positioning plate motor is not rotating or paper positioning plate is not moving normally. [MJ-1030]	P. 26-79
CC00		Sensor connector abnormality: Connector of guide home position sensor, paper pushing plate home position sensor or paper pushing plate top position sensor is disconnected. [MJ-1030]	P. 26-79
CC10		Micro switch abnormality: With all covers closed, inlet door switch, delivery door switch or front cover switch is open. [MJ-1030]	P. 26-80
CC20		Communication error between finisher and saddle stitcher: Communication error between finisher controller PC board and saddle stitcher controller board [MJ-1030]	P. 26-80
CC30		Stack transport motor abnormality: The stack transport motor is not rotating or the stack transport belt is not moving normally. [MJ-1101] Stack delivery motor abnormality: The stack delivery motor is not rotating normally. [MJ-1031]	P. 26-80
CC31		Transport motor abnormality: The transport motor is not rotating or the stack transport roller -1 and -2 is not rotating normally. [MJ-1101]	P. 26-81
CC40		Swing motor abnormality: Swing motor is not rotating or swing unit is not moving normally. [MJ-1030]	P. 26-81
CC41		Paper holder cam home position abnormality: The paper holder cam is not at the home position. [MJ-1101]	P. 26-81
CC50	Finisher related service call	Horizontal registration motor abnormality: Horizontal registration motor is not rotating or puncher is not shifting normally. [MJ-1030 (when MJ-6004 is installed)]	P. 26-82
CC51		Sideways adjustment motor (M2) abnormality: Sideways adjustment motor is not rotating or puncher is not shifting normally. [MJ-1101 (when MJ-6101 is installed)]	P. 26-82
CC52		Skew adjustment motor (M1) abnormality: Skew adjustment motor is not rotating or puncher is not shifting normally. [MJ-1101 (when MJ-6101 is installed)]	P. 26-83

Error code	Classification	Contents	Troubleshooting
CC60	Finisher related service call	Punch motor abnormality: Punch motor is not rotating or puncher is not shifting normally. [MJ-1030 (when MJ-6004 is installed)]	P. 26-82
CC61		Punch motor (M3) home position detection error: Punch motor is not rotating or puncher is not shifting normally. [MJ-1101 (when MJ-6101 is installed)]	P. 26-84
CC71		Punch ROM checksum error: Abnormality of checksum value on Hole punch controller PC board is detected when the power is turned on. [MJ-1101 (when MJ-6101 is installed)]	P. 26-84
CC72		Punch RAM read/write error: Abnormality of checksum value on Hole punch controller PC board is detected when the power is turned on. [MJ-1101 (when MJ-6101 is installed)]	P. 26-84
CC80		Front aligning plate motor abnormality: Front aligning plate motor is not rotating or aligning plate is not moving normally. [MJ-1030] Rear alignment motor abnormality: The rear alignment motor is not rotating or the rear alignment plate is not moving normally. [MJ-1101]	P. 26-85
CC90		Tray shift motor abnormality: The tray shift motor is not rotating or the stack tray is not moving normally. [MJ-1031]	P. 26-85
CCB0		Offset motor abnormality: The offset motor is not rotating normally. [MJ-1031]	P. 26-85
CCD0		Stack ejection motor abnormality: Stack ejection motor or stack ejection roller is not rotating normally. [MJ-1030]	P. 26-86
CCE0		Paper trailing edge assist motor abnormality: Paper trailing edge assist motor is not rotating or paper trailing edge assist is not moving normally. [MJ-1030]	P. 26-86
CCF0		Gear changing motor abnormality: Gear changing motor is not rotating normally. [MJ-1030]	P. 26-86
CCF1		Tray safety switch abnormality - (1) The tray safety switch turned on during tray operation (moving up or down). (2) The tray operated with the tray safety switch turned on. [MJ-1031]	P. 26-86
CD70	Process related service call	Waste toner box mixing paddle locked: The mixing paddle in the waste toner box does not rotate.	P. 26-103
CD71		Waste toner transport motor drive locking error.	P. 26-104
CDE0	Finisher related service call	Paddle motor abnormality: The paddle motor is not rotating or the paddle is not rotating normally. [MJ-1101]	P. 26-87
CE00		Communication error between finisher and punch unit: Communication error between finisher controller PC board and punch controller PC board [MJ-1030 (when MJ-6004 is installed)] [MJ-1101 (when MJ-6101 is installed)]	P. 26-87
CE10	Image control related service call	Image quality sensor abnormality (OFF level): The output value of this sensor is out of a specified range when sensor light source is OFF.	P. 26-94
CE20		Image quality sensor abnormality (no pattern level): The output value of this sensor is out of a specified range when the image quality control test pattern is not formed.	P. 26-95
CE40		Image quality control test pattern abnormality: The test pattern is not formed normally.	P. 26-97

Error code	Classification	Contents	Troubleshooting
CE50	Image control related service call	Temperature/humidity sensor abnormality: The output value of this sensor is out of a specified range.	P. 26-99
CE60		Drum thermistor-Y abnormality: The output value of the drum thermistor-Y is out of a specified range.	P. 26-99
CE70		Drum drive switching abnormality: The drum switching detection sensor (S19) is not turned ON after the drum motor was rotated for a specified period of time.	P. 26-100
CE71		Drum phase adjustment abnormality: Drum phase sensors (Color drum phase sensor (S43) and K drum phase sensor (S44)) are not turned ON after the drum motor was rotated for a specified period of time.	P. 26-101
CE90		Drum thermistor-K abnormality: The output value of the drum thermistor-K is out of a specified range.	P. 26-99
CEC0	Copy process related service call	2nd transfer roller position detection abnormality: The 2nd transfer roller does not contact/release normally.	P. 26-105
CF10	Finisher related service call	Communication module SRAM reading failure. [MJ-1101]	P. 26-88
CF90	Laser optical unit related service call	Laser optical unit shutter abnormality.	P. 26-71
F070	Communication related service call	Communication error between System-CPU and Engine-CPU	P. 26-65
F090	Circuit related service call	SRAM abnormality on the SYS board	P. 26-67
F100	Other service call	HDD format error: HDD cannot be initialized normally.	P. 26-106
F101		HDD unmounted: Connection of HDD cannot be detected.	P. 26-106
F102		HDD start error: HDD cannot become ‘Ready’ state.	P. 26-106
F103		HDD transfer time-out: Reading/writing cannot be performed in the specified period of time.	P. 26-106
F104		HDD data error: Abnormality is detected in the data of HDD.	P. 26-106
F105		HDD other error	P. 26-106
F106		Point and Print partition damage	P. 26-106
F107		/BOX partition damage	P. 26-106
F108		/SHA partition damage	P. 26-106
F110	Communication related service call	Communication error between System-CPU and Scanner-CPU	P. 26-65
F111		Scanner response abnormality	P. 26-65
F120	Other service call	Database abnormality: Database is not operating normally.	P. 26-106
F130		Invalid MAC address	P. 26-107
F140		Accelerator ASIC format error	P. 26-107
F200		Data Overwrite option (GP-1070) disabled	P. 26-107
F350	Circuit related service call	SLG board abnormality	P. 26-68
F400	Circuit related service call	SYS board cooling fan abnormality	P. 26-107

26.2.3 Error in Internet FAX / Scanning Function

1. Internet FAX related error

Error code	Classification	Troubleshooting
1C10	System access abnormality	P. 26-107
1C11	Insufficient memory	P. 26-107
1C12	Message reception error	P. 26-107
1C13	Message transmission error	P. 26-107
1C14	Invalid parameter	P. 26-108
1C15	Exceeding file capacity	P. 26-108
1C20	System management module access abnormality	P. 26-108
1C21	Job control module access abnormality	P. 26-108
1C22	Job control module access abnormality	P. 26-108
1C30	Directory creation failure	P. 26-108
1C31	File creation failure	P. 26-108
1C32	File deletion failure	P. 26-107
1C33	File access failure	P. 26-108
1C40	Image conversion abnormality	P. 26-108
1C60	HDD full failure during processing	P. 26-108
1C61	Address Book reading failure	P. 26-108
1C62	Memory acquiring failure	P. 26-108
1C63	Terminal IP address unset	P. 26-108
1C64	Terminal mail address unset	P. 26-108
1C65	SMTP address unset	P. 26-109
1C66	Server time time-out error	P. 26-109
1C67	NIC time time-out error	P. 26-109
1C68	NIC access error	P. 26-109
1C69	SMTP server connection error	P. 26-109
1C6A	HOST NAME error	P. 26-109
1C6B	Terminal mail address error	P. 26-109
1C6C	Destination mail address error	P. 26-109
1C6D	System error	P. 26-109
1C70	SMTP client OFF	P. 26-109
1C71	SMTP authentication error	P. 26-109
1C72	POP before SMTP error	P. 26-109
1C80	Internet FAX transmission failure when processing E-mail job received	P. 26-110
1C81	Onramp Gateway transmission failure	P. 26-110
1C82	Internet FAX transmission failure when processing FAX job received	P. 26-110
1CC0	Job canceling	-
1CC1	Power failure	P. 26-110

2. RFC related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2500	Syntax error, command unrecognized	HOST NAME error (RFC: 500) Destination mail address error (RFC: 500) Terminal mail address error (RFC: 500)	P. 26-110
2501	Syntax error in parameters or arguments	HOST NAME error (RFC: 501) Destination mail address error (RFC: 501) Terminal mail address error (RFC: 501)	P. 26-110
2503	Bad sequence of commands	Destination mail address error (RFC: 503)	P. 26-110
2504	Command parameter not implemented	HOST NAME error (RFC: 504)	P. 26-110
2550	Mailbox unavailable	Destination mail address error (RFC: 550)	P. 26-110
2551	User not local	Destination mail address error (RFC: 551)	P. 26-110
2552	Insufficient system storage	Terminal/Destination mail address error (RFC: 552)	P. 26-110
2553	Mailbox name not allowed	Destination mail address error (RFC: 553)	P. 26-110

3. Electronic Filing related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2B10	There was no applicable job.	No applicable job error in job control module	P. 26-110
2B11	Job status failed.	JOB status abnormality	P. 26-110
2B20	Failed to access file.	File library function error	P. 26-110
2B30	Insufficient disk space.	Insufficient disk space in /BOX partition	P. 26-110
2B31	Failed to access Electronic Filing.	Status of specified Electronic Filing or folder is undefined or being created/deleted	P. 26-111
2B32	Failed to print Electronic Filing document.	Electronic Filing printing failure: Specified document can not be printed because of client's access (being edited, etc.).	P. 26-111
2B50	Failed to process image.	Image library error	P. 26-111
2B51	Failed to process print image.	List library error	P. 26-111
2B71	Document(s) expire(s) in a few days	Documents expiring in a few days exist	-
2B80	Hard Disk space for Electronic Filing nearly full.	Hard disk space in /BOX partition is nearly full (90%).	-
2B90	Insufficient Memory.	Insufficient memory capacity	P. 26-111
2BA0	Invalid Box password specified.	Invalid Box password	P. 26-111
2BA1	Incorrect paper size/ color mode	A Paper size or a color mode not supported in the Electronic Filing function is being selected.	P. 26-111
2BB0	Job canceled	Job canceling	-
2BB1	Power failure occurred	Power failure	P. 26-111
2BC0	System fatal error.	Fatal failure occurred	P. 26-110
2BC1	Failed to acquire resource.	System management module resource acquiring failure	P. 26-110
2BD0	Power failure occurred during e-Filing restoring.	Power failure occurred during restoring of Electronic Filing	P. 26-111
2BE0	Failed to get machine parameter.	Machine parameter reading failure	P. 26-112
2BF0	Maximum number of page range is reached.	Exceeding maximum number of pages	P. 26-112
2BF1	Maximum number of document range is reached.	Exceeding maximum number of documents	P. 26-112
2BF2	Maximum number of folder range is reached.	Exceeding maximum number of folders	P. 26-112

4. Remote scanning related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2A20	Failed to acquire resource	System management module resource acquiring failure	P. 26-112
2A40	System fatal error	System error	P. 26-112
2A50	Job canceling	Job canceling	-
2A51	Power failure	Power failure	P. 26-112

5. E-mail related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2C10	Illegal Job status	System access abnormality	P. 26-113
2C11	Not enough memory	Insufficient memory	P. 26-113
2C12	Illegal Job status	Message reception error	P. 26-113
2C13	Illegal Job status	Message transmission error	P. 26-113
2C14	Invalid parameter specified	Invalid parameter	P. 26-113
2C15	Message size exceeded limit or maximum size	Exceeding file capacity	P. 26-113
2C20	Illegal Job status	System management module access abnormality	P. 26-113
2C21	Illegal Job status	Job control module access abnormality	P. 26-113
2C22	Illegal Job status	Job control module access abnormality	P. 26-113
2C30	Failed to create directory	Directory creation failure	P. 26-113
2C31	Failed to create file	File creation failure	P. 26-113
2C32	Failed to delete file	File deletion failure	P. 26-113
2C33	Failed to create file	File access failure	P. 26-113
2C40	Failed to convert image file format	Image conversion abnormality	P. 26-113
2C43	Encryption error. Failed to create file	Encryption error	P. 26-113
2C44	Creating the image file was not permitted.	Encryption PDF enforced mode error	P. 26-114
2C60	Failed to process your Job. Insufficient disk space.	HDD full failure during processing	P. 26-114
2C61	Failed to read AddressBook	Address Book reading failure	P. 26-114
2C62	Not enough memory	Memory acquiring failure	P. 26-113
2C63	Invalid Domain Address	Terminal IP address unset	P. 26-114
2C64	Invalid Domain Address	Terminal mail address unset	P. 26-114
2C65	Failed to connect to SMTP server	SMTP address unset	P. 26-114
2C66	Failed to connect to SMTP server	Server time time-out error	P. 26-114
2C67	Failed to send E-Mail message	NIC time time-out error	P. 26-114
2C68	Failed to send E-Mail message	NIC access error	P. 26-114
2C69	Failed to connect to SMTP server	SMTP server connection error	P. 26-114
2C6A	Failed to send E-Mail message	HOST NAME error (No RFC error)	P. 26-114
2C6B	Invalid address specified in From: field	Terminal mail address error	P. 26-114
2C6C	Invalid address specified in To: field	Destination mail address error (No RFC error)	P. 26-115
2C6D	NIC system error	System error	P. 26-114
2C70	SMTP service is not available	SMTP client OFF	P. 26-115
2C71	Failed SMTP Authentication	SMTP authentication error	P. 26-115
2C72	POP Before SMTP Authentication Failed	POP before SMTP error	P. 26-115
2C80	Failed to process received E-mail job	E-mail transmission failure when processing E-mail job received	P. 26-115
2C81	Failed to process received Fax job	Process failure of FAX job received	P. 26-115
2CC0	Job canceled	Job canceling	-
2CC1	Power failure occurred	Power failure	P. 26-115

6. File sharing related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2D10	Illegal Job status	System access abnormality	P. 26-115
2D11	Not enough memory	Insufficient memory	P. 26-115
2D12	Illegal Job status	Message reception error	P. 26-116
2D13	Illegal Job status	Message transmission error	P. 26-116
2D14	Invalid parameter specified	Invalid parameter	P. 26-116
2D15	Document size exceeded limit or maximum size.	Exceeding the maximum size for file sharing	P. 26-116
2D20	Illegal Job status	System management module access abnormality	P. 26-116
2D21	Illegal Job status	Job control module access abnormality	P. 26-116
2D22	Illegal Job status	Job control module access abnormality	P. 26-116
2D30	Failed to create directory	Directory creation failure	P. 26-116
2D31	Failed to create file	File creation failure	P. 26-116
2D32	Failed to delete file	File deletion failure	P. 26-115
2D33	Failed to create file	File access failure	P. 26-116
2D40	Failed to convert image file format	Image conversion abnormality	P. 26-116
2D43	Encryption error. Failed to create file	Encryption error	P. 26-116
2D44	Creating the image file was not permitted.	Encryption PDF enforced mode error	P. 26-116
2D60	Failed to copy file	File library access abnormality	P. 26-116
2D61	Invalid parameter specified	Invalid parameter	P. 26-116
2D62	Failed to connect to network destination. Check destination path	File server connection error	P. 26-116
2D63	Specified network path is invalid. Check destination path	Invalid network path	P. 26-117
2D64	Logon to file server failed. Check username and password	Login failure	P. 26-117
2D65	There are too many documents in the folder. Failed in creating new document.	Exceeding documents in folder: Creating new document is failed.	P. 26-117
2D66	Failed To Process your Job. Insufficient Storage space.	Storage capacity full failure during processing	P. 26-117
2D67	FTP service is not available	FTP service not available	P. 26-117
2D68	File Sharing service is not available	File sharing service not available	P. 26-117
2DA0	Expired scan documents deleted from share folder.	Periodical deletion of scanned documents completed properly.	-
2DA1	Expired Sent Fax documents deleted from shared folder.	Periodical deletion of transmitted FAX documents completed properly.	-
2DA2	Expired Received Fax documents deleted from shared folder.	Periodical deletion of received FAX documents completed properly.	-
2DA3	Scanned documents in shared folder deleted upon user's request.	Manual deletion of scanned documents completed properly.	-
2DA4	Sent Fax Documents in shared folder deleted upon user's request.	Manual deletion of transmitted FAX documents completed properly.	-
2DA5	Received Fax Documents in shared folder deleted upon user's request.	Manual deletion of received FAX documents completed properly.	-
2DA6	Failed to delete file.	File deletion failure	P. 26-115
2DA7	Failed to acquire resource.	Resource acquiring failure	P. 26-115
2DC0	Job canceled	Job canceling	-
2DC1	Power failure occurred	Power failure	P. 26-117

7. E-mail reception related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
3A10	MIME Error has been detected in the received mail.	E-mail MIME error	P. 26-118
3A11	MIME Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3A12	MIME Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118
3A20	Analyze Error has been detected in the received mail.	E-mail analysis error	P. 26-118
3A21	Analyze Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3A22	Analyze Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118
3A30	Whole partial mails were not reached by timeout.	Partial mail time-out error	P. 26-118
3A40	Partial Mail Error has been detected in the received mail.	Partial mail related error	P. 26-118
3A50	HDD Full Error has been occurred in this mail.	Insufficient HDD capacity error	P. 26-118
3A51	HDD Full Error has been occurred in this mail. This mail has been transferred to the administrator.		P. 26-118
3A52	HDD Full Error has been occurred in this mail. This mail could not be transferred to the administrator.		P. 26-118
3A60	HDD Full Warning has been occurred in this mail.	Warning of insufficient HDD capacity	P. 26-118
3A61	HDD Full Warning has been occurred in this mail. This mail could not be transferred to the administrator.		P. 26-118
3A62	HDD Full Warning has been occurred in this mail. This mail could not be transferred to the administrator.		P. 26-118
3A70	Receiving partial mail was aborted since the partial mail setting has been changed to Disable.	Warning of partial mail interruption	P. 26-118
3A80	Partial mail was received during the partial mail setting is disabled.	Partial mail reception setting OFF	P. 26-118
3A81	Partial mail was received during the partial mail setting is disabled. This mail has been transferred to the administrator.		P. 26-118
3A82	Partial mail was received during the partial mail setting is disabled. This mail could not be transferred to the administrator.		P. 26-118
3B10	Format Error has been detected in the received mail.	E-mail format error	P. 26-118
3B11	Format Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3B12	Format Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
3B20	Content-Type Error has been detected in the received mail.	Content-Type error	P. 26-118
3B21	Content-Type Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3B22	Content-Type Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118
3B30	Charset Error has been detected in the received mail.	Charset error	P. 26-118
3B31	Charset Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3B32	Charset Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118
3B40	Decode Error has been detected in the received mail.	E-mail decode error	P. 26-118
3B41	Decode Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-118
3B42	Decode Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-118
3C10	Tiff Analyze Error has been detected in the received mail.	TIFF analysis error	P. 26-119
3C11	Tiff Analyze Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C12	Tiff Analyze Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119
3C13	Tiff Analyze Error has been detected in the received mail.		P. 26-119
3C20	Tiff Compression Error has been detected in the received mail.	TIFF compression error	P. 26-119
3C21	Tiff Compression Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C22	Tiff Compression Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119
3C30	Tiff Resolution Error has been detected in the received mail.	TIFF resolution error	P. 26-119
3C31	Tiff Resolution Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C32	Tiff Resolution Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
3C40	Tiff Paper Size Error has been detected in the received mail.	TIFF paper size error	P. 26-119
3C41	Tiff Paper Size Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C42	Tiff Paper Size Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119
3C50	Offramp Destination Error has been detected in the received mail.	Offramp destination error	P. 26-119
3C51	Offramp Destination Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C52	Offramp Destination Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119
3C60	Offramp Security Error has been detected in the received mail.	Offramp security error	P. 26-119
3C61	Offramp Security Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 26-119
3C62	Offramp Security Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 26-119
3C70	Power Failure has been occurred in Email receiving.	Power failure error	P. 26-119
3D10	SMTP Destination Error has been detected in the received mail. This mail was deleted.	Destination address error	P. 26-119
3D20	Offramp Destination limitation Error has been detected in the received mail.	Offramp destination limitation error	P. 26-119
3D30	Fax Board Error has been occurred in the received mail.	FAX board error	P. 26-119
3E10	POP3 Connection Error has been occurred in the received mail.	POP3 server connection error	P. 26-120
3E20	POP3 Connection Timeout Error has been occurred in the received mail.	POP3 server connection time-out error	P. 26-120
3E30	POP3 Login Error has been occurred in the received mail.	POP3 login error	P. 26-119
3E40	POP3 Login Error occurred in the received mail.	POP3 login method error	P. 26-120
3F00	File I/O Error has been occurred in this mail. The mail could not be received until File I/O is recovered.	File I/O error	P. 26-120
3F10			P. 26-120
3F20			P. 26-120
3F30			P. 26-120
3F40			P. 26-120

26.2.4 Printer function error

Following codes are displayed at the end of the user name on the print job log screen.

Error code	Contents	Troubleshooting
4031	HDD full during print - Large quantity image data by private print or invalid network print are saved in HDD.	P. 26-121
4032	Private-print-only error: Jobs other than Private print jobs cannot be performed.	P. 26-121
4033	Printing data storing limitation error: Printing with its data being stored to the HDD temporarily (Proof print, Private print, Scheduled print, etc.) cannot be performed.	P. 26-121
4034	e-Filing storing limitation error: Printing with its data being stored to the HDD (print and e-Filing, print to e-Filing, etc.) cannot be performed.	P. 26-121
4035	Local file storing limitation error: Network FAX or Internet FAX cannot be sent when “Local” is selected for the destination of the file to save.	P. 26-121
4036	User authentication error: The user who intended to print a document is not registered as a user.	P. 26-121
4040	Not being authorized to perform JOB	P. 26-121
4050	Problem in LDAP server connection or LDAP server authorization settings	P. 26-121
4300	USB direct printing: Job execution error due to functional restrictions - Printing with he USB direct printing function restricted	P. 26-121
4301	USB direct printing: File conversion error - Printing a file whose format is not supported, or an invalid file	P. 26-121
4310	Double-sign encoding error: A double-sign encoding error occurred because the PDF file is encrypted in a forbidden language or in a language not supported.	P. 26-121
4311	Printing not permitted: Printing is not permitted or only printing in a low resolution level is permitted due to the encryption language of the encrypted PDF file. * Permitted only when a user password is entered.	P. 26-121
4312	Password mismatching: The entered password is neither matched with a user password nor an owner password.	P. 26-122
A221	Print job cancellation - Print job (copy, list print, network print) is deleted from the print job screen.	P. 26-122
A222	Print job power failure - The power of the equipment is turned OFF during print job (copy, list print, network print).	P. 26-122
A290	Limit over error (Black): The numbers of output pages have exceeded those specified with both of the department code and the user code at the same time.	P. 26-122
A291	Limit over error (Black): The number of output pages has exceeded the one specified with the user code.	P. 26-122
A292	Limit over error (Black): The number of output pages has exceeded the one specified with the department code.	P. 26-122
A2A0	Limit over error (Color): The number of prints has exceeded the one specified for the department code and user code, or users (guests) are not authorized to perform color printing.	P. 26-122
A2A1	Limit over error (Color): The number of prints has exceeded the one specified for the user code, or users (guests) are not authorized to perform color printing.	P. 26-122
A2A2	Limit over error (Color): The number of output pages has exceeded the one specified with the department code.	P. 26-122

26.2.5 TopAccess related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
5110	Toner Not Recognized - Please Check Toner.	Toner cartridge detection error	P. 26-123
5212	Time for Slit Glass and Main Charger Cleaning - Please Clean Slit Glass and Main Charger.	Appears when the time for main charger cleaning comes (at every output of approx. 10,000 sheets)	P. 26-123
5BD0	Power failure occurred during restore	Power supply is cut off during the restoration of database sent from TopAccess	P. 26-123
5C10	FAX Unit is not attached.	Network FAX is disabled because the FAX Unit is not attached	P. 26-123
5C11	Security error on Address Book.	The network FAX job failed because the specified address is not registered in the Address Book	P. 26-123
5C20	The file has been imported	Displayed when data have been imported from TopAccess (Not an error message)	P. 26-123
5C21	Failed to import the file - Invalid file format	Data import from TopAccess failed due to invalid file format	P. 26-123
5C22	Failed to import the file - Internal error	Data import from TopAccess failed due to an internal error, the cause of which is unknown	P. 26-123

26.2.6 Error history

In the setting mode (08-253), the latest twenty groups of error data will be displayed.

Display example

EA10	99999999	06 04 14 17 57 32	064	064	2362 1000 0000 0
Error code	Total counter	YY MM DD HH MM SS	MMM	NNN	ABCD_EFHI_JLOP_Q
4 digits	8 digits	12 digits (Year is indicated with its last two digits.)	3 digits	3 digits	13 digits

A	Paper source
	0: Not selected 1: Bypass feed 2: LCF 3: 1st drawer 4: 2nd drawer 5: PFP upper drawer 6: PFP lower drawer 7: Unused 8: Unused
B	Paper size code
	0: A5/ST 1: A5-R 2: ST-R 3: LT, 4: A4 5: B5-R 6: LT-R 7: A4-R 8: OTHER/UNIV 9: B5, A: FOLIO/COMP B: LG C: B4 D: LD E: A3 F: 13"LG G: Unused H: A6-R I: Post card J: 8.5"SQ K: A3-wide L: LD wide M: 8K N: 16K-R O: 16K P: Unused Q: Unused R: Unused S: Unused T: Unused U: SRA3(320x450) V: SRA3(320x460) Z: Not selected
C	Sort mode/staple mode
	0: Non-sort/Non-staple 1: Group 2: Sort 7: Front staple 8: Double staple 9: Rear staple A: Saddle stitch
D	ADF mode
	0: Unused 1: AUTO FEED (SADF) 2: STACK FEED
E	APS/AMS mode
	0: Not selected 1: APS 2: AMS
F	Duplex mode
	0: Not selected 1: Book 2: Double-sided/Single-sided 4: Double-sided/Duplex copying 8: Single-sided/Duplex copying
G	Unused
H	Image shift
	0: Unused 1: Book 2: Left 3: Right 4: Top 5: Bottom 6: Book+Top 7: Book+Bottom 8: Left+Top 9: Left+Bottom A: Right+Top B: Right+Bottom
I	Editing
	0: Unused 1: Masking 2: Trimming 3: Mirror image 4: Unused 5: NEG/POS
J	Edge erase/Dual-page
	0: Unused 1: Edge erase 2: Dual-page 3: Edge erase & Dual-page
K	Unused
L	Function
	0: Unused 1: Copying 2: FAX/Internet FAX transmission 3: FAX/Internet FAX/E-mail reception printing 4: Unused 5: Printing/List print 6: Scan/E-mail transmission
MMM	Primary scanning reproduction ratio (Display in hexadecimal)
	(Mx256)+(Mx16)+M
NNN	Secondary scanning reproduction ratio (Display in hexadecimal)
	(Nx256)+(Nx16)+N
O	Color mode
	0: Auto color 1: Full color 2: Black 3: Unused 4: Twin color copy 5: Gray scale 6: Unused 7: Image smoothing
P	Media type
	0: Plain paper 1: Thick 1 2: Thick 2 3: Thick 3 4: Thick 4 5: Special paper 1 6: Special paper 2 7: Recycled paper 8: Plain paper 1 9: Plain paper 2 A: Thin paper B: OHP film C: Thick 1/ reverse D: Thick 2/ reverse E: Thick 3/ reverse F: Thick 4/ reverse G: Special paper 1/ reverse H: Special paper 2/ reverse I: Envelope J: Tab paper Z: Unused
Q	RADF size mixed
	0: Unused 1: Single-size document 2: Size mixed

26.3 Diagnosis and Prescription for Each Error Code

26.3.1 Paper transport jam (paper exit section)

[E010] Jam not reaching the exit sensor

1. Check if there is any paper on the transport path or in the fuser unit. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the exit sensor working? (Perform the input check: 03-[FAX]ON/[1]/[B]).
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN333 on the LGC board is disconnected from the exit sensor or the harnesses are open circuited. Correct if any.
4. Replace the exit sensor.
5. Replace the LGC board.
6. Check if there is any abnormality on the paper transport path in the fuser unit. Correct it if there is.

[E020] Stop jam at the exit sensor

1. Open the jam access cover and check if there is any paper on the transport path. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the exit sensor working? (Perform the input check: 03-[FAX]ON/[1]/[B]).
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN333 on the LGC board is disconnected from the exit sensor or the harnesses are open circuited. Correct if any.
4. Replace the exit sensor.
5. Replace the LGC board.
6. Check the exit roller. Replace it if it is worn out.

26.3.2 Paper misfeeding

[E110] ADU misfeeding (paper not reaching the registration sensor)

1. Open the jam access cover and check if there is any paper in front of the registration sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the registration sensor working? (Perform the input check:03-[FAX]OFF/[7]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN338 on the LGC board is disconnected from the registration sensor or the harnesses are open circuited. Correct if any.
4. Replace the registration sensor.
5. Replace the LGC board.
6. Is the ADU clutch working? (Perform the output check: 03-222)
   * If it is working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN338 on the LGC board is disconnected from the ADU clutch or the harnesses are open circuited. Correct if any.
8. Replace the ADU clutch.
9. Replace the LGC board.
10. Check the rollers in the ADU. Replace them if they are worn out.

[E120] Bypass misfeeding (paper not reaching the bypass feed sensor)

1. Are the bypass feed clutch and bypass feed sensor working? (Perform the output check: 03-204 and the input check: 03-[FAX]ON/[4]/[D])
   * If it is working properly, proceed to 6. If not, check 2 to 5 below.
2. Check if the connector CN338 on the LGC board is disconnected from the bypass feed clutch or the bypass feed sensor, or the harnesses are open circuited. Correct if any.
3. Replace the bypass feed clutch.
4. Replace the bypass feed sensor.
5. Replace the LGC board.
6. Check the rollers in the ADU. Replace them if they are worn out.

[E130] 1st drawer misfeeding (paper not reaching the 1st drawer feed sensor)

1. Open the jam access cover and check if there is any paper in front of the 1st drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the 1st drawer feed sensor working? (Perform the input check: 03-[FAX]ON/[1]/[G])
   * If it is working properly, proceed to 9. If not, check 3 to 8 below.
3. Check if the connector CN337 on the LGC board is disconnected from the 1st drawer feed sensor or the harnesses are open circuited. Correct if any.
4. Replace the 1st drawer feed sensor.
5. Replace the LGC board.
6. Is the 1st drawer feed clutch working? (Perform the output check: 03-201)
   * If it is working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN337 on the LGC board is disconnected from the 1st drawer feed clutch or the harnesses are open circuited. Correct if any.
8. Replace the 1st drawer feed clutch.
9. Replace the LGC board.
10. Check the 1st drawer feed roller, separation roller and pickup roller. Replace them if they are worn out.

[E140] 2nd drawer misfeeding (paper not reaching the 2nd drawer feed sensor)

1. Open the side cover and check if there is any paper in front of the 2nd drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the 2nd drawer feed sensor working? (Perform the input check: 03-[FAX]ON/[1]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN348 on the LGC board is disconnected from the 2nd drawer feed sensor or the harnesses are open circuited. Correct if any.
4. Replace the 2nd drawer feed sensor.
5. Replace the LGC board.
6. Is the 2nd drawer feed clutch working? (Perform the output check: 03-202)
   * If it is working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN348 on the LGC board is disconnected from the 2nd drawer feed clutch or the harnesses are open circuited. Correct if any.
8. Replace the 2nd drawer feed clutch.
9. Replace the LGC board.
10. Check the 2nd drawer feed roller, separation roller and pickup roller. Replace them if they are worn out.

[E150] PFP upper drawer misfeeding (paper not reaching the PFP upper drawer feed sensor)

1. Open the PFP side cover and check if there is any paper in front of the PFP upper drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the PFP upper drawer feed sensor working? (Perform the input check: 03-[FAX]OFF/[2]/[D])
   * If it is working properly, proceed to 7. If not, check 3 to 6 below.
3. Check if the connectors CN349 on the LGC board is disconnected from the PFP upper drawer feed sensor or the harnesses are open circuited. Check if the connectors CN241 and CN243 on the PFP board are disconnected. Correct if any.
4. Replace the PFP upper drawer feed sensor.
5. Replace the PFP board.
6. Replace the LGC board.
7. Is the PFP upper drawer feed clutch working? (Perform the output check: 03-226)
   * If it is working properly, proceed to 12. If not, check 8 to 11 below.
8. Check if the connectors CN349 on the LGC board is disconnected from the PFP upper drawer feed clutch or the harnesses are open circuited. Check if the connectors CN241 and CN247 on the PFP board are disconnected. Correct if any.
9. Replace the PFP upper drawer feed clutch.
10. Replace the PFP board.
11. Replace the LGC board.
12. Check the PFP upper drawer feed roller, separation roller and pickup roller. Replace them if they are worn out.

[E160] PFP lower drawer misfeeding (paper not reaching the PFP lower drawer feed sensor)

1. Open PFP side cover and check if there is any paper in front of the PFP lower drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the PFP lower drawer feed sensor working? (Perform the input check: 03-[FAX]OFF/[8]/[D])
   * If it is working properly, proceed to 7. If not, check 3 to 6 below.
3. Check if the connectors CN349 on the LGC board is disconnected from the PFP lower drawer feed sensor or the harnesses are open circuited. Check if the connectors CN 241 and CN243 on the PFP board are disconnected. Correct if any.
4. Replace the PFP lower drawer feed sensor.
5. Replace the PFP board.
6. Replace the LGC board.
7. Is the PFP lower drawer feed clutch working? (Perform the output check: 03-228)
   * If it is working properly, proceed to 12. If not, check 8 to 11 below.
8. Check if the connectors CN349 on the LGC board is disconnected from the PFP lower drawer feed clutch or the harnesses are open circuited. Check if the connectors CN241 and CN248 on the PFP board are disconnected. Correct if any.
9. Replace the PFP lower drawer feed clutch.
10. Replace the PFP board.
11. Replace the LGC board.
12. Check the PFP lower drawer feed roller, separation roller and pickup roller. Replace them if they are worn out.

[E190] LCF misfeeding (paper not reaching the LCF feed sensor)

1. Open the LCF side cover and check if there is any paper in front of the LCF feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the LCF feed sensor working? (Perform the input check: 03-[FAX]OFF/[0]/[G])
   * If it is working properly, proceed to 7. If not, check 3 to 6 below.
3. Check if the connectors CN349 on the LGC board is disconnected from the LCF feed sensor or the harnesses are open circuited. Check if the connectors CN1 and CN6 on the LCF board are disconnected. Correct if any.
4. Replace the LCF feed sensor.
5. Replace the LCF board.
6. Replace the LGC board.
7. Is the LCF feed clutch working? (Perform the output check: 03-209)
   * If it is working properly, proceed to 12. If not, check 8 to 11 below.
8. Check if the connectors CN349 on the LGC board is disconnected from the LCF feed clutch or the harnesses are open circuited. Check if the connectors CN1 and CN5 on the LCF board are disconnected. Correct if any.
9. Replace the LCF feed clutch.
10. Replace the LCF board.
11. Replace the LGC board.
12. Check the LCF feed roller, separation roller and pickup roller. Replace them if they are worn out.

26.3.3 Paper transport jam

[E200] 1st drawer transport jam (not reaching the registration sensor)
[E210] 2nd drawer transport jam (not reaching the registration sensor)
[E270] Bypass transport jam (not reaching the registration sensor)
[E300] PFP upper drawer transport jam (not reaching the registration sensor)
[E330] PFP lower drawer transport jam (not reaching the registration sensor)
[E3C0] LCF transport jam (not reaching the registration sensor)

1. Open the jam access cover and check if there is any paper in front of the 1st drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the 1st drawer feed sensor working? (Perform the input check: 03-[FAX]ON/[1]/[G])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN348 on the LGC board is disconnected from the 1st drawer feed sensor or the harnesses are open circuited. Correct if any.
4. Replace the 1st drawer feed sensor.
5. Replace the LGC board.
6. Are the lower transport clutches (high/low speed) working? (Perform the output check: 03-230, 233)
   * If it is working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN348 on the LGC board is disconnected from the lower transport clutches (high/low) or the harnesses are open circuited. Correct if any.
8. Replace the lower transport clutches (high/low speed).
9. Replace the LGC board.
10. Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
11. Check the transport roller. Replace it if it is worn out.

[E220] 2nd drawer transport jam (not reaching the 1st drawer feed sensor)
[E310] PFP upper drawer transport jam (not reaching the 1st drawer feed sensor)
[E340] PFP lower drawer transport jam (not reaching the 1st drawer feed sensor)
[E3D0] LCF transport jam (not reaching the 1st drawer feed sensor)

1. Open the jam access cover and check if there is any paper in front of the registration sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the registration sensor working? (Perform the input check: 03-[FAX]OFF/[7]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN337 on the LGC board is disconnected from the registration sensor or the harnesses are open circuited. Correct if any.
4. Replace the registration sensor.
5. Replace the LGC board.
6. Are the upper transport clutches (high/low speed) working? (Perform the output check: 03-229, 231)
   * If it is working properly, proceed to 11. If not, check 7 to 10 below.
7. Check if the connector CN337 on the LGC board is disconnected from the upper transport clutches (high/low) or the harnesses are open circuited. Correct if any.
8. Replace the upper transport clutches (high/low speed).
9. Replace the LGC board.
10. Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
11. Check the transport roller. Replace it if it is worn out.

[E320] PFP upper drawer transport jam (not reaching the 2nd drawer feed sensor)
[E350] PFP lower drawer transport jam (not reaching the 2nd drawer feed sensor)
[E3E0] LCF transport jam (not reaching the 2nd drawer feed sensor)

1. Open the side cover and check if there is any paper in front of the 2nd drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the 2nd drawer feed sensor working? (Perform the input check: 03-[FAX]ON/[1]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN348 on the LGC board is disconnected from the 2nd drawer feed sensor or the harnesses are open circuited. Correct if any.
4. Replace the 2nd drawer feed sensor.
5. Replace the LGC board.
6. Are the lower transport clutches working? (Perform the output check: 03-230, 233)
   * If they are working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN348 on the LGC board is disconnected from the lower transport clutches (high/low) or the harnesses are open circuited. Correct if any.
8. Replace the lower transport clutches (high/low speed).
9. Replace the LGC board.
10. Is the PFP transport clutch working? (Perform the output check: 03-225)
    * If they are working properly, proceed to 16. If not, check 11 to15 below.
11. Check if the connectors CN349 on the LGC board is disconnected from the PFP transport clutch or the harnesses are open circuited. Check if the connectors CN241 and CN244 on the PFP board are disconnected. Correct if any.
12. Replace the PFP transport clutch.
13. Replace the PFP board.
14. Replace the LGC board.
15. Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
16. Check the transport roller. Replace it if it is worn out.

[E360] PFP lower drawer transport jam (not reaching the PFP upper drawer feed sensor)

1. Open the PFP side cover and check if there is any paper in front of the PFP upper drawer feed sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the PFP upper feed sensor working? (Perform the input check: 03-[FAX]OFF/[2]/[D])
   * If it is working properly, proceed to 7. If not, check 3 to 6 below.
3. Check if the connectors CN349 on the LGC board is disconnected from the PFP upper drawer feed sensor or the harnesses are open circuited. Check if the connectors CN 241 and CN243 on the PFP board are disconnected. Correct if any.
4. Replace the PFP upper drawer feed sensor.
5. Replace the PFP board.
6. Replace the LGC board.
7. Is the PFP transport clutch working? (Perform the output check: 03-225)
   * If it is working properly, proceed to 12. If not, check 8 to 11 below.
8. Check if the connectors CN349 on the LGC board is disconnected from the PFP transport clutch or the harnesses are open circuited. Check if the connectors CN 241 and CN244 on the PFP board are disconnected. Correct if any.
9. Replace the PFP transport clutch.
10. Replace the PFP board.
11. Replace the LGC board.
12. Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
13. Check the PFP transport roller. Replace it if it is worn out.

[E510] ADU transport stop jam

1. Open the ADU and check if there is any paper in front of the ADU entrance sensor.
   * If the error still occurs, check the following.
2. Is the ADU entrance sensor working? (Perform the input check: 03-[FAX]ON/[4]/[B])
   * If it is working properly, proceed to 7. If not, check 3 to 6 below.
3. Check if the connectors CN338 on the LGC board is disconnected from the ADU entrance sensor or the harnesses are open circuited. Check if the connectors CN211 and CN214 on the ADU board are disconnected. Correct if any.
4. Replace the ADU entrance sensor.
5. Replace the ADU board.
6. Replace the LGC board.
7. Is the exit motor (rotating in reverse) working? (Perform the output check: 03-121/171)
   * If it is working properly, proceed to 11. If not, check 8 to 10 below.
8. Check if the connector CN332 on the LGC board is disconnected from the exit motor or the harnesses are open circuited. Correct if any.
9. Replace the exit motor.
10. Replace the LGC board.
11. Is the ADU motor working? (Perform the output check: 03-110/160)
    * If it is working properly, proceed to 16. If not, check 12 to 15 below.
12. Check if the connectors CN338 on the LGC board is disconnected from the ADU motor or the harnesses are open circuited. Check if the connectors CN211, CN212 and CN215 on the ADU board are disconnected. Correct if any.
13. Replace the ADU motor.
14. Replace the ADU board.
15. Replace the LGC board.
16. Check the rollers in the ADU, the exit roller and the pressure spring of the equipment. Replace them if they are worn out.

[E520] Stop jam in the ADU

1. Open the ADU and check if there is any paper in front of the ADU exit sensor.
   * If the error still occurs, check the following.
2. Is the ADU exit sensor working? (Perform the input check: 03-[FAX]ON/[4]/[A])
   * If it is working properly, proceed to 11. If not, check 3 to 10 below.
3. Check if the connectors CN338 on the LGC board is disconnected from the ADU exit sensor or the harnesses are open circuited. Check if the connectors CN211 and CN213 on the ADU board are disconnected. Correct if any.
4. Replace the ADU exit sensor.
5. Replace the ADU board.
6. Replace the LGC board.
7. Is the ADU clutch working? (Perform the output check: 03-222)
   * If it is working properly, proceed to 11. If not, check 8 to 10 below.
8. Check if the connectors CN338 on the LGC board is disconnected from the ADU clutch or the harnesses are open circuited. Correct if any.
9. Replace the ADU clutch.
10. Replace the LGC board.
11. Check the rollers in the ADU. Replace them if they are worn out.

[EB50] Paper remaining on the transport path due to multiple feeding

When the paper is fed from any of the 1st drawer, bypass feed unit or ADU:

(When the paper is fed from the 1st drawer:)

1. Open the jam access cover and check if there is any paper in front of the registration sensor (when the paper is fed from the 1st drawer).
2. Is the 1st drawer feed sensor working? (Perform the input check: 03-[FAX]ON/[1]/[G])
   * If it is working properly, proceed to 11. If not, check 3 to 10 below.
3. Check if the connector CN337 on the LGC board is disconnected from the 1st drawer feed sensor or the harnesses are open circuited. Correct if any.
4. Replace the 1st drawer feed sensor.
5. Replace the LGC board.

(When the paper is fed from the bypass feed unit:)

1. Is the bypass feed sensor working? (Perform the input check: 03-[FAX]ON/[4]/[D])
2. Check if the connector CN338 on the LGC board is disconnected from the bypass feed sensor or the harnesses are open circuited. Correct if any.
3. Replace the bypass feed sensor.
4. Replace the LGC board.

(When the paper is fed from the ADU:)

1. Is the ADU exit sensor working? (Perform the input check: 03-[FAX]ON/[4]/[A])
2. Check if the connector CN338 on the LGC board is disconnected from the ADU exit sensor or the harnesses are open circuited. Check if the connectors CN211 and CN213 on the ADU board are disconnected. Correct if any.
3. Replace the ADU exit sensor.
4. Replace the ADU board.
5. Replace the LGC board.
6. Is the registration sensor working? (Perform the input check: 03-[FAX]OFF/[7]/[F])
7. Check if the connector CN337 on the LGC board is disconnected from the registration sensor or the harnesses are open circuited. Correct if any.
8. Replace the registration sensor
9. Replace the LGC board.
10. Check the rollers. Replace them if they are worn out.

When the paper is fed from any of the 2nd drawer, PFP or LCF:

1. Open the jam access cover and check if there is any paper in front of the 1st drawer feed sensor. Remove it if there is.
2. Are the 1st/2nd drawer feed sensors working? (Perform the input check: 03-[FAX]ON/[1]/[G], /[1]/[F])
   * If it is working properly, proceed to 11. If not, check 3 to 10 below.
3. Check if the connector CN348 on the LGC board is disconnected from the 1st and 2nd drawer feed sensors or the harnesses are open circuited. Correct if any.
4. Replace the 1st/2nd drawer feed sensors.
5. Replace the LGC board.
6. Check the rollers. Replace them if they are worn out.

[EB60] Paper remaining on the transport path due to multiple feeding

1. Open the jam access cover and check if there is any paper in front of the registration sensor. Remove it if there is.
   * If the error still occurs, check the following.
2. Is the registration sensor working? (Perform the input check: 03-[FAX]OFF/[7]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN337 on the LGC board is disconnected from the registration sensor or the harnesses are open circuited. Correct if any.
4. Replace the registration sensor.
5. Replace the LGC board.
6. Check the rollers. Replace them if they are worn out.

26.3.4 Other paper jam

[E011] Paper jam caused by clinging to the transfer belt (Paper not reached the paper clinging detection sensor)

1. Check if there is any paper clinging to the transfer belt or entering under the receiving tray. Remove it if there is.
2. Use the paper within the specification if the thin paper being used is out of specification.
3. Is the registration motor rotating? (Perform the input check. 03-108/158)
4. Check if the connector CN332 on the LGC board is disconnected from the registration motor or the harnesses are open circuited. Correct if any.
5. Replace the registration motor.
6. Replace the LGC board.
7. Check the state of the registration roller and replace it if it is deteriorated.
8. Is the paper clinging detection sensor working? (Perform the input check: 03-[FAX]OFF/[7]/[E])
9. Check if the connector CN337 on the LGC board is disconnected from the paper clinging detection sensor or the harnesses are open circuited. Correct if any.
10. Replace the paper clinging detection sensor.
11. Replace the LGC board.
12. Use the paper within the specification if the special paper whose reflection rate is lower than the specification is used.

[E030] Power-ON jam

1. Open the cover of the unit/area whose picture is flashing on the control panel and remove if there is any paper on the transport path. (Refer to the table below.)
2. Is the sensor in the jamming area working? (Perform the input check: Refer to the following table.)
3. heck if the connector on the LGC board is disconnected from the corresponding sensor in the jamming area or the harnesses are open circuited. Correct if any.
4. Replace the sensor.
5. Replace the LGC board.

Relation between the jamming area and the corresponding sensors/covers.
(If a jam is occurring in the ADU, LCF or PFP, check the board in each unit.)

Jamming area	Cover	Sensor	Test Mode/Input check
Registration area	Jam access cover	Registration sensor	03-[FAX]OFF/[7]/[F]
		Paper clinging detection sensor	03-[FAX]OFF/[7]/[E]
		1st drawer feed sensor	03-[FAX]ON/[1]/[G]
Exit area	Fuser cover	Exit sensor	03-[FAX]ON/[1]/[B]
ADU	ADU	ADU entrance sensor	03-[FAX]ON/[4]/[B]
		ADU exit sensor	03-[FAX]ON/[4]/[A]
Feeding area (equipment)	Side cover	2nd drawer feed sensor	03-[FAX]ON/[1]/[F]
Bypass unit	Bypass unit	Bypass feed sensor	03-[FAX]ON/[4]/[D]
LCF	LCF side cover	LCF feed sensor	03-[FAX]OFF/[0]/[G]
PFP	PFP side cover	PFP upper drawer feed sensor	03-[FAX]OFF/[2]/[D]
		PFP lower drawer feed sensor	03-[FAX]OFF/[8]/[D]
Bridge unit	Bridge unit	Bridge unit transport sensor-1 (Entrance sensor)	03-[FAX]OFF/[5]/[F]
		Bridge unit transport sensor-2 (Exit sensor)	03-[FAX]OFF/[5]/[D]

[E061]Incorrect paper size setting for 1st drawer
[E062]Incorrect paper size setting for 2nd drawer
[E063]Incorrect paper size setting for PFP upper drawer
[E064]Incorrect paper size setting for PFP lower drawer
[E065]Incorrect paper size setting for bypass tray

If any paper remains in the equipment or drawer, remove it. Match the paper size of the drawer setting and the one in the drawer.

* Paper size detection is performed at the first sheet of paper when the drawer is opened or closed, or when the power of the equipment is turned ON.

[E090]Image data delay jam

1. Remove the paper remained in front of the registration sensor.
2. Check if the error is cleared by turning the power OFF and then back ON.
3. Check if the connectors connecting the SYS board, IMG board and LGC board are disconnected.
4. Check if the connectors connecting the IMG board and SLG board are disconnected.
5. Check if the connectors of the HDD are disconnected.
6. Check if the page memory is correctly connected to the connector on the SYS board.
7. Replace the page memory.
8. Replace the HDD, SYS board, IMG board and LGC board.

[E091]Motor on time-out jam

1. Check if there is any paper in the equipment. Remove it if there is.
2. Check if the error is cleared by turning the power OFF and then back ON.
3. Check if the connectors connecting the SYS board, IMG board and LGC board are disconnected.
4. Check if the connectors connecting the IMG board and SLG board are disconnected.
5. Check if the connectors of the HDD are disconnected.
6. Replace the HDD, SYS board, IMG board and LGC board.

[E0A0]Image transport ready time-out jam

1. Remove the paper remained in front of the registration sensor.
2. Check if the error is cleared by turning the power OFF and then back ON.
3. Check if the connectors on the LGC board are disconnected.
4. Replace the LGC board.

[E550] Paper remaining on the transport path

1. Open the cover of the unit/area whose picture is flashing on the control panel and remove if there is any paper on the transport path.
2. Is the sensor in the jamming area working? (Perform the input check: Refer to the following table)
3. Check if the connector on the LGC board is disconnected from the corresponding sensor in the jamming area or the harnesses are open circuited. Correct if any.
4. Replace the sensor.
5. Replace the LGC board.

Relation between the jamming area and the corresponding sensors/covers
(If a jam is occurring in the ADU, LCF or PFP, check the board in each unit.)

Jamming area	Cover	Sensor	Test Mode/Input check
Registration area	Jam access cover	Registration sensor	03-[FAX]OFF/[7]/[F]
		1st drawer feed sensor	03-[FAX]ON/[1]/[G]
Exit area	Fuser cover	Exit sensor	03-[FAX]ON/[1]/[B]
ADU	ADU	ADU entrance sensor	03-[FAX]ON/[4]/[B]
		ADU exit sensor	03-[FAX]ON/[4]/[A]
Bypass unit	Bypass unit	Bypass feed sensor	03-[FAX]ON/[4]/[D]
Feeding area (equipment)	Side cover	2nd drawer feed sensor	03-[FAX]ON/[1]/[F]
LCF	LCF side cover	LCF feed sensor	03-[FAX]OFF/[0]/[G]
PFP	PFP side cover	PFP upper drawer feed sensor	03-[FAX]OFF/[2]/[D]
		PFP lower drawer feed sensor	03-[FAX]OFF/[8]/[D]
Bridge unit	Bridge unit	Bridge unit transport sensor-1 (Entrance sensor)	03-[FAX]OFF/[5]/[F]
		Bridge unit transport sensor-2 (Exit sensor)	03-[FAX]OFF/[5]/[D]
Finisher	Finisher door	Sensors in the finisher	-

26.3.5 Cover open jam

[E400] Jam access cover open

1. Close the jam access cover if it is opened. Remove if there is any paper before closing it.
2. Is the voltage of 24V being supplied from the power supply unit? (Perform the input check: 03-[FAX] ON/[2]/[B])
3. Check if the connector CN361 on the LGC board is disconnected from the connector CN405 on the switching regulator or the harnesses are open circuited. Correct if any.
4. Check if the fuse (F201, F202, F203, and F204) on the switching regulator has blown.
5. Replace the LGC board.
6. Replace the switching regulator.
7. Is the transfer cover switch working properly? (Perform the input check: 03-[FAX] ON/[3]/[D])
8. Check if the connector CN338 on the LGC board is disconnected from the transfer cover switch or the harnesses are open circuited. Correct if any.

[E410] Front cover open jam

1. Close the front cover if it is opened.
2. Is the voltage of 24V being supplied from the power supply unit? (Perform the input check: 03-[FAX] ON/[2]/[B])
3. Check if the connector CN345 on the LGC board is disconnected from the connector CN405 on the switching regulator or the harnesses are open circuited. Correct if any.
4. Check if the fuse (F201, F202, F203, and F204) on the switching regulator has blown.
5. Replace the LGC board.
6. Replace the switching regulator.

[E420] PFP side cover open jam

1. Close the PFP side cover if it is opened. Remove if there is any paper before closing it.
2. Is the PFP side cover opening/closing switch working? (Perform the input check: 03-[FAX]OFF/[2]/[F])
3. Check if the connector CN349 on the LGC board is disconnected from the PFP side cover opening/closing switch or the harnesses are open circuited. Check if the connectors CN241 and CN243 on the PFP board are disconnected. Correct if any.
4. Replace the PFP side cover opening/closing switch.
5. Replace the PFP board.
6. Replace the LGC board.

[E430] ADU open jam

1. Close the ADU if it is opened. Remove if there is any paper before closing it.
2. Is the ADU opening/closing switch working? (Perform the input check: 03-[FAX]ON/[2]/[C])
3. Check if the connector CN338 on the LGC board is disconnected from the ADU opening/closing switch or the harnesses are open circuited. Check if the connectors CN211 and CN217 on the ADU board are disconnected. Correct if any.
4. Replace the ADU opening/closing switch.
5. Replace the ADU board.
6. Replace the LGC board.

[E440] Side cover open jam

1. Close the side cover if it is opened. Remove if there is any paper before closing it.
2. Is the side door switch working? (Perform the input check: 03-[FAX]ON/[0]/[B])
3. Check if the connector CN348 on the LGC board is disconnected from the side cover switch or the harnesses are open circuited. Correct if any.
4. Replace the side door switch.
5. Replace the LGC board.

[E450] LCF side cover open jam

1. Close the LCF side cover if it is opened. Remove if there is any paper before closing it.
2. Is the LCF side cover opening/closing switch working? (Perform the input check: 03-[FAX]OFF/[0]/[D])
3. Check if the connector CN349 on the LGC board is disconnected from the LCF side cover opening/closing switch or the harnesses are open circuited. Check if the connectors CN1 and CN6 on the LCF board are disconnected. Correct if any.
4. Replace the LCF side cover opening/closing switch.
5. Replace the LCF board.
6. Replace the LGC board.

[E480] Bridge unit open jam

1. Close the bridge unit if it is opened. Remove if there is any paper before closing it.
2. Is the bridge unit cover opening/closing detection switch working? (Perform the input check: 03-[FAX]OFF/[5]/[E])
3. Check if the connector CN334 on the LGC board is disconnected from the bridge unit cover opening/closing detection switch or the harnesses are open circuited. Correct if any.
4. Replace the bridge unit cover opening/closing detection switch.
5. Replace the LGC board.

[E4A0] Waste toner cover open jam

1. Close the waste toner cover if it is opened. Remove if there is any paper before closing it.
2. Is the waste toner cover open/close detection switch working? (Perform the input check: 03-[FAX]OFF/[1]/[H])
3. Check if the connector CN359 on the LGC board is disconnected from the waste toner cover open/close detection switch or the harnesses are open circuited. Correct if any.
4. Replace the waste toner cover open/close detection switch.
5. Replace the LGC board.

26.3.6 RADF jam

[E712] Jam not reaching the original registration sensor

1. Clean the pickup roller, feed roller and separation roller if they are stained.
2. Flatten the original if it is folded or excessively curled and place it again.
3. Is the original registration sensor working? (Perform the input check: 03-[FAX]ON/[7]/[H])
   * If it is working properly, proceed to 7. If not, check 3 to 6.
4. Check if the connector CN74 on the RADF board is disconnected from the original registration sensor or the harnesses are open circuited. Correct if any.
5. Replace the original registration sensor.
6. Replace the RADF board.
7. Replace the pickup roller, feed roller and separation roller if they are worn out.

[E713] Cover open jam in the read ready status

1. Close the RADF jam access cover or the front cover if they are opened in the read ready status.
2. Is the RADF jam access cover sensor working? (Perform the input check: 03-[FAX]ON/[7]/[C])
3. Check if the connector CN75 on the RADF board is disconnected from the RADF jam access cover sensor or the harnesses are open circuited. Correct if any.
4. Replace the RADF jam access cover sensor.
5. Replace the RADF board.

[E714] Feed signal reception jam

1. Is the empty sensor working? (Perform the input check: 03-[FAX]ON/[7]/[B])
2. Check if the lever of empty sensor is working normally.
3. Check if the connector CN75 on the RADF board is disconnected from the empty sensor or the harnesses are open circuited. Correct if any.
4. Replace the empty sensor.
5. Replace the RADF board.

[E721] Jam not reaching the read sensor

1. Clean the registration roller and the read roller if they are stained.
2. Is the read sensor working? (Perform the input check: 03-[FAX]ON/[7]/[G])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN76 on the RADF board is disconnected from the read sensor or the harnesses are open circuited. Correct if any.
4. Replace the read sensor.
5. Replace the RADF board.
6. Replace the registration roller and the read roller if they are worn out.

[E722] Jam not reaching the exit sensor (during scanning)

1. Clean the read roller if it is stained.
2. Is the original exit/reverse sensor working? (Perform the input check: 03-[FAX]ON/[7]/[E])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN75 on the RADF board is disconnected from the original exit/reverse sensor or the harnesses are open circuited. Correct if any.
4. Replace the original exit/reverse sensor
5. Replace the RADF board.
6. Replace the read roller if it is worn out.

[E724] Stop jam at the registration sensor

1. Clean the registration roller if it is stained.
2. Is the registration sensor working? (Perform the input check: 03-[FAX]ON/[7]/[H])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN74 on the RADF board is disconnected from the registration sensor or the harnesses are open circuited. Correct if any.
4. Replace the registration sensor.
5. Replace the RADF board.
6. Replace the registration roller if it is worn out.

[E725] Stop jam at the read sensor

1. Clean the read roller if it is stained.
2. Is the read sensor working? (Perform the input check: 03-[FAX]ON/[7]/[G])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN75 on the RADF board is disconnected from the read sensor or the harnesses are open circuited. Correct if any.
4. Replace the read sensor.
5. Replace the RADF board.
6. Replace the read roller if it is worn out.

[E726] Transport/exit signal reception jam

1. If any original remains in the RADF, remove it.
2. If any paper remains in the equipment, remove it.
3. Turn the power OFF and then back ON. If the jam still occurs, perform the following procedure.
4. Check the connection between the RADF board and SLG board, and the connection between the RADF board and switching power supply.
   * Are the connection of the connectors and joint connectors normal?
   * Are the connector pins connected or are the harnesses open circuited?
5. Check if the 24V and 5V outputs of the switching power supply are normal.
6. Check if the conductor pattern on the RADF board is short circuited or open circuited.
7. Replace the RADF board.
8. Check if the conductor pattern on the SLG board is short circuited or open circuited.
9. Replace the SLG board.

[E731] Stop jam at the exit sensor

1. Clean the exit roller if it is stained.
2. Is the exit/reverse sensor working? (Perform the input check: 03-[FAX]ON/[7]/[E])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN4 on the RADF board is disconnected from the exit/reverse sensor or the harnesses are open circuited. Correct if any.
4. Replace the exit/reverse sensor.
5. Replace the RADF board.
6. Replace the exit roller if it is worn out.

[E860] RADF jam access cover open

1. Close the RADF jam access cover if it is opened. Remove if there is any original before closing it.
2. Is the RADF jam access cover switch working? (Perform the input check: 03-[FAX]ON/[7]/[C])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN8 on the RADF board is disconnected from the RADF jam access cover switch or the harnesses are open circuited. Correct if any.
4. Replace the RADF jam access cover switch.
5. Replace the RADF board.

[E870] RADF open jam

1. Close the RADF if it is opened. Remove if there is any original before closing it.
2. Is the RADF opening/closing sensor working? (Perform the input check: 03-[FAX]ON/[7]/[D])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN75 on the RADF board is disconnected from the RADF opening/closing sensor or the harnesses are open circuited. Correct if any.
4. Replace the RADF opening/closing sensor.
5. Replace the RADF board.
6. Is the RADF opening/closing sensor adjusted within the specified range?

26.3.7 Jam in bridge unit

[E910] Paper not reaching the bridge unit transport sensor-1
[E920] Paper stopping at the bridge unit transport sensor-1

1. Check if there is any paper in the bridge unit and remove it if there is.
2. Is the bridge unit transport sensor-1 working? (Perform the input check:03-[FAX]OFF/[5]/[F])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN334 on the LGC board is disconnected from the bridge unit transport sensor-1 (entrance sensor) or the harnesses are open circuited. Check if the connector J523 of the bridge unit is disconnected. Correct if any.
4. Replace the bridge unit transport sensor-1.
5. Replace the LGC board.
6. Is the bridge unit gate solenoid working? (Perform the output check: 03-232)
   * If it is working properly, proceed to 10. If not, check 7 to 9 below.
7. Check if the connector CN334 on the LGC board is disconnected from the bridge unit gate solenoid or the harnesses are open circuited. Check if the connector J523 of the bridge unit is disconnected. Correct if any.
8. Replace the bridge unit gate solenoid.
9. Replace the LGC board.
10. Does the transport roller of the bridge unit work when the fuser motor is rotated? (Perform the output check: 03-113/163)
    * If it is working properly, proceed to 12. If not, check 11 below.
11. Check the drive system of the equipment and bridge unit.
12. Check if the rollers in the exit roller, the pressure spring and the bridge unit are worn out.

[E930] Paper not reaching the bridge unit transport sensor-2
[E940] Paper stopping at the bridge unit transport sensor-2

1. Check if there is any paper in the bridge unit and remove it if there is.
2. Is the bridge unit transport sensor-2 working? (Perform the input check:03-[FAX]OFF/[5]/[D])
   * If it is working properly, proceed to 6. If not, check 3 to 5 below.
3. Check if the connector CN334 on the LGC board is disconnected from the bridge unit transport sensor-2 (exit sensor) or the harnesses are open circuited. Check if the connector J523 of the bridge unit is disconnected. Correct if any.
4. Replace the bridge unit transport sensor-2.
5. Replace the LGC board.
6. Does the transport roller of the bridge unit work when the fuser motor is rotated? (Perform the output check: 03-113/163)
   * If it is working properly, proceed to 8. If not, check 7 below.
7. Check the drive system of the equipment and bridge unit.
8. Check if the rollers in the exit roller, the pressure spring and the bridge unit are worn out.

26.3.8 Paper jam in finisher section

[EA10] Paper transport delay jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J708 on the finisher controller PC board is disconnected from the inlet sensor (P133) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J104 on the finisher controller PC board is disconnected from the inlet sensor (SR2) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Is there a disconnection of the connector, incorrect installation or breakage of the entrance sensor (S1)?
3. Is the gap between the flapper and entrance roller shaft other than 0.60?0.20mm when the gate solenoid (SOL2) is pulled?.
4. Is the harness between the entrance motor (M1) and the finisher control PC board (CN7) disconnected or open circuited?
5. Is the harness between the gate solenoid (SOL2) and the finisher control PC board (CN22) disconnected or open circuited?
6. Replace the finisher controller PC board.

[EA20] Paper transport stop jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connectors J707, J708 and J722B on the finisher controller PC board are disconnected from the corresponding sensors (inlet sensor [P133], transport path sensor [P134] and processing tray sensor [P138]) or the harnesses are open circuited. Correct if any.
3. Attach the actuators securely if their shafts are out of place.
4. Replace the sensors.
5. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J104 on the finisher controller PC board is disconnected from the inlet sensor (SR2) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

[EA20] Paper transport stop jam (inlet sensor)

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector on the finisher controller PC board is disconnected from the transport sensor (S2) or the harnesses are open circuited. Correct if any.
3. Replace the sensor.
4. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J104 on the finisher controller PC board is disconnected from the inlet sensor (SR2) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

[EA21] Paper size error jam (outlet sensor)
[EA22] Paper size error jam (punch paper edge sensor)

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Is the paper size used shorter than the size specified in the specifications?
3. Check if the connectors CN7 and CN22 on the finisher controller PC board are disconnected from the entrance sensor (S1) and the transport sensor (S2), or the harnesses are open circuited. Correct if any.
4. Replace the sensor.
5. Replace the finisher controller PC board.

[EA23] Paper transport stop jam (transport sensor)
[EA24] Paper transport stop jam (between entrance & transport sensor)
[EA25] Paper transport stop jam (after paper stack exit)
[EA26] Paper transport stop jam (stop command request)
[EA27] Paper transport stop jam (paper not inserted)
[EA28] Paper transport stop jam (paper holder plate operation delay)
[EA29] Paper transport stop jam (stack transport delay)

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connectors CN7 and CN22 on the finisher controller PC board are disconnected from the entrance sensor (S1) and the transport sensor (S2), or the harnesses are open circuited. Correct if any.
3. Replace the sensor.
4. Replace the finisher controller PC board.

[EA30] Power-ON jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connectors J707, J708 and J722B on the finisher controller PC board are disconnected from the corresponding sensor (inlet sensor [P133], transport path sensor [P134] and processing tray sensor [P138]) or the harnesses are open circuited. Correct if any.
3. Is each of the sensors (the inlet sensor, the transport path sensor and the processing tray sensor) working properly? (Check the movement of the actuator.)
4. Replace the sensors.
5. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J104 on the finisher controller PC board is disconnected from the inlet sensor (SR2) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

[EA31] Transport path paper remaining jam

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector CN22 on the finisher controller PC board is disconnected from the transport sensor (S2) or the harnesses are open circuited. Correct if any.
3. Check if the connectors CN7 and CN22 on the finisher controller PC board are disconnected from the entrance sensor (S1) and the transport sensor (S2), or the harnesses are open circuited. Correct if any.
4. Replace the sensor.
5. Replace the finisher controller PC board.

[EA32] Exit paper remaining jam

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check and correct the mechanism.
3. Check if the connector CN11 on the finisher controller PC board is disconnected from the finishing tray paper detection sensor (S12) or the harnesses are open circuited. Correct if any.
4. Replace the sensor.
5. Replace the finisher controller PC board.

[EA40] Door open jam / joint open jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Close the upper or front cover of the finisher if any of them is opened.
3. Check if the connectors J707 and J708 on the finisher controller PC board are disconnected from the upper cover opening sensor (P131) and the front cover opening sensor (P132), or the harnesses are open circuited. Correct if any.
4. Replace the upper/front cover opening sensor.
5. Check if the connector J719 on the finisher controller PC board is disconnected from the front cover switch (MS31) or the harnesses are open circuited. Correct if any.
6. Replace the front cover switch (MS31).
7. Is the connector J5 on the punch controller PC board disconnected?
8. Is the harness connecting the punch controller PC board and upper door switch (MSW61) open circuited?
9. Is the harness connecting the punch controller PC board and front door switch (MSW62) open circuited?
10. Are the upper and front door switches working properly?
11. Reconnect or replace the connector of the upper cover switch or the front cover switch.
12. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J110 on the finisher controller PC board is disconnected from the Joint switch (SW1) or the harnesses are open circuited. Correct if any.
3. Replace the Joint switch.
4. Replace the finisher controller PC board.

MJ-1101

1. Close the front cover or the stationary tray cover if they are opened.
2. Replace the handle cover installed inside of the front cover if it is broken.
3. Reinstall the stationary tray opening/closing switch if it is incorrectly installed.
4. Check if the connector CN16 on the finisher controller PC board is disconnected from the front cover switch (SW1) and the stationary tray opening/closing switch (SW2) or the harnesses are open circuited. Correct if any.
5. Replace the sensors.
6. Replace the finisher controller PC board.

[EA50] Stapling jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment or on the stapling tray. Remove it if there is.
2. Is the jam cleared by taking off the staple cartridge from the finisher and removing the staple sheet slid from the staple case?
3. Is the connector J721B on the finisher controller PC board disconnected?
4. Is the harness connecting the finisher controller PC board and staple home position sensor (PI40) open circuited?
5. Is the staple home position sensor working properly?
6. Reconnect or replace the connector of the staple home position sensor.
7. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or stapler and remove it if there is.
2. Is the jam cleared by taking off the staple cartridge from the finisher and removing the staple sheet slid from the staple case?
3. Check if the connectors J112, J113 on the finisher controller PC board is disconnected from the stapler) or the harnesses are open circuited. Correct if any.
4. Check if the connectors on the stapler is disconnected or the harnesses are open circuited. Correct if any.
5. Replace the stapler.
6. Replace the finisher controller PC board.

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment or on the finishing tray. Remove it if there is.
2. Is the jam cleared by taking off the staple cartridge from the finisher and removing the staple sheet slid from the staple case?
3. Check if the actuator of the stapler interference sensor (S11) moves smoothly.
4. Check if the connector CN2 on the finisher controller PC board is disconnected from the stapler or the harnesses are open circuited. Correct if any.
5. Check the harnesses in the stapler are disconnected or open circuited. Correct if any.
6. Replace the finisher controller PC board.

[EA60] Early arrival jam

MJ-1030

1. Check if there is any paper in the finisher or on the transport path of the equipment or on the stapling tray. Remove it if there is.
2. Check if the connector CN2 on the finisher controller PC board is disconnected from the stapler or the harnesses are open circuited. Correct if any.
3. Check if the connector on the finisher controller PC board is disconnected from the inlet sensor (P133) or the harnesses are open circuited. Correct if any.
4. Check if the inlet sensor (P133) is working (or if the actuator returns) properly.
5. Replace the inlet sensor.
6. Replace the finisher controller PC board.

MJ-1031

1. Check if there is any paper in the finisher or on the transport path of the equipment and remove it if there is.
2. Check if the connector J104 on the finisher controller PC board is disconnected from the inlet sensor (SR2) or the harnesses are open circuited. Correct if any.
3. Is the inlet sensor working properly? (Check the movement of the actuator.)
4. Replace the inlet sensor.
5. Replace the finisher controller PC board.

MJ-1101

1. Check if there is any paper in the finisher or on the transport path of the equipment or on the finishing tray. Remove it if there is.
2. Check if there is any disconnection, incorrect installation or breakage on the entrance sensor (S1). Correct if any.
3. Check if the connector CN7 on the finisher controller PC board is disconnected from the entrance sensor (S1) and the harnesses are disconnected or open circuited. Correct if any.
4. Replace the entrance sensor.
5. Replace the finisher controller PC board.

[EA70] Stack exit belt home position error / Stack slider home position error

MJ-1101

1. Check if the connector CN11 on the finisher controller PC board is disconnected from the stack belt exit home position sensor (S9) and the harnesses are open circuited. Correct if any.
2. Is the harness between the stack transport motor (M5) and the finisher control PC board (CN10) disconnected or open circuited?
3. Replace the sensor.
4. Replace the finisher controller PC board.

MJ-1031

1. Check if the connector J111 on the finisher controller PC board is disconnected from the stack edging HP sensor (SR8) or the harnesses are open circuited. Correct if any.
2. Check if the connector J111 on the finisher controller PC board is disconnected from the stack slide motor (M4) or the harnesses are open circuited. Correct if any.
3. Replace the stack slider HP sensor.
4. Replace the stack slide motor.
5. Replace the finisher controller PC board.

26.3.9 Paper jam in saddle stitcher section

[EA80] Stapling jam

MJ-1030

1. Check if there is any paper in the finisher, saddle stitcher, or on the transport path of the equipment, or on the stapling tray. Remove it if there is.
2. Remove the staple cartridge from the finisher and remove staples stuck in the stapling unit.
3. Check if the connector J8 on the saddle stitcher controller PC board is disconnected from the stitcher home position switches (rear: SW5, front: SW7) or the harnesses are open circuited. Correct if any.
4. Check if the stitcher home position switches are working properly.
5. Replace the stitcher home position switch.
6. Replace the finisher controller PC board.

[EA90] Door open jam

MJ-1030

1. Check if there is any paper in the finisher, saddle stitcher or on the transport path of the equipment. Remove it if there is.
2. Check if the saddle stitcher door is closed.
3. Check if the connectors J10 and J11 on the saddle stitcher controller PC board are disconnected from any of the cover opening switches (the delivery cover sensor [P13] and the inlet cover sensor [P19]) or the harnesses are open circuited. Correct if any.
4. Check if the cover opening switches noted above are working properly.
5. Replace the sensor.
6. Replace the finisher controller PC board.

[EAA0] Power-ON jam

MJ-1030

1. Check if there is any paper on the transport path of the saddle stitcher or the finisher. Remove it if there is.
2. Is any of the connectors J9, J10 and J13 on the saddle stitcher controller PC board disconnected?
3. Check if the connectors on the saddle stitcher controller PC board are disconnected from the No. 1 paper sensor (PI18), No. 2 paper sensor (PI19), No. 3 paper sensor (PI20), vertical path paper sensor (PI17) and delivery sensor (PI11), or the harnesses are open circuited. Correct if any.
4. Is each of the sensors (No.1 paper sensor, No.2 paper sensor, No.3 paper sensor, the vertical path paper sensor, and the delivery sensor) working properly? (Check the movement of the actuator.)
5. Replace the sensor.
6. Replace the saddle stitcher controller PC board.

[EAB0] Paper transport stop jam

MJ-1030

1. Check if there is any paper in the finisher, saddle stitcher or the on the transport path of the equipment. Remove it if there is.
2. Is the connector J708 on finisher controller PC board disconnected?
3. Is the harness between the finisher controller PC board and inlet sensor [PI33] open circuited?
4. Is either of the connectors J9 or J10 on the saddle stitcher controller PC board disconnected?
5. Is the harness between the saddle stitcher controller PC board and each sensor (No.1 paper sensor [PI18], No.2 paper sensor [PI19], No.3 paper sensor [PI20] and the delivery sensor [PI11]) open circuited?
6. Is each of the sensors (the inlet sensor, No.1 paper sensor, No.2 paper sensor, No.3 paper sensor and the delivery sensor) working properly? (Check the movement of the actuator.)
7. Replace the sensor.
8. Replace the saddle stitcher controller PC board.

[EAC0] Transport delay jam

MJ-1030

1. Check if there is any paper in the finisher, saddle stitcher or the on the transport path of the equipment. Remove it if there is.
2. Is the connector J708 on finisher controller PC board disconnected?
3. Is the harness between the finisher controller PC board and inlet sensor [PI33] open circuited?
4. Is the inlet sensor working properly? (Check the movement of the actuator.)
5. Replace the sensor.
6. Replace the finisher controller PC board.

26.3.10 Paper jam in puncher unit

[E9F0] Punching jam

MJ-1030 (when MJ-6004 is installed)

1. Check if there is any paper in the finisher or the on the transport path of the equipment. Remove it if there is.
2. Is the connector J605A on the punch controller PC board disconnected?
3. Check if the connector on the punch controller PC board is disconnected from the punch home position sensor (PI63) or the harnesses are open circuited. Correct if any.
4. Check if the punch home position sensor (PI63) is working properly.
5. Replace the punch home position sensor.
6. Replace the punch controller PC board.

MJ-1101 (when MJ-6101 is installed)

1. Check if there is any paper in the finisher, saddle stitcher or the on the transport path of the equipment. Remove it if there is.
2. Rotate the punch motor (M3) and fix its mechanism if it does not rotate smoothly.
3. Check if the harnesses and the punch HP sensor (S4) are connected properly. Correct if any.
4. Check if the wiring of the hole punch controller PC board (HP board) and the punch motor (M3) is proper. Correct if any.
5. Replace the punch motor (M3).
6. Replace the hole punch control PC board.

26.3.11 Other paper jam

[EAD0] Print end command time-out jam

1. Is the drum motor rotating normally?
2. Replace the SYS board.
3. Replace the LGC board.

[EAE0] Receiving time-out jam

1. Is the finisher working?
2. Check if the voltage (24V) is being supplied to the finisher.
3. Check the connection of the LGC board and IPC board.
4. Check if the harness connecting the IPC board and finisher I/F connector of the equipment side is open circuited.
5. Check if the harness connecting the I/F connector of the finisher side and finisher controller PC board is open circuited.
6. Replace the finisher controller PC board.

[EB30] Ready time-out jam

1. Check if there is any paper in the equipment. Remove it if there is.
2. Check if the connector on the equipment is disconnected from the finisher or the harnesses are open circuited. Correct if any.
3. Replace the IPC board.
4. Replace the LGC board.
5. Replace the finisher controller PC board.

[ED10] Skew adjustment motor (M1) home position detection abnormality

MJ-1101 (when MJ-6101 is installed)

1. Check if there is any paper in the finisher or the on the transport path of the equipment. Remove it if there is.
2. Rotate skew adjustment motor and fix its mechanism if it does not rotate smoothly.
3. Check if the connectors on the hole punch controller PC board (HP board) are disconnected from the skew HP sensor (S2) and the skew adjustment motor, or the harnesses are open circuited. Correct if any.
4. Replace the skew adjustment motor.
5. Replace the hole punch control PC board.

[ED11] Sideways adjustment motor (M2) home position detection error

MJ-1101 (when MJ-6101 is installed)

1. Check if there is any paper on the transport path and remove it if there is.
2. Rotate sideways adjustment motor and fix its mechanism if it does not rotate smoothly.
3. Check if the connectors on the hole punch controller PC board (HP board) are disconnected from the sideways deviation HP sensor (S3)and the sideways adjustment motor, or the harnesses are open circuited. Correct if any.
4. Replace the sideways adjustment motor.
5. Replace the hole punch control PC board.

[ED12] Shutter home position error

MJ-1101

1. Open and close the shutter. If there is any mechanical problem, fix its mechanism.
2. Check if the connectors on the finisher controller PC board are disconnected from the shutter opening/closing sensor (S4) and the shutter clutch (CLT1), or the harnesses are open circuited. Correct if any.
3. Replace the shutter clutch (CLT1).
4. Replace the shutter opening/closing sensor (S4).
5. Replace the finisher controller PC board.

[ED13] Front alignment plate home position error

MJ-1101

1. Move the front alignment plate. If there is any mechanical problem, fix its mechanism.
2. Check if the connectors on the finisher controller PC board are disconnected from the front alignment plate home position sensor (S7) and the front alignment motor (M9), or the harnesses are open circuited. Correct if any.
3. Replace the front alignment motor (M9).
4. Replace the front alignment plate home position sensor (S7).
5. Replace the finisher controller PC board.

[ED14] Rear alignment plate home position error

MJ-1101

1. Move the rear alignment plate. If there is any mechanical problem, fix its mechanism.
2. Check if the connectors on the finisher controller PC board are disconnected from the rear alignment plate home position sensor (S8) and the rear alignment motor (M10), or the harnesses are open circuited. Correct if any.
3. Replace the rear alignment motor (M10).
4. Replace the rear alignment plate home position sensor (S8).
5. Replace the finisher controller PC board.

[ED15] Paddle home position error

MJ-1101

1. Rotate the paddle. If there is any mechanical problem, fix its mechanism.
2. Check if the connectors on the finisher controller PC board are disconnected from the paddle home position sensor (S3) and the paddle motor (M8), or the harnesses are open circuited. Correct if any.
3. Replace the paddle motor (M8).
4. Replace the paddle home position sensor (S3).
5. Replace the finisher controller PC board.

[ED16] Buffer tray home position error

MJ-1101

1. Open and close the buffer tray guide. If there is any mechanical problem, fix its mechanism.
2. Check if the connectors on the finisher controller PC board are disconnected from the buffer tray home position sensor (S5) and the buffer tray guide motor (M3), or the harnesses are open circuited. Correct if any.
3. Replace the buffer tray guide motor (M3).
4. Replace the buffer tray home position sensor (S5).
5. Replace the finisher controller PC board.

26.3.12 Paper feeding system related service call

[C040] PFP motor abnormality

Is the PFP motor working? (Perform the output check: 03-109/159)

NO →
1. Check if the signal line connector CN503 of the PFP motor is disconnected.
2. Check if the power line connector CN502 of the PFP motor is disconnected.
3. Check if the connector CN246 on the PFP board is disconnected.
4. Check if the signal line connector CN241 on the PFP board is disconnected.
5. Check if the power line connector CN242 on the PFP board is disconnected.
6. Check if the connector CN349 on the LGC board is disconnected.
7. Check if the connector pins are disconnected or the harnesses are open circuited.
8. Check if the conductor patterns on the PFP motor board, PFP board and LGC board are short circuited or open circuited.
9. Replace the PFP motor.
10. Replace the PFP board.
11. Replace the LGC board.

↓

YES

Is the LED on the PFP motor board lit without flashing?

NO →
1. Check if the connector pins are disconnected or the harnesses are open circuited.
2. Check if the conductor patterns on the PFP motor board, PFP board and LGC board are short circuited or open circuited.
3. Replace the PFP motor.
4. Replace the PFP board.
5. Replace the LGC board.

↓

YES

1. Check if the PLL lock signal CN246-8 pin output from the PFP board is always “L” level.
2. Check if the voltage supplied to the microcomputer input terminal IC5-17 pin is always “L” level.
3. Replace the PFP board.
4. Replace the LGC board.

[C130] 1st drawer tray abnormality
[C140] 2nd drawer tray abnormality

Does the tray go up? (Perform the output check: 03-242, 243)

NO →
1. Check if the connector of the tray-up motor is disconnected.
2. Check if the connector CN348 on the LGC board is disconnected.
3. Check if the connector pins are disconnected or the harnesses are open circuited.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the tray-up motor.
6. Replace the LGC board.

↓

YES

Is the tray-up sensor working? (Perform the input check: 03-[FAX]OFF/[4]/[B], /[4]/[A])

NO →
1. Check if the connector of the sensor is disconnected.
2. Check if the connector CN348 on the LGC board is disconnected.
3. Check if the slit reaches the sensor.
4. Check if the connector pins are disconnected or the harnesses are open circuited.
5. Check if the conductor pattern on the LGC board is short circuited or open circuited.
6. Replace the tray-up sensor.
7. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[C150] PFP upper drawer tray abnormality
[C160] PFP lower drawer tray abnormality

Does the tray go up? (Perform the output check: 03-278, 280)

NO →
1. Check if the connector of the tray-up motor is disconnected.
2. Check if any of the connectors CN241, CN242 and CN244 on the PFP board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the connector pins are disconnected or the harnesses are open circuited.
5. Check if the conductor patterns on the PFP board and LGC board are short circuited or open circuited.
6. Replace the tray-up motor.
7. Replace the PFP board.
8. Replace the LGC board.

↓

YES

Is the tray-up sensor working? (Perform the input check: 03-[FAX]OFF/[2]/[H], /[8]/[H])

NO →
1. Check if the connector of the sensor is disconnected.
2. Check if any of the connectors CN241, CN247 and CN248 on the PFP board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the slit reaches the sensor.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Check if the conductor patterns on the PFP board and LGC board are short circuited or open circuited.
7. Replace the tray-up sensor.
8. Replace the PFP board.
9. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[C180] LCF tray-up motor abnormality

Does the tray move? (Perform the output check: 03-271)

NO →
1. Check if the connector of the LCF tray-up motor is disconnected.
2. Check if any of the connectors CN100, CN101 and CN103 on the LCF board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the connector pins are disconnected or the harnesses are open circuited.
5. Check if the conductor patterns on the LCF board and LGC board are short circuited or open circuited.
6. Replace the LCF tray-up motor.
7. Replace the LCF board.
8. Replace the LGC board.

↓

YES

Are the LCF tray-up sensor and LCF tray bottom sensor working?
(Perform the input check: 03-[FAX]OFF/[0]/[F], /[9]/[A])

NO →
1. Check if the connectors of the sensors are disconnected.
2. Check if any of the connectors CN100, CN104 and CN105 on the LCF board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the slit reaches the sensors.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Check if the conductor patterns on the LCF board and LGC board are short circuited or open circuited.
7. Replace the sensor.
8. Replace the LCF board.
9. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[C1A0] LCF end fence motor abnormality

Is the LCF end fence motor working? (Perform the output check: 03-207)

NO →
1. Check if the connector of the LCF end fence motor is disconnected.
2. Check if any of the connectors CN100, CN101 and CN103 on the LCF board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the connector pins are disconnected or the harnesses are open circuited.
5. Check if the conductor patterns on the LCF board and LGC board are short circuited or open circuited.
6. Replace the LCF end fence motor.
7. Replace the LCF board.
8. Replace the LGC board.

↓

YES

Are the LCF end fence home/stop position sensors working?
(Perform the input check: 03-[FAX]OFF/[0]/[A], /[0]/[B])

NO →
1. Check if the connectors of the sensors are disconnected.
2. Check if either of the connectors CN100 or CN107 on the LCF board is disconnected.
3. Check if the connector CN349 on the LGC board is disconnected.
4. Check if the slit reaches the sensors.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Check if the conductor patterns on the LCF board and LGC board are short circuited or open circuited.
7. Replace the sensors.
8. Replace the LCF board.
9. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[C1B0] LCF transport motor abnormality

Is the LCF transport motor working? (Perform the output check: 03-122/172)

NO →
1. Check if the connector CN112 of the LCF transport motor is disconnected.
2. Check if the connector CN102 on the LCF board is disconnected.
3. Check if the signal line connector CN100 on the LCF board is disconnected.
4. Check if the power line connector CN101 on the LCF board is disconnected.
5. Check if the connector CN349 on the LGC board is disconnected.
6. Check if the connector pins are disconnected or the harnesses are open circuited.
7. Check if the conductor patterns on the LCF transport motor board, LCF board and LGC board are short circuited or open circuited.
8. Replace the LCF transport motor.
9. Replace the LCF board.
10. Replace the LGC board.

↓

YES

1. Check if the connector pins are disconnected or the harnesses are open circuited.
2. Check if the conductor patterns on the LCF transport motor board, LCF board and LGC board are short circuited or open circuited.
3. Check if the PLL lock signal CN102-3 pin output from the LCF board is always “L” level.
4. Check if the voltage supplied to the microcomputer input terminal IC103-17 pin is always “L” level.
5. Replace the LCF transport motor.
6. Replace the LCF board.
7. Replace the LGC board.

26.3.13 Scanning system related service call

[C260] Peak detection error

Does the exposure lamp light? (Perform the output check: 03-267)

YES →
1. Check if the connectors on the CCD and SLG boards are disconnected.
2. Check if the shading correction plate is dirty.
3. Check if the conductor pattern on the CCD board is short circuited or open circuited.
4. Check if the conductor pattern on the SLG board is short circuited or open circuited.
5. Replace the lens unit.
6. Replace the SLG board.

↓

NO

1. Check if the connectors of the exposure lamp and inverter are disconnected.
2. Check the SLG board if the connector pin CN21 is disconnected or the harness is short circuited or open circuited.
3. Check if the conductor pattern on the SLG board is short circuited or open circuited.
4. Replace the SLG board.
5. Replace the inverter.
6. Replace the exposure lamp.

[C270] Carriage home position sensor not going OFF within a specified time / Downloading firmware with an incorrect model

Remove the original glass and move the carriages to the paper feeding side. Turn ON the power and check the following items.

Are the carriages slightly moved to the feeding direction?/Are the carriages staying at a position other than home position?

↓ YES → Check if the circuits of the SLG board are abnormal.

NO

1. Check if the connector pin is disconnected or the harness is short circuited or open circuited.
2. Check if the conductor pattern on the SLG board is short circuited or open circuited.
3. Replace the SLG board.
4. If the model of the firmware downloaded is incorrect, a C270 error (exposure lamp blinks twice) occurs.
   If the exposure lamp blinks twice, download the correct ROM.

[C280] Carriage home position sensor not going ON within a specified time

Remove the original glass and move the carriages to the paper feeding side. Turn ON the power and check the following items.

Do the carriages make a big noise after they arrive at the home position?

| YES → The carriage home position sensor is not turned ON.
| 1. Check if the connector of the sensor is disconnected.
| 2. Check if the circuits of the SLG board are abnormal.
↓

NO

The carriages are stopped at the home position and do not move.

1. Check if the connector pins are disconnected or the harnesses are short circuited or open circuited.
2. Check if the conductor pattern on the SLG board is short circuited or open circuited.
3. Replace the SLG board.

26.3.14 Fuser unit related service call

Note:
Be sure to turn OFF the power and unplug the power cable beforehand when checking the power supply unit and fuser unit.
The fuser unit itself or the part of the unit remains heated and the capacitors are still charged after a while the power cable is unplugged. So make sure the unit is cooled down enough before checking.

[C411/C412] Thermistor/heater lamp abnormality at power-ON

1.Check the power voltage

(1) Check if the power voltage is normal.(Is the voltage during the operation ±10% of the rated voltage?)

2.Check the thermopiles

(1) Check if the fuser belt center and side thermopiles (front, rear) are installed properly.
(2) Check if the harnesses of the fuser belt center and side thermopiles (front, rear) are open circuited.

3. Check the power supply unit and fuser unit

(1) Is the fuser unit installed correctly?
(2) Check if the heater lamp is broken.
(3) Check if the connector of the heater lamp is disconnected.
(4) Check if the thermostat is blown.
(5) Check if the connectors of the power supply unit are disconnected (power supply unit AC output connector CN408, CN409 and LGC I/F connector CN404 CN405).
(6) Check if the power supply unit is abnormal.
    • Replace the power supply unit.

4. Check the LGC board

(1) Check if the connectors CN333, CN345 and CN361 are disconnected.
(2) Check if the conductor pattern on the LGC board is short circuited or open circuited.
(3) Replace the LGC board.

5. Clear the status counter

After repairing the matter which caused the error [C411/C412], perform the following:

(1) Turn ON the power while [0] and [8] are pressed simultaneously.
(2) Key in “400”, then press [START].
(3) Change the current status counter value “1” or “2” to “0”, then press [ENTER] or [INTERRUPT] (to cancel [C411/C412]).
(4) Turn the power OFF and then back ON. Make sure that the equipment enters the normal ready state.

[C443/C445/C446/C447/C449] Heater lamp abnormality after abnormality judgment

1,2,3,4. Check the thermopiles, Heater and LGC board

Check the above components following the procedures 1, 2,3 and 4 for [C411/C412].

5. Clear the status counter

Change the current status counter value (08-400) “3”, “5”, “6”, “9”, “19”, “21”, “22”, “23”, “24”, “25”, “27”, “32” or “29” to “0” for [C44X], taking the same procedure as that for [C41X].

- The status counter value is as follows in the following cases.
  - The error occurred during warming-up: “3”, “5” or “6”
  - The error occurred after the equipment has become ready: “7”
  - The temperature detected by the fuser belt center thermopile is 220°C or higher, the temperature detected by the side thermopile is 230°C or higher or the temperature detected by the front thermopile is 250°C or higher: “9”, “19”, “21”, “22”, “23”, “25”, “27” or “29”.
  - The error occurred during printing: “24” or “25”
  - The error occurred during energy saving: “27”
  - A paper jam occurred: “29”

[C448] Heater lamp lights continuously for a certain period of time when the pressure roller temperature during ready status is higher than the specified

1. Check the power supply and fuser unit

(1) Check if the fuser unit is installed properly.
(2) Check if foreign matter or paper in the fuser unit is plugging up the monitoring opening of the fuser belt thermopile.
(3) Check if the opening of the fuser belt thermopile of the equipment is plugged up.
(4) Check if the connectors of the power supply are disconnected (power supply unit AC output connector CN409 and LGC Interface connector CN403).
(5) Check if the power supply unit is abnormal.
    * Replace the power supply unit.

2. Check the LGC board

(1) Check if the connector CN333 is disconnected.
(2) Check if the conductor pattern on the LGC board is short circuited or open circuited.
(3) Replace the LGC board.

3. Clear the status counter

After repairing the matter which caused the error [C448], perform the following:

(1) Turn the power ON while [0] and [8] are pressed simultaneously.
(2) Key in “400”, then press the [START] button.
(3) Change the displayed current status counter value “32” to “0”, then press [ENTER] or [INTERRUPT] (to cancel C448).
(4) Turn the power OFF and then back ON. Make sure that the equipment enters the normal status.

[C450] Abnormal temperature difference between the center thermopile and the edge thermistor (Not determined)
[C451] Abnormal temperature difference between the center thermopile and the edge thermistor (Determined)
[C452] Abnormal thermopile temperature difference

1. Check the power supply unit and fuser unit

(1) Check if the fuser unit is installed properly.
(2) Check if foreign matter or paper in the fuser unit is plugging up the monitoring opening of the thermopile.
(3) Check if the heater lamp is open circuited.
(4) Check if the connector of the heater lamp is disconnected.
(5) Check if the thermistor is open circuited.
(6) Check if the connectors of the power supply unit (power supply unit AC output connector CN408, CN409 and LGC/IF connector CN404) are disconnected.
(7) Check if the power supply unit is broken.
* Replace it if it is broken.

2. Check the thermopile

(1) Check if foreign matter is plugging up the thermopile.
(2) Check if the thermopile is installed properly.
(3) Check if the harnesses are open circuited.
(4) Replace the thermopile.

3. Check the LGC board

(1) Check if the connectors CN333, CN345 and CN361 are disconnected.
(2) Check if the conductor pattern on the LGC board is short circuited or open circuited.
(3) Replace the LGC board.

4. Reset the status counter

(1) Turn the power ON while [0] and [8] are pressed simultaneously.
(2) Key in "400", and then press the [START] button.
(3) Reset the displayed current status counter value "38", "39", "48" or "49" to "0", then press [ENTER] or [INTERRUPT]. (The error C450, C451 or C452 is cleared.)
(4) Turn the power OFF and then back ON. Then check that the equipment normally enters into the standby mode.

[C465/C466/C467/C468] Pressure roller thermistor abnormality after entering ready status

1. Check the pressure roller thermistor

(1) Check if the connector is disconnected.
(2) Check if the pressure roller center/rear thermistor is installed properly.
(3) Check if the harnesses of the pressure roller center and rear thermistors are open circuited.

2. Check the power supply unit and fuser unit

(1) Check if the fuser unit is installed properly.
(2) Check if the pressure roller lamp is open circuited. (Check if the pressure roller lamp has electric continuity.)
(3) Check if the connector of the pressure roller lamp is disconnected.
(4) Check if the thermistor is open circuited.
(5) Check if the connectors of the power supply (power supply AC output connector CN409, LGCI/F connector CN403) are disconnected.

(6) Check if the power supply unit is broken.
* Replace the power supply unit if it is broken.

3. Check the LGC board

(1) Check if the connector CN333/CN345 is disconnected.
(2) Check if the conductor pattern on the board is short circuited or open circuited.
(3) Replace the LGC board.

4. Clear the status counter
Change the current status counter value (08-400) “5”, “6”, “8”, “18”, “20”, “26”, “28”, “33” or “34” to “0”
* The status counter value is set as follows in the following cases.
• The error occurred during warming-up: “5” or “6”
• The error occurred after the equipment has become ready: “33”
• Regardless of the equipment’s status (i.e. during warming-up or in ready status), when the temperature detected by the pressure roller thermistor is 210°C or higher: “8”, “18”, “20”, “26” or “28”.
• The error occurred during printing: “34”

[C4B0] IGBT overheating abnormality
1. Check the LGC board

(1) Check if the conductor pattern on the board is short circuited or open circuited.
(2) Check if SRAM is mounted.
(3) Replace the LGC board.

2. Clear the status counter
Change the values “30” or above, or “4” of the status counter (08-400) to “0”.

[C4B1] Fuser unit destination selection abnormality

(1) Check if the fuser unit is installed correctly or if its destination is correct.
(2) Check if any harness in the fuser unit is caught.
(3) Check if the destination of the SRAM is correct.
(4) Replace the LGC board if any harness of the LGC board is open or short circuited.

* The first occurrence of the error C4B1 is not the determination of the error.
When the error C4B1 occurred, turn the power of the equipment OFF and then back ON following the instruction shown in the touch panel. If the abnormality is resolved, the value of the fuser unit status counter is automatically reset to “0”. When the error C4B1 occurred twice or more consecutively, the error is determined and recorded in the error history.

[C4D0] Fuser belt thermopile abnormality

1. Check the thermopile

(1) Check if the connector of the thermopile is disconnected.
(2) Check if the harnesses of the fuser belt center thermopile and the fuser belt side thermopile are open circuited.
(3) Replace the thermopile.

2. Check the LGC board

(1) Check if the connector CN333 is disconnected.
(2) Check if the conductor pattern on the LGC board is open circuited or short circuited.
(3) Replace the LGC board.

3. Cancel the service call

After repairing the matter which caused the error [C4D0], turn the power OFF and then back ON to cancel the service call. However, the counter value will be stored until it is written over by the value of the other service call.

26.3.15 Communication related service call

[C550] RADF I/F error

(1) Check if the harness connecting the RADF board and SLG board is disconnected or open circuited.
(2) Check if the conductor pattern on the RADF board is short circuited or open circuited.
(3) Check if the conductor pattern on the SLG board is short circuited or open circuited.
(4) Replace the RADF board.
(5) Replace the SLG board.

[C570] Communication error between Engine-CPU and IPC board

(1) Check if the LGC board and IPC board are connected properly.
(2) Check if the conductor pattern on the IPC board is short circuited or open circuited.
(3) Check if the conductor pattern on the LGC board is short circuited or open circuited.
(4) Replace the IPC board.
(5) Replace the LGC board.

[C580] Communication error between IPC board and finisher

(1) Confirm the setting of 08 Code 1912.
(2) Check if the specified finisher is attached.
(3) Check if the harness connecting the IPC board and the finisher controller PC board is disconnected or open circuited.
(4) Check if the conductor pattern on the IPC board is short circuited or open circuited.
(5) Check if the conductor pattern on the finisher controller PC board is short circuited or open circuited.
(6) Replace the IPC board.
(7) Replace the finisher controller PC board.

[F070] Communication error between System-CPU and Engine-CPU

(1) Check the version of the system ROM on the SYS board.
(2) Check the version of the engine ROM on the LGC board.
(3) Check if the connector CN423 on the IMG board and the connector CN354 on the LGC board are completely inserted.
(4) Check if the connector pin between the IMG board (connector CN423) and the LGC board (connector CN354) is disconnected.
(5) Check if the connector CN422 on the IMG board and the connector CN135 on the SYS board are completely inserted.
(6) Check if the connector pin between the IMG board (connector CN422) and the SYS board (connector CN135) is disconnected.
(7) Check if the conductor patterns on the IMG board, LGC board and SYS board are short circuited or open circuited.
(8) Replace the LGC board if no problem is found in steps from (1) to (7) above.
(9) If the problem is not corrected with the replacement of the LGC board, reinstall the removed LGC board and replace the SYS board.
(10) If the problem is still not corrected with the replacement of the SYS board, reinstall the removed SYS board and replace the IMG board.

[F110] Communication error between System-CPU and Scanner-CPU
[F111] Scanner response abnormality

(1) Check if the harness connecting the IMG board and SLG board is disconnected or open circuited.
(2) Check the version of the system ROM on the SYS board.
(3) Check the version of the scanner ROM version on the SLG board.
(4) Replace the SYS board.
(5) Replace the SLG board.

26.3.16 RADF related service call

No service call for the RADF (MR-3018).

26.3.17 Circuit related service call

[C5A0] SRAM board not connected (LGC board)
[C5A1] SRAM board data abnormality (LGC board)

(1) Check if the SRAM board is installed securely.
(2) Check if the SRAM board is short circuited or open circuited.
(3) Check if the battery on the SRAM board has not run out.
(4) Replace the SRAM board.
(5) Replace the LGC board.

[C900] Connection error between the SYS board and the LGC board

(1) Check if the connector CN423 on the IMG board and the connector CN354 on the LGC board are completely inserted.
(2) Check if the connector pin between the IMG board (connector CN423) and the LGC board (connector CN354) is disconnected.
(3) Check if the connector CN422 on the IMG board and the connector CN135 on the SYS board are completely inserted.
(4) Check if the connector pin between the IMG board (connector CN422) and the SYS board (connector CN135) is disconnected.
(5) Check if the conductor patterns on the IMG board, LGC board and SYS board are short circuited or open circuited.
(6) Replace the LGC board if no problem is found in steps from (1) to (5) above.
(7) If the problem is not corrected with the replacement of the LGC board, reinstall the removed LGC board and replace the IMG board.
(8) If the problem is still not corrected with the replacement of the IMG board, reinstall the removed IMG board and replace the SYS board.

[C940] Engine-CPU abnormality

Does service call still occur even after turning OFF the main switch then back ON?
↓ NO → Leave it for a while and see how.
YES
1. Check if the conductor pattern between the Engine-CPU and FROM, SRAM is short circuited or open circuited.
2. Replace the LGC board if it frequently occurs.

[C962] LGC board ID abnormality

(1) Check if the connector CN344 on the LGC board is completely inserted or not disconnected.
(2) Check if the connector CN423 on the IMG board and the connector CN354 on the LGC board are completely inserted.
(3) Check if the connector pin between the IMG board (connector CN423) and the LGC board (connector CN354) is disconnected.
(4) Check if the connector CN425 on the IMG board is completely inserted or not disconnected.
(5) Check if the conductor patterns on the IMG board and the LGC board are short circuited or open circuited.
(6) Replace the LGC board if no problem is found in steps from (1) to (5) above.
(7) If the problem is not corrected with the replacement of the LGC board, reinstall the removed LGC board and replace the IMG board.
(8) If the problem is still not corrected with the replacement of the IMG board, reinstall it and ask a specialist to repair it. (Abnormal ID)

[C9E0] Connection error between the SLG board and the SYS board

(1) Check if the connector CN12 on the SLG board is completely inserted or not disconnected.
(2) Check if the connector CN421 on the IMG board is completely inserted or not disconnected.
(3) Check if the connector pin between the SLG board (connector CN12) and the IMG board (connector CN421) is disconnected, or the harness connecting these boards is short circuited or open circuited.
(4) Check if the connector CN422 on the IMG board and the connector CN135 on the SYS board are completely inserted.
(5) Check if the connector pin between the IMG board (connector CN422) and the SYS board (connector CN135) is disconnected.
(6) Check if the conductor patterns on the SLG board, IMG board and SYS board are short circuited or open circuited.
(7) Replace the SLG board if no problem is found in steps from (1) to (6) above.
(8) If the problem is not corrected with the replacement of the SLG board, reinstall the removed SLG board and replace the IMG board.
(9) If the problem is still not corrected with the replacement of the IMG board, reinstall the removed IMG board and replace the SYS board.

[F090] SRAM abnormality on the SYS board

(1) Turn the power OFF and start up the Setting Mode (08).
(2) When “SRAM ERROR DOES IT INITIALIZE” is displayed on the LCD, check the destination and then press the [START] button. If the destination is not correct, key in the correct one and then press the [START] button. (SRAM is initialized.)
(3) After the confirmation message is displayed, press the [INTERRUPT] button.
(4) Perform the panel calibration (08-692).
(5) Enter the serial number (08-995). Match it with the serial number on the label attached to the rear cover of the equipment.
(6) Initialize the NIC information (08-693).
(7) Turn the power OFF and then start up with the Adjustment mode (05).
(8) Perform “Data transfer of characteristic value of scanner” (05-364).
(9) Perform “Automatic gamma adjustment” <PPC> (05-1642). (using [4][FAX] test pattern)
(10) Perform “Automatic gamma adjustment” <PRT> (05-1008). (using [70][FAX] test pattern)
(11) Turn the power OFF and then back ON. If the error is not recovered, replace the SRAM on the SYS board.

[F350] SLG board abnormality

(1) Check if the conductor pattern on the SLG board is short circuited or open circuited.
(2) If there is no problem found in the check (1) above, check the combination of the firmware version of the system ROM, engine ROM and scanner ROM. Reinstall the scanner ROM firmware.
(3) If an error occurs after step (2) above has been performed, replace the SLG board.

26.3.18 Laser optical unit related service call

[CA10] Polygonal motor abnormality

Is the polygonal motor rotating?

NO →

<e-STUDIO2020C/2330C//2820C/2830C/3520C/3530C>

1. Check if the connector of the polygonal motor is disconnected.
2. Check if the relay connector J506 is disconnected.
3. Check if the connector CN343 on the LGC board is disconnected.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the LGC board.
6. Replace the laser optical unit.

<e-STUDIO4520C>

1. Check if the connector on the POL board is disconnected.
2. Check if the connectors on the both edges of the HRNS-POL-DRV-382 are disconnected.
3. Check if the relay connector J506 is disconnected.
4. Check if the connector CN343 on the LGC board is disconnected.
5. Check if the conductor pattern on the POL board is short circuited or open circuited.
6. Replace the POL board.
7. Check if the conductor pattern on the LGC board is short circuited or open circuited.
8. Replace the LGC board.
9. Replace the laser optical unit.

↓

YES

Is the printed image distorted?

YES →

<e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C>

1. Check if the connector CN343 on the LGC board is almost disconnected.
2. Check if the relay connector J506 is almost disconnected.
3. Check if the harness is almost open circuited or the connector pin is almost disconnected.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Check if the laser unit cooling fan is stopped.
6. Check if the suction area of the laser unit cooling fan is plugged up.
7. Replace the laser optical unit.
8. Replace the LGC board.

<e-STUDIO4520C>

1. Check if the connector CN343 on the LGC board is almost disconnected.
2. Check if the relay connector J506 is almost disconnected.
3. Check if the connectors on the both edges of the HRNS-POL-DRV-382 are almost disconnected.
4. Check if the harness is almost open circuited or the connector pin is almost disconnected.
5. Check if the conductor pattern on the POL board is short circuited or open circuited.
6. Check if the conductor pattern on the LGC board is short circuited or open circuited.
7. Check if the laser unit cooling fan is stopped.
8. Check if the suction area of the laser unit cooling fan is plugged up.
9. Replace the laser optical unit.
10. Replace the LGC board.

↓

NO

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Check if the units with high-voltage (developer unit, transfer belt unit, 2nd transfer roller unit) are securely grounded.
3. Check if the bias supply joints of the units with high-voltage are securely connected or they are not stained.
4. Check if the plate in the paper transport system is securely grounded.
5. Check if the equipment is grounded.
6. Check if the laser unit cooling fan is stopped.
7. Check if the suction area of the laser unit cooling fan is plugged up.
8. Replace the laser optical unit.
9. Replace the LGC board.

[CA20] H-sync detection error

Is the harness between the LGC board (CN356) and the LDR board open circuited, broken or disconnected?
Are the relay connectors (J505) disconnected or almost disconnected? (Are they locked with the latches?)
Is the harness between the LGC board (CN355) and the SNS board open circuited, broken or disconnected?
Are the relay connector (J503) disconnected or almost disconnected? (Are they locked with the latches?)

YES → 1. Reconnect the harness.
2. Replace the laser optical unit.
3. Replace the LGC board.

NO

Is the pin CN405-4 on the power supply unit +5V?

NO → 1. Check if there is any abnormality in the harness (e.g.: if it is caught) between the power supply unit and the LGC board.
2. Replace the power supply unit.

YES

Is the pin CN361-4 on the LGC board +5V?

NO → 1. Check if the harness between the power supply unit and the LGC board is open circuited, broken or disconnected.
2. Replace the LGC board.

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Check if the units with high-voltage (developer unit, transfer belt unit, 2nd transfer roller unit) are securely grounded.
3. Check if the bias supply joints of the units with high-voltage are securely connected or they are not stained.
4. Check if the plate in the paper transport system is securely grounded.
5. Check if the equipment is grounded.
6. Check if the laser unit cooling fan is stopped.
7. Check if the suction area of the laser unit cooling fan is plugged up.
8. Replace the laser optical unit.
9. Replace the LGC board.

[CF90] Laser optical unit shutter abnormality

Take off the developer unit so that the laser shutter can be seen.
Clean around the laser shutter if the toner or developer material is spilled over.

Is there any abnormality such as warp on the main charger cleaner rod?

YES → Replace the main charger cleaner rod.

NO

Does the harness of EPU (Auto toner sensor) contact with the shutter?

YES → Correct the wiring.

NO

Is the shutter motor working? (Perform the output check: 03-417)

NO →
1. Check if the connector of the exit shutter motor is disconnected.
2. Check if the connector CN359 on the LGC board is disconnected.
3. Check if the connector pins are disconnected or the harnesses are open circuited.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the shutter motor.
6. Replace the LGC board.

YES

Is the laser shutter working?

NO →
1. Check and correct the mechanism of the laser shutter.
2. Check if the shutter plate is assembled correctly.

YES

Is the shutter motor assembled correctly?

NO →
1. Check if the positioning of the gear and the rack is correct.
2. Check if the distance between the gear and the rack is proper.
3. Check if the worm gear and the drive gear are engaging properly.
4. Check if grease is applied to the worm gear and the drive gear.

YES

Is the laser shutter able to be opened/closed repeatedly?

NO →
1. Check if the connector of the shutter status detection sensor (S20) is disconnected.
2. Check if the connector CN359 on the LGC board is disconnected.
3. Check if the connector pins are disconnected or the harnesses are open circuited.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the shutter status detection sensor.
6. Replace the LGC board.

YES

Check if the conductor pattern on the LGC board is short circuited or open circuited.
Replace the LGC board.

26.3.19 Finisher related service call

[CB00] Finisher not connected

MJ-1101

1. Check if the MJ-1101 is set as the specified finisher on the equipment.
2. Check if the harness connecting the converter PC board and the finisher controller PC board is disconnected or open circuited.
3. Check if the conductor pattern on the converter PC board is open circuited or short circuited.
4. Check if the conductor pattern on the finisher controller PC board is open circuited or short circuited.
5. Replace the converter PC board.
6. Replace the finisher control PC board.

[CB01] Finisher communication error

MJ-1101

1. Check if the MJ-1101 is set as the specified finisher on the equipment.
2. Check if the harness connecting the converter PC board and the finisher controller PC board is disconnected or open circuited.
3. Check if the conductor pattern on the converter PC board is open circuited or short circuited.
4. Check if the conductor pattern on the finisher controller PC board is open circuited or short circuited.
5. Replace the converter PC board.
6. Replace the finisher control PC board.

[CB10] Entrance motor abnormality

MJ-1101

Is there any mechanical problem when the entrance roller is rotated?

↓ →YES Fix the mechanism.

NO

Is the harness between the entrance motor (M1) and the finisher control PC board (CN7) disconnected or open circuited?

| →YES • Reconnect the connector securely.

↓ • Replace the harness.

NO

1. Replace the entrance motor (M1).
2. Replace the finisher control PC board.

[CB11] Buffer tray guide motor abnormality

*** You receive a [CB11] error when the [ED16] error occurs three times in succession.**

MJ-1101

Is there any mechanical problem when the buffer tray guide is opened/closed while the buffer roller is lifted up?

↓ →YES Fix the mechanism.

NO

Is the harness between the buffer tray guide motor (M3) and the finisher control PC board (CN18) disconnected or open circuited?

↓ →YES
- Reconnect the connector securely.
- Replace the harness.

NO

1. Replace the buffer tray guide motor (M3).
2. Replace the finisher control PC board.

[CB12] Buffer roller drive motor abnormality

MJ-1101

Is there any mechanical problem when the buffer roller is rotated?

↓ →YES Fix the drive mechanism.

NO

Is the harness between the buffer roller drive motor (M6) and the finisher control PC board (CN18) disconnected or open circuited?

↓ →YES
- Reconnect the connector securely.
- Replace the harness.

NO

1. Replace the buffer roller drive motor (M6).
2. Replace the finisher control PC board.

[CB30] Tray 1/2 shift motor abnormality

MJ-1030

Are the tray 1 shift area sensors 1-3 and tray 2 shift area sensors 1-3 normal?

↓ NO → Replace the tray 1/2 shift area sensor boards.

YES

Are the wirings between the finisher controller PC board and the tray 1/2 shift motors (M37/M38) correct?

↓ NO → Correct the wirings.

YES

Is there any problem with the tray lift mechanism?

↓ NO → Fix the lift mechanism.

YES

1. Replace the tray 1/2 shift motors.
2. Replace the finisher controller PC board.

[CB30] Movable tray shift motor abnormality

MJ-1101

Is there any mechanical problem when the movable tray is moved?

↓ →YES Fix the mechanism.

NO

Is the harness between the movable tray shift motor (M7) and the finisher control PC board (CN8) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

Is there a disconnection of the connector, incorrect installation or breakage of the movable tray position A, B, and C sensors (S13, S14, and S15)?

↓ →YES • Replace the harness.
• Reinstall the sensor correctly.
• Replace the sensor.

NO

1. Replace the movable tray shift motor (M7).
2. Replace the finisher control PC board.

[CB31] Movable tray paper-full detection error

MJ-1101

Is there any mechanical problem when the actuator of the movable tray paper-full sensor (S16) is moved?

↓ →YES Fix the mechanism.

NO

Is there a disconnection of the connector, incorrect installation or breakage of the movable tray paper-full sensor (S16)?

↓ →YES • Connect the connector securely.
• Reinstall the sensor correctly.
• Replace the sensor.

NO

Is the harness between the movable tray paper-full sensor (S16) and the finisher control PC board (CN13) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

Replace the finisher control PC board.

[CB40] Rear aligning plate motor abnormality

MJ-1030

Is the rear aligning plate home position sensor (PI37) normal?

↓ NO → Correct the wiring.

YES

Is there any mechanical problem with the path of aligning plate?

↓ NO → Fix the mechanism.

YES

1. Replace the rear aligning plate motor.
2. Replace the finisher controller PC board.

[CB40] Front alignment motor abnormality

*** You receive a [CB40] error when the [ED13] error occurs three times in succession.**

MJ-1101

Is there any mechanical problem when the front alignment plate is moved?

↓ →YES Fix the mechanism.

NO

Is the harness between the front alignment motor (M9) and the finisher control PC board (CN10) disconnected or open circuited?

| →YES • Reconnect the connector securely.

↓ • Replace the harness.

NO

Replace the front alignment motor (M9).

[CB50] Staple motor abnormality

MJ-1030

Is the wiring between the stapler and finisher controller PC board correct?

↓ NO → Correct the wiring.

YES

1. Replace the stapler.
2. Replace the finisher controller PC board.

[CB50] Staple unit abnormality

MJ-1031

1. Check if the connectors J112, J113 on the finisher controller PC board is disconnected from the stapler) or the harnesses are open circuited. Correct if any.
2. Replace the staple unit.
3. Replace the finisher control PC board.

[CB50] Stapler home position error

*** You receive a [CB50] error when the [EA50] error occurs three times in succession.**

MJ-1101

Is the harness between the stapler and the finisher control PC board (CN2) disconnected or open circuited?

| →YES • Reconnect the connector securely.

↓ • Replace the harness.

NO

Are the harnesses in the stapler disconnected or open circuited?

| →YES • Reconnect the connector securely.

↓ • Replace the harness.

NO

Replace the finisher control PC board.

[CB51] Stapler shift home position error

MJ-1101

Is there any mechanical problem when the stapler is moved?

↓ →YES Fix the mechanism.

NO

Is there a disconnection of the connector, incorrect installation or breakage of the stapler unit home position sensor (S10)?

↓ →YES • Connect the connector securely.
• Reinstall the sensor correctly.
• Replace the sensor.

NO

Is the harness between the stapler unit home position sensor (S10) and the finisher control PC board (CN1) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

Is the harness between the stapler unit shift motor (M4) and the finisher control PC board (CN5) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

Replace the finisher control PC board.

[CB60] Stapler unit shift motor abnormality

MJ-1030

Is the stapler shift home position sensor (PI40) working normally?

↓ NO → Replace the sensor.

YES

Is the wiring between the finisher controller PC board and the stapler shift motor (M35) correct?

↓ NO → Correct the wiring.

YES

Is there any mechanical problem with the stapler stand motion path?

↓ YES→ Fix the lift mechanism.

NO

1. Replace the stapler shift motor.
2. Replace the finisher controller PC board.

MJ-1101

Is there any mechanical problem when the stapler is moved?

↓ →YES Fix the mechanism.

NO

Is the harness between the stapler unit shift motor (M4) and the finisher control PC board (CN5) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

1. Replace the stapler unit shift motor (M4).
2. Replace the finisher control PC board.

[CB70] Paper loading amount detection sensor abnormality

MJ-1030

1. Check if there is any abnormality with the mechanical section (sensor's actuator, etc.).
2. Check if the harness connecting the area sensor and the finisher controller PC board is disconnected or open circuited.
3. Replace the area sensor.
4. Replace the finisher control PC board.

[CB80] Backup RAM data abnormality

MJ-1030

Is the problem solved by turning the power of the equipment OFF and ON?

↓ YES→ End.

NO

1. Replace the finisher controller PC board.
2. Replace the punch controller PC board.

[CB80] Backup RAM data abnormality

MJ-1031

Is the problem solved by turning the power of the equipment OFF and ON?

↓ YES→ End.

NO

Replace the finisher controller PC board.

[CB80] RAM abnormality

MJ-1101

Is the error recovered when the power of the equipment is turned OFF and then back ON?

↓ →YES End.

NO

Replace the finisher control PC board.

[CB81] Flash ROM abnormality

MJ-1101

Is the error recovered when the power of the equipment is turned OFF and then back ON?

↓ →YES End.

NO

1. Check if the conductor pattern on the finisher controller PC board is open circuited or short circuited.
2. Replace the finisher control PC board.

[CB90] Paper pushing plate motor abnormality

MJ-1030

Are the paper pushing plate home position sensor (PI14), paper pushing plate top position sensor (PI15) and paper pushing plate motor clock sensor (PI1) working normally?

↓ NO → Replace the sensor.

YES

Is the paper pushing plate drive mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replace the paper pushing plate motor (M8).
2. Replace the saddle stitcher controller PC board.

[CBA0] Stitch motor (front) abnormality
[CBB0] Stitch motor (rear) abnormality

MJ-1030

Are the front and rear stitchers and their stands installed properly?

↓ NO → Install them properly.

YES

Are the stitcher home position switches (SW7/SW5) and stitcher motors (M7/M6) on the front and rear stitchers working normally?

↓ NO → Replace the front or rear stitcher.

YES

Replace the saddle stitcher controller PC board.

[CBC0] Alignment motor abnormality

MJ-1030

Is the alignment plate home position sensor (PI5) working normally?

↓ NO → Replace the sensor.

YES

Is the alignment plate drive mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replace the alignment motor (M5).
2. Replace the saddle stitcher controller PC board.

[CBD0] Guide motor abnormality

MJ-1030

Is the guide home position sensor (PI13) working normally?

↓ NO → Replace the sensor.

YES

Is the guide plate drive mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replacing the guide motor (M3).
2. Replace the saddle stitcher controller PC board.

[CBE0] Paper folding motor abnormality

MJ-1030

Are the paper folding motor clock sensor (PI4) and paper folding home position sensor (PI21) working normally?

↓ NO → Replace the sensors.

YES

Is the paper folding roller drive mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replacing the paper folding motor (M2).
2. Replace the saddle stitcher controller PC board.

[CBF0] Paper positioning plate motor abnormality

MJ-1030

Is the paper positioning plate home position sensor (PI7) working normally?

↓ NO → Replace the sensor.

YES

Is the paper positioning plate drive mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replacing the paper positioning plate motor (M4).
2. Replace the saddle stitcher controller PC board.

[CC00] Sensor connector abnormality

MJ-1030

Are the guide home position sensor (PI13), paper pushing plate home position sensor (PI14) and paper pushing plate top position sensor (PI15) connected to the saddle stitcher controller PC board?

↓ NO → Connect them to the board.

YES

Is the wiring between the sensors and the saddle stitcher correct?

↓ NO → Correct the wiring.

Is 5V DC being supplied from the connector pins J9-7, -10 and -13 on the saddle stitcher controller PC board?

↓ NO → Replace the saddle stitcher controller PC board.

YES

Are the connector pins J9-8, -11 and -14 on the saddle stitcher controller PC board correctly connected to the ground?

↓ NO → Replace the saddle stitcher controller PC board.

YES

End.

[CC10] Microswitch abnormality

MJ-1030

Are the front cover switch (MS31), inlet door switch (SW1) and delivery door switch (SW3) normal?

↓ NO → Replace the switches.

YES

Measure the voltage between J704-1 (+) and J704-2 (-) on the finisher controller PC board. Is it 24V?

↓ NO → Replace the finisher controller PC board.

Is the wiring between J704 on the finisher controller PC board and J1 on the saddle stitcher controller PC board correct?

↓ NO → Correct the wiring.

YES

Replace the saddle stitcher controller PC board.

[CC20] Communication error between finisher and saddle stitcher

MJ-1030

Is the problem solved by turning OFF and ON the power switch of the equipment?

↓ YES→ End.

NO

Is the wiring between the finisher controller PC board and the saddle stitcher controller PC board connected?

↓ NO → Connect the wiring.

YES

1. Replace the finisher controller PC board.
2. Replace the saddle stitcher controller PC board.

[CC30] Stack transport motor abnormality

*** You receive a [CC30] error when the [EA70] error occurs three times in succession.**

MJ-1101

Is there any mechanical problem when the stack transport belt is moved?

↓ →YES Fix the mechanism.

NO

Is the harness between the stack transport motor (M5) and the finisher control PC board (CN10) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

1. Replace the stack transport motor (M5).
2. Replace the finisher control PC board.

[CC30] Stack delivery motor abnormality

MJ-1031

1. Check if the connector J111 on the finisher controller PC board is disconnected from the stack edging HP sensor (SR8) or the harnesses are open circuited. Correct if any.
2. Check if the connector J111 on the finisher controller PC board is disconnected from the stack slide motor (M4) or the harnesses are open circuited. Correct if any.
3. Replace the stack edging HP sensor.
4. Replace the stack slide motor.
5. Replace the finisher control PC board.

[CC31] Transport motor abnormality

*** You receive a [CC31] error when the [ED12] error occurs three times in succession.**

MJ-1101

Is there any mechanical problem when the stack transport roller -1 and -2 are rotated?

↓ →YES Fix the mechanism.

NO

Is the harness between the transport motor (M2) and the finisher control PC board (CN5) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

1. Replace the transport motor (M2).
2. Replace the finisher control PC board.

[CC40] Swing motor abnormality

MJ-1030

Is the swing unit home position sensor (PI35) normal?

↓ NO → Replace the sensor.

YES

Is the wiring between the finisher controller PC board and the swing motor (M36) correct?

↓ NO → Correct the wiring.

YES

Is the swing mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replace the swing motor.
2. Replace the finisher controller PC board.

[CC41] Paper holder cam home position abnormality

MJ-1101

Is there any mechanical problem when the paper holder cam is rotated?

↓ →YES Fix the mechanism.

NO

Is the harness between the paper holder home position sensor (S6) and the finisher control PC board (CN17) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.
• Replace the harness.

NO

1. Replace the paper holder home position sensor (S6).
2. Replace the finisher control PC board.

[CC50] Horizontal registration motor abnormality

MJ-1030 (when MJ-6004 is installed)

Is the horizontal registration home position sensor (PI61) working normally?

↓ NO → Replace the sensor.

YES

Is the wiring between the horizontal registration home position sensor and finisher controller PC board correct?

↓ NO → Correct the wiring.

YES

Is the horizontal registration mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replace the horizontal registration motor (M62).
2. Replace the punch controller PC board.
3. Replace the finisher controller PC board.

[CC51] Sideways adjustment motor (M2) abnormality

*** The [CC51] error will be displays when the [ED11] error occurs three times in succession or during the initial operation.**

MJ-1101 (When MJ-6101 is installed)

Is there any paper remaining on the transport path?

↓ →YES Remove the paper.

NO

Rotate the sideways adjustment motor (M2). Does it rotate smoothly?

↓ →NO Fix the mechanism.

YES

Are the sideways deviation home position sensor (S3) and its wiring correct?

↓ →NO Replace the sensor. Correct the wiring.

YES

Is the wiring between the hole punch control PC board (HP) and sideways adjustment motor (M2) correct?

↓ →NO Correct the wiring.

YES

1. Replace the punch sideways adjustment motor (M2).
2. Replace the hole punch control PC board (HP).

[CC52] Skew adjustment motor (M1) abnormality

*** The [CC52] error will be displays when the [ED10] error occurs three times in succession or during the initial operation.**

MJ-1101 (When MJ-6101 is installed)

Is there any paper remaining on the transport path?

↓ →YES Remove the paper.

NO

Rotate the skew adjustment motor (M1). Does it rotate smoothly?

↓ →NO Fix the mechanism.

YES

Are the skew home position sensor (S2) and its wiring correct?

↓ →NO Replace the sensor. Correct the wiring.

YES

Is the wiring between the hole punch control PC board (HP) and skew adjustment motor (M1) correct?

↓ →NO Correct the wiring.

YES

1. Replace the skew adjustment motor (M1).
2. Replace the hole punch control PC board (HP).

[CC60] Punch motor abnormality

MJ-1030 (when MJ-6004 is installed)

Are the punch home position sensor (PI63) and punch motor clock sensor (PI62) working normally?

↓ NO → Replace the sensors.

YES

Is the wiring between the sensors and finisher controller PC board correct?

↓ NO → Correct the wiring.

YES

Is the punching mechanism normal?

↓ NO → Fix the mechanism.

YES

1. Replace the punch motor (M61).
2. Replace the punch controller PC board.
3. Replace the finisher controller PC board.

[CC61] Punch motor (M3) home position detection error

*** The [CC61] error will be displays when the [E9F0] error occurs three times in succession or during the initial operation.**

MJ-1101 (When MJ-6101 is installed)

Is there any paper remaining on the transport path?

↓ →YES Remove the paper.

NO

Rotate the punch motor (M3). Does it rotate smoothly?

↓ →NO Fix the mechanism.

YES

Are the punch home position sensor (S4) and its wiring correct?

↓ →NO Replace the sensor. Correct the wiring.

YES

Is the wiring between the hole punch control PC board (HP) and punch motor (M3) correct?

↓ →NO Correct the wiring.

YES

1. Replace the punch motor (M3).
2. Replace the hole punch control PC board (HP).

[CC71] Punch ROM checksum error

MJ-1101 (When MJ-6101 is installed)

Is the conductor pattern on the hole punch control PC board (HP) open circuited or short circuited?

↓ →YES Replace the hole punch control PC board (HP).

NO

Replace the finisher control PC board.

[CC72] Punch RAM read/write error

MJ-1101 (When MJ-6101 is installed)

Is the conductor pattern on the hole punch control PC board (HP) open circuited or short circuited?

↓ →YES Replace the hole punch control PC board (HP).

NO

Replace the finisher control PC board.

[CC80] Front jogging motor abnormality/Front aligning plate motor abnormality

MJ-1030 (Front aligning plate motor abnormality)

Is the front aligning plate home position sensor (PI36) normal?

↓ NO → Replace the sensor.

YES

Is the wiring between the finisher controller PC board and the front aligning plate motor (M33) correct?

↓ NO → Correct the wiring.

YES

Is there any mechanical problem with the path of aligning plate?

↓ NO → Fix the mechanism.

YES

1. Replace the front aligning plate motor.
2. Replace the finisher controller PC board.

[CC80] Rear alignment motor abnormality

*** You receive a [CC80] error when the [ED14] error occurs three times in succession.**

MJ-1101

Is there any mechanical problem when the rear alignment plate is moved?

↓ →YES Fix the mechanism.

NO

Is the harness between the rear alignment motor (M10) and the finisher control PC board (CN10) disconnected or open circuited?

↓ →YES • Reconnect the connector securely.

↓ • Replace the harness.

NO

1. Replace the rear alignment motor (M10).
2. Replace the finisher control PC board.

[CC90] Tray shift motor abnormality

MJ-1031

Is the wiring between the finisher controller PC board and tray shift motor (M2) correct?

↓ NO → Correct the wiring.

YES

Are the front and rear sides of the stack tray leveled?

↓ NO → Level them.

YES

Is the tray clock sensor (SR9) working properly?

↓ NO → Replace the sensor.

YES

Are the tray lower limit sensor (SR5), tray 500 sensor (SR4) and tray safety switch (SW2) working properly?

↓ NO → Replace the sensor or sensor controller PC board.

YES

Does the voltage between the pins J114-1 and -2 on the finisher controller PC board become 24V when the tray shift motor starts rotating?

↓ NO → Replace the finisher controller PC board.

YES

Check the wiring between the tray shift motor and finisher controller PC board. If there is no problem, replace the tray shift motor.

[CCB0] Offset motor abnormality

MJ-1031

1. Check if the connector J104 on the finisher controller PC board is disconnected from the offset HP sensor (SR1) or the harnesses are open circuited. Correct if any.
2. Check if the connector J107 on the finisher controller PC board is disconnected from the offset motor (M5) or the harnesses are open circuited. Correct if any.
3. Replace the offset HP sensor.
4. Replace the offset motor.
5. Replace the finisher control PC board.

[CCD0] Stack ejection motor abnormality

MJ-1030

Is the shutter home position sensor (PI45) normal?

↓ NO → Replace the sensor.

YES

Are the wirings between the finisher controller PC board and the stack ejection motor (M32)/ shutter clutch (CL31) correct?

↓ NO → Correct the wirings.

YES

Is there any problem with the shutter mechanism?

↓ YES→ Fix the shutter mechanism.

NO

1. Replace the stack ejection motor and shutter clutch.
2. Replace the finisher controller PC board.

[CCE0] Rear end assist motor abnormality

MJ-1030

Is the rear end assist guide home position sensor (PI39) normal?

↓ NO → Replace the sensor.

YES

Is the wiring between the finisher controller PC board and the rear end assist motor (M39) correct?

↓ NO → Correct the wiring.

YES

Is there any problem with the rear end assist mechanism?

↓ YES→ Fix the rear end assist mechanism.

NO

1. Replace the rear end assist motor.
2. Replace the finisher controller PC board.

[CCF0] Gear change motor abnormality

MJ-1030

Is the gear change home position sensor (PI49) normal?

↓ NO → Replace the sensor.

YES

Is the wiring between the finisher controller PC board and the gear change motor (M40) correct?

↓ NO → Correct the wiring.

YES

Is there any problem with the gear change mechanism?

↓ YES→ Fix the gear change mechanism.

NO

1. Replace the gear change motor.
2. Replace the finisher controller PC board.

[CCF1] Tray safety switch abnormality

MJ-1030

1. Check if the connector J110 on the finisher controller PC board is disconnected from the tray safety switch (SW2) or the harnesses are open circuited. Correct if any.
2. Check if the connector J114 on the finisher controller PC board is disconnected from the stack tray shift motor (M2) or the harnesses are open circuited. Correct if any.
3. Replace the tray safety switch
4. Replace the stack tray shift motor.
5. Replace the finisher control PC board.

[CDE0] Paddle motor abnormality

*** You receive a [CDE0] error when the [ED15] error occurs three times in succession or during the initial operation.**

MJ-1101

Is there any mechanical problem with the paddle is rotated?

↓ →YES Fix the mechanism.

NO

Is the harness between the paddle motor (M8) and the finisher control PC board (CN6) disconnected or open circuited?

↓ →YES
- Reconnect the connector securely.
- Replace the harness.

NO

1. Replace the paddle motor (M8).
2. Replace the finisher control PC board.

[CE00] Communication error between finisher and puncher unit

MJ-1030 (When MJ-6004 is installed)

Is the problem solved by turning OFF and ON the power of the equipment?

↓ YES→ End.

NO

Is the wiring between the finisher controller PC board and punch controller PC board correct?

↓ NO → Correct the wiring.

YES

1. Replace the finisher controller PC board.
2. Replace the punch controller PC board.

[CE00] Punch communication error

MJ-1101 (When MJ-6101 is installed)

Is the harness between the hole punch control PC board (HP) and the finisher control PC board disconnected or open circuited?

↓ →YES Replace the harness. Correct the wiring.

NO

Is the conductor pattern on the hole punch control PC board (HP) open circuited or short circuited?

↓ →YES Replace the hole punch control PC board (HP).

NO

Replace the finisher control PC board.

[CF10] Communication module SRAM reading failure

MJ-1101

1. Is the error recovered when the power of the equipment is turned OFF and then back ON?
2. Check if the MJ-1101 is set as the specified finisher on the equipment.
3. Check if the harness connecting the converter PC board and the finisher controller PC board is disconnected or open circuited.
4. Check if the conductor pattern on the converter PC board is open circuited or short circuited.
5. Check if the conductor pattern on the finisher controller PC board is open circuited or short circuited.
6. Replace the converter PC board.
7. Replace the finisher control PC board.

MJ-1101 (When MJ-6101 is installed)

1. Is the error recovered when the power of the equipment is turned OFF and then back ON?
2. Check if the MJ-1101 is set as the specified finisher on the equipment.
3. Check if the harness connecting the converter PC board and the finisher controller PC board is disconnected or open circuited.
4. Check if the harness connecting the hole punch control PC board and the finisher control PC board is disconnected or open circuited.
5. Check if the conductor pattern on the converter PC board is open circuited or short circuited.
6. Check if the conductor pattern on the finisher controller PC board is open circuited or short circuited.
7. Check if the conductor pattern on the hole punch control PC board is open circuited or short circuited.
8. Replace the converter PC board.
9. Replace the finisher control PC board.
10. Replace the hole punch control PC board.

26.3.20 Image control related service call

(1) Based on the procedure of [CE10], [CE20] and [CE40] described below, check the status and take appropriate actions. And then perform the forced performing of image quality closed-loop control according to the following procedure.

1. While pressing [0] and [5] simultaneously, turn ON the power.
2. Key in [396], and then press the [START] button. Confirm that the image quality control has finished normally.

(2) After confirming the items in (1), clear the abnormal detection counter of image quality control.

1. While pressing [0] and [8] simultaneously, turn ON the power.
2. Key in [573], and then press the [START] button.
3. Rewrite the displayed status counter from “1” - “16” to “0”, and then press the [ENTER] or [INTERRUPT] button.
4. Key in [574], and then press the [START] button.
5. Rewrite the displayed status counter from “1” - “16” to “0”, and then press the [ENTER] or [INTERRUPT] button.
6. Key in [575], and then press the [START] button.
7. Rewrite the displayed status counter from “1” - “16” to “0”, and then press the [ENTER] or [INTERRUPT] button.
8. Key in [576], and then press the [START] button.
9. Rewrite the displayed status counter from “1” - “16” to “0”, and then press the [ENTER] or [INTERRUPT] button.
10. Turn the power OFF and then back ON. Make sure that the equipment enters the normal ready state.

[CA00] Color registration abnormality

<Color toner low density>

When you check the printing status to find out that the color printing ratio is less than 5%, color toner low density might be the cause.

Turn the code 08-2692 “Prevention of color toner low density / ON/OFF setting” to ON, and then set number of sheets to be judged at the code 08-2693 “Prevention of color toner low density / Judged number of sheets setting”.

If the color printing ratio is 5% or more, check the following.

1. Check if there is any abnormality on the hand grips and rods of the main charger cleaner. Correct if there is.
2. Check if the drum is rotated properly by turning the coupling of the developer unit. Correct the auger and the surrounding hardware if not.
3. Check if the connectors CN337, CN346 and CN358 of the LGC board are disconnected from the laser optical unit or the harnesses are open circuited.
4. Check if there is any stain or scratch on the glass surface of the laser optical unit. Clean or correct if there is.
5. Check if there is any stain on the image quality sensor and Image position aligning sensors.
6. Check if the sensor shutter is working properly.

* If the error still occurs, check the following.

< Invalidating color registration control >

(1) Turn the power ON while [0] and [8] are pressed simultaneously.
(2) Key in “4546”, then press the [START] button. (08-4546: Position adjustment control / Mode setting)
(3) Set the value to “0” (not performed automatically).
(4) Turn the power OFF.

< Checking the abnormal status on color registration >

(5) Turn the power ON while [0] and [5] are pressed simultaneously.
(6) Key in “4720”, then press the [START] button. (05-4720: Displaying the cause of color registration detection error)
(7) Check the displayed value.

When the error [CA00] occurs, the value between 1 and 255 is displayed. (0: Normal completion)
(The statues of total 8 sections (4 colors on the front and rear sides) are displayed.)

1 : Y on the rear side detection abnormality (*1)	-> Go to (23)
2 : Y on the front side detection abnormality (*1)	-> Go to (23)
3 : Y on the front and rear sides detection abnormality	-> Go to (23)
4 : M on the rear side detection abnormality (*1)	-> Go to (23)
8 : M on the front side detection abnormality (*1)	-> Go to (23)
12 : M on the front and rear sides detection abnormality	-> Go to (23)
16 : C on the rear side detection abnormality (*1)	-> Go to (23)
32 : C on the front side detection abnormality (*1)	-> Go to (23)
48 : C on the front and rear sides detection abnormality	-> Go to (23)
64 : K on the rear side detection abnormality (*1)	-> Go to (23)
85 : All colors on the rear side detection abnormality	-> Go to (8)
128: K on the front side detection abnormality (*1)	-> Go to (23)
170: All colors on the front side detection abnormality	-> Go to (8)
192: K on the front and rear sides detection abnormality	-> Go to (23)
255: All colors on the front and rear sides detection abnormality	-> Go to (8)
Other than the above: Multiple colors detection abnormality	-> (*2), Go to (23)

(*2) The adjustment value is the sum of (*1), which, as in the example below, specifies the cause of the detection abnormality.
(E.g. 1) 05-4720 --- in case of 72
72 = 64 + 8
-> K on the rear side / M on the front side detection abnormality
(E.g. 2) 05-4720 --- in case of 146
146 = 128 + 18 = 128 + 16 + 2
-> K on the front side / C on the rear side / Y on the front side detection abnormality

< Checking the status of the image position aligning sensor >
Check if the light emitting area of the image position aligning sensor emits LEDs and if the reflected lights on the transfer belt surface are detected by the light receiving area of the image position aligning sensor.

(8) Turn the power ON while [0] and [3] are pressed simultaneously.
(9) Press the [START] button.
(10) Check how items [G] and [H] are displayed while [7] is pressed.
(11) Press the [CLEAR] button.
(12) Key in “125”, then press the [START] button. (03-125: Sensor shutter is opened)
(13) Key in “126”, then press the [START] button. (03-126: Image position aligning sensor / LED ON)
(14) Press the [START] button.
(15) Check how items [G] and [H] are displayed while [7] is pressed.
(16) Compare them with the statues of [G] and [H] displayed in step 10.

Both [G] and [H] are changed	-	The image position aligning sensors on both sides are operating normally.
[G] remains same	-	The image position aligning sensor on the rear side is not operating normally.
[H] remains same	-	The image position aligning sensor on the front side is not operating normally.
Both [G] and [H] remain same	-	The image position aligning sensors on both sides are not operating normally.

(17) Press the [CLEAR] button.
(18) Key in “176”, then press the [START] button. (03-176: Image position aligning sensor / LED OFF)
(19) Key in “175”, then press the [START] button. (03-175: Sensor shutter closed)
(20) Turn the power OFF.
(21) If the image position aligning sensors on both sides are operating normally, proceed to step (23). In other cases, proceed to step (22).
(22) Check the following items if the image position aligning sensors are not operating normally:

Is the connector CN337 on the LGC board disconnected?
Is the connector of the image position aligning sensor disconnected?
Is the harness between the LGC board and the image position aligning sensor broken?
Is the light emitting or receiving area of the image position aligning sensor stained with toner?
Are the sensor shutter and the image quality sensor opening or closing normally? Or are they damaged?
Is the light emitting area of the image position aligning sensor emitting LEDs?

< Checking procedure for the sensor shutter opening/closing status >
1. Take off the transfer belt unit so that the sensor unit can be seen.
2. Turn the power ON while [0] and [3] are pressed simultaneously.
3. The shutter should be opened when “125” is keyed in. It should be closed when “175” is keyed in.

< Checking procedure for the LED emission of the image position aligning sensor >
1. Key in “125” to open the sensor shutter.
2. The light emitting area of the sensor should emit LEDs when “126” is keyed in.

Abnormal→ 1. Reconnect the connector.
2. Replace the harness.
3. Clean the light emitting and receiving areas of the image position aligning sensor.
4. If the sensor shutter is damaged, replace it.
If the sensor shutter solenoid is not operating normally, replace the solenoid.
↓
Proceed to step (8).

↓

Normal (Proceed to step (23).)

< Checking with test pattern >

(23) Turn the power ON while [0] and [4] are pressed simultaneously.
(24) Key in “220”, then press the [START] button.
(25) Select “C”, “M”, “Y” or “K”, then press the [START] button.
(26) Press the [CLEAR] button after one sheet of test pattern has been exited.
(27) Check if the printed image of the test pattern in each color contains difference in density on its front, center and rear sides, or if there is any image trouble in a whole image.

Is the test pattern printed in blank?

Check if the laser shutter is operating normally.
< Checking procedure for the laser shutter opening/closing status >
1. Take off the developer unit so that the laser shutter can be seen.
* Clean around the laser shutter if the toner or developer material is spilled over.
2. Turn the power ON while [0] and [3] are pressed simultaneously.
3. Key in “417”. (03-417: Laser shutter opening/closing status)
4. Press the [START] button repeatedly to open and close the shutter alternatively.

Abnormal→ If the laser shutter is not opening or closing normally, check the shutter and correct it if necessary.
↓
Proceed to step (23).

↓

Normal

Is the image of the test pattern printed normally without any difference in density on its front and rear sides?

NO→ 1. Check the contacting status of the transfer belt and the photoconductive drum.
2. Check the amount of the developer material. (Check if the developer material is supplied on the developer sleeve.)

↓ ↓

YES

Is the image printed normally without yellow, magenta, cyan or black streaks in the secondary scanning direction?

NO→ Check if the main charger wire corresponding to the color of the streaks is stained.

↓ ↓

YES

Is the image printed normally without white streaks in the secondary scanning direction?

NO→ Check if the slit glass of the laser optical unit is stained.

↓ ↓

YES

Is a certain color in the printed image turned to black solid?

Abnormal→
- Abnormality in the main high-voltage transformer corresponding to the color or abnormality in the laser optical unit.
- Replace one of 4 main high-voltage transformers which possibly contains abnormality, and also the one possibly normal. Then print the same test pattern.
- If the color which turned into black solid changes along with the replacement of the main high-voltage transformer, this main high-voltage transformer is defined as abnormal.
- If the color which turned into black solid does not change, check if the harness between the LGC board and the main high-voltage transformer is broken or if the power is sufficiently supplied to the main charger (breaking of the high-voltage harness or connection defect). If no problem is found, check the laser optical unit.

↓

Normal

If the density level is low on both front and rear sides, is the image printed normally in cases other than noted above?

NO→ Check the following items:

1. Check if the photoconductive drum and the transfer belt are rotating. If not, correct their mechanism.
2. Check if there are abnormal stain, large breaking or scratches on the transfer belt surface.
3. Check if the connector of the transfer transformer is disconnected.
4. Check if the high-voltage harnesses of the main high-voltage transformer and the transfer transformer are disconnected.
5. Check if the harness between the LGC board and the transfer transformer is broken.
6. Check if the high-voltage joints of the transfer belt unit are securely contacted or if they are not stained.
7. Check if the high-voltage harness is broken.
8. Check if the connector of the main high-voltage transformer is disconnected.
9. Check if the harness between the LGC board and the main high-voltage transformer is broken.
10. Replace the transfer transformer.
11. Replace the main high-voltage transformer.

↓

YES (Proceed to step (28).)

Proceed to step (23).

< Checking with the enforced image position adjustment >

(28) Turn the power ON while [0] and [5] are pressed simultaneously.
(29) Key in “4719”, then press the [START] button. (05-4719: Enforced position adjustment)

Does the error [CA00] occur during the position adjustment control?

YES→ Proceed to step (5).

↓

NO (Proceed to step (30).)

< Validating the color registration control >
Check the operation and correct if necessary. Then be sure to perform the following:

(30) Turn the power ON while [0] and [8] are pressed simultaneously.
(31) Key in “4546”, then press the [START] button. (08-4546: Position adjustment control / Mode setting)
(32) Set the value to “5” (performed automatically).
(33) Turn the power OFF.

<Checking the image position aligning sensor>

(34) Clean the image position aligning sensor (S16/S17).

<Checking the power supply>

(35) Check if any of the springs for supplying power to the transfer belt unit is deformed. Replace the spring if it is deformed.

[CE10] Image quality sensor abnormality (OFF level)

Is the connector of the image quality sensor, or the connector CN337 on the LGC board disconnected?
Is the harness between the LGC board and the image quality sensor, or the harness between the LGC board and the switching power supply open circuited?
↓ YES→ Connect the connector securely. Replace the harness.
NO
Is the output voltage from the 12V-power supply normal?
(Is +12V voltage normally output by the CN345-7pin on the LGC board?)
↓ NO → Check the power supply system and replace the switching power supply.
YES
1. Replace the image quality sensor.
2. Replace the LGC board.

[CE20] Image quality sensor abnormality

Is the transfer belt or the transfer belt unit securely installed?
Are there any abnormal stains (cleaning defects), large scratches or breaking on the transfer belt surface?
Are the drum and the transfer belt rotating?

NO→ <Checking procedure>

1. Check if the transfer belt unit is securely installed. Correct it if not.
2. Check if any toner image remains on the transfer belt surface.
   If any, check the installation status of the TBU cleaner unit. If there is any abnormality, correct it, and clean the transfer belt.
3. Check if the drum and the transfer belt are properly operated.
   (ON: 03-101 / OFF: 03-151)
   If they are not rotating normally, check if their drive gears are damaged or if they contact the equipment. Correct it if needed.

↓

Proceed to step (6). (to step (1) for the second time)

YES

Is the sensor shutter of the image quality sensor opening or closing normally? Or is it damaged?
Is the sensor surface of the image quality sensor stained with toner? If so, has it been cleaned?

NO → <Checking procedure>

1. Take off the transfer belt unit so that you can see the sensor unit.
2. Check if the sensor shutter is opening or closing normally.
   (Opening: 03-125 / Closing: 03-175)
   If the sensor shutter is not opening or closing, check if it is damaged or there is any abnormality in the sensor shutter solenoid.
   Check the connector and the harness between the sensor shutter solenoid and the LGC board. (LGC CN337-8pin, 9pin)
3. Slide the sensor shutter so that the sensor surface can be seen.
4. Clean the sensor surface with a cotton swab or a soft cloth.
5. Clean the area around the sensor (e.g.: sensor shutter) if it is stained, so that the sensor surface does not become dirty.

↓

Proceed to step (6). (to step (1) for the second time)

YES

Is the connector of the image quality sensor securely connected?
Is the connector CN337 on the LGC board securely connected?
Is the harness between the LGC board and the image quality sensor disconnected?

NO → <Checking procedure>

- Reconnect the connector.
- Replace the harness.

↓

Proceed to step (6). (to step (1) for the second time)

YES

Is +12V power supply voltage normally supplied to the image quality sensor?
Is +12V voltage normally output by the CN345-7pin on the LGC board?

NO → <Checking procedure>

1. Check if +12V voltage is output by the switching power supply (PS-ACC CN404-7pin).
2. Check if +12V voltage is output by the CN345-7pin on the LGC board.
   Check if the supply harness between the switching power supply and the LGC board is open circuited, damaged or disconnected.

↓

Proceed to step (6). (to step (1) for the second time)

YES

(1) Set the values of “Image quality closed-loop control / Contrast voltage (08-556)” and “Image quality closed-loop control / Laser power (08-557)” to “0” (Invalid).

↓

(2) Perform “Enforced performing of image quality open-loop control (05-394)”.

↓

(3) Output the image quality control test pattern (04-270) more than one time and the list print ([9][START]) in the adjustment mode (05), and then check if the image is normal.

Normal

↓

Abnormal

Abnormal image:
Blank print, Solid print, White banding, Color banding, White spots, Poor transfer, Uneven image density, Faded image (low density), Uneven light distribution, Blotched image.

* Blank print: including when one of the YMCK colors is not printed.

↓

Correct the abnormal image.

↓

Proceed to step (5).

(4) Replace the image quality sensor or the LGC board.

↓

(5) Set the values of “Image quality closed-loop control / Contrast voltage (08-556)” and “Image quality closed-loop control / Laser power (08-557)” to “1” (Valid).

↓

(6) Perform “Automatic initialization of image quality control (05-396)” and make sure it is completed normally. (Error [CE10], [CE20] and [CE40] do not appear.) Then perform “Automatic gamma adjustment” (Chapter 3.7.1 and 3.8.1).

When an error occurs:

↓

Check and correct it accordingly.

(7) Reset all of the values in the codes “Abnormality detection count (Y/M/C/K) Display/0 clearing (08-573 to 08-576)”.

[CE40] Image quality control test pattern abnormality

<Color toner low density>

When you check the printing status to find out that the color printing ratio is less than 5%, color toner low density might be the cause.

Turn the code 08-2692 “Prevention of color toner low density / ON/OFF setting” to ON, and then set number of sheets to be judged at the code 08-2693 “Prevention of color toner low density / Judged number of sheets setting”.

If the color printing ratio is 5% or more, check the following.

1. Check if there is any abnormality on the hand grips and rods of the main charger cleaner. Correct if there is.
2. Check if the drum is rotated properly by turning the coupling of the developer unit. Correct the auger and the surrounding hardware if not.
3. Check if the connectors CN337, CN346 and CN358 of the LGC board are disconnected from the laser optical unit or the harnesses are open circuited.
4. Check if there is any stain or scratch on the glass surface of the laser optical unit. Clean or correct if there is.
5. Check if there is any stain on the image quality sensor and Image position aligning sensors.
6. Check if the sensor shutter is working properly.

* If the error still occurs, check the following.

(1) Use “Image quality control abnormal detection counter Y to K display/0 clearing (08-573 to 576)” to check the abnormal occurring condition for each color.

(2) Check “Output value display of image quality sensor / Low-density pattern (05-391-0 to 3)” to check if the low-density pattern abnormality occurs for each color. The values under 180 for Y, M and C, and under 20 for K are defined as low-density pattern abnormality.

180 or above (Y, M and C)	Under 180 (Y, M and C)
20 or above (K)	↓ Under 20 (K)
↓	Low-density pattern abnormality Check the transfer belt. If the cleaning is poor, check the installation status of the transfer belt cleaner unit and correct it if necessary. ↓ To (9) (If you have already performed this checking cycle once, proceed to step (4).)

(3) Check “Output value display of image quality sensor / High-density pattern (05-390-0 to 3)” to check if the high-density pattern abnormality occurs for each color and identify the color which pattern is abnormal. If the value is 628 or above, it is defined as high-density pattern abnormality.

- Under 628 (Y, M, C and K) → To (9) (If you have already performed this checking cycle once, proceed to step (4).)
- 628 or above (Y, M, C and K) → High-density pattern abnormality

• Check if the laser shutter is working properly.

<Procedure>

1. Take off the developer unit so that the laser shutter can be easily seen.
   * Clean around the laser shutter if the developer has been spilled over.
2. While pressing the digital keys [0] and [3] simultaneously, turn the power ON.
3. Key in “417”.
4. Press the [START] button repeatedly to open and close the shutter alternatively.
   - If the laser shutter does not open/close, check the shutter and correct it if necessary.

• Check if the developer unit has been installed properly.

1. Visually check the installation status of the developer unit, and correct it if there is any abnormality.

(4) Set the values of “Image quality closed-loop control / Contrast voltage (08-556)” and “Image quality closed-loop control / Laser power (08-557)” to “0” (Invalid).

(5) Perform “Enforced performing of image quality open-loop control (05-394)”.

(6) Output the image quality control test pattern (04-270) more than one time and the list print ([9][START]) in the adjustment mode (05), and check the patch of the color identified in step (1) to see if the image is abnormal.

- Normal → Proceed to step (8).
- Abnormal → Abnormal image: Blank print, Solid print, White banding, Color banding, White spots, Poor transfer, Uneven image density, Faded image (low density), Uneven light distribution, Blotched image.
  * Blank print: including when one of the YMCK colors is not printed.

  ↓ Correct the abnormal image. ↓ Proceed to step (8).

(7) Replace the image quality sensor or LGC board.

(8) Set the values of “Image quality closed-loop control / Contrast voltage (08-556)” and “Image quality closed-loop control / Laser power (08-557)” to “1” (Valid).

(9) Perform “Automatic initialization of image quality control (05-396)” and make sure it is completed normally. (Error [CE40] does not appear.) Then perform “Automatic gamma adjustment” (Chapter 3.7.1 and 3.8.1).

- When an error occurs: → Check and correct it accordingly.

(10) Clear all “Image quality control abnormal detection counter Y to K display/0 clearing (08-573 to 576)”.

(11) Check if any of the springs for supplying power to the transfer belt unit is deformed. Replace the spring if it is deformed.

[CE50] Temperature/humidity sensor abnormality

Is the connector CN342 on the LGC board or the connector of the temperature/humidity sensor disconnected?
Is the harness between the LGC board and the temperature/humidity sensor disconnected?

↓ YES→ Connect the connector securely. Replace the harness.

NO

1. Replace the temperature/humidity sensor.
2. Replace the LGC board.

[CE60] Drum thermistor Y abnormal
[CE90] Drum thermistor K abnormal

Is the harness between the LGC board and the drawer connector for developer unit disconnected?
Is the harness inside of the developer unit and the harness of the drum thermistor Y or K disconnected?
Is the connector CN340 on the LGC board, or the connector of the drum thermistor Y or K disconnected?

↓ YES→ Reconnect the connector. Replace the harness.

NO

1. Replace the drum thermistor Y or K.
2. Replace the LGC board.

[CE70] Drum drive switching abnormality

Is the drum switching motor (M11) operating properly? (Perform the output check: 03-240)

NO→
1. Check if the connector of the motor and joint connectors are disconnected.
2. Check if the drum switching detection sensor (S19) is coming off its installation position.
3. Check if the connector (CN339) on the LGC board is disconnected.
4. Check if the LGC board is short circuited or open circuited.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Replace the drum switching motor.
7. Replace the LGC board.

↓

YES

Is the drum switching detection sensor (S19) working? (Perform the input check: 03-[FAX]ON/[0]/[E]…Highlighted in the color mode)

NO→
1. Check if the connector of the drum switching detection sensor and joint connectors are disconnected.
2. Check if there is any foreign matter such as grease in the detection area of the drum switching detection sensor.
3. Check if the connector (CN339) on the LGC board is disconnected.
4. Check if the LGC board is short circuited or open circuited.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Replace the drum switching sensor.
7. Replace the LGC board.

↓

YES

Is the drum switching motor assembled in the drum drive unit able to be rotated smoothly by hand?

NO→
1. While reinstalling the drum switching motor, push it so that its gear will slightly move away from the engaging gear.
2. Check the bracket in which the drum switching motor is installed. If it is deformed, replace it.

↓

YES

Is the drum switching guide able to be moved smoothly by hand after the drum switching motor has been removed?

NO→ Check if the slide area (guide, plate) of the drum switching guide is deformed or any foreign matter is attached to it. (Replace it if there is.)

↓

1. Check if the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[CE71] Drum phase adjustment abnormality

Check if the error is cleared after the power has been turned OFF and then back ON.

Is the drum motor (M10) operating properly? (Perform the output check: ON 03-101 / OFF 03-151.))

(Check the operation after removing all process units (EPU (Y, M, C, K))).

NO→
1. Check if the connector of the motor and joint connectors are disconnected.
2. Check if the connector (CN332) on the LGC board is disconnected.
3. Check if their drive gears are damaged or if they contact with the equipment. Correct if any.
4. Check if the LGC board is short circuited or open circuited.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Replace the drum motor.
7. Replace the LGC board.

YES

Rotate the drum of each EPU in the direction of the arrow once. (See the figure below.) If the rotation of the drum is extremely heavy or not smooth, check if the mechanism of the EPU is normal.

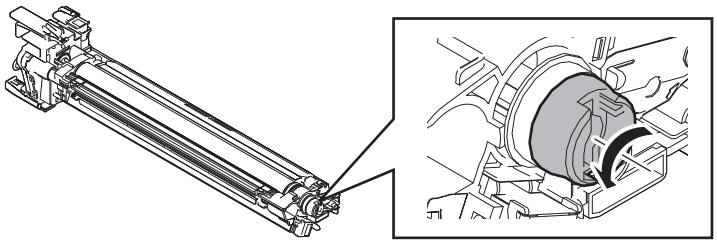


Fig. 26-1

Are the drum phase sensors (Color drum phase sensor (S43) and K drum phase sensor (S44)) are operating properly? (Perform the input check: Color 03-[1] [F] / K 03-[1] [E].)

NO→
1. Check if the connector of the drum phase sensors (S43/S44) and joint connectors are disconnected.
2. Check if the connector (CN339) on the LGC board is disconnected.
3. Check if there is any foreign matter such as grease in the detection area of the drum phase sensors (S43/S44).
4. Check if the LGC board is short circuited or open circuited.
5. Check if the connector pins are disconnected or the harnesses are open circuited.
6. Replace the drum phase sensors (S43/S44).
7. Replace the LGC board.

YES

1. Check if the drive gears are installed properly. (Check if the mark on each gear is aligned with the area of the punched mark on the frame.)
2. Check if the actuator is installed properly.
3. Check if the LGC board is short circuited or open circuited.
4. Replace the drum motor.
5. Replace the LGC board.

CE71 error can be prevented by setting the drum phase adjustment control OFF in the self-diagnostic code below.

The setting value shall be returned after the recovery, otherwise color deviation increases.

Drum phase adjustment control ON/OFF code

08-4766

0: Disabled

1: Enabled (Default)

26.3.21 Copy process related service call

[C370] Transfer belt motor abnormality

(1) Check if the connector of the transfer belt unit is not disconnected.
(2) Is the transport belt unit working normally?
(3) Check if the connector of the transfer belt motor is not disconnected.
(4) Check if the connector CN342 on the LGC board is disconnected.
(5) Check if the fuse on the switching power supply has blown.
(6) Check if the transfer belt release detection sensor is working properly.
(7) Replace the transfer belt motor.
(8) Replace the LGC board.

[C380] Auto-toner sensor-K abnormality (upper limit)
[C381] Auto-toner sensor-K abnormality (lower limit)
[C390] Auto-toner sensor-C abnormality (upper limit)
[C391] Auto-toner sensor-C abnormality (lower limit)
[C3A0] Auto-toner sensor-M abnormality (upper limit)
[C3A1] Auto-toner sensor-M abnormality (lower limit)
[C3B0] Auto-toner sensor-Y abnormality (upper limit)
[C3B1] Auto-toner sensor-Y abnormality (lower limit)

<Color toner low density>

When you check the printing status to find out that the color printing ratio is less than 5%, color toner low density might be the cause.

Turn the code 08-2692 “Prevention of color toner low density / ON/OFF setting” to ON, and then set number of sheets to be judged at the code 08-2693 “Prevention of color toner low density / Judged number of sheets setting”.

If the color printing ratio is 5% or more, check the following.

(1) Is the developer unit installed properly?
(2) Check if the connector CN340 on the LGC board is disconnected from the auto toner sensor or the harnesses are open circuited. Correct if necessary.
(3) Check if there is any foreign matter such as toner in the drawer connector of the equipment and fuser unit or the connector of the auto toner sensor. Remove if there is and reconnect it.
(4) Replace the auto-toner sensor.
(5) Replace the LGC board.

[C970] High-voltage transformer abnormality

(1) Is the main charger installed securely?
(2) Check if the spring of high-voltage supply contact point is deformed.
(3) Check if the needle electrode is broken or the main charger grid is deformed.
(4) Check if any foreign matter is on the needle electrode or main charger grid.

[CD70] Waste toner box mixing paddle locked

Do the paddles in the waste toner box rotate? (Actually make them rotate.)

NO → 1. Replace the waste toner box.

↓

YES

Is the waste toner paddle motor rotating? (Perform the output check: 03-414)

NO → 1. Check if the connector or the relay connector of the waste toner paddle motor is disconnected.
2. Check if there is any damage or abnormality in the gears on the driving cascade of the waste toner paddle motor.
3. Check if the connector CN359 on the LGC board is disconnected.
4. Check if the connector pin is disconnected or the harness is broken.
5. Check if the conductor pattern on the LGC board is short circuited or open circuited.
6. Replace the waste toner paddle motor.
7. Replace the LGC board.

↓

YES

Is the waste toner paddle motor lock detection sensor operating normally? (Perform output check: 03-[FAX] OFF/[1]/[C])

To judge it is an error, check if the sensor detects each status of normal display and highlighted display.

NO → 1. Check if the connector or the relay connector of the waste toner paddle motor lock detection sensor is disconnected.
2. Check if the connector CN359 on the LGC board is disconnected.
3. Check if the connector pin is disconnected or the harness is broken.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the waste toner paddle motor lock detection sensor.
6. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[CD71] Waste transport motor drive locking error

Is the waste toner transport motor rotating? (Perform the output check: 03-415)

NO →
1. Check if the connector or the relay connector of the waste toner transport motor is disconnected.
2. Check if there is any damage or abnormality in the gears on the driving cascade of the waste toner transport motor.
3. Check if the connector CN342 on the LGC board is disconnected.
4. Check if the connector pin is disconnected or the harness is broken.
5. Check if the conductor pattern on the LGC board is short circuited or open circuited.
6. Replace the waste toner paddle motor.
7. Replace the LGC board.

↓

YES

Is the auger lock detection sensor operating normally? (Perform output check: 03-[FAX] ON/[2]/[G])

To judge it is an error, check if the sensor detects each status of normal display and highlighted display.

NO →
1. Check if the connector or the relay connector of the auger lock detection sensor is disconnected.
2. Check if the connector CN359 on the LGC board is disconnected.
3. Check if the connector pin is disconnected or the harness is broken.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the auger lock detection sensor.
6. Replace the LGC board.

↓

YES

1. Check if the conductor pattern on the LGC board is short circuited or open circuited.
2. Replace the LGC board.

[CEC0] 2nd transfer roller position detection abnormality

Is the 2nd transfer roller contacted and released properly? (Perform the output check: 03-239)

NO →
1. Check if the connectors of the registration motor(M19) are disconnected.
2. Check if the connector CN332 on the LGC board is disconnected.
3. Check if the connector pins are disconnected or the wires of harnesses are open circuited.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the registration motor.
6. Replace the LGC board.

↓

YES

Is the 2nd transfer roller position detection sensor(S29) working properly? (Perform the input check:03-[FAX]ON/[2]/[F])

NO →
1. Check if the connector or joint connectors of the 2nd transfer roller position detection sensor are disconnected.
2. Check if the connector CN337 on the LGC board is disconnected.
3. Check if the connector pins are disconnected or the wires of harnesses are open circuited.
4. Check if the conductor pattern on the LGC board is short circuited or open circuited.
5. Replace the 2nd transfer roller position detection sensor.
6. Replace the LGC board.

↓

YES

1. Check if there is any abnormality with the mechanical section (sensor's actuator, etc.).
2. Check if the conductor pattern on the LGC board is short circuited or open circuited.
3. Replace the LGC board.

26.3.22 Other service call

[F100] HDD format error

(1) Check if the HDD is mounted.
(2) Check if the specified HDD is mounted.
(3) Check if the connector pins of the HDD are bent.
(4) Check if the connectors CN116, CN132 on the SYS board is disconnected.
(5) Replace the harness.
(6) Format the HDD. (Key in “2” at 08-690.)
(7) Replace the HDD.
(8) Replace the SYS board.

[F101] HDD unmounted
[F102] HDD start error
[F103] HDD transfer time-out
[F104] HDD data error
[F105] HDD other error

(1) Check if the connectors of the HDD are disconnected.
(2) Check if the connector pins are disconnected or the wires of harnesses are open circuited.
(3) Perform the bad sector check (08-694). If the check result is OK, recover the data in the HDD. If the check result is failed, replace the HDD.
(4) Replace the SYS board.

[F106] Point and Print partition damage

(1) Turn the power OFF and start up the Setting Mode (08).
(2) Key in “662” and press the [START] button. (Partition clearing is performed.)
(3) Restart the equipment.
(4) Access TopAccess. Click the [Administration] tab, and then click the Maintenance Menu to open. Then install the “Point and Print” driver.

[F107] / SHR partition damage
Initialize the Electronic Filing using the Setting Mode (08-666).

[F108] /SHA partition damage
Initialize the shared folder using the Setting Mode (08-667).

[F120] Database abnormality

(1) Check that no jobs remain and rebuild the databases. (Perform 08-684.)
(2) If the error is not recovered, initialize the HDD. (Key in “2” at 08-690.)

Notes:
- If you rebuild the databases with a job remaining, delete it after finishing.
- When “Rebuilding all databases (08-684)” is performed, all data in the Address Book and Mailbox are deleted. If you back up the data in advance, they will be recovered by restoring them after rebuilding the database.

[F130] Invalid MAC address
Compare the serial number of the equipment with a number displayed in 08-995. If they are different, enter the correct serial number at 08-995.

[F140] Accelerator ASIC format error

(1) Check if the connector on the SYS board is connected.
(2) Replace the SYS board.

[F200] Data Overwrite option (GP-1070) disabled

Perform firmware installation (all firmware: OS, HDD, SYS, PFC Firmware, Engine Main Firmware, and Scanner Firmware) with the USB media.
* When the function of the Data Overwrite option (GP-1070) is deleted from the equipment, the service call “F200” occurs.

[F400] SYS board cooling fan abnormality

(1) Check if the fan is rotating properly.
(2) If not, check if any foreign object is adhered.
(3) Are the connector CN126 and the relay connector of the SYS board connected securely?
(4) Replace the SYS board cooling fan.

26.3.23 Error in Internet FAX / Scanning Function

Notes:
1. When initializing the Electronic Filing (Setting Mode (08-666)), all data in the Electronic Filing are erased. Back up the data in the Electronic Filing by using the Electronic Filing Function of TopAccess before the initialization.
2. When initializing the shared folder (Setting Mode (08-667)), all data in the shared folder are erased. Back up the data in the shared folder by using Explorer before the initialization.
3. When formatting the HDD (Setting Mode (08-690)), all data in the shared folder, Electronic Filing, Address Book, template, etc. are erased. Back up these data before the initialization. Note that some of data cannot be backed up
📖 P.21-18 "21.2.3 Precautions and procedures when replacing the HDD"

[1] Internet FAX related error

[1C10] System access abnormality
[1C32] File deletion failure
Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, first, check if there are no jobs existing and then perform the HDD formatting (08-690).

[1C11] Insufficient memory
When there are running jobs, perform the job in error again after the completion of the running jobs.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[1C12] Message reception error
[1C13] Message transmission error
Turn the power OFF and then back ON. Perform the job in error again.

[1C14] Invalid parameter

When a template is used, form the template again.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[1C15] Exceeding file capacity

Reset and extend the “Maximum send to E-mail/iFAX size” or reduce the number of pages and perform the job again.

[1C20] System management module access abnormality
[1C21] Job control module access abnormality
[1C22] Job control module access abnormality

Turn the power OFF and then back ON. Perform the job in error again.
Check if there are no other running jobs and perform the HDD formatting (08-690).
If the recovery is still not completed, replace the SYS board.

[1C30] Directory creation failure
[1C31] File creation failure
[1C33] File access failure

Check if the access privilege to the storage directory is writable.
Check if the server or local disk has a sufficient space in disk capacity.

[1C40] Image conversion abnormality

Turn the power OFF and then back ON. Perform the job in error again.
Replace the main memory and perform the job again.

[1C60] HDD full failure during processing

Reduce the number of pages of the job in error and perform the job again.
Check if the server or local disk has a sufficient space in disk capacity.

[1C61] Address Book reading failure

Turn the power OFF and then back ON. Perform the job in error again.
Reset the data in the Address Book and perform the job again.

[1C62] Memory acquiring failure

Check if there is any job being performed and perform the job in error again.
Turn the power OFF and then back ON. Perform the job in error again.
Replace the main memory and perform the job again.

[1C63] Terminal IP address unset

Reset the Terminal IP address.
Turn the power OFF and then back ON. Perform the job in error again.

[1C64] Terminal mail address unset

Reset the Terminal mail address.

Turn the power OFF and then back ON. Perform the job in error again.

[1C65] SMTP address unset

Reset the SMTP address and perform the job.
Turn the power OFF and then back ON. Perform the job in error again.

[1C66] Server time-out error

Check if the SMTP server is operating properly.

[1C67] NIC time-out error
[1C68] NIC access error
[1C6D] System error

Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, replace the SYS board.

[1C69] SMTP server connection error

Reset the login name or password of SMTP server and perform the job again.
Check if the SMTP server is operating properly.

[1C6A] HOST NAME error

Check if there is an illegal character in the device name.
Delete the illegal character and reset the appropriate device name.

[1C6B] Terminal mail address error

Check the SMTP Authentication method.
Check if there is an illegal character in the Terminal mail address.
Set the correct SMTP Authentication method or delete the illegal character and reset the appropriate Terminal mail address, then perform the job again.

[1C6C] Destination mail address error

Check if there is an illegal character in the Destination mail address.
Delete the illegal character and reset the appropriate Destination mail address, then perform the job again.

[1C70] SMTP client OFF

Set the SMTP valid and perform the job again.

[1C71] SMTP authentication error

Check that SMTP authentication method, login name and password are correct, then perform authentication again.

[1C72] POP Before SMTP error

Check that both the POP Before SMTP setting and POP3 setting are correct, then perform authentication again.

[1C80] Internet FAX transmission failure when processing E-mail job received

Reset the “Received InternetFax Forward”.

[1C81] Onramp Gateway transmission failure

Reset the mail box.

[1C82] Internet FAX transmission failure when processing FAX job received

Reset the “Received Fax Forward”.

[1CC1] Power failure

Check if the power cable is connected properly and it is inserted securely.
Check if the power voltage is unstable.

[2] RFC related error

[2500] HOST NAME error (RFC: 500) / Destination mail address error (RFC: 500) / Terminal mail address error (RFC: 500)
[2501] HOST NAME error (RFC: 501) / Destination mail address error (RFC: 501) / Terminal mail address error (RFC: 501)

Check if the Terminal mail address and Destination mail address are correct.
Check if the mail server is operating properly.
Turn the power OFF and then back ON. Perform the job in error again.

[2503] Destination mail address error (RFC: 503)
[2504] HOST NAME error (RFC: 504)
[2551] Destination mail address error (RFC: 551)

Check if the mail server is operating properly.
Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, replace the SYS board.

[2550] Destination mail address error (RFC: 550)

Check the state of the mail box in the mail server.

[2552] Terminal/Destination mail address error (RFC: 552)

Confirm the size on the mail server.
Transmit again in text mode or with lower resolution or divide the document and transmit again.
If the error still occurs, turn the power OFF and then back ON. Perform the job in error again.

[2553] Destination mail address error (RFC: 553)

Check if there is an illegal character in the mail box in the mail server.

[3] Electronic Filing related error

[2B10] No applicable job error in Job control module
[2B11] JOB status abnormality
[2B20] File library function error
[2B30] Insufficient disk space in BOX partition
[2BC0] Fatal failure occurred
[2BC1] System management module resource acquiring failure

Erase some data in the Electronic Filing and perform the job in error again (in case of [2B30]).
Ask the administrator if e-Filing has been disabled. (In case of [2CC1])
Turn the power OFF and then back ON. Perform the job in error again.
Check if there are no other running jobs and perform the HDD formatting (08-690).
If the recovery is still not completed, replace the SYS board.

[2B50] Image library error
[2B90] Insufficient memory capacity

Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, replace the main memory.
Perform the job in error again.
Check if there are no other running jobs and initialize the Electronic Filing using the Setting Mode (08-666).

[2B31] Status of specified Electronic Filing or folder is undefined or being created/deleted

Check if the specified Electronic Filing or folder exists. (If no, this error would not occur.)
Delete the specified Electronic Filing or folder.
Perform the job in error again.
If the specified Electronic Filing or folder can not be deleted, initialize the Electronic Filing using the Setting Mode (08-666).

[2B32] Electronic Filing printing failure: Specified document can not be printed because of client's access (being edited, etc.)

Check if the specified document exists. (If no, this error would not occur.)
Delete the specified document.
Perform the job in error again.
If the specified document can not be deleted, initialize the Electronic Filing using the Setting Mode (08-666).

[2B51] List library error

Check if the Function List can be printed out.
If it can be printed out, perform the job in error again.
If it can not be printed out, replace the main memory.
If the recovery is still not completed, perform the HDD formatting (08-690).

[2BA0] Invalid Box password

Check if the password is correct.
Reset the password.
When this error occurs when printing the data in the Electronic Filing, perform the printing with the administrator's password.
If the recovery is still not completed or in case of invalid password for the operation other than printing (opening the file, etc.), initialize the Electronic Filing using the Setting Mode (08-666).

[2BA1] A paper size or a color mode not supported in the Electronic Filing function is being selected.

Check the paper size or color mode.

[2BB1] Power failure
[2BD0] Power failure occurred during restoring of Electronic Filing

Check if the power cable is connected properly and it is inserted securely.
Check if the power voltage is unstable.

[2BE0] Machine parameter reading error

Turn the power OFF and then back ON. Perform the job in error again.

[2BF0] Exceeding maximum number of pages

Reduce the number of inserting pages and perform the job again.

[2BF1] Exceeding maximum number of documents

Backup the documents in the box or folder to PC or delete them.

[2BF2] Exceeding maximum number of folders

Backup the folders in the box or folder to PC or delete them.

[4] Remote scanning related error

[2A20] System management module resource acquiring failure

Retry the job in error.
If the error still occurs, turn the power OFF and then back ON, then retry the job in error.

[2A40] System error

Turn the power OFF and then back ON, then retry the job in error.

[2A51] Power failure

Check if the power cable is properly connected.
Check if the power supply voltage is inconstant.

[5] E-mail related error

[2C10] System access abnormality
[2C32] File deletion failure

Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, first, check if there are no jobs existing and then perform the HDD formatting (08-690).

[2C11] Insufficient memory

When there are running jobs, perform the job in error again after the completion of the running jobs.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[2C12] Message reception error
[2C13] Message transmission error

Turn the power OFF and then back ON. Perform the job in error again.

[2C14] Invalid parameter

When a template is used, form the template again.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[2C15] Exceeding file capacity

Reset and extend the “Maximum send to E-mail/iFAX size” or reduce the number of pages and perform the job again.

[2C20] System management module access abnormality
[2C21] Job control module access abnormality
[2C22] Job control module access abnormality

Turn the power OFF and then back ON. Perform the job in error again.
Check if there are no other running jobs and perform the HDD formatting (08-690).
If the recovery is still not completed, replace the SYS board.

[2C30] Directory creation failure
[2C31] File creation failure
[2C33] File access failure

Check if the access privilege to the storage directory is writable.
Check if the server or local disk has a sufficient space in disk capacity.

[2C40] Image conversion abnormality
[2C62] Memory acquiring failure

Turn the power OFF and then back ON. Perform the job in error again.
Replace the main memory and perform the job again.

[2C43] Encryption error

Turn the power OFF and then back ON. Perform the job in error again.

[2C44] Encryption PDF enforced mode error

Reset the encryption and perform the job in error again.
If an image file not encrypted is created, consult your administrators.

[2C60] HDD full failure during processing

Reduce the number of pages of the job in error and perform the job again.
Check if the server or local disk has a sufficient space in disk capacity.

[2C61] Address Book reading failure

Turn the power OFF and then back ON. Perform the job in error again.
Reset the data in the Address Book and perform the job again.

[2C63] Terminal IP address unset

Reset the Terminal IP address.
Turn the power OFF and then back ON. Perform the job in error again.

[2C64] Terminal mail address unset

Reset the Terminal mail address.
Turn the power OFF and then back ON. Perform the job in error again.

[2C65] SMTP address unset

Reset the SMTP address and perform the job.
Turn the power OFF and then back ON. Perform the job in error again.

[2C66] Server time-out error

Check if the SMTP server is operating properly.

[2C67] NIC time-out error
[2C68] NIC access error
[2C6D] NIC system error

Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, replace the SYS board.

[2C69] SMTP server connection error

Reset the login name and password of SMTP server and perform the job again.
Check if the SMTP server is operating properly.

[2C6A] HOST NAME error (No RFC error)

Check if there is an illegal character in the device name.
Delete the illegal character and reset the appropriate device name.

[2C6B] Terminal mail address error

Check the SMTP Authentication method.
Check if there is an illegal character in the Terminal mail address.
Set the correct SMTP Authentication method or delete the illegal character and reset the appropriate Terminal mail address, then perform the job again.

[2C6C] Destination mail address error (No RFC error)

Check if there is an illegal character in the Destination mail address.
Delete the illegal character and reset the appropriate Destination mail address, then perform the job again.

[2C70] SMTP client OFF

Set the SMTP valid and perform the job again.

[2C71] SMTP authentication error

Check that SMTP authentication method, login name and password are correct, then perform authentication again.

[2C72] POP Before SMTP error

Check that both the POP Before SMTP setting and POP3 setting are correct, then perform authentication again.

[2C80] E-mail transmission failure when processing E-mail job received

Reset the “Received InternetFax Forward”.

[2C81] Process failure of FAX job received

Reset the setting of the mail box or “Received InternetFax Forward”.

[2CC1] Power failure

Check if the power cable is connected properly and it is inserted securely.
Check if the power voltage is unstable.

[6] File sharing related error

[2D10] System access abnormality
[2D32] File deletion failure
[2DA6] File deletion failure
[2DA7] Resource acquiring failure

Delete some files in the shared folder by using Explorer because of automatic/manual file deletion failure (in case of [2DA6])
Turn the power OFF and then back ON. Perform the job in error again.
If the error still occurs, first, check if there are no jobs existing and then perform the HDD formatting (08-690).

[2D11] Insufficient memory

When there are running jobs, perform the job in error again after the completion of the running jobs.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

When the Imaging Acceleration Board (GE-1170, optional) is installed

Since the input data are a high-compression PDF created at high speed, an error code is displayed when the input data cause the overflow of the memory capacity specified for data processing.
Check the content of the data and reattempt the process because the specified memory capacity cannot be changed. You cannot see if this error will occur until you actually perform the process.

[2D12] Message reception error
[2D13] Message transmission error

Turn the power OFF and then back ON. Perform the job in error again.

[2D14] [2D61] Invalid parameter

When a template is used, form the template again.
If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[2D15] Exceeding the maximum size for file sharing

Divide the file in error into several files and retry. Or retry the job in a single-page format.

[2D20] System management module access abnormality
[2D21] Job control module access abnormality
[2D22] Job control module access abnormality
[2D60] File library access abnormality

Turn the power OFF and then back ON. Perform the job in error again.
Check if there are no other running jobs and perform the HDD formatting (08-690).
If the recovery is still not completed, replace the SYS board.

[2D30] Directory creation failure
[2D31] File creation failure
[2D33] File access failure

Check if the access privilege to the storage directory is writable.
Check if the server disc, local disk or USB storage device has a sufficient space in capacity.

[2D40] Image conversion abnormality

Turn the power OFF and then back ON. Perform the job in error again.
Replace the main memory and perform the job again.
If the error still occurs, first, check if there are no jobs existing and then initialize the shared folder using the Setting Mode (08-667).

When the Imaging Acceleration Board (GE-1170, optional) is installed

Refer to the following page:
📖 P.26-124 "26.4.4 Abnormality Related to Imaging Acceleration Board (GE-1170, optional)"

[2D43] Encryption error

Turn the power OFF and then back ON. Perform the job in error again.

[2D44] Encryption PDF enforced mode error

Reset the encryption and perform the job in error again.
If an image file not encrypted is created, consult your administrators.

[2D62] File server connection error

Check the IP address or path of the server.
Check if the server is operating properly.

[2D63] Invalid network path

Check the network path.

If the path is correct, turn the power OFF and then back ON, and perform the job again.

[2D64] Login failure

Reset the login name and password. Perform the job.

Check if the account of the server is properly set up.

[2D65] Exceeding documents in folder: Creating new document is failed

Delete some documents in the folder.

[2D66] Storage capacity full failure during processing

Reduce the number of pages of the job in error or set the resolution mode low, and perform the job again.

Check if the server disc, local disk or USB storage device has a sufficient space in capacity.

[2D67] FTP service not available

Check if the setting of FTP service is valid.

[2D68] File sharing service not available

Check if the setting of SMB is valid.

[2DC1] Power failure

Check if the power cable is connected properly and it is inserted securely.

Check if the power voltage is unstable.

[7] E-mail reception related error

[3A10] [3A11] [3A12] E-mail MIME error

The format of the mail is not corresponding to MIME 1.0.
Request the sender to retransmit the mail in the format corresponding to MIME 1.0.

[3A20] [3A21] [3A22] E-mail analysis error
[3B10] [3B11] [3B12] E-mail format error
[3B40] [3B41] [3B42] E-mail decode error

These errors occur when the mail data is damaged from the transmission to the reception of the mail.
Request the sender to retransmit the mail.

[3A30] Partial mail time-out error

The partial mail is not received in a specified period of time.
Request the sender to retransmit the partial mail, or set the time-out period of the partial mail longer.

[3A40] Partial mail related error

The format of the partial mail is not corresponding to this equipment.
Request the sender to remake and retransmit the partial mail in RFC2046 format.

[3A50] [3A51] [3A52] Insufficient HDD capacity error
[3A60] [3A61] [3A62] Warning of insufficient HDD capacity

These errors occur when the HDD capacity is not sufficient for a temporary concentration of the jobs, etc.
Request the sender to retransmit after a certain period of time, or divide the mail into more than one.
Insufficient HDD capacity error also occurs when printing is disabled for no printing paper.
In this case, supply the printing paper.

[3A70] Warning of partial mail interruption

This error occurs when the partial mail reception setting becomes OFF during the partial mail reception.
Reset the partial mail reception setting ON and then request the sender to retransmit the mail.

[3A80] [3A81] [3A82] Partial mail reception setting OFF

Reset the partial mail reception setting ON and then request the sender to retransmit the mail.

[3B20] [3B21] [3B22] Content-Type error

The format of the attached file is not supported by this equipment (TIFF-FX).
Request the sender to retransmit the file in TIFF-FX.

[3B30] [3B31] [3B32] Charset error

These errors occur when the standard of the Charset is other than ISO-8559-1 or ISO-8559-2.
Request the sender to reformat the Charset into either of the standards described above and then retransmit the mail.

[3C10] [3C11] [3C12] [3C13] TIFF analysis error

These errors occur when the mail data is damaged from the transmission to the reception of the mail, or when the format of the attached file is not supported by this equipment (TIFF-FX).
Request the sender to retransmit the mail.

[3C20] [3C21] [3C22] TIFF compression error

The compression method of the TIFF file is not acceptable for this equipment. (Acceptable: MH/MR/MMR/JBIG)
Request the sender to retransmit the file in the acceptable compression method.

[3C30] [3C31] [3C32] TIFF resolution error

The resolution of the TIFF file is not acceptable for this equipment. (Acceptable: 200 x 100, 200 x 200, 200 x 400, 400 x 400, 300 x 300 or equivalent)
Request the sender to retransmit the file in the acceptable resolution.

[3C40] [3C41] [3C42] TIFF paper size error

The paper size of the TIFF file is not acceptable for this equipment. (Acceptable: A4, B4, A3, B5, LT, LG, LD or ST)
Request the sender to retransmit the file in the acceptable paper size.

[3C50] [3C51] [3C52] Offramp destination error

These errors occur when the FAX number of the offramp destination is incorrect.
Request the sender to correct the FAX number of offramp destination and then retransmit the mail.

[3C60] [3C61] [3C62] Offramp security error

These errors occur when the FAX number of the offramp destination is not on the Address Book.
Check if the FAX number of the offramp destination is correctly entered or the number has not been changed.

[3C70] Power failure error

Check if the mail is recovered after turning ON the power again.
Request the sender to retransmit the mail if it is not recovered.

[3D10] Destination address error

Check if the setting of the server or DNS is correct. Correct if any of the setting is incorrect.
When the content of the setting is correct, confirm the sender if the destination is correct.

[3D20] Offramp destination limitation error

Inform the sender that the transfer of the FAX data over 40 is not supported.

[3D30] FAX board error

This error occurs when the FAX board is not installed or the FAX board has an abnormality.
Check if the FAX board is correctly connected.

[3E10] POP3 server connection error

Check if the IP address or domain name of the POP3 server set for this equipment is correct, or check if POP3 server to be connected is operating properly.

[3E20] POP3 server connection time-out error

Check if POP3 server to be connected is operating properly.
Check if the LAN cable is correctly connected.

[3E30] POP3 login error

Check if the POP3 server login name and password set for this equipment are correct.

[3E40] POP3 Login Type error

Check that the login type (Auto, POP3 or APOP) to the POP3 server is correct.

[3F00] [3F10] [3F20] [3F30] [3F40] File I/O error

These errors occur when the mail data is not transferred properly to the HDD.
Request the sender to retransmit the mail.
Replace the HDD if the error still occurs after retransmission.

26.3.24 Printer function error

[4031] HDD full failure during printing

Reduce the number of pages of the job in error and perform the job again.
Check if the server or local disk has a sufficient space in disk capacity.

[4032] Private-print-only error

Select “Private print”, and then perform the printing again.

[4033] Printing data storing limitation error

Select “Normal Print”, and then perform the printing again.

[4034] e-Filing storing limitation error

Select “Normal Print”, and then perform the printing again.

[4035] Local file storing limitation error

Select “Remote” (SMB/FTP) for the destination of the file to save.

[4036] User authentication error

Perform the authentication or register as a user, and then perform the printing again.

[4040] Not being authorized to perform JOB

Confirm the administrator for the JOB authorization.

[4050] Problem in LDAP server connection or LDAP server authorization settings

Confirm the administrator for the LDAP server connection or LDAP server authorization settings.

[4300] Job execution error due to functional restrictions

USB direct printing cannot be performed because the function is restricted by the self-diagnosis.
Check the self-diagnosis setting.

[4301] File conversion error

The format of this file (other than PDF and JPEG) is not supported in USB direct printing, or the file is invalid. Check the file.

[4310] Double-sign encoding error

Printing using this function cannot be performed due to a decoding process error which occurs because the PDF file is encrypted incorrectly or encrypted in a language not supported.

[4311] Printing not permitted

This file cannot be printed using this function due to the encrypted PDF file not permitting printing or permitting it only with a low resolution.

[4312] Password mismatching

The entered password is neither matched with a user password nor an owner password. Check the password again.

[A221] Print job cancellation

This message appears when deleting the job on the screen.

[A222] Print job power failure

When there are running jobs, perform the job in error again after the completion of the running jobs. If the error still occurs, turn the power OFF and then back ON, and perform the job again.

[A290] Limit over error (black)
[A291] Limit over error (black)
[A292] Limit over error (black)

Clear the limit counter (black).

[A2A0] Limit over error (color)
[A2A1] Limit over error (color)

Clear the limit counter (color), or authorize users so that they can perform color printing.

[A2A2] Limit over error (color)

Clear the limit counter (color).

26.3.25 TopAccess related error

[5110] Toner cartridge detection error

(1) Check if the toner cartridge is installed properly.
(2) Check if the toner cartridge detection sensor operates properly.

[5212] Time for cleaning of the slit glass and main charger

(1) Clean the slit glass and main charger.
(2) If the message is not cleared after the cleaning, check if there is any detection error, breakage or poor connection of the needle electrode cleaner detection sensor.

[5BD0] Power failure during restoration

(1) Check if the power cable is connected properly and is inserted securely.
(2) Check if the power voltage is unstable.
(3) Reattempt the restoration of the database (Address Book, templates, F-code (Mailbox) or user information).

[5C10] FAX Unit attachment error

(1) Check if the FAX Unit is attached.
(2) Check if there is any damage or abnormality on the FAX board.
(3) Check if the connector on the FAX board is connected properly.

[5C11] Network FAX transmission error

The address specified for the network FAX is not registered on the Address Book. Register it.

[5C20] Data import from TopAccess succeeded

Data (Address book, department or user information) have been imported successfully. No troubleshooting is required.

[5C21] Error in data import from TopAccess

Data import failed because the specified file (Address Book, department or user information) is incorrect or damaged. Check if the file is incorrect or damaged, and then reattempt the import.

[5C22] Error on data import from TopAccess

(1) Data import failed because the specified file (Address Book, department or user information) is incorrect or damaged. Check if the file is incorrect or damaged, and then reattempt the import.
(2) Check that no jobs remain and rebuild the databases (Perform 08-684).
(3) If the error is not recovered, initialize the HDD (Key in "2" at 08-690).

Notes:

- If you rebuild the databases with a job remaining, delete it after finishing.
- When "Rebuilding all databases (08-684)" is performed, all the data in the Address Book and Mailbox are deleted. If you back up the data in advance, they will be recovered by restoring them after rebuilding the database.

26.4 Other errors

26.4.1 Equipment operation disabled after the installation of option(s)

Check if the optional board is installed properly.

26.4.2 Wireless LAN connection disabled

The connection state and settings of the Wireless LAN can be checked with [USER FUNCTIONS] → [ADMIN] → [WIRELESS LAN] → [SETTING CHECK].
Confirm the settings with the administrator.

- “NIC INITIALIZING” does not disappear at the time of the power being turned ON and it disappears after 6 minutes with the NIC initializing time-out. In this case, the connection to the Wireless LAN did not succeed even though “NIC INITIALIZING” disappears.
- The connection to the Wireless LAN cannot be made if the Access Point to be connected is not found or security settings are not correct.

26.4.3 “Start page” printing disabled after the installation of the EFI Printer Board (GA-1211, optional)

When the firmware of the equipment or the system software of the EFI printer board is updated, perform “Initialization of NIC information (08-693)” and “Default setting of the EFI printer board (08-700)” if “Start page” is not printed out after a specified period of time. (In case of the equipment's firmware, wait approx. 3 minutes and in case of the EFI printer board's system software, wait approx. 10 minutes.)

1. Turn OFF the power of the equipment.
2. Confirm that the power of the EFI printer board is also turned OFF. (The 7-Segment LED of the EFI printer board goes off.)
3. Turn ON the power of the equipment while pressing digital keys [0] and [8] simultaneously to enter the Setting Mode (08).
4. Confirm that the power of the EFI printer board is also turned ON. (The 7-Segment LED of the EFI printer board is lit.)
5. Key in [693] and press the [START] button (Initialization of NIC information).
6. Key in [700] and press the [START] button (Default setting of the EFI printer board).
7. Turn OFF the power of the equipment.
8. Confirm that the power of the EFI printer board is also turned OFF.
9. Turn ON the power of the equipment.

26.4.4 Abnormality Related to Imaging Acceleration Board (GE-1170, optional)

When an abnormality related to the Imaging Acceleration Board (GE-1170, optional) occurs, the specified icon on the touch panel is displayed in gray.
Perform code 08-9966 (Imaging Acceleration Board operation check) to check the status of the board. If the abnormality is derived from the hardware, replace the board.

26.4.5 "Invalid Department Code" is displayed

Log in to TopAccess as an administrator, select [Authentication] on the [User Management] tab, and then check whether Department Setting is enabled or disabled.

Department Setting is enabled:
- Log in to TopAccess as an administrator, select [Authentication] on the [User Management] tab, and then check User Management Setting.
- Confirm the settings of 08-3805 and 08-3850 in the setting mode.

Department Setting is disabled:
- Log in to TopAccess as an administrator, select [Authentication] on the [User Management] tab, and then check User Management Setting.
- Confirm the settings of 08-3850 in the setting mode.

26.5 Troubleshooting for the Image

26.5.1 Color deviation

1) Color deviation

<Symptoms>

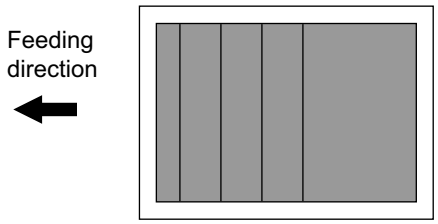
Original mode	Location	Phenomena	
All modes	Color blurred in outline of white text or illustration on a colored background	Color deviation→	 Fig. 26-2
Text Mode Text/Photo Mode	Outline in black text on a colored background	White void→	 Fig. 26-3
Photo Mode Map Mode	Color blurred in outline of line or text	Color deviation→	 Fig. 26-4

Cause/Section	Step	Check Item	Measure	Remark
	1	Test printing (A3/LD)	Output the built-in grid pattern	For the following checks
Drum rotation abnormality	2	Check the drum motor operation in the test mode (03) to see if there is any rotation abnormality of the drum.	Replace the drum motor.	
	3	Check the drum motor operation in the test mode (03) to see if there is any rotation abnormality of the drum.	Reconnect the connectors. Replace the harnesses. Replace the LGC board.	
Inadequate drum motor rotation speed	4	Check the value set for main motor rotation speed. (Is the value significantly different from the default value?)	Reset drum motor speed to 128.	
Drum coupling and coupling on the equipment side	5	Loose coupling, damage, deformation	Check if they are installed properly or replace the couplings.	
Transfer belt	6	Deformation or damage of the transfer belt or stains on the transfer belt.	Clean or replace the transfer belt.	
	7	Are the gears on the transfer belt side loosen, damaged or deformed?	Tighten the screws if they loosen, or replace the gears.	
	8	Stain or damage of the drive roller	Clean or replace the drive roller.	
	9	Does the rib of the transfer belt overlap the collar on both edge of the drive roller?	Adjust the position of the transfer belt.	
	10	Is the belt edge damaged or stained?	Clean or replace the transfer belt.	
	11	Peeling of the cleaning blade (Large driving load)	Replace the cleaning blade.	
	12	Is the transfer belt unit installed normally? (Is the unit properly grounded?)	Check and correct the installing.	
Laser optical unit	13	Check the grid pattern. Are the lines of the primary scanning direction warped?	Replace the laser optical unit.	Fθ lens characteristic defect or reflection mirror warp

Cause/Section	Step	Check Item	Measure	Remark
High-voltage transformer	14	Check the connection of the high-voltage supply terminal of the 1st or 2nd transfer rollers.	Correct or replace the terminal if it is loosened or damaged.	

26.5.2 Uneven pitch and jitter image

<Symptoms>

Original mode	Location	Phenomena	
All modes	Occurs cyclically at right angles to paper feeding direction	Uneven pitch	 Fig. 26-5

Cause/Section	Step	Check Item	Measure	Remark
	1	Test printing (A3/LD)	Output the built-in halftone and grid patterns.	For the following checks
Drum	2	Are there uneven pitches of approx. 94 mm?	Replace the drum.	
	3	Is there any damage on the drum surface?	Clean or replace the drum.	
Drum drive	4	Is there any dent, damage or deformation on the gears of the drum drive unit?	Replace the gears of the drum drive unit.	
Drum rotation abnormality	5	Check the drum motor operation in the test mode (03) to see if there is any rotation abnormality of the drum.	Reconnect the connectors. Replace the harnesses. Replace the LGC board. Replace the drum motor.	
Developer sleeve	6	Are there uneven pitches of approx. 28 mm?	Replace the developer sleeve.	
Inadequate drum motor rotation speed	7	Check the value set for drum motor rotation speed. (Is the value significantly different from the default value?)	Reset drum motor speed to 128.	
Drum coupling	8	Loose coupling, damage, deformation	Replace the couplings.	
Transfer belt	9	Deformation or damage of the transfer belt	Replace the transfer belt.	Check the halftone pattern. (Uneven pitch: approx. 90 mm)
	10	Stain or damage of the drive roller	Clean or replace the drive roller.	Check the halftone pattern. (Uneven pitch: approx. 90 mm)
	11	Large driving load due to the peeling of the cleaning blade	Replace the cleaning blade.	
Transfer belt drive	12	Are there uneven pitches of approx. 1.5 mm?	Adjust the gap between the TBU drive gears. (Ref. Ch.14.7.2) Replace the TBU drive gears.	
	13	Is the gap between the TBU drive gears adjusted properly?		
	14	Is there any dent, damage or deformation on the TBU drive gears?		
Laser optical unit	15	Check the halftone pattern to see if there are uneven pitches of approx. 0.3 mm, 0.8 mm, 1.1 mm, 1.5 mm each in the whole image.	Replace the laser optical unit.	Check the halftone pattern. (Uneven pitch: approx. 0.3 mm, 0.8 mm, 1.1 mm, 1.5 mm)

Cause/Section	Step	Check Item	Measure	Remark
Registration guide	16	Do jittery images occur in certain positions on the second and subsequent pages? (One or two streaks on each page.)	Replace the cams of the registration guide.	
	17	Is there any dent, damage, deformation, wear or malfunction on the front and rear side cams of the registration guide?		
Feeding drive	18	Are there uneven pitches of approx. 1.1 mm?	Replace the gears of the feed/transport gear unit and the first drawer transport clutches.	
	19	Is there any dent, damage or deformation on the gear of the feed/ transport gear unit and the first drawer transport clutch (CLT1 or CLT2)?		
Fusing drive	20	Are there uneven pitches of approx. 3.1 mm?	Perform “Fine adjustment of fuser roller rotational speed” (05-485).	
	21	Is the fuser unit properly installed in the equipment?	Check if the fuser unit is installed correctly.	
	22	Is there any dent, damage or deformation on the drive gears of the pressure roller?	Replace the drive gear of the pressure roller.	
EPU drive	23	Are there uneven pitches of approx. 0.8 mm or 1.2 mm?	Replace the developer drive unit, developer sleeve and drive gears of the mixer.	
	24	Is there any dent, damage or deformation on the developer drive unit, developer sleeve and drive gears of the mixer?		

26.5.3 Poor image density, color reproduction and gray balance

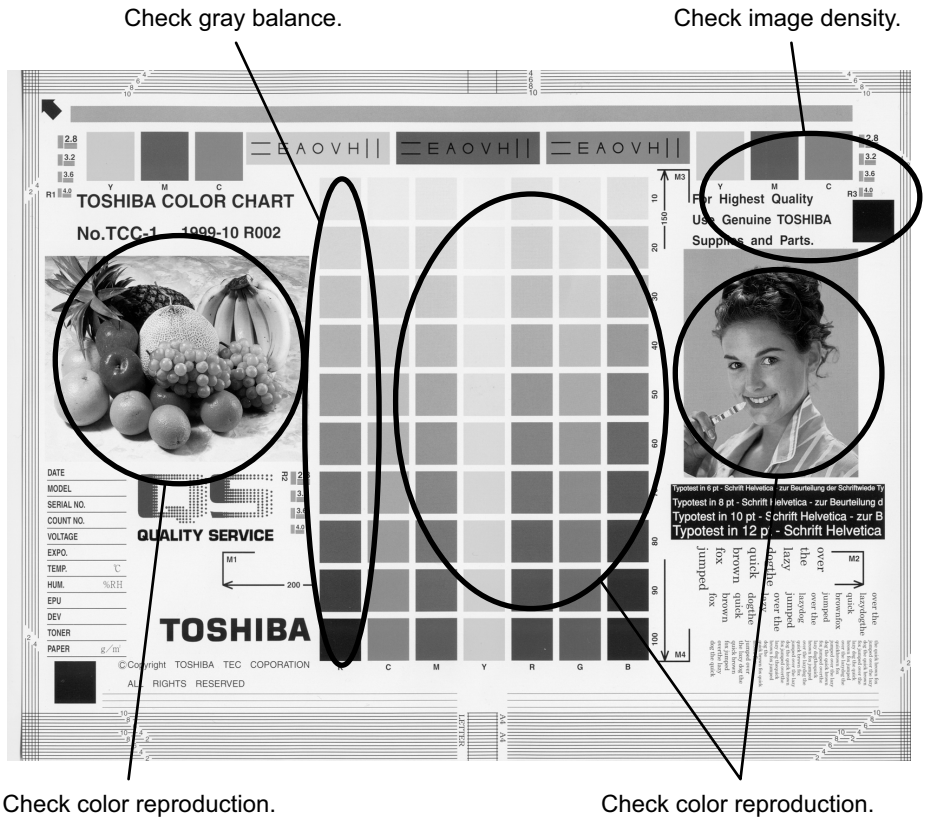


Fig. 26-6

Cause/Section	Step	Check items	Measures	Remarks
Density / Color reproduction / Gray balance	1	Check the image density / color reproduction / gray balance.	Perform the enforced performing of image quality closed-loop control (05-395) and then automatic gamma adjustment.	
Printer density	2	Check the density of printer output image.	Output the test patterns and check them. Color: using 04-231 for each color Black: using 04-113	See step 5 if defect occurs.
Scanner	3	Check if the original glass, mirrors or lens is dirty.	Clean it.	
Parameter adjustment value	4	Check the image processing parameters.	Adjust the color balance (color). Adjust the image density.	
Printer output image abnormal	5	Is there any faded image (low density)?	Perform the troubleshooting procedures against the faded image.	
		Is there any fog in the background?	Perform the troubleshooting procedures against the background fogging.	
		Is there any blotch image?	Perform the troubleshooting procedures against the blotch image.	
		Is there any poor transfer?	Perform the troubleshooting procedures against the poor transfer.	
		Is there any poor cleaning of the transfer belt? (Check inside the equipment.)	Correct the transfer belt area.	

* If the trouble is not solved at the step 1 and the step 2 or followings (excluding the parameter adjustment) are performed, make sure to perform “Enforced performing of image quality closed-loop control” and then “Automatic gamma adjustment” after taking a measure.

26.5.4 Background fogging

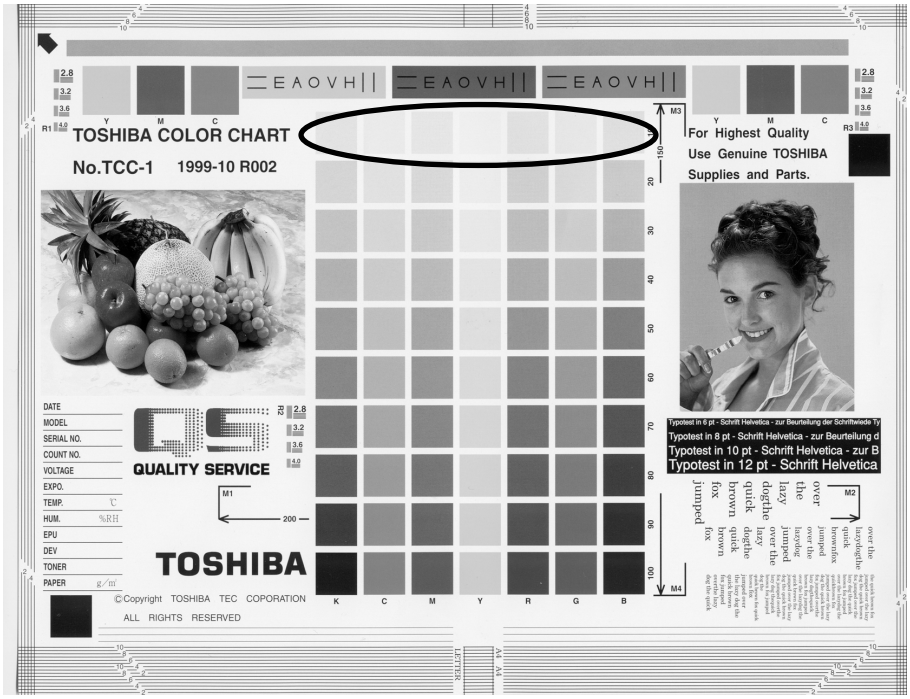


Fig. 26-7

Cause/Section	Step	Check items	Measures	Remarks
Density reproduction	1	Check the gradation reproduction.	Perform the forced performing of image quality closed-loop control (05-395) and then automatic gamma adjustment.	
Printer section	2	Check the printer output image.	Output the test patterns and check them. Color: using 04-231 for each color Black: using 04-113	See step 6 if defects occur.
Scanner	3	Check if the original glass, mirrors or lens is dirty.	Clean it.	
Parameter adjustment value	4	Check the image processing parameters.	Check the value of offsetting adjustment for background processing (color), background adjustment (black) and background peak adjustment for range correction (black).	
	5	Adjust the image processing parameters.	While checking the above encircled image, adjust the reproduction level by the offsetting adjustment for background processing (color), background adjustment (black) and background peak adjustment for range correction (black).	
Cover	6	Is the cover installed properly? (Is the drum exposed to the external light?)	Correct it.	
Auto-toner	7	Is the auto-toner sensor normal?	Check the operation of auto-toner sensor and readjust.	
	8	Is the toner supply operating constantly?	Check the motor and circuits.	
Main charger output	9	Is the main charger output normal?	Check the circuits.	
Developer bias	10	Is the developer bias proper?	Check the circuits.	

Cause/Section	Step	Check items	Measures	Remarks
Developer unit	11	Is the contact between the drum and developer material proper?	Check the doctor-to-sleeve gap and pole position.	
Developer material/Toner/ Drum	12	Using the specified developer material, toner and drum?	Use the specified developer material, toner and drum.	
	13	Have the developer material and drum reached their PM life?	Replace the developer material and drum.	
	14	Is the storage environment of the toner cartridge 35oC or less without dew?	Use the toner cartridge stored in the environment within specification.	
Drum cleaning blade	15	Is the drum cleaned properly?	Check the drum cleaning blade pressure.	
Transfer belt cleaning blade	16	Is the transfer belt cleaning blade in proper contact with the transfer belt?	Take off the transfer belt and check if the transfer belt cleaning blade pressure spring and pressure hook are installed properly.	
Toner dusting	17	Is the toner accumulated on the seals of the developer unit?	Remove the toner and clean the seals.	

* If the trouble is not solved at the step 1 and the step 2 or followings (excluding the parameter adjustment) are performed, make sure to perform “Enforced performing of image quality closed-loop control” and then “Automatic gamma adjustment” after taking a measure.

26.5.5 Moire /lack of sharpness

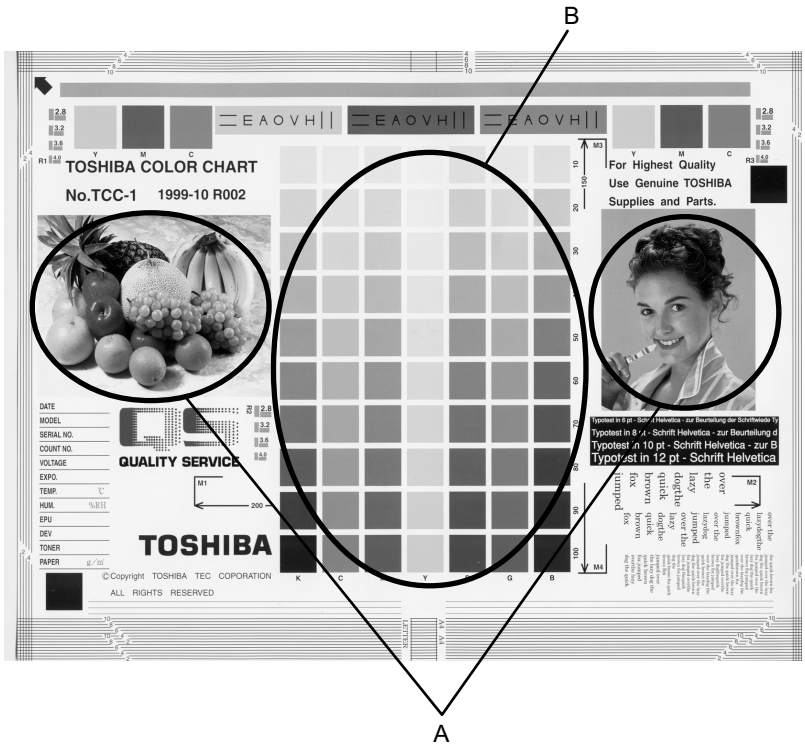


Fig. 26-8

Moire

Cause/Section	Step	Check items	Measures	Remarks
Density reproduction	1	Check the gradation reproduction.	Perform the forced performing of image quality closed-loop control (05-395) and then automatic gamma adjustment.	
Parameter adjustment value	2	Check the image processing parameters.	Check the sharpness adjustment value.	
	3	Adjust the image processing parameters.	While checking the above encircled images A and B, decrease moire by sharpness adjustment.	
Printer section	4	Check the printer output image.	Output the test patterns and check them. Color: using 04-231 for each color Black: using 04-113	When defects occur, perform the corresponding troubleshooting procedures.

Lack of sharpness

Cause/Section	Step	Check items	Measures	Remarks
Density reproduction	1	Check the gradation reproduction.	Perform the forced performing of image quality closed-loop control (05-395) and then automatic gamma adjustment.	
Parameter adjustment value	2	Check the image processing parameters.	Check the sharpness adjustment value.	
	3	Adjust the image processing parameters.	While checking the above encircled image A, increase sharpness by sharpness adjustment.	

* If the trouble is not solved at the step 1 and the step 2 or followings (excluding the parameter adjustment) are performed, make sure to perform “Enforced performing of image quality closed-loop control” and then “Automatic gamma adjustment” after taking a measure.

26.5.6 Toner offset

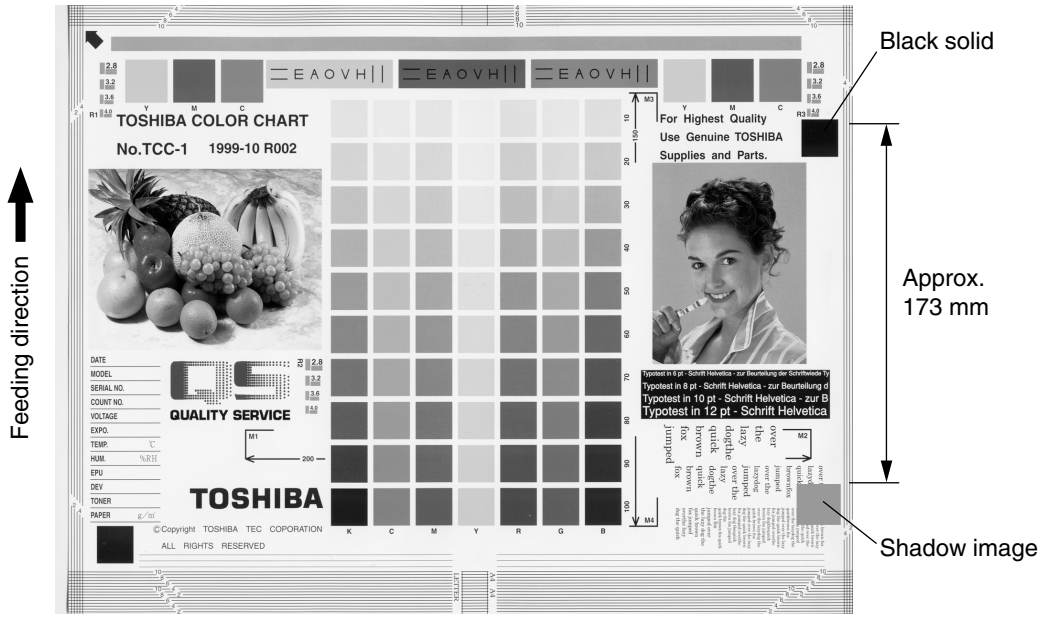


Fig. 26-9

Toner offset (Shadow image appears approx. 173 mm behind the high density image.)

Cause/Section	Step	Check items	Measures	Remarks
Fuser unit	1	Is the pressure between the fuser belt and pressure roller proper?	Check the pressure removal parts and pressure mechanism.	
	2	Is there scratch on the fuser belt or pressure roller surface?	Replace the fuser belt or the pressure roller.	
	3	Has the fuser belt or pressure roller reached its PM life?	Replace the fuser belt or the pressure roller.	
	4	Is the fuser roller temperature proper?	Check and correct the control circuit.	
Paper	5	Is the paper type corresponding to its mode?	Use the proper type of paper or select the proper mode.	
	6	Using recommended paper?	Use the recommended paper.	
Developer material	7	Is the specified developer used?	Use the specified developer and toner.	
Scanner	8	Are the mirrors, original glass or lens dirty?	Clean them.	
Image quality control	9	Is the control activated?	Check the image quality control related codes.	
Density	10	Is the density too high?	Perform the forced performing of image quality closed-loop control (05-395) and then automatic gamma adjustment.	
Printer density	11	Check the density of printer output image.	Output the test patterns and check them. Color: using 04-231 for each color Black: using 04-113	When defects occur, perform the corresponding troubleshooting procedures.

26.5.7 Blurred image

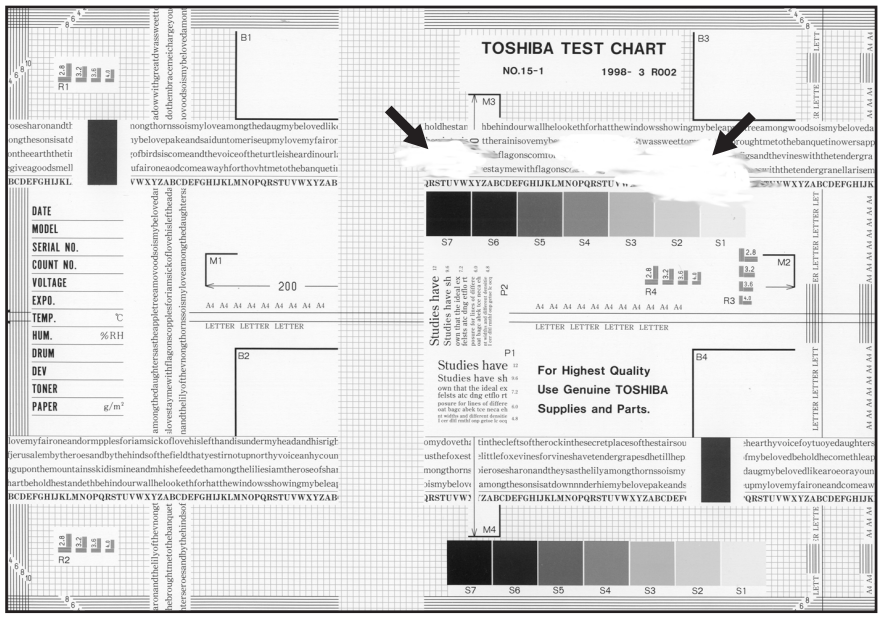


Fig. 26-10

Cause/Section	Step	Check items	Measures
Scanner	1	Is the scanner bedewed?	Clean it.
Drum	2	Is the drum bedewed or dirty?	Wipe the drum with dry cloth. * Be sure never use alcohol or other organic solvents because they have bad effect on the drum.
Ozone exhaust	3	Is the ozone exhaust fan operating properly?	Check the connection of the connector.
	4	Is the ozone filter stained or damaged?	Replace it.

26.5.8 Poor fusing

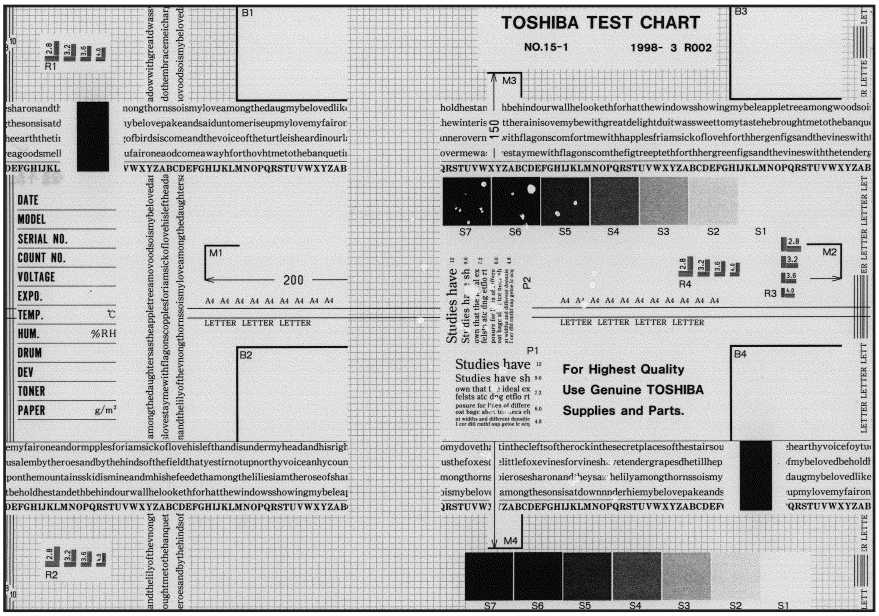


Fig. 26-11

Cause/Section	Step	Check items	Measures
Electric power/ control abnormal	1	Is the connector in proper contact with the equipment?	Correct it.
	2	Is the heater lamp control circuit (switching power supply) working properly?	Replace the switching power supply.
	3	Are the connectors on the LGC board and joint connectors connected properly?	Reconnect them.
	4	Is the LGC board normal?	Replace the LGC board.
	5	Is the harness connected with the LGC board short circuited or open circuited?	Replace the harness.
Pressure between fuser belt and pressure roller improper	6	Are the pressure springs working properly?	Check/adjust the pressure springs.
Fuser roller temperature	7	Is the temperature of fuser roller too low?	Check/correct the setting value of fuser roller temperature. Clean or replace the thermopiles. Check/correct the related circuit.
Developer material and toner	8	Using the specified developer material and toner?	Use the specified developer material and toner.
Paper	9	Is the paper damp?	Change the paper.
	10	Is the paper type corresponding to its mode?	Use the proper type of paper or select the proper mode.
	11	Using the recommended paper?	Use the recommended paper.

26.5.9 Blank print

Fig. 26-12

Cause/Section	Step	Check items	Measures
High-voltage transformer (1st/2nd transfer roller and developer bias)	1	Is the high-voltage transformer output defective?	Adjust the output and correct the circuit, or replace the transformer.
	2	Are the connector of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.
Developer unit	3	Is the developer unit installed securely?	Check/correct the developer sleeve coupling engaging.
	4	Do the developer sleeve and mixer rotate?	Check/correct the developer drive system.
	5	Is the developer unit filled up with the developer material?	Check that the charger grid is not dirty. (The developer material may be reduced due to the carrier offset.)
	6	Is the developer material properly transported?	Remove foreign matter from the developer material, if any.
	7	Is there any magnetic brush phase error?	Check the developer pole position.
	8	Is the doctor sleeve gap incorrect?	Adjust the gap with the doctor-sleeve jig.
Drum	9	Is the drum rotating?	Check that the drum shaft is inserted. Check the drum drive system.
	10	Is the drum grounded?	Check the contact of the grounding plate.
Transfer unit	11	Is the transfer belt in proper contact with the drum?	Check if the contact releasing lever is at releasing position. Check the installation of the transfer belt.
	12	Is the transport of the transfer belt normal?	Check the installation of the transfer belt or transport mechanism.
	13	Is the 2nd transfer roller contacted and released properly?	Check the connection of the connector of 2nd transfer roller contact clutch and open circuit of harness.
Switching power supply	14	Is the power supply output (5.1VD) normal?	Replace the switching power supply.
Harnesses for SLG, SYS, LGC and LDR boards	15	Are the connectors securely connected? Is any harness between the boards open circuited?	Reconnect the connectors securely. Replace the harness.

Cause/Section	Step	Check items	Measures
Laser optical unit	16	Was the protection seal of slit removed when replacing the unit?	Remove the protection seal.

26.5.10 Solid print

Fig. 26-13

Cause/Section	Step	Check items	Measures
Exposure lamp Inverter	1	Does the exposure lamp light?	Check the contact of the inverter connector. If the inverter does not work, replace it. If the lamp does not work, replace it.
Main charger	2	Is the main charger securely installed?	Reinstall it securely.
	3	Does the needle electrode not come off?	Reinstall it securely.
High-voltage transformer (main charger needle electrode/grid bias)	4	Is the high-voltage transformer output defective?	Adjust the output and correct the circuit, or replace the high-voltage transformer.
	5	Are the connector of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.
Harnesses for SLG, SYS, IMG and LGC boards	6	Are the connectors securely connected? Is any harness between the boards open circuited? Is the connector between the SYS and IMG boards not disconnected? Is the connector between the LGC and IMG boards not disconnected?	Reconnect the connectors securely. Replace the harness.
Scanner	7	Is there foreign matter in the optical path?	Remove it.
Bedewing of scanner and drum	8	Is the scanner or the drum bedewed?	Clean the mirrors, lens and drum. Keep the power cord plugged so that the damp heater can work.

26.5.11 White banding (in feeding direction)

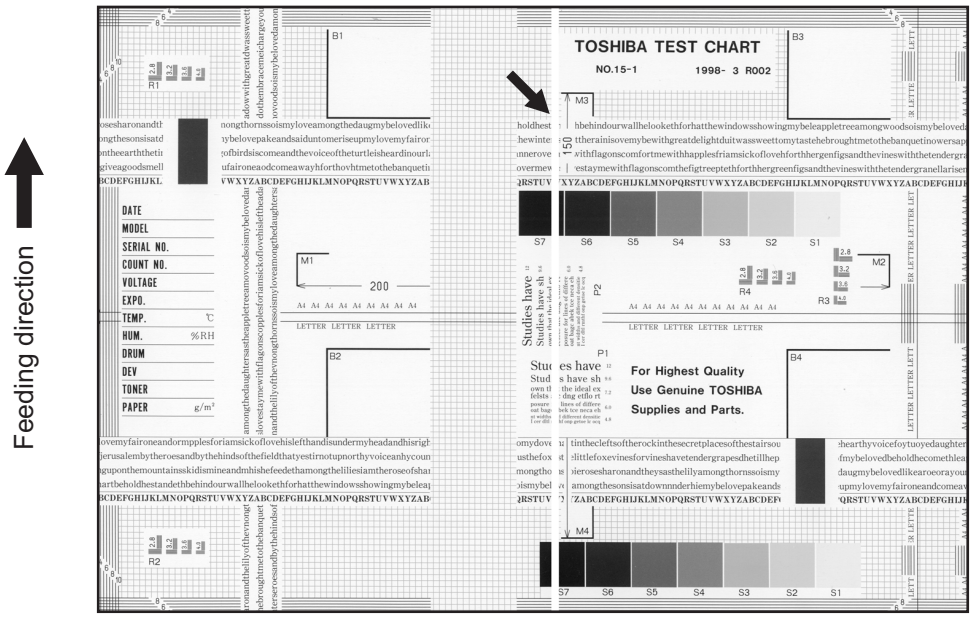


Fig. 26-14

Cause/Section	Step	Check items	Measures
Laser optical unit	1	Is there foreign matter or dust on the slit glass?	Clean the slit glass.
Main charger grid	2	Is there foreign matter on the charger grid?	Remove foreign matter.
Developer unit	3	Is there foreign matter inside the doctor blade?	Remove foreign matter.
	4	Is there foreign matter on the drum seal?	Remove foreign matter.
	5	Do any paper fibers or dirt adhere to the developer unit and contact with the drum?	Remove the paper fibers or dirt.
Drum	6	Is there scratch or foreign matter on the drum surface?	Replace the drum.
Transfer unit	7	Is there scratch or foreign matter on the transfer belt surface?	Replace the transfer belt.
	8	Are the harness or foreign matters in contact with the transfer belt surface?	Correct or remove them.
	9	Is there any scratch or hole on the 1st/2nd transfer roller?	Replace the 1st/2nd transfer roller.
Transfer unit	10	Is there any foreign matter on the 2nd transfer facing roller?	Remove foreign matter or clean the roller.
Transport path	11	Does the toner image touch foreign matter after transfer, before entering the fuser unit?	Remove foreign matter.
Discharge lamp	12	Has any LED of discharge lamp gone out?	Replace the discharge lamp.
Scanner	13	Is there foreign matter or dust in the optical path?	Clean the lens and mirrors.

26.5.12 White banding (at right angles to feeding direction)

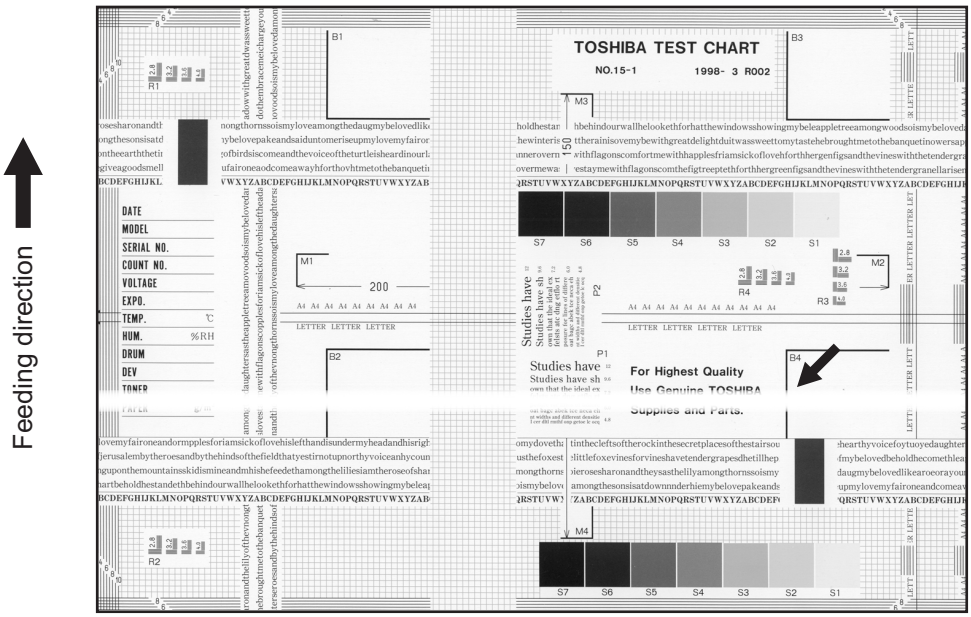


Fig. 26-15

Cause/Section	Step	Check items	Measures
Main charger	1	Is there foreign matter on the charger?	Remove foreign matter.
	2	Is the terminal contact poor?	Clean or adjust the terminals.
Drum	3	Is there any abnormalities on the drum surface?	Replace the drum.
	4	Is the drum grounded?	Check the contact of the grounding plate.
Discharge lamp	5	Is the discharge lamp lighting properly?	Replace the discharge lamp or clean terminals.
Developer unit	6	Is the developer sleeve rotating correctly? Is there any abnormalities on the sleeve surface?	Check the developer drive system, or clean the sleeve surface.
	7	Is the connection of developer bias supply terminal normal?	Correct it.
Drive systems	8	Is the drum, scanner or transfer belt jittery?	Check each drive system.
High-voltage transformer (main charger needle electrode/grid, 1st/2nd transfer roller and developer bias)	9	Is the high-voltage transformer output defective?	Check/correct any electric leakage and related circuits. If the high-voltage transformer does not work, replace it.

26.5.13 Skew (slantwise copying)

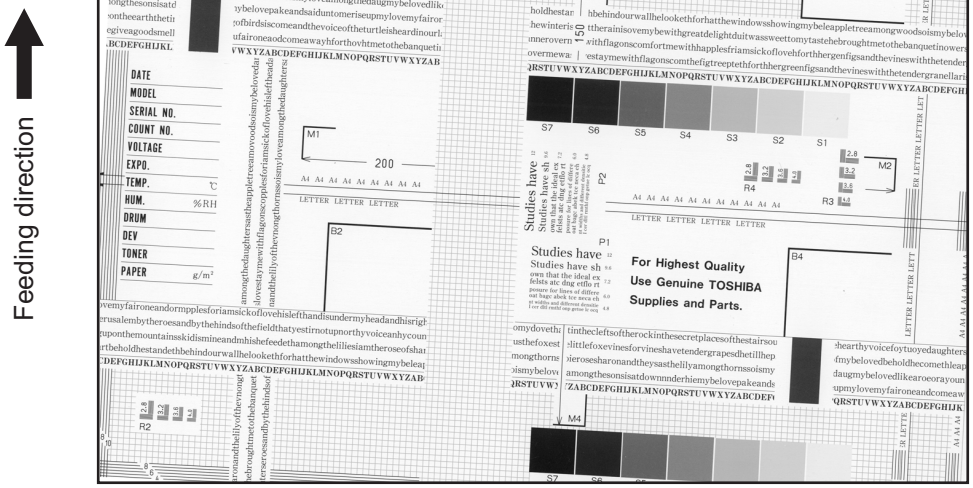


Fig. 26-16

Cause/Section	Step	Check items	Measures
Drawer/LCF	1	Is the drawer or LCF properly installed?	Reinstall the drawer or LCF properly.
	2	Is too much paper loaded in the drawer or LCF?	Reduce paper to 550 sheets or less. (2500 sheets or less/stack for LCF)
	3	Is the paper corner folded?	Change the paper direction and reinsert it.
	4	Are the drawer or LCF side guides properly set?	Adjust the side guides.
Paper feed roller	5	Is the surface of paper feed roller dirty?	Clean the roller surface with alcohol, or replace the roller.
Rollers	6	Is each roller improperly fixed to the shaft?	Check E-rings, pins and clips.
Aligning amount	7	Is the aligning amount proper?	Increase the aligning amount.
Registration roller	8	Is the registration roller spring removed?	Mount the spring correctly. Clean the roller if it is dirty.
Registration guide	9	Is the registration guide improperly installed?	Correct it.
2nd transfer front guide	10	Is the 2nd transfer front guide installed properly?	Correct it.
RADF	11	Is the RADF installed and adjusted properly?	Reinstall and readjust it.
Transfer unit	12	Is the transfer belt unit installed properly?	Correct it.

26.5.14 Color banding (in feeding direction)

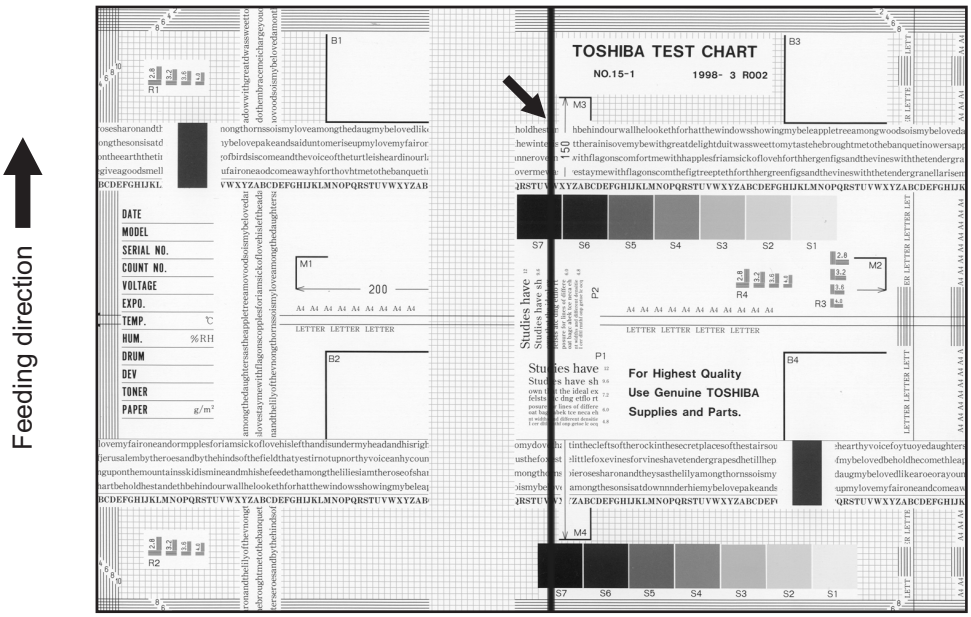


Fig. 26-17

Cause/Section	Step	Check items	Measures
Scanner	1	Is there foreign matter in the optical path?	Clean the slit, lens and mirrors.
	2	Is there dust or stain on the shading correction plate or ADF original glass?	Clean it.
Main charger	3	Is there foreign matter on the charger grid?	Remove foreign matter.
	4	Is the charger grid dirty or deformed?	Clean or replace the charger grid.
	5	Is there foreign matter on the main charger?	Remove foreign matter.
	6	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
	7	Is there foreign matter inside the charger case?	Remove foreign matter.
	8	Is the inner surface of charger case dirty?	Clean inside.
Drum cleaner	9	Is there any foreign matter on the drum cleaning blade edge?	Clean or replace the drum cleaning blade.
	10	Is toner recovery defective?	Clean the toner recovery auger section.
Transfer unit	11	Are the harness or foreign matters in contact with the transfer belt surface?	Correct or remove them.
	12	Is there paper dust on the edge of transfer belt cleaning blade?	Clean or replace the transfer belt cleaning blade.
	13	Is the transfer belt cleaning blade in proper contact with the transfer belt?	Take off the transfer belt and check if the transfer belt cleaning blade pressure spring and the pressure hook are installed properly.
Fuser unit	14	a. Is there dirt or scratches on the fuser belt and pressure roller surface? b. Is the thermistor dirty?	a. Clean or replace them. b. Clean the thermistor.
Drum	15	Are there scratches on the drum surface?	Replace the drum.
Laser optical unit	16	Is there foreign matter or dust on the slit glass?	Remove foreign matter or dust.

26.5.15 Color banding (at right angles to feeding direction)

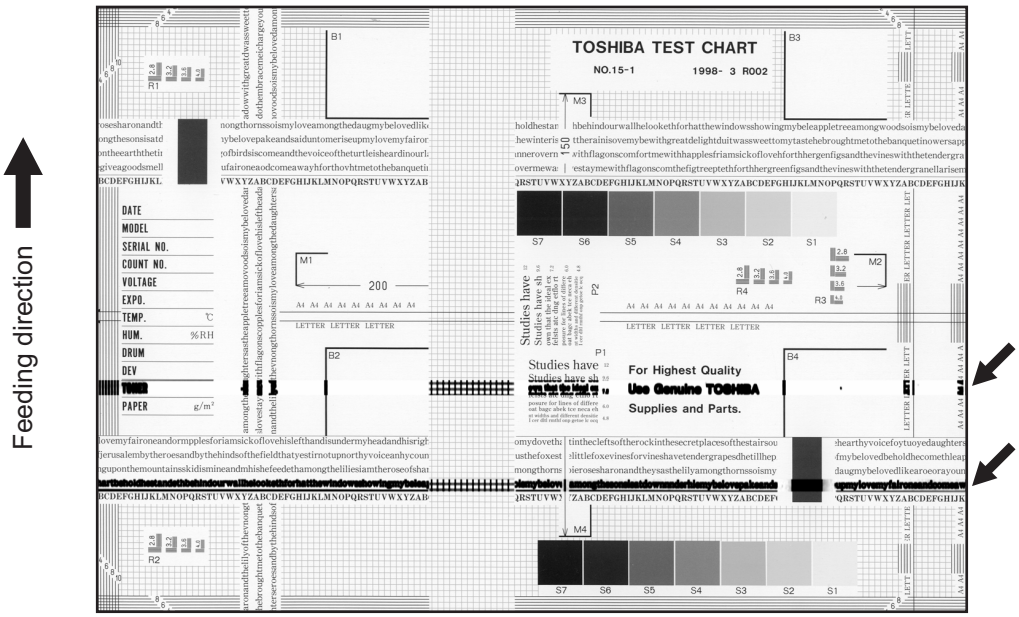


Fig. 26-18

Cause/Section	Step	Check items	Measures
Main charger	1	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
Fuser unit	2	Is the fuser belt or pressure roller dirty?	Clean them.
High-voltage transformer (main charger needle electrode/grid and transfer roller bias)	3	Is the high-voltage transformer output defective?	Check the circuit and replace the high-voltage transformer if not working.
	4	Is each joint of high-voltage output loosened? (Check if any electric leakage is causing noise.)	Reconnect each joint.
Drum	5	Is there deep scratch on the drum surface?	Replace the drum, especially if the scratch has reached the aluminum base.
	6	Are there fine scratches on the drum surface (drum pitting)?	Check and correct the contact of cleaning blade and recovery blade.
	7	Is the drum grounded?	Check the contact of the grounding plate.
2nd transfer roller	8	Is the 2nd transfer roller rotating normally?	Clean the roller area or replace the roller.
Scanner	9	Is there foreign matter on the carriage rail?	Remove foreign matter.

26.5.16 White spots

Fig. 26-19

Cause/Section	Step	Check items	Measures
Developer unit/ Toner cartridge	1	Is the toner density of developer material proper?	Check and correct the auto-toner sensor and toner supply operation. Check if the amount of toner is sufficient in the toner cartridge.
	2	Is the doctor-sleeve gap proper?	Adjust the gap.
Developer material/ Toner/Drum	3	Using the specified developer material, toner and drum?	Use the specified developer material, toner and drum.
	4	Have the developer material and drum reached their PM life?	Replace the developer material and drum.
	5	Is the storage environment of the toner cartridge 35oC or less without dew?	Use the toner cartridge stored in the environment within specification.
	6	Is there any dent on the surface of the drum?	Replace the drum.
	7	Is there any film forming on the drum?	Clean or replace the drum.
	8	Is the drum bedewed?	Wipe the drum surface with a piece of dry cloth.
Transfer unit	9	Is there foreign matter on the transfer belt surface?	Remove foreign matter.
	10	Is there foreign matter on the transfer belt 2nd transfer facing roller?	Clean the transfer belt unit.
Main charger	11	Is there foreign matter on the charger?	Remove it.
	12	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
High-voltage transformer (main charger needle electrode/grid, developer 1st/2nd transfer roller bias)	13	Is the high-voltage transformer output defective?	Adjust the output.
Paper	14	Is the paper type corresponding to its mode?	Use the proper type of paper or select the proper mode.

26.5.17 Poor transfer

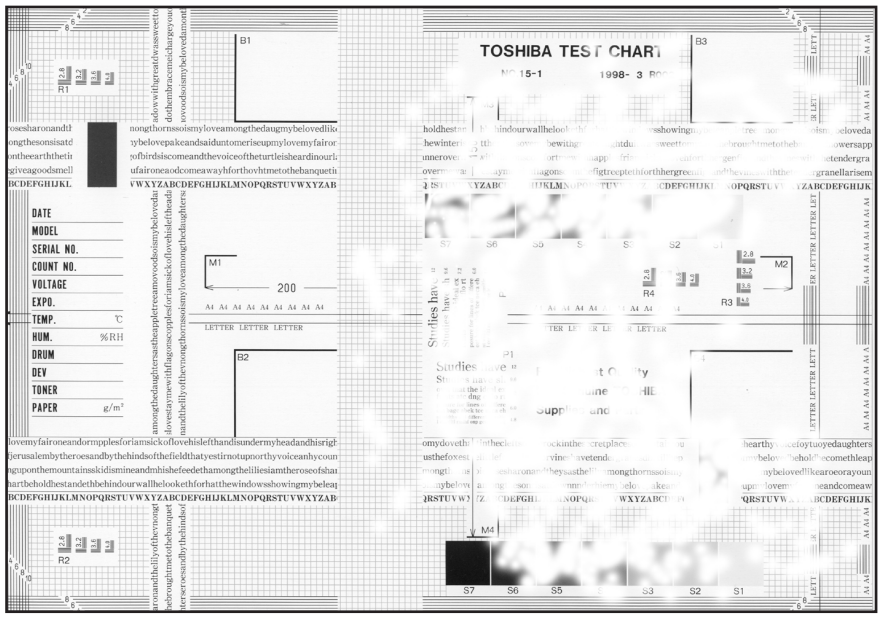


Fig. 26-20

Cause/Section	Step	Check items	Measures
Transfer unit	1	Is the transfer belt or 1st/2nd transfer rollers dirty?	Clean it.
	2	Is the transfer belt in proper contact with the drum?	Correct it.
	3	Is the 2nd transfer roller in proper contact with the transfer belt?	Correct it.
	4	Is there any deformation or abnormalities on the transfer belt?	Replace the belt.
	5	Is the 2nd transfer facing roller dirty?	Clean the roller and replace the cleaning pad.
Paper	6	Is the high-voltage fed to the 2nd transfer roller correctly?	If any contact failure occurs in the feeding area (e.g. the conductive bushing and spring come off), correct it.
	7	Is paper in the drawer or LCF curled?	Reinsert paper with reverse side up or change paper.
	8	Is paper in the drawer or LCF damp?	Change paper. * Avoid storing paper in damp place.
Registration roller	9	Is the registration roller malfunctioning?	Clean the roller, remount the spring, or replace defective motor-related parts.
Aligning amount	10	Is the aligning amount proper?	Decrease the aligning amount
High-voltage transformer (1st/2nd transfer roller bias)	11	Is the high-voltage transformer output defective?	Check the circuit and adjust the transformer output.
	12	Are the high-voltage harness and terminals in proper contact?	Correct them if loosened.

26.5.18 Uneven image density (in feeding direction)

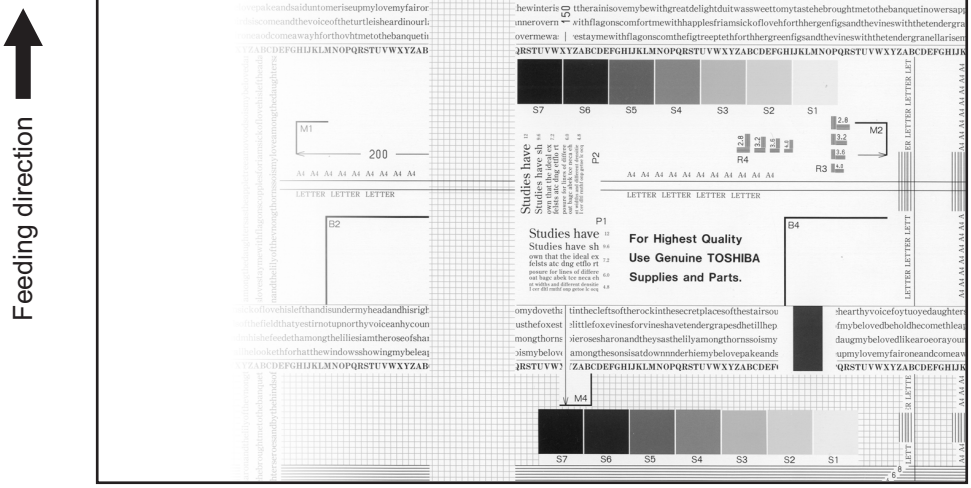


Fig. 26-21

Cause/Section	Step	Check items	Measures
Main charger	1	Is the main charger dirty?	Clean it or replace the needle electrode.
Transfer unit	2	Is the transfer belt or 1st/2nd transfer rollers dirty?	Clean the belt.
	3	Is the transfer belt in proper contact with the drum?	Correct it.
	4	Is 2nd transfer roller in proper contact with the transfer belt? (Is the roller tilted?)	Correct it.
	5	Is there any abnormalities or deformation on the transfer belt?	Replace the transfer belt.
Laser optical unit	6	Is there foreign matter or dust on the slit glass?	Clean the slit glass.
Discharge lamp	7	Is the discharge lamp dirty?	Clean it.
	8	Has any LED of discharge lamp gone out?	Replace it.
Developer unit	9	Is the magnetic brush in proper contact with the drum?	Adjust the doctor-sleeve gap.
	10	Is the developer unit pressure spring applying properly?	Check the pressure spring.
	11	Is the transport of developer material poor?	Remove foreign matter if any.
Scanner section	12	a. Is the platen cover or RADF open? b. Is the original glass, mirrors, or lens dirty?	a. Close the platen cover or RADF. b. Clean them.

26.5.19 Uneven image density (at right angles to feeding direction)

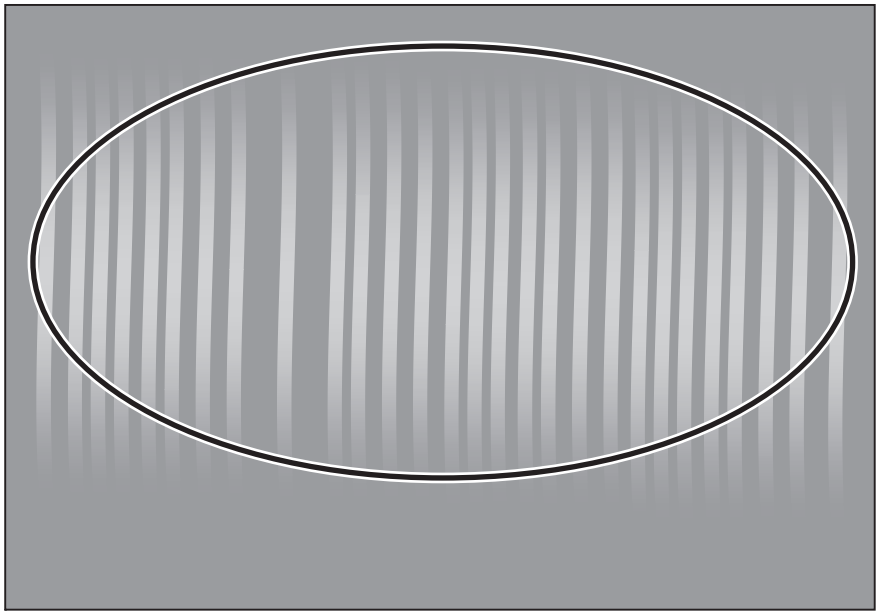


Fig. 26-22

Cause/Section	Step	Check items	Measures
Developer unit	1	Is the magnetic brush in proper contact with the drum?	Adjust the doctor sleeve gap.

26.5.20 Faded image (low density)

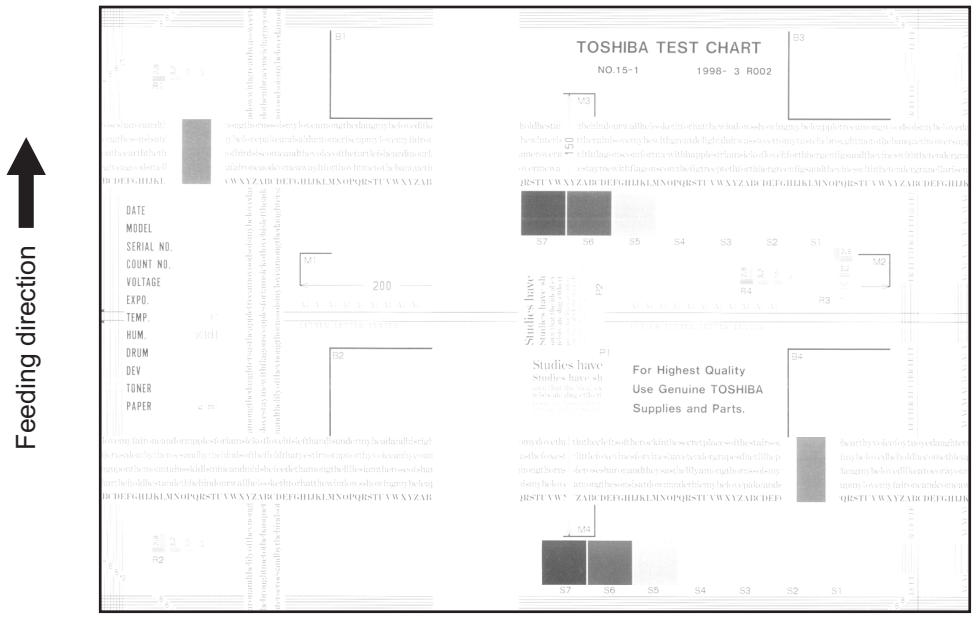


Fig. 26-23

Cause/Section	Step	Check items	Measures
Toner empty Auto-toner circuit	1	Is the “ADD TONER” symbol blinking?	Replace the toner cartridge.
	2	Is there enough toner in the cartridge?	Check the auto-toner circuit function.
	3	Is the toner density of developer material too low?	
Toner motor	4	Is the toner motor malfunctioning?	Check the motor drive circuit.
Toner cartridge	5	Are there any abnormalities in the toner cartridge?	Replace the toner cartridge.
Developer material	6	Has the developer material reached its PM life?	Replace developer material.
Developer unit	7	Is the magnetic brush in proper contact with the drum?	Check the developer unit installation. Check the doctor-sleeve gap and pole position.
Main charger	8	Is the main charger dirty?	Clean it or replace the needle electrode.
Drum	9	Is there film forming on the drum surface?	Clean or replace the drum.
	10	Has the drum reached its PM life?	Replace the drum.
Transfer unit	11	Has the transfer belt, 1st or 2nd transfer roller reached its PM life?	Replace the transfer belt, 1st or 2nd transfer roller.
High-voltage transformer (developer bias)	12	Is the high-voltage transformer output settings improper?	Adjust the high-voltage transformer output.
	13	Are the connector of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.

26.5.21 Image dislocation in feeding direction

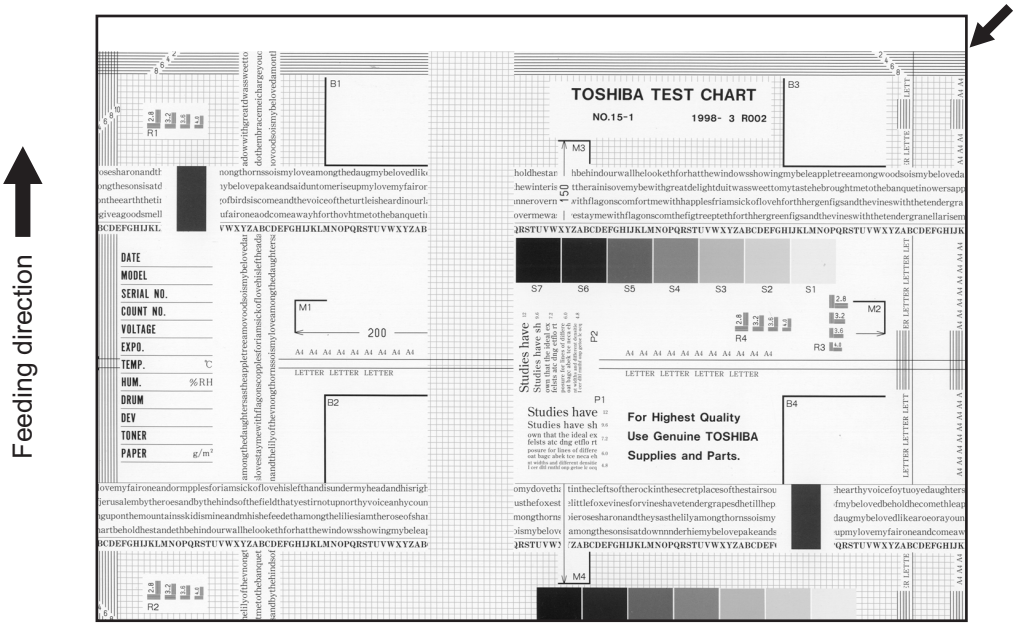


Fig. 26-24

Cause/Section	Step	Check items	Measures
Adjustment error of scanner or printer section	1	Is same dislocation on every copy?	Adjust the scanner/printer using the Adjustment Mode.
Registration roller	2	Is the registration roller dirty, or is the spring removed?	Clean the roller with alcohol. Reinstall the spring.
	3	Is the registration motor malfunctioning?	Adjust or replace the gears, etc. if they are not engaged properly.
	4	Is the registration motor operating normally? (Is the timing of operation delaying?)	Replace the registration motor.
Paper feed clutch, Transport clutch	5	Are the paper feed clutch and transport clutch malfunctioning?	Check the circuit or the clutch and replace them if necessary.
Aligning amount	6	Is the aligning amount proper?	Decrease the aligning amount.
Each roller	7	Are the roller and shaft not fixed securely?	Check the E-ring, pin and clip.
	8	Is the roller surface dirty?	Clean the roller surface with alcohol or replace it.
Registration guide	9	Is the registration guide improperly installed?	Reinstall the guide.

26.5.22 Image jittering

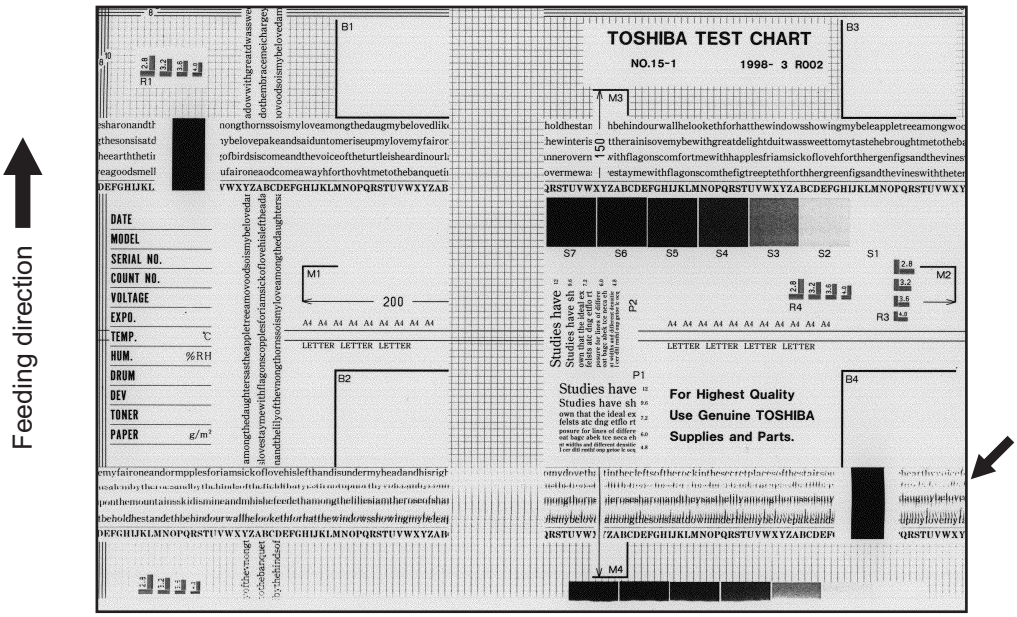


Fig. 26-25

Cause/Section	Step	Check items	Measures
-	1	Is the toner image on the drum proper?	If proper, perform step 1 to 3; otherwise perform step 4 and after.
Registration roller	2	Is the registration roller rotating normally?	Check the registration roller section and its springs.
Transfer unit	3	Is the transfer belt or 2nd transfer roller operating normally?	Check the drive system and replace the transfer belt or 2nd transfer roller if necessary.
Fuser unit	4	Are the fuser roller and pressure roller rotation proper? Is the fuser belt transportation proper?	Check the drive system. Replace the fuser belt, fuser roller and pressure roller if necessary.
Drum	5	Is there large scratch on the drum?	Replace the drum.
Scanner	6	Is the slide sheet defective?	Replace it.
	7	Are there any abnormalities on the carriage feet?	Replace the feet.
	8	Is the tension of timing belt inappropriate?	Correct the tension.
	9	Is the carriage drive system malfunctioning?	Check the carriage drive system.
	10	Are any mirrors loosely installed?	Install them properly.
Drum drive system	11	Is the drum drive system malfunctioning?	Check the drum drive system. Clean or replace the belts, pulleys, bushings if they have dirt or scratches.

26.5.23 Poor cleaning

Note:

Poor cleaning may occur in feeding direction.

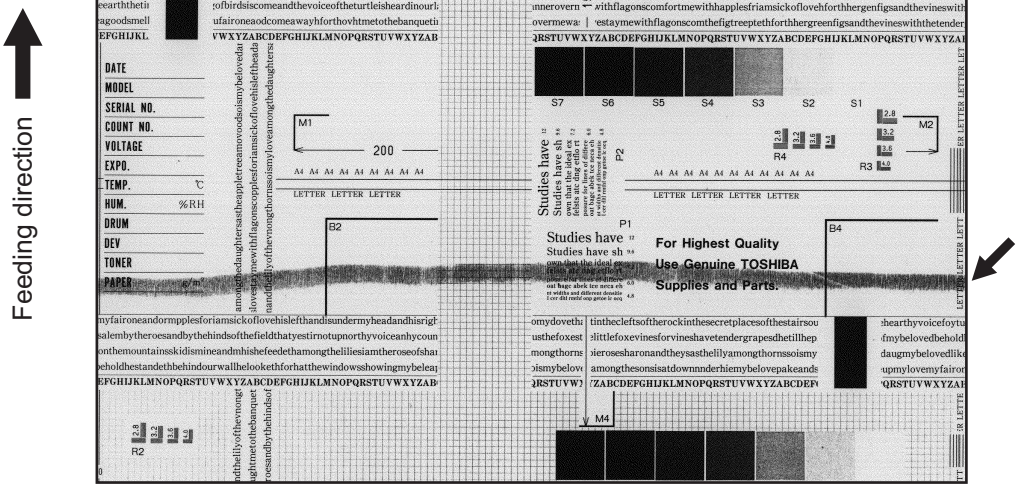


Fig. 26-26

Cause/Section	Step	Check items	Measures
Developer material	1	Is the specified developer material used?	Use the specified developer material and toner.
Drum cleaner	2	Is there dust on the drum cleaning blade edge?	Clean or replace it.
	3	Is the drum cleaning blade peeled?	Replace the blade.
Transfer belt cleaner	4	Is there paper dust on the edge of transfer belt cleaning blade?	Clean or replace it.
	5	Is the transfer belt cleaning blade peeled?	Replace the blade.
	6	Is the transfer belt cleaning blade in proper contact with the transfer belt?	Take off the transfer belt and check if the transfer belt cleaning blade pressure spring and the pressure hook are installed properly.
Toner recovery auger	7	Is the toner recovery defective?	Clean the toner recovery auger. Check the cleaning blade pressure.
Fuser unit	8	Is there any bubble-like defect on the fuser belt (approx. 189 mm pitch on the image)?	Replace the fuser belt. Check and modify the heater lamp control circuit.
	9	Have the fuser belt and pressure roller reached their PM life?	Replace them.
	10	Is the pressure between the fuser belt and pressure roller proper?	Check and adjust the pressure mechanism.
	11	Is the temperature of fuser roller proper?	Check/correct the setting value of fuser roller temperature. Clean or replace the thermistors. Check and correct the circuit.

26.5.24 Uneven light distribution

Fig. 26-27

Cause/Section	Step	Check items	Measures
Original glass	1	Is the original glass dirty?	Clean the glass.
Main charger	2	Are the needle electrode, grid and case dirty?	Clean or replace them.
Discharge lamp	3	Is the discharge lamp dirty?	Clean it.
Scanner	4	Are the reflector, exposure lamp, mirrors, lens, etc. dirty?	Clean them.
Exposure lamp	5	Is the exposure lamp tilted?	Adjust the installed position of the lamp.
	6	Is the lamp discolored or degraded?	Replace it.
Process unit	7	Is the laser beam interrupted by a foreign material adhering to the doctor blade area of the developer unit or the charger case of the main charger?	Remove the foreign material.

26.5.25 Blotched image

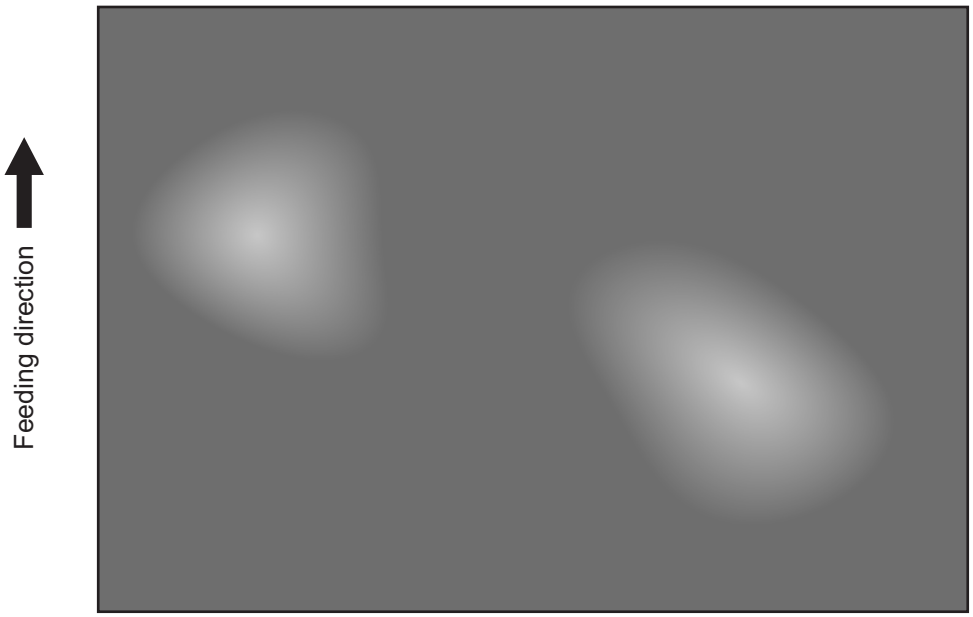


Fig. 26-28

Cause/Section	Step	Check items	Measures
Paper	1	Is the paper type corresponding to its mode?	Check the paper type and mode.
	2	Is paper too dry?	Change paper.
Transfer unit	3	Is the transfer belt in proper contact with the drum?	Correct it.
	4	Is the 2nd transfer roller in proper contact with the transfer belt?	Correct it.
	5	Are there any abnormalities on the transfer belt?	Clean or replace the transfer belt.
High-voltage transformer (1st/2nd transfer roller bias)	6	Is the high-voltage transformer output abnormal?	Adjust the output. Replace the transformer, if necessary.

26.5.26 Stain on the paper back side

Feeding direction

Printing side of 1st page

The edge of image cut off.

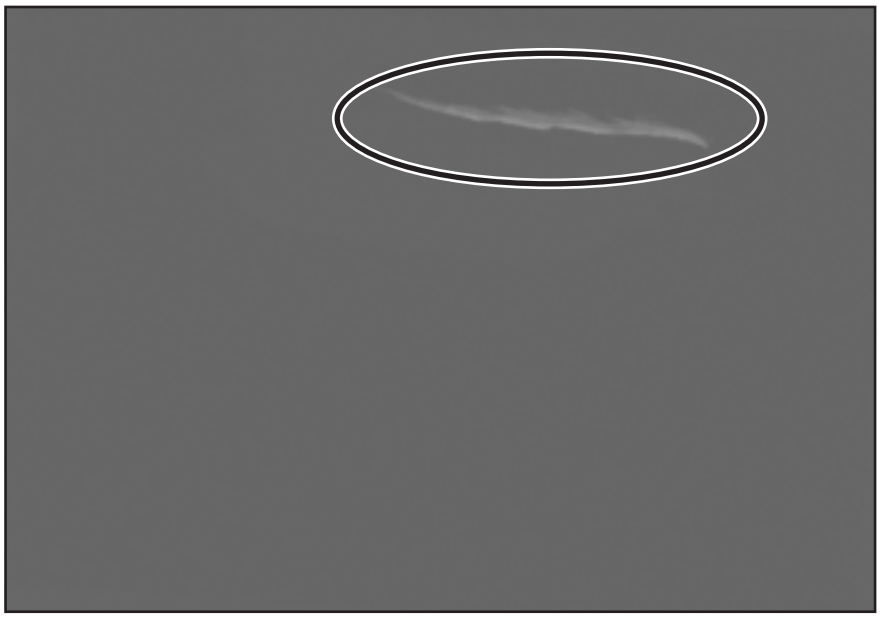
Feeding direction

Back side of 2nd page

Fig. 26-29

Cause/Section	Step	Check items	Measures
Image adjustment/ setting	1	Is the margin adjustment of image correct?	Adjust the margin.
	2	Is the margin adjustment of image correct when the paper size is not selected in bypass feeding?	Adjust the margin.
	3	Is the margin adjustment of image at duplexing correct?	Adjust the margin. (05-434)
	4	Is the image location in primary/ secondary scanning direction correct?	Adjust the location.
	5	Is the reproduction ratio of image in primary/secondary scanning direction correct?	Adjust the reproduction ratio.
	6	Is the tab setting correct?	Correct the setting.
Paper feeding / Transport area	7	Does the size of paper in the drawer or LCF correspond to the setting?	Use the appropriate paper size or correct the size setting.
	8	Is the width between the slides in the drawer correct (too wide)?	Correct the position of the slides.
	9	Is the width between the slides of the bypass tray correct (too wide)?	Correct the width.
	10	Is the sideways deviation adjustment for drawers or slides of the bypass tray correct?	Adjust the deviation.
	11	Is the paper aligning amount sufficient?	Adjust the aligning amount.
	12	Are the feed roller and transport roller dirty or worn out?	Clean or replace the rollers.
	13	Does the paper mode correspond to the paper type?	Use the appropriate paper type or paper mode.
	14	Using the recommended paper?	Use the recommended paper.
Transfer unit	15	Is there any stain caused by a poor cleaning, etc. on the transfer belt?	Clean the transfer belt.
	16	Is the transfer belt cleaning blade in proper contact with the transfer belt?	Take off the transfer belt and check if the transfer belt cleaning blade pressure spring and the pressure hook are installed properly.
	17	Is the 2nd transfer roller rotating properly?	Clean the area around the roller. Otherwise replace the roller.
	18	Is there any foreign matter or stain on the 2nd transfer roller?	Clean or replace the roller.
	19	Has the 2nd transfer roller reached to its PM life?	Replace the 2nd transfer roller.
Fuser unit	20	Are the fuser belt and pressure roller dirty?	Clean the fuser belt and pressure roller.
	21	Is the rib of transport guide dirty?	Clean the rib.

26.5.27 White void in the halftone



Feeding direction

Fig. 26-30

Cause/Section	Step	Check items	Measures
Fuser unit	1	Installed position of the fuser unit	Move the fuser unit tilt-adjustment plate up or down. (Fig. 5-27)

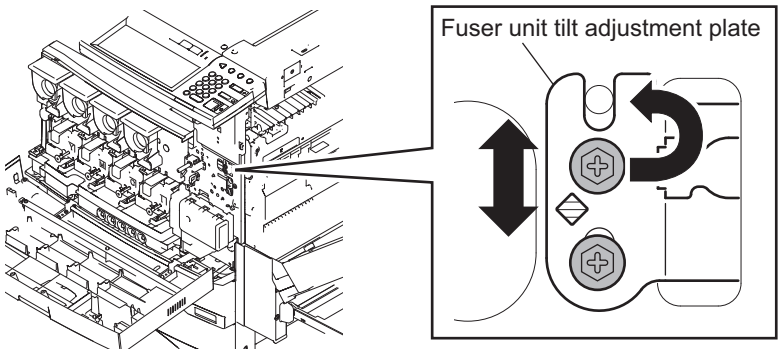


Fig. 26-31

26.5.28 Paper wrinkle

There are 2 locations where the paper wrinkle occurs: before the fusing stage and in the fuser unit
See below to determine the case.

Smooth out the wrinkled paper. When there is no image in the wrinkled area
→See (1) “Paper wrinkle before fusing”.

Smooth out the wrinkled paper. When there is a copied image in the wrinkled area
→See (2) “Paper wrinkle in the fuser unit”.

(1) Paper wrinkle before fusing

Is paper properly set?
| NO → Set paper properly.
↓
YES
Is there any abnormality such as scratch or wear on the transport roller?
| YES → Replace the transport roller.
↓
NO
Is flexible paper such as recycled paper used?
| YES → Switch to the recycled paper mode.
| (Select “RECYCLED PAPER” in MEDIA TYPE.)
↓ If the paper wrinkle still appears, proceed to NO.
NO

1. Increase the adjustment value for the paper alignment.
   (📖 P.8-17 "8.5.7 Paper alignment at the registration roller")
2. Increase the transport motor speed. (Adjust it at the code 05-489.)

(2) Paper wrinkle in the fuser unit

Is the paper properly set?
| NO → Set the paper properly.
↓
YES
Has the paper absorbed moisture?
| YES → Use paper that has not absorbed moisture.
↓
NO
Is flexible paper such as recycled paper used?
| YES → Switch to the recycled paper mode.
| (Select “RECYCLED PAPER” in MEDIA TYPE.)
↓ If the paper wrinkle still appears, proceed to NO.
NO

1. Adjust the installed position of the fuser unit up or down
   and check if the paper wrinkle disappears. (See (26) “White void in the halftone”.)
2. Adjust the inlet guide of the fuser unit and check if the paper wrinkle disappears. (Fig. 5-28)

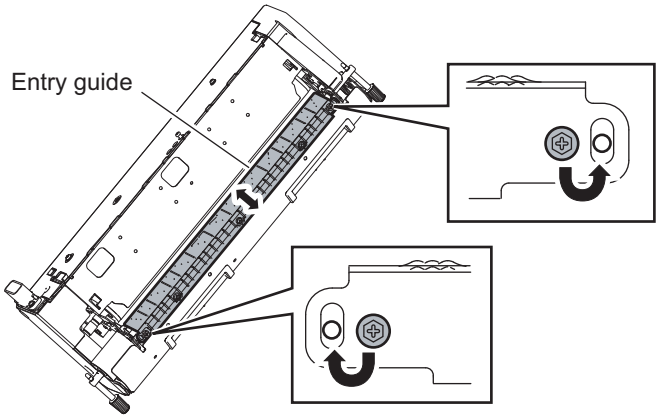


Fig. 26-32

26.5.29 White void in the halftone

Staining may occur at the leading/trailing edge of the paper.
If a large amount of printing is carried out, staining may be seen as streaks as shown below.

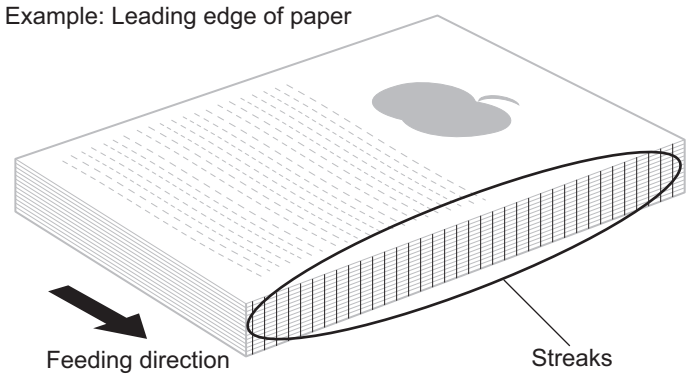


Fig. 26-33

Cause/Section	Step	Check items	Measures
2nd transfer unit	1	Is there any toner adhering to the ribs of the transfer guide?	Clean the ribs of the transfer guide.

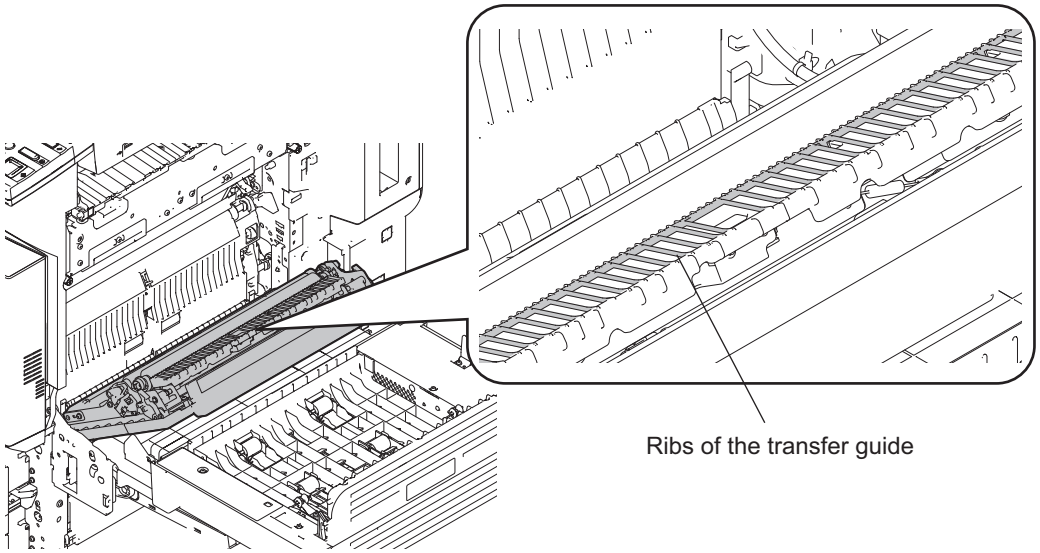


Fig. 26-34

Note:
Clean them with a soft pad, cloth or electric vacuum cleaner.

26.5.30 Faint image (immediately after equipment installation)

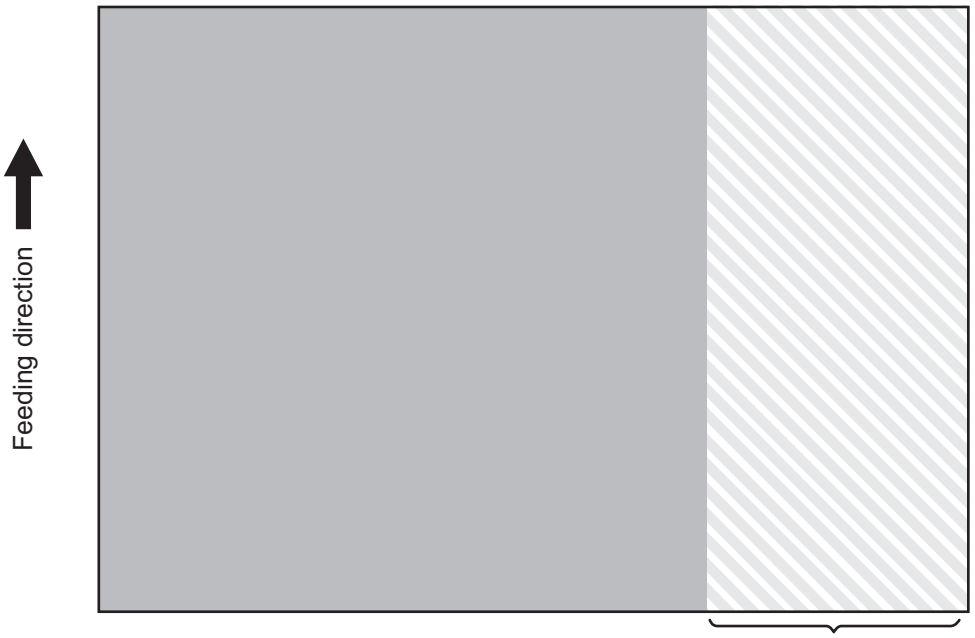


Fig. 26-35

* Checking is easier with a halftone (Y) test chart.

Cause/Section	Step	Check items	Measures
Transfer belt unit (TBU)	1	Are the drum and the transfer belt contacted?	Contact and release the transfer belt unit several times with the TBU lifting lever. Check that the 1st transfer roller is rotated smoothly upward and downward.
	2	TBU tilt angle adjustment	For the details, see the procedure below. Rotate the TBU tilt-adjustment screw counterclockwise. Check the image every time you rotate the screw. Then adjust the tilt angle at the smallest number of rotations that can resolve the phenomenon. * Maximum 3 rotations
Process unit (EPU)	3	Is the developer material fully mixed?	Replace the drive gears of the developer drive unit, developer sleeve and mixer.
	4	Is the contact between the drum and developer material proper?	Check the doctor-to-sleeve gap and pole position.
Laser optical unit	5	Is there foreign matter or dust on the slit glass?	Clean the slit glass.
	6	Is the problem resolved if you replace the laser optical unit?	Replace the laser optical unit.

<Step 2 - TBU tilt angle adjustment>

1. Preparation
Hexagonal wrench for M3 (The longer part shall be 60 mm or shorter.)

2. Procedure

(1) Confirm that there is no abnormality in the installation status of the equipment.
(2) Open the front cover and raise the TBU using the TBU lifting lever.
(3) Remove the Yellow and Magenta EPUs, front cover and transfer belt cleaner nozzle.
(4) Rotate the adjustment screw in 360 degrees counterclockwise using the hexagonal wrench.
(5) Install the Yellow and Magenta EPUs, front cover and transfer belt cleaner nozzle.
(6) Lower the TBU using the TBU lifting lever and close the front cover.

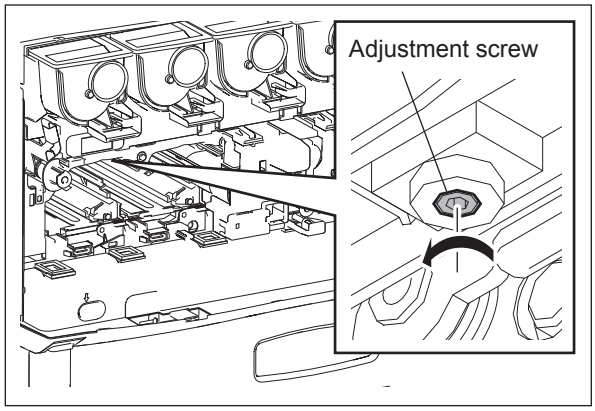


Fig. 26-36

Notes:
1. Do not rotate the adjustment screw more than 3 rotations or other image defects may occur.
2. Be sure to rotate the adjustment screw while the TBU is being raised with the TBU lifting lever.
3. If you become uncertain about the screw position during adjustment, return the screw to its standard position.

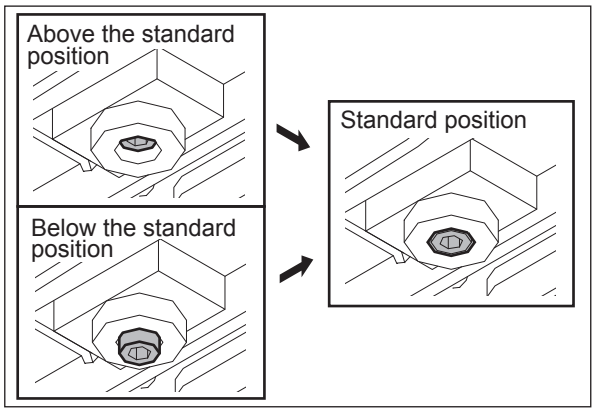


Fig. 26-37

4. If a faint image still occurs, return the screw to its standard position, and proceed to step 3 in the table above.

26.5.31 Black streaks on image leading edge during scanning

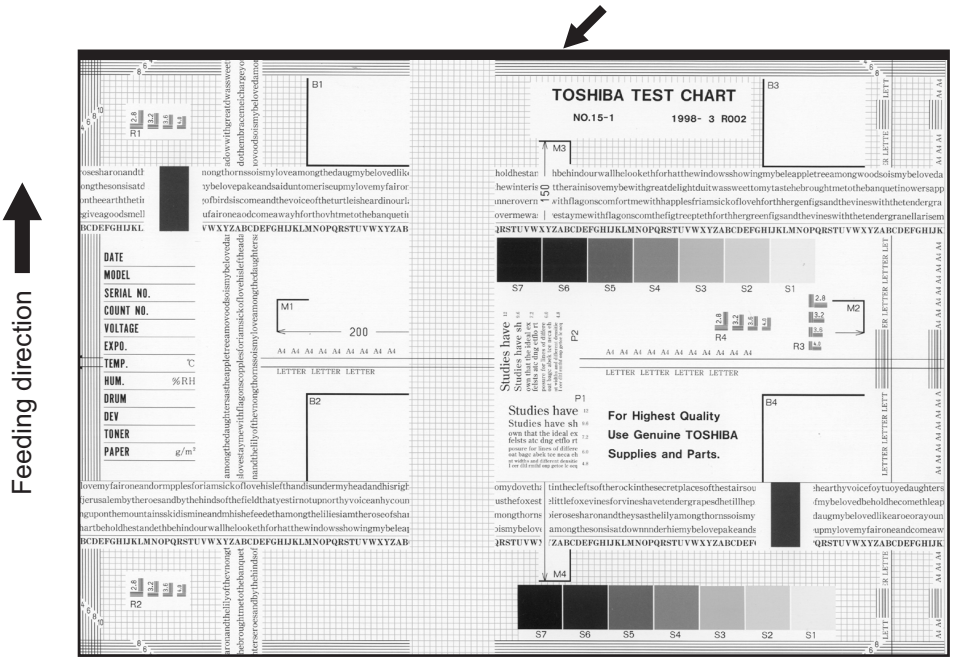


Fig. 26-38

* Checking is easier with a halftone (Y) test chart.

Cause/Section	Step	Check items	Measures
Scanner	1	Amount of surrounding void (network scanning)	Perform 05-7489 to adjust the amount of the surrounding void during network scanning.

27. REMOTE SERVICE

There are following functions as Remote Service.
1. Auto Supply Order
   Automatically orders the toner and used waste toner box by FAX or E-mail.
2. Service Notification
   Notifies the status of the equipment to the service technician by E-mail or FAX.

27.1 Auto Supply Order

27.1.1 Outline

Automatically orders the toner and used waste toner box.

(1) Placing an Order
There are two ways to place an order.

- FAX
  Installation of the FAX board is required.
  If the FAX board has not been installed, it is regarded as OFF setting.
- E-mail (E-mail body + TIFF image)

(2) Order Intervals
When the toner empty occurs, the number of occurrences is counted. And when it reaches the specified number for CONDITION, the order is placed automatically.
With regard to the used waste toner box, it is done according to the number of the used waste toner box full detection.
The number of the CONDITION can be set respectively for the toner and used waste toner box.

(3) If Order Failure Occurs
If some problems occur and the order cannot be placed after registering an order as a job, refer to the standard countermeasure for the FAX/E-mail transmission failure.

27.1.2 Setting Item

To enable Auto Supply Order, the following settings are required.

Note:
When selecting E-mail to place an order, it is required that sending and receiving E-mails are available. Confirm the details to the administrator.

(1) Self-diagnosis (08) Setting
As the default setting, the Auto Supply Order setting screen is not displayed on the touch panel. To display it, switching the Valid/Invalid setting (08-765) is required.
0: Valid (FAX/Internet FAX)
1: Valid (FAX/Internet FAX/HTTP)*
2: Invalid (Default)
When changing the setting value from “2” (default) to “0”, the Auto Supply Order setting screen is displayed. (* HTTP has not been supported yet.)

(2) Touch Panel Setting
Each item is set from the Auto Supply Order screen on the touch panel.

Entering the password and customer information is required because the setting is made from the ADMIN screen. Setting it with the administrator is a must.

- Basic setting
[ADMIN] > [SERVICE] > [SUPPLY ORDER SETUP] > [ORDER INFORMATION]

AUTO SUPPLY ORDER	Ordered by: [FAX], [MAIL], [HTTP] (*1)
FAX NUMBER	FAX number of supplier (*2)
E-MAIL	E-mail address of supplier (*3)
CUSTOMER	Customer information
NAME	
TEL NUMBER	
E-MAIL	
ADDRESS	
SUPPLIER	Supplier information
NAME	
ADDRESS	
SERVICE TECNICIAN	Service technician information
NUMBER	
NAME	
TEL NUMBER	
E-MAIL	

*1 HTTP has not been supported yet.
*2 Even when “FAX” is selected, the order is not placed without entering the FAX number.
*3 Even when “MAIL” is selected, the order is not placed without entering the E-mail address.

- Detailed setting for the order
[ADMIN] > [SERVICE] > [SUPPLY ORDER SETUP] > [TONER ORDERING]

***** TONER ORDER	Order information (TONER /USED TONER CONTAINER)
PART NUMBER	Part number to be ordered
CONDITIOIN	The number of conditions (*)
QUANTITY	The quantity to be ordered
AUTO ORDER	ON/OFF setting of order for each part

* The order is placed when the number of replacement reaches the number specified for the CONDITION.

- FAX number of this equipment (common information)
[ADMIN] > [FAX] > [TERMINAL ID]

ID NAME	ID name of this equipment
FAX NUMBER	FAX number of this equipment

- E-mail information of this equipment (common information)
[ADMIN] > [E-MAIL]

FROM ADDRESS	E-mail address of this equipment (*)
FROM NAME	E-mail username of this equipment

* When sending an E-mail, validity of the address is checked. If the address is invalid, it is not sent.

(3) Output of setting list of the Auto Supply Order Keying in the following buttons and keys prints the setting list.
[USER FUNCTIONS] [USER] [LISTS] [*] [#] [*] [*] [3] [8] [START]

27.1.3 Setting procedure

(1) Start up the self-diagnosis setting mode 08-765, and then change the setting value to “0”.

(2) Turn the power OFF, and then ON.

(3) Press the [USER FUNCTIONS] button to enter the user function screen.

(4) Press the [ADMIN] button.
- When the Administrator Password has been set, ADMINISTRATOR PASSWORD screen is displayed.

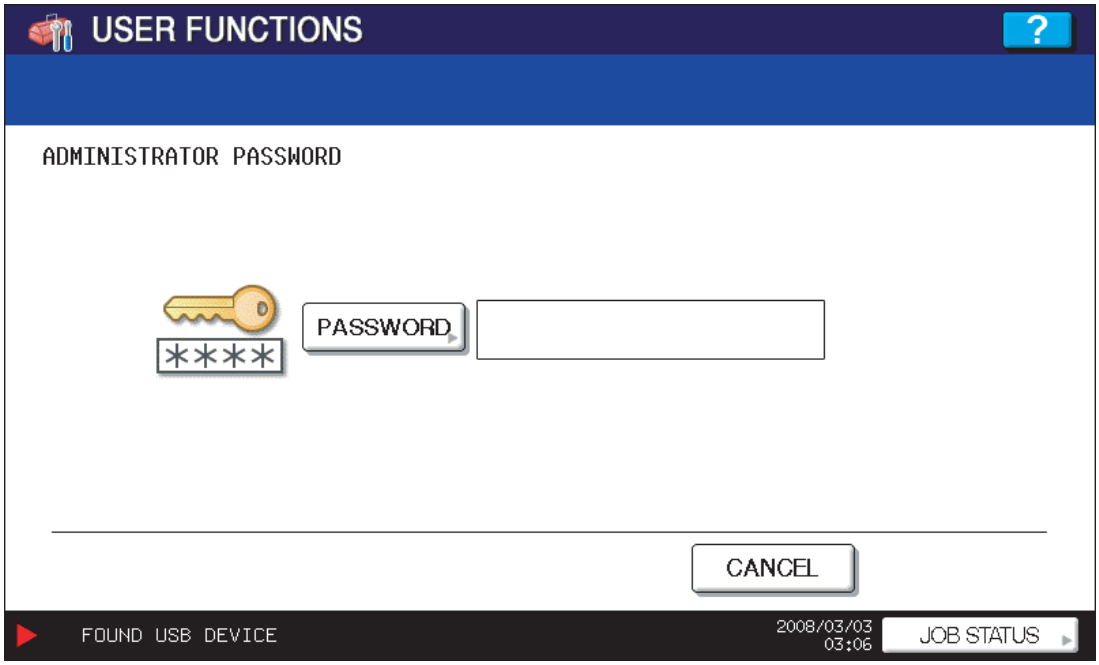


Fig. 27-1

(5) Press the [PASSWORD] button and the screen is switched to a full keyboard. Then key in the Administrator Password and press the [OK] button.
* Confirm the password to the administrator.

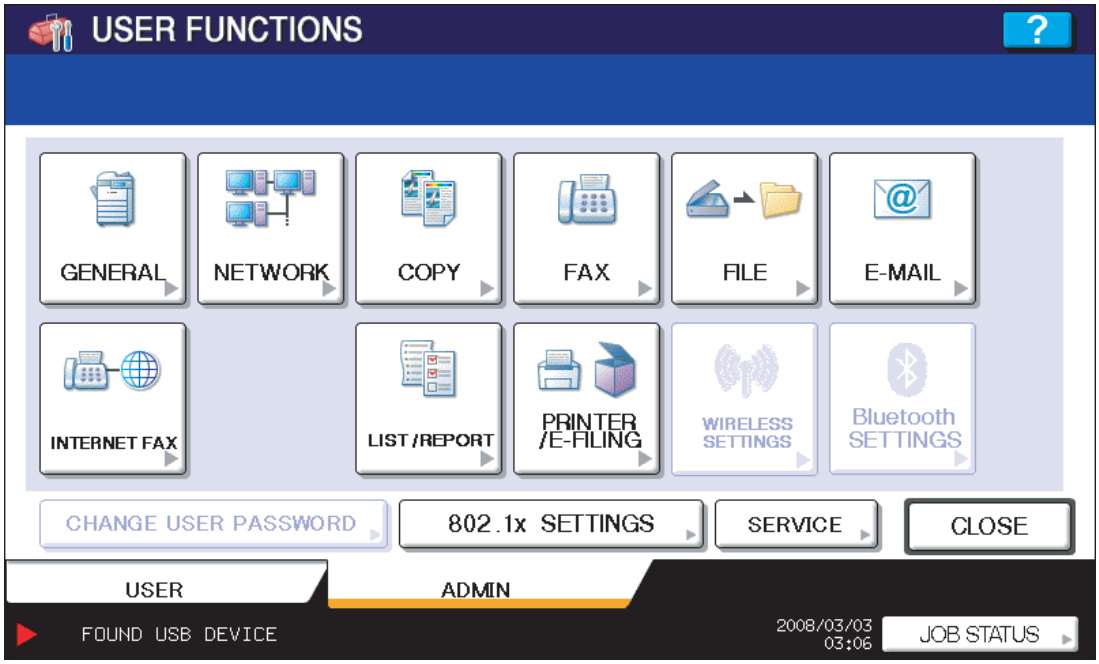


Fig. 27-2

(6) Press the [SERVICE] button in the ADMIN screen.

(7) The SERVICE screen is displayed.

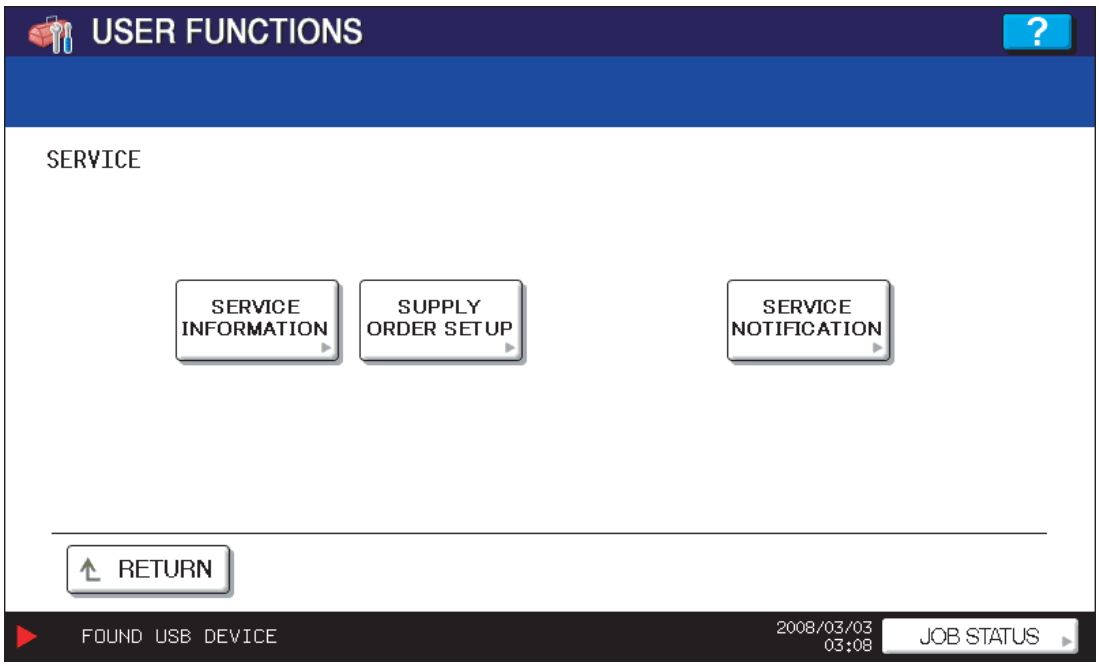


Fig. 27-3

(8) Press the [SUPPLY ORDER SETUP] button.

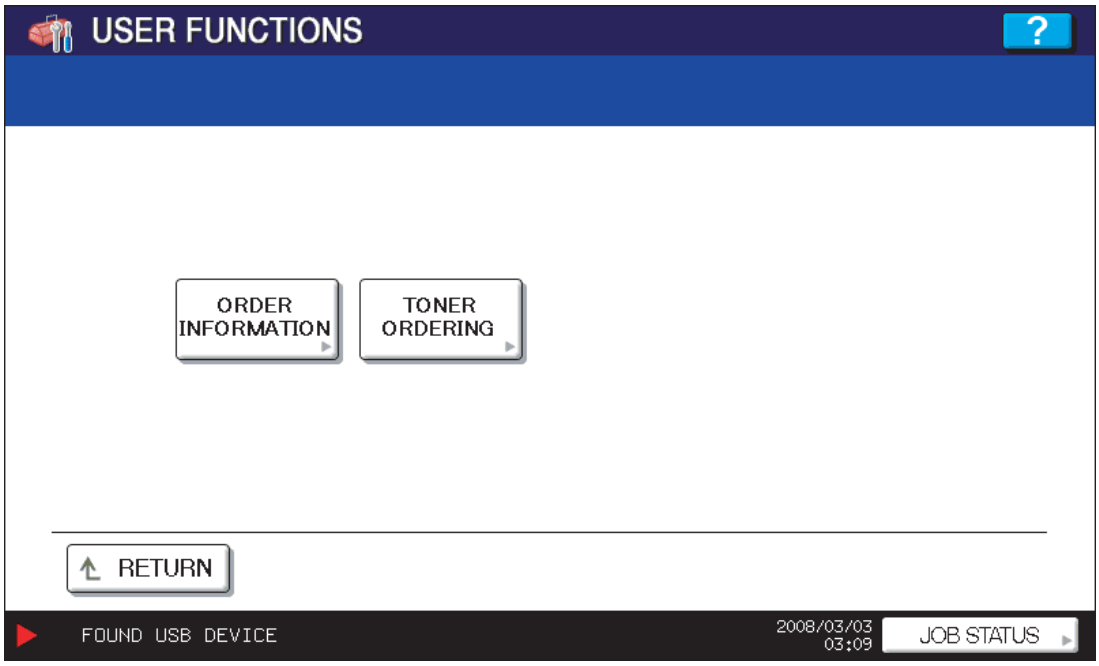


Fig. 27-4

(9) Press the [ORDER INFORMATION] button.

(10) The ORDER INFORMATION screen is displayed.

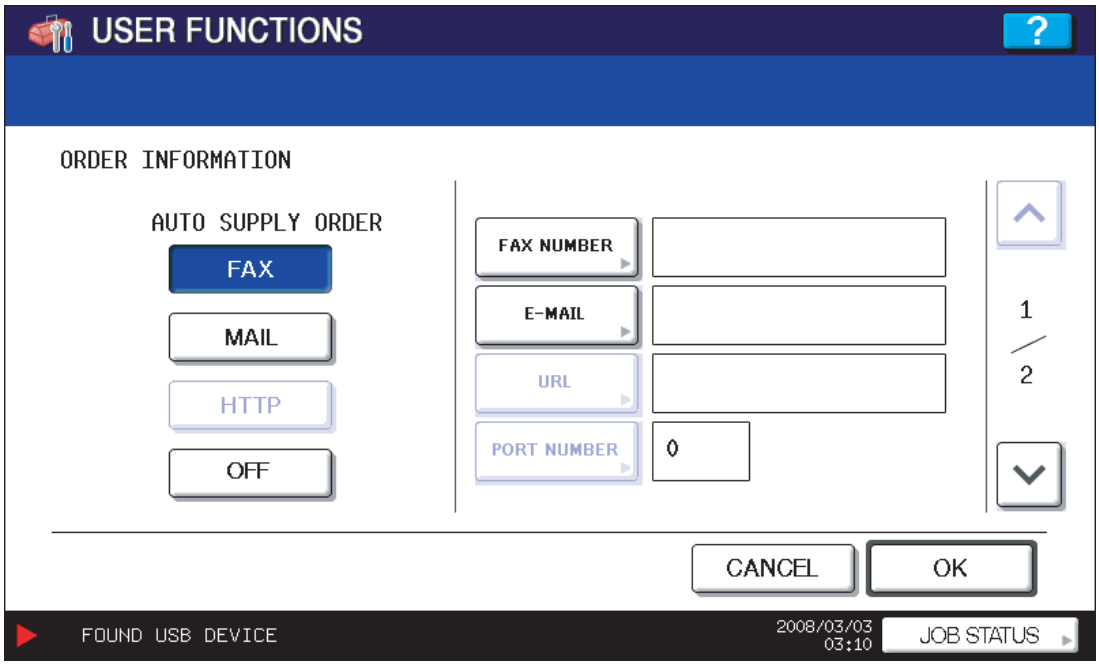


Fig. 27-5

(11) Press the buttons on the screen of ORDER INFORMATION to set the required item.

[FAX]/[MAIL]/[OFF] Select the [FAX] or the [MAIL] button for the transmitting way of order. (HTTP has not been supported yet.)
[OFF]: Turn off the AUTO SUPPLY ORDER function.

[FAX NUMBER] Input the FAX number of supplier. (To transmit by FAX, the order cannot be placed automatically if you do not input the number.)

[E-MAIL] Input the E-mail address of supplier. (To transmit by E-mail, the order cannot be placed automatically if you do not input the address.)

(12) Press the scroll button.
(Press the [OK] button to register, and then the screen returns to the (7) SERVICE screen. Press the [CANCEL] button to cancel this register, and then the screen returns to the (7) SERVICE screen.)

(13) The SUPPLIER screen is displayed.

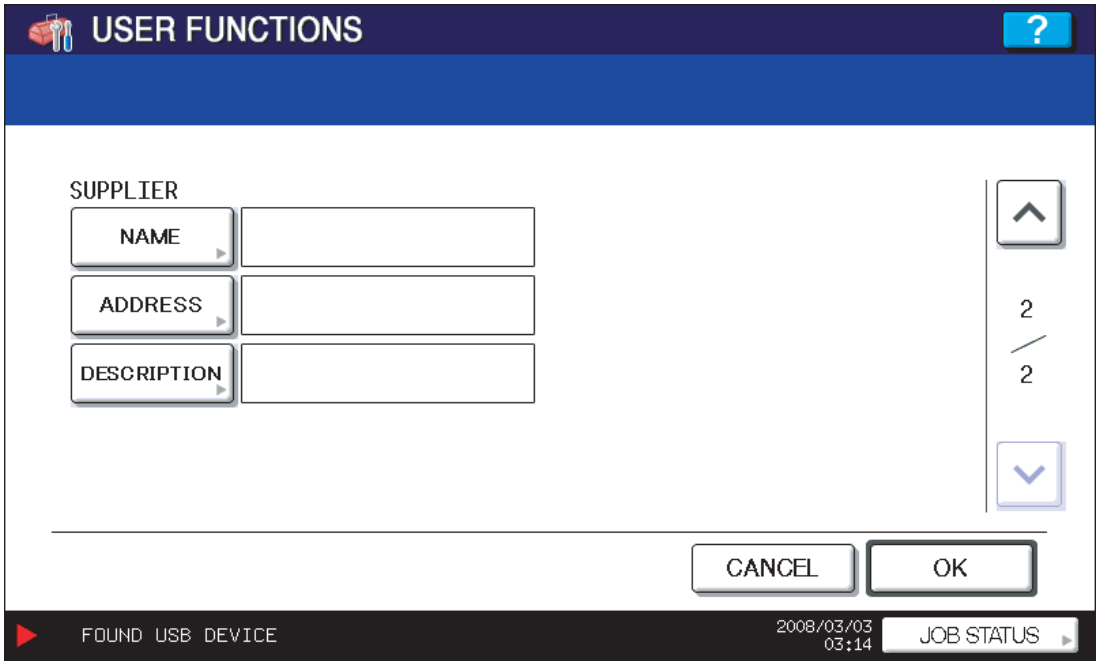


Fig. 27-6

(14) Press the buttons of the screen of SUPPLIER to set the required item.

[NAME] Input the name of supplier.
[ADDRESS] Input the address of supplier.

(15) Press the [OK] button.

(16) The SERVICE screen is displayed.

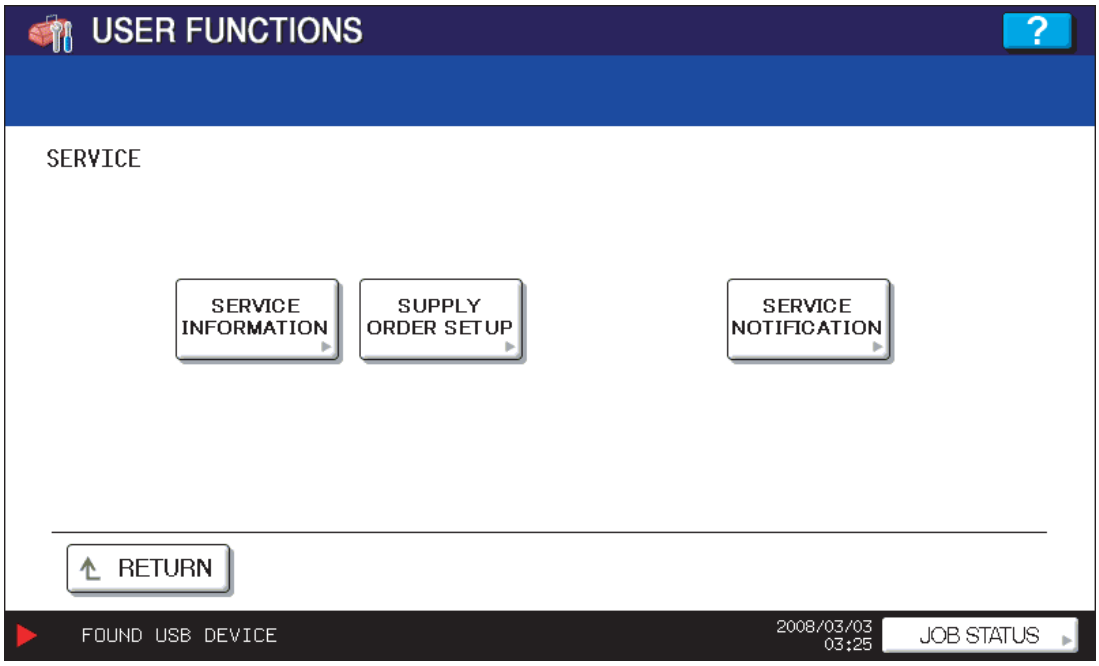


Fig. 27-7

(17) Press the [SERVICE INFORMATION] button.

(18) The CUSTOMER/SERVICE TECHNICIAN screen is displayed.

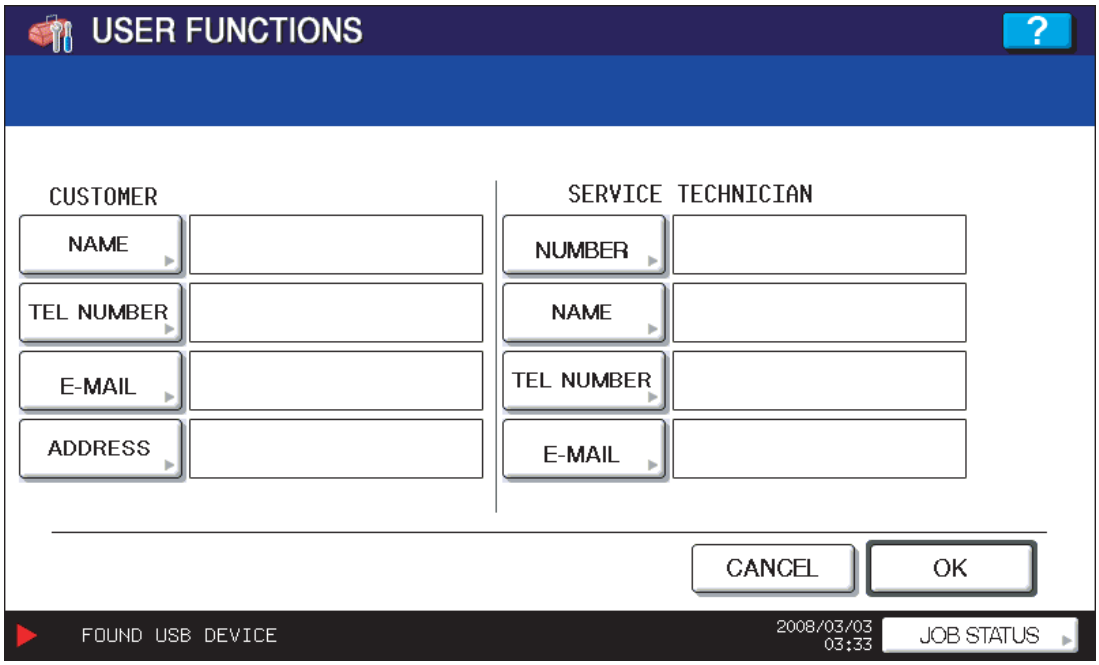


Fig. 27-8

(19) Press the buttons of the screen of CUSTOMER/SERVICE TECHNICIAN to set the required item.

CUSTOMER

[NAME]	Input the name of customer.
[TEL NUMBER]	Input the telephone number of customer.
[E-MAIL]	Input the E-mail address of customer.
[ADDRESS]	Input the address of customer.

SERVICE TECHNICIAN

[NUMBER]	Input the number of SERVICE TECHNICIAN.
[NAME]	Input the name of SERVICE TECHNICIAN.
[TEL NUMBER]	Input the telephone number of SERVICE TECHNICIAN.
[E-MAIL]	Input the E-mail address of SERVICE TECHNICIAN.

(20) Press the [OK] button to register and complete the order information setting.

(21) The SERVICE screen is returned.

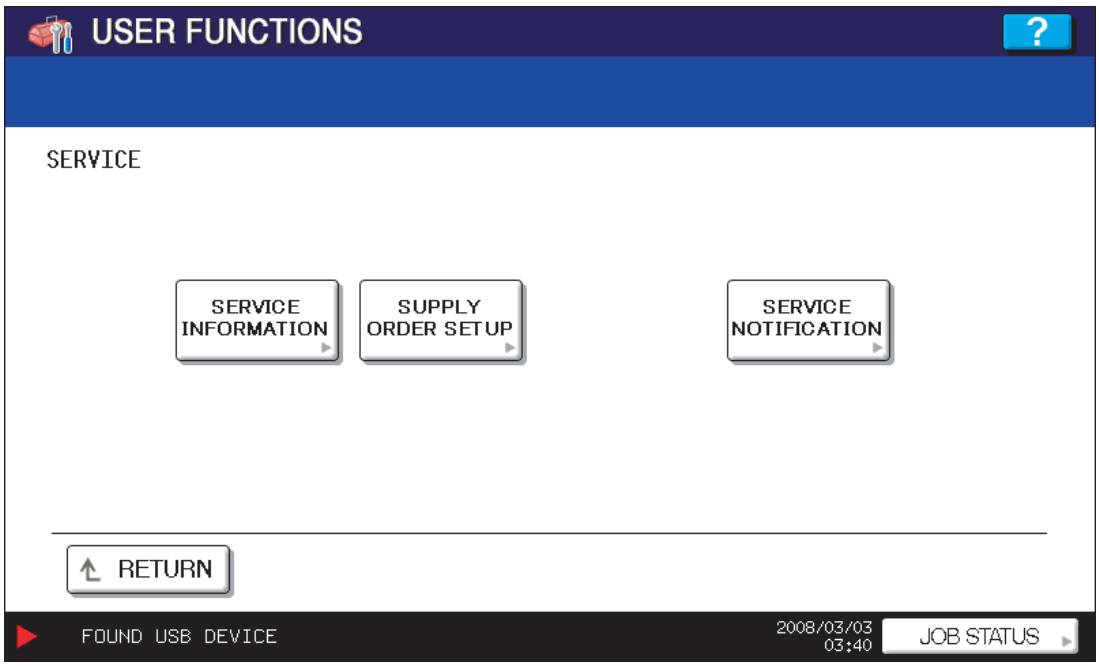


Fig. 27-9

(22) Press the [SUPPLY ORDER SETUP] button.

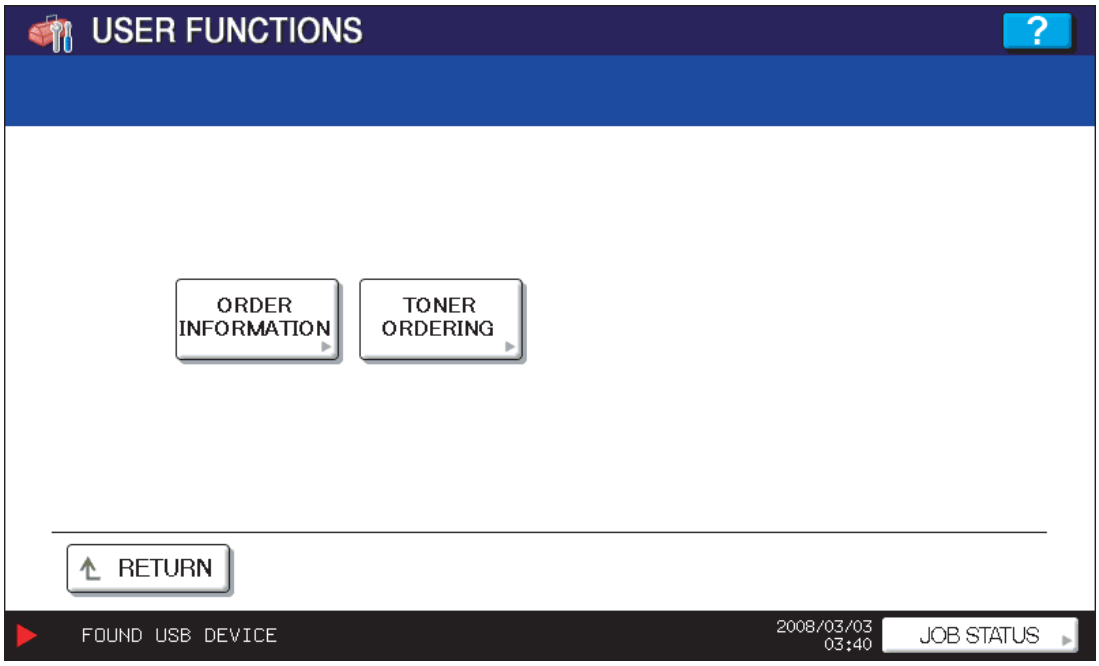


Fig. 27-10

(23) Press the [TONER ORDERING] button.

(24) The TONER ORDERING screen is displayed.

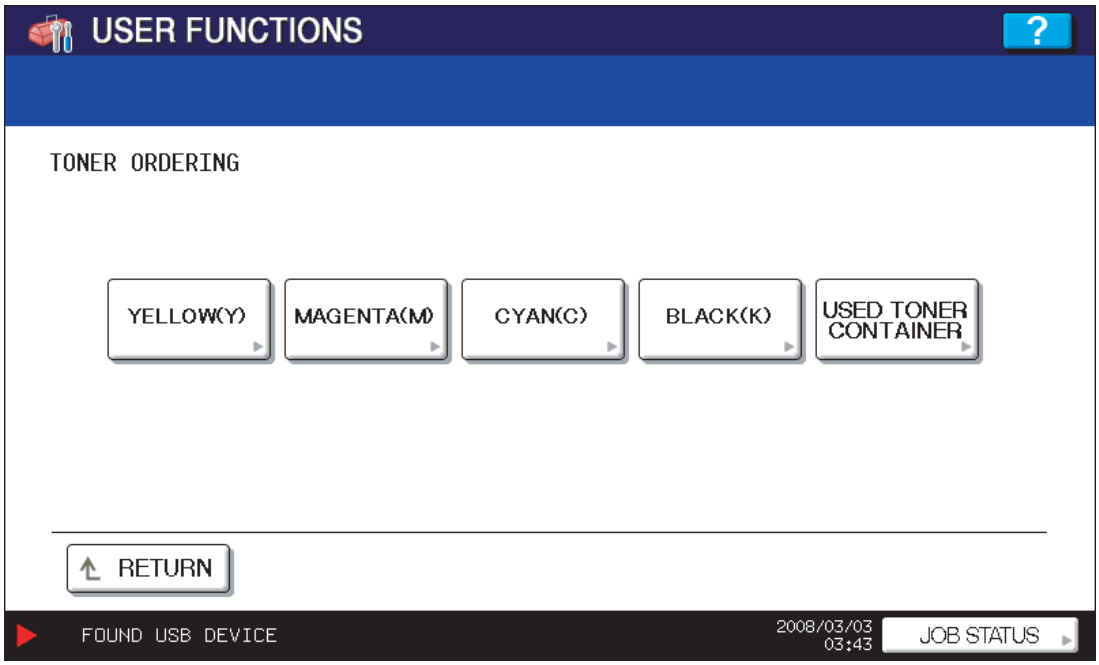


Fig. 27-11

(25) Select the part to be ordered. (Press the [YELLOW(Y)] button.)

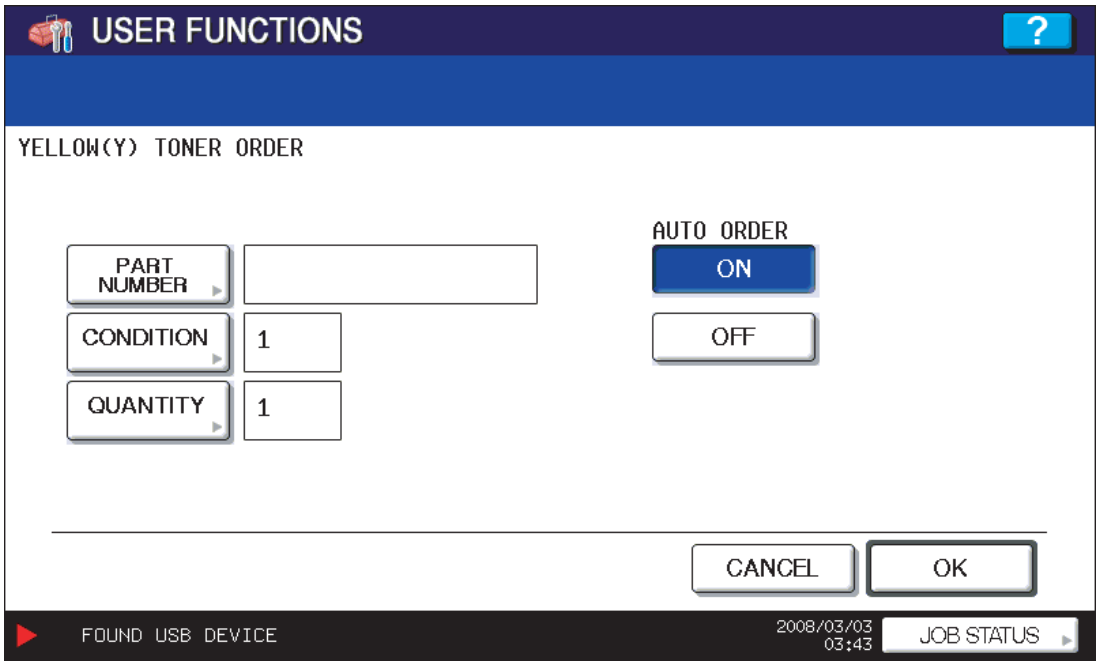


Fig. 27-12

(26) Input the order information of TONER.

[PART NUMBER] Toner number

[CONDITION] The order is placed when the number of toner empty reaches the number specified for the CONDITION.

[QUANTITY] Quantity to be ordered

AUTO ORDER

[ON]/[OFF] Allows you to select whether each part to be ordered is placed automatically or not.

(27) Press the [OK] button to register the setting of toner order.

(28) The TONER ORDERING screen is displayed.

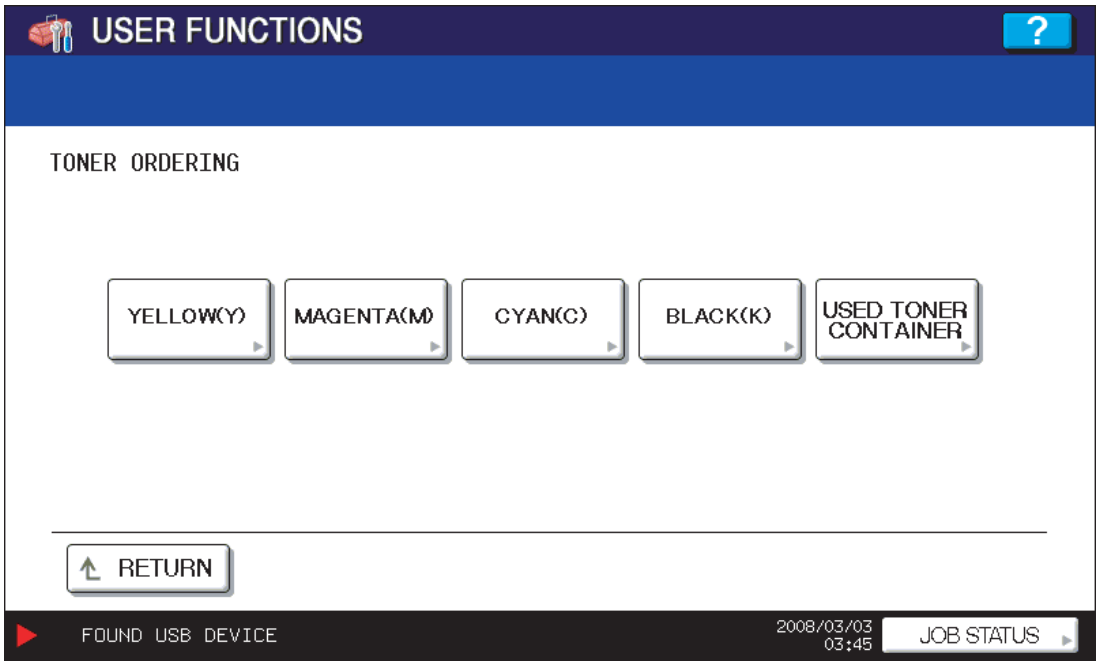


Fig. 27-13

(29) Press the [MAGENTA(M)] / [CYAN(C)] / [BLACK(K)] / [USED TONER CONTAINER] button, and then input the order information in the same way.

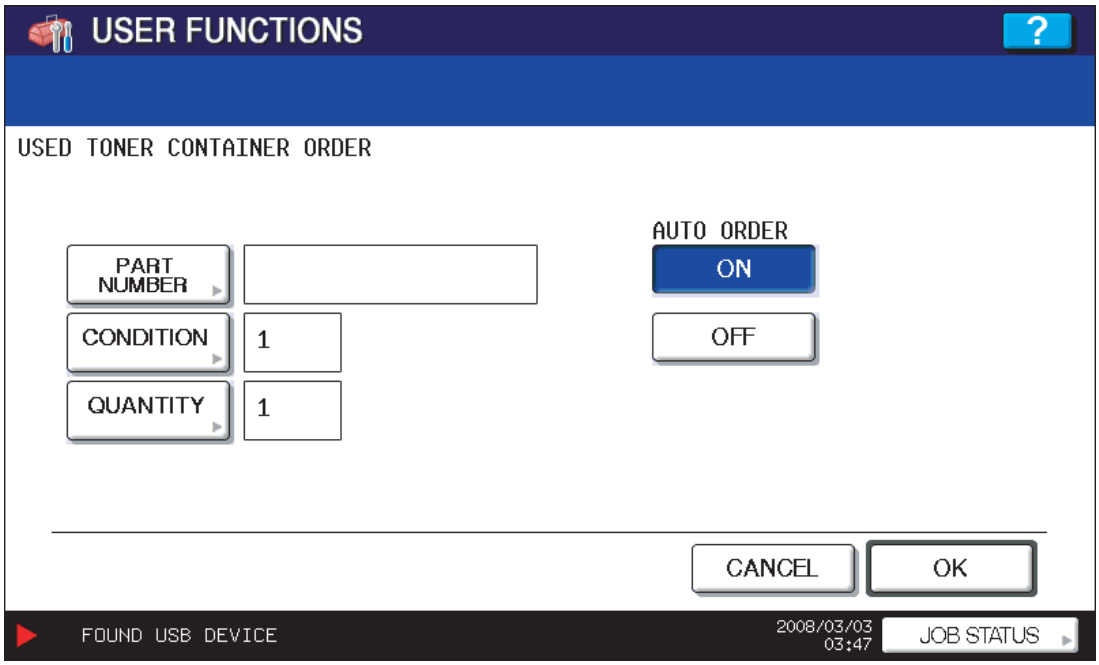


Fig. 27-14

(30) Press the [OK] button to register the order information.

(31) The screen returns to the TONER ORDERING.

(32) Press the [USER FUNCTION] button to be switched from the ADMIN screen on touch panel and returned to the BASIC screen, so that the setting of Auto Supply Order is finished.

Note:

Auto Supply Order setting is also available from the following setting mode (08).

Items	08 code	Contents
The transmitting way of order [FAX]/[MAIL] /[OFF]	732	0: Ordered by FAX 1: Ordered by E-mail 2: Ordered by HTTP 3: OFF
SUPPLIER [FAX NUMBER]	733	Maximum 32 digits
SUPPLIER [E-MAIL]	734	Maximum 192 letters
CUSTOMER [NAME]	738	Maximum 50 letters
CUSTOMER [TEL NUMBER]	739	Maximum 32 digits
CUSTOMER [E-MAIL]	740	Maximum 192 letters
CUSTOMER [ADDRESS]	741	Maximum 100 letters
SUPPLIER [NAME]	746	Maximum 50 letters
SUPPLIER [ADDRESS]	747	Maximum 100 letters
SERVICE TECHNICIAN [NUMBER]	742	Maximum 5 digits
SERVICE TECHNICIAN [NAME]	743	Maximum 50 letters
SERVICE TECHNICIAN [TEL NUMBER]	744	Maximum 32 digits
SERVICE TECHNICIAN [E-MAIL]	745	Maximum 192 letters
Remarks [DESCRIPTION]	748	Maximum 128 letters
RESULT PRINTING [OFF] / [ALWAYS] / [ON ERROR]	764	0: OFF 1: Always 2: ON Error
YELLOW(Y) TONER [PART NUMBER]	755	Maximum 20 digits
YELLOW(Y) TONER [CONDITION]	757	1-99
YELLOW(Y) TONER [QUANTITY]	756	1-99
MAGENTA(M) TONER [PART NUMBER]	752	Maximum 20 digits
MAGENTA(M) TONER [CONDITION]	754	1-99
MAGENTA(M) TONER [QUANTITY]	753	1-99
CYAN(C) TONER [PART NUMBER]	749	Maximum 20 digits
CYAN(C) TONER [CONDITION]	751	1-99
CYAN(C) TONER [QUANTITY]	750	1-99

Items	08 code	Contents
BLACK(K) TONER [PART NUMBER]	758	Maximum 20 digits
BLACK(K) TONER [CONDITION]	760	1-99
BLACK(K) TONER [QUANTITY]	759	1-99
USED TONER CONTAINER [PART NUMBER]	761	Maximum 20 digits
USED TONER CONTAINER [CONDITION]	763	1-99
USED TONER CONTAINER [QUANTITY]	762	1-99

27.1.4 Order Sheet Format

The sample of order sheet is as follows.

(1) FAX (This format is the same as that of TIFF image attached E-mail.)
*1 Part not to be ordered is not output. (Less space between the lines)

DATE & TIME :99-99-'99 99:99
CUSTOMER NUMBER :XXX
CUSTOMER NAME :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER TEL NUMBER :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER E-MAIL ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SERVICE TECHNICIAN TEL NUMBER :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SERVICE TECHNICIAN E-MAIL :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SUPPLIER NAME :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SUPPLIER ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

	PART NUMBER	QUANTITY	
TONER CARTRIDGE			
CYAN	: XXXXXXXXXXXX	99	(*1)
MAGENTA	: XXXXXXXXXXXX	99	
YELLOW	: XXXXXXXXXXXX	99	
BLACK	: XXXXXXXXXXXX	99	
USED TONER CONTAINER	: XXXXXXXXXXXX	99	

DESCRIPTION AREA .....
.....

DEVICE DESCRIPTION :XXXXXXXXXXXXXXXXXXXXXXX
SERIAL NUMBER :XXXXXXXXXXXXXXXXXXXXXXX
DEVICE FAX NUMBER :XXXXXXXXXXXXXXXXXXXXXXX
DEVICE E-MAIL ADDRESS :XXXXXXXXXXXXXXXXXXXXXXX

	TOTAL	BLACK	TWIN COLOR	FULL COLOR
PRINT COUNTER	999999999	999999999	999999999	999999999
SCAN COUNTER	999999999	999999999	999999999	999999999

Fig. 27-15

DESCRIPTION AREA: Remarks
DEVICE DESCRIPTION: Model name
SERIAL NUMBER: Serial number
DEVICE FAX NUMBER: Fax number
DEVICE E-MAIL ADDRESS: E-mail address

(2) E-MAIL (TIFF image attached with the E-mail is the same format with that of the FAX order sheet.)
SUBJECT: SUPPLY ORDER REQUEST
*1 Part not to be ordered is not output. (Less space between the lines)

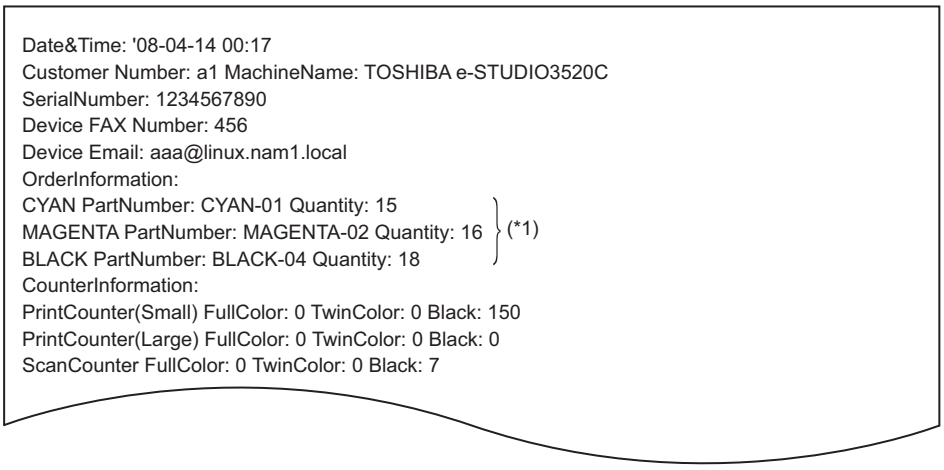


Fig. 27-16

Date&Time: Order date and time
Customer Number: Customer number
MachineName: Model name (MFP model name)
SerialNumber: Serial number
Device FAX Number: Fax number
Device Email: E-mail address
OrderInformation: Order information
CYAN PartNumber: Cyan toner cartridge part number
MAGENTA PartNumber: Magenta toner cartridge part number
BLACK PartNumber: Black toner cartridge part number
Quantity: Order quantity
CounterInformation: Counter information

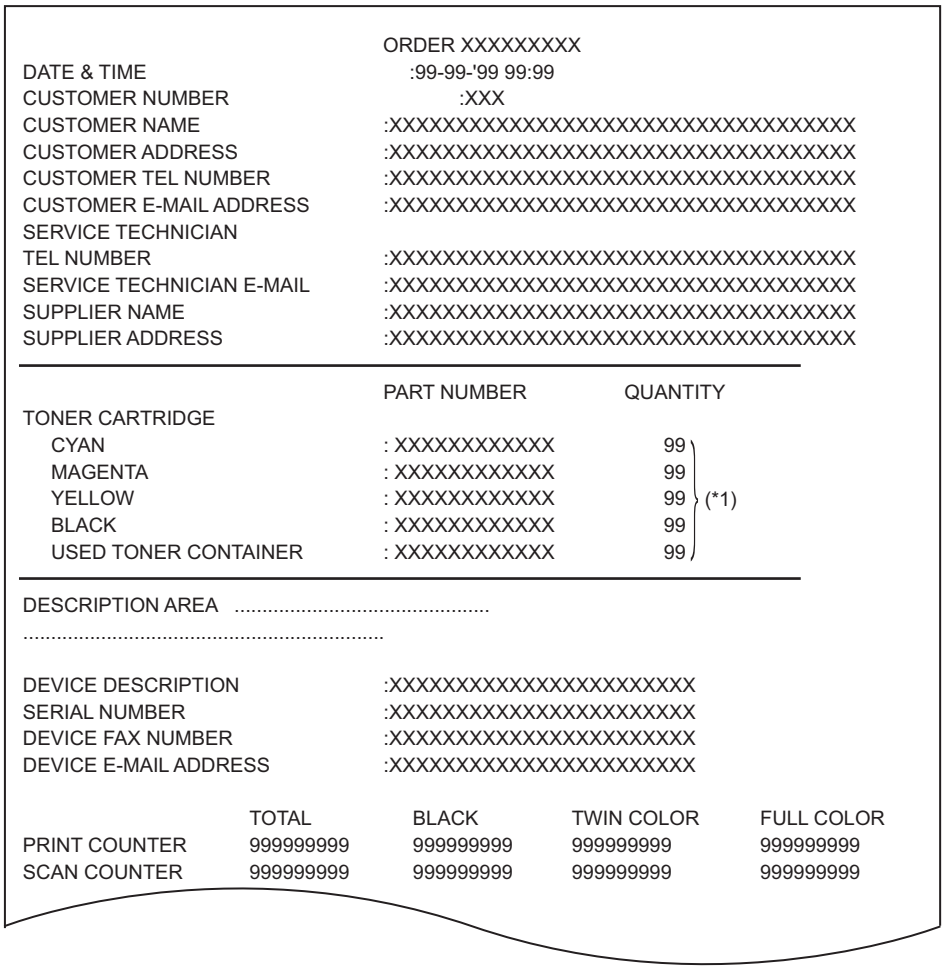
PrintCounter (Small) FullColor: 0 TwinColor: 0 Black:
Print count (Small size) for Full color, Twin color and Black

PrintCounter (Large) FullColor: 0 TwinColor: 0 Black:
Print count (Large size) for Full color, Twin color and Black

ScanCounter FullColor: 0 TwinColor: 0 Black: Scan count
Scan count for Full color, Twin color and Black

(3) Result list

*1 Part not to be ordered is not output. (Less space between the lines)



ORDER XXXXXXXXX
DATE & TIME :99-99-'99 99:99
CUSTOMER NUMBER :XXX
CUSTOMER NAME :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER TEL NUMBER :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CUSTOMER E-MAIL ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SERVICE TECHNICIAN
TEL NUMBER :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SERVICE TECHNICIAN E-MAIL :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SUPPLIER NAME :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SUPPLIER ADDRESS :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

	PART NUMBER	QUANTITY	
TONER CARTRIDGE			
CYAN	: XXXXXXXXXXXX	99	(*1)
MAGENTA	: XXXXXXXXXXXX	99	
YELLOW	: XXXXXXXXXXXX	99	
BLACK	: XXXXXXXXXXXX	99	
USED TONER CONTAINER	: XXXXXXXXXXXX	99	

DESCRIPTION AREA .....
.....

DEVICE DESCRIPTION :XXXXXXXXXXXXXXXXXXXXXX
SERIAL NUMBER :XXXXXXXXXXXXXXXXXXXXXX
DEVICE FAX NUMBER :XXXXXXXXXXXXXXXXXXXXXX
DEVICE E-MAIL ADDRESS :XXXXXXXXXXXXXXXXXXXXXX

	TOTAL	BLACK	TWIN COLOR	FULL COLOR
PRINT COUNTER	999999999	999999999	999999999	999999999
SCAN COUNTER	999999999	999999999	999999999	999999999

Fig. 27-17

ORDER SUCCESSFUL/FAILURE: Automatic supply ordering: transmission success or failure
DATE & TIME: Order date and time
CUSTOMER NUMBER: Customer number
CUSTOMER NAME: Customer name
CUSTOMER ADDRESS: Customer address
CUSTOMER TEL NUMBER: Customer telephone number
CUSTOMER E-MAIL ADDRESS: Customer E-mail address
SERVICE TECHNICIAN TEL NUMBER: Service technician telephone number
SERVICE TECHNICIAN E-MAIL: Service technician E-mail address
SUPPLIER NAME: Supplier name
SUPPLIER ADDRESS: Supplier address

PART NUMBER: Order part number
QUANTITY: Order quantity
TONER CARTRIDGE: Toner cartridge
CYAN: Cyan
MAGENTA: Magenta
YELLOW: Yellow
BLACK: Black
USED TONER CONTAINER: Used toner container (waste toner box)
DESCRIPTION AREA: Remarks
DEVICE DESCRIPTION: Model name (MFP model name)
SERIAL NUMBER: Serial number
DEVICE FAX NUMBER: Fax number

DEVICE E-MAIL ADDRESS: E-mail address
PRINT COUNTER: Print count
SCAN COUNTER: Scan count
TOTAL: Total
BLACK: Black
TWIN COLOR: Twin color
FULL COLOR: Full color

27.2 Service Notification

27.2.1 Outline

This function automatically notifies the status of the equipment to the service technician by E-mail or FAX. The following three are the items to be notified.

- Total Counter Transmit
  When this function is effective, it notifies each counter information periodically (on the set date and time every month).

- Service Call Transmit (E-mail only)
  When this function is effective, it notifies the corresponding error code and such at a service call error.

- PM Counter Transmit
  When this function is effective, it notifies that the PM timing has come when the present PM sheet counter has reached to its setting value, or the present PM driving counter has reached to its setting value.

27.2.2 Setting

Note:
When using this function, it is required that sending and receiving E-mails or FAXes are available. Confirm the details to the administrator.

[1] Preparation

The screen to set this function is not displayed at the default setting.
Set this screen to be displayed with the following code (08).

08-774 Setting of notification display
0: Invalid (Default)
1: Valid

[2] Setting procedure

(1) Press the [USER FUNCTIONS] button and select the [ADMIN] button. Then enter the password and press the [OK] button.
- Confirm the password to the administrator.

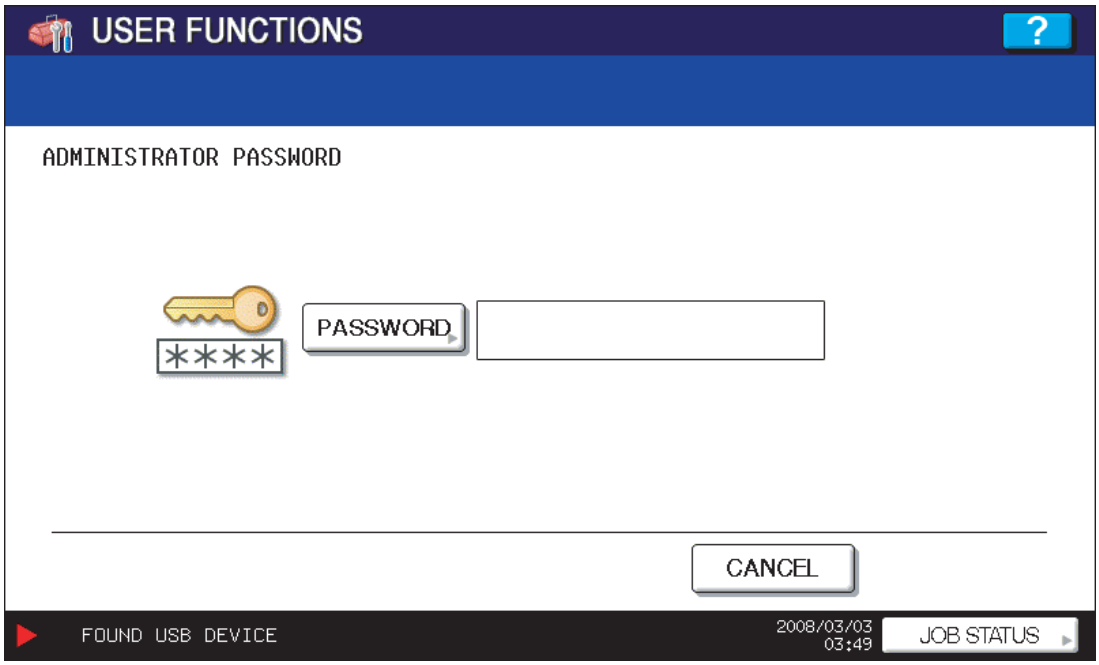


Fig. 27-18

(2) Press the [SERVICE] button.

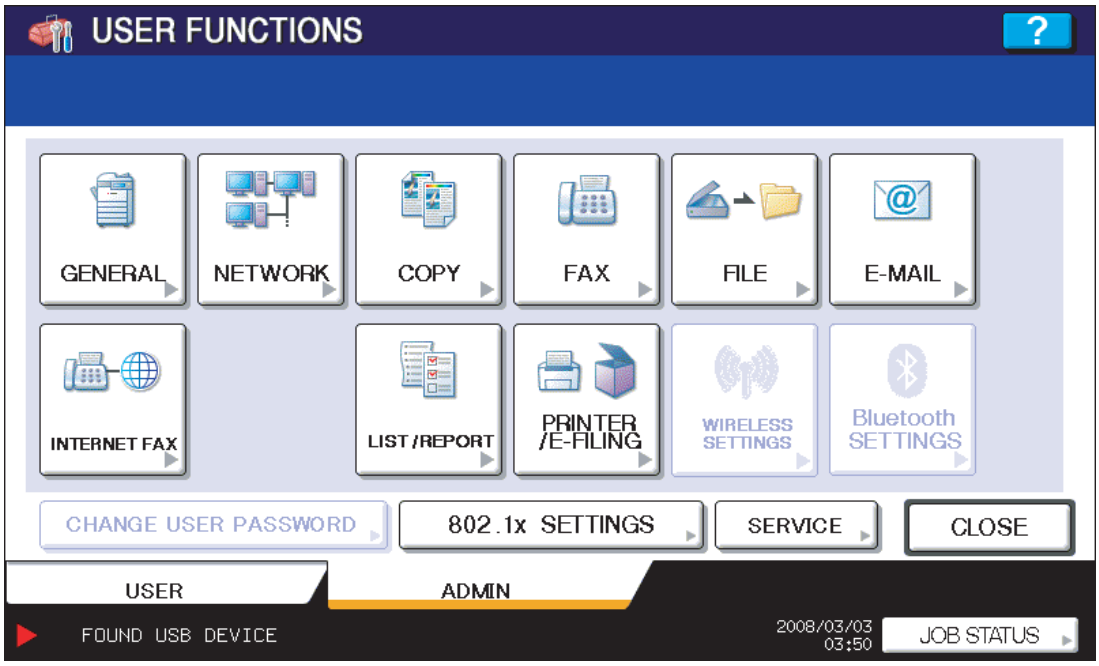


Fig. 27-19

(3) Press the [SERVICE NOTIFICATION] button.

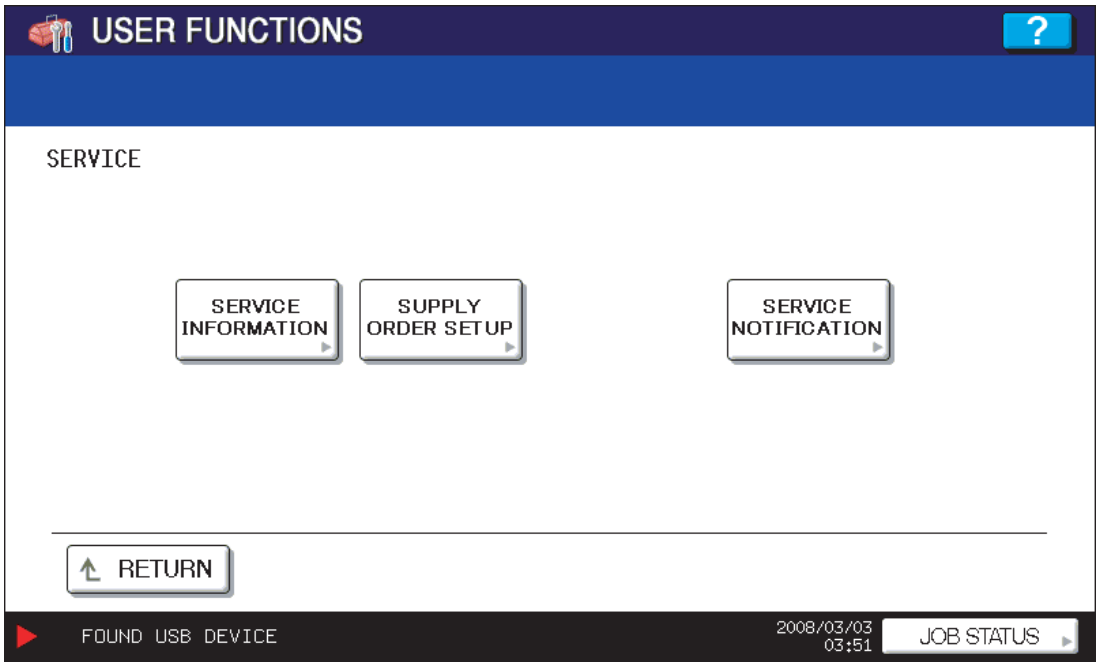


Fig. 27-20

(4) Press the [E-MAIL] or [FAX] button in “SERVICE NOTIFICATION”.
- When the [OFF] button is pressed, all functions related Service Notification become ineffective.

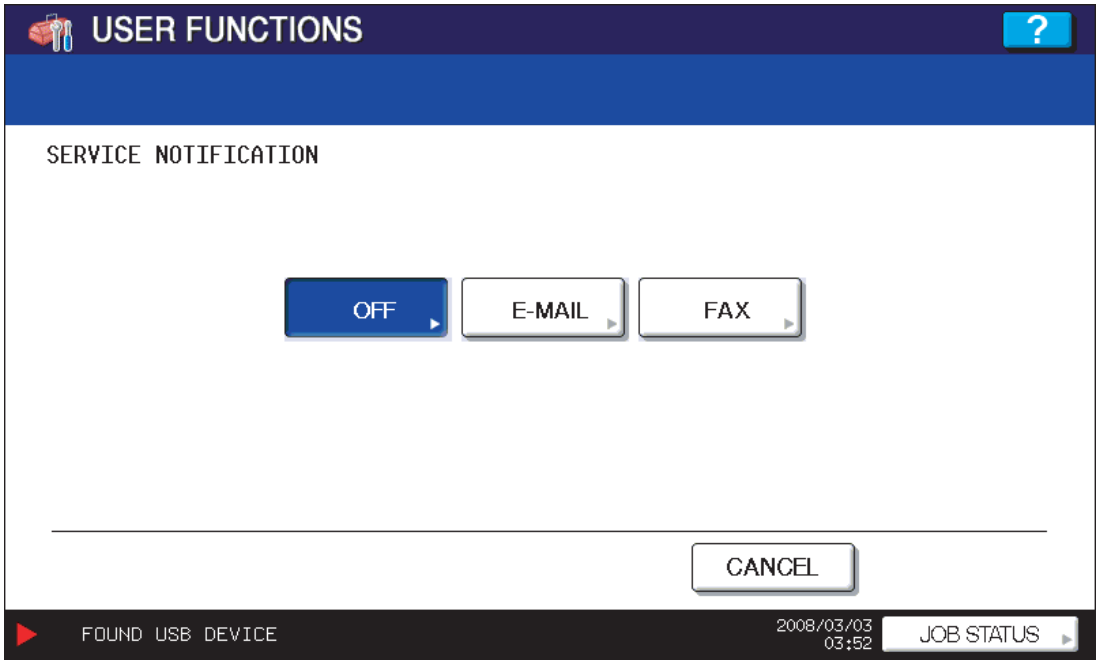


Fig. 27-21

(5) Enter the E-mail address or FAX number of the destination.
- When pressing the [E-MAIL] button, the screen is switched to a full keyboard. Then enter the E-mail addresses and press the [OK] button. (Maximum 3 addresses can be set.)

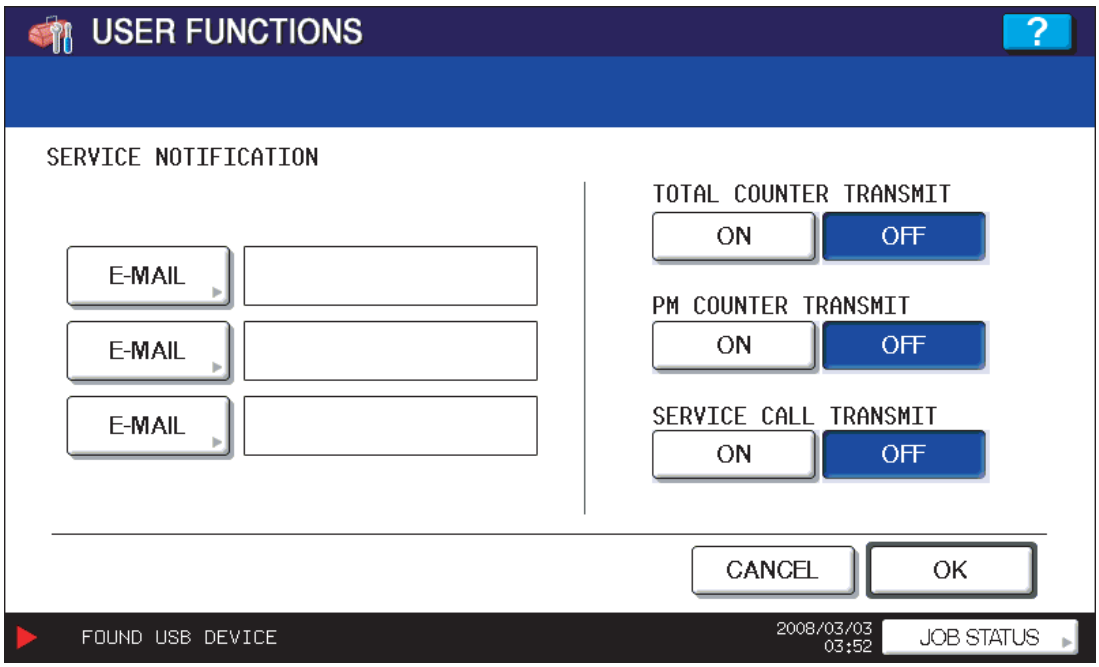


Fig. 27-22

- Press the [FAX NUMBER] button, key in the FAX number and then press the [OK] button.

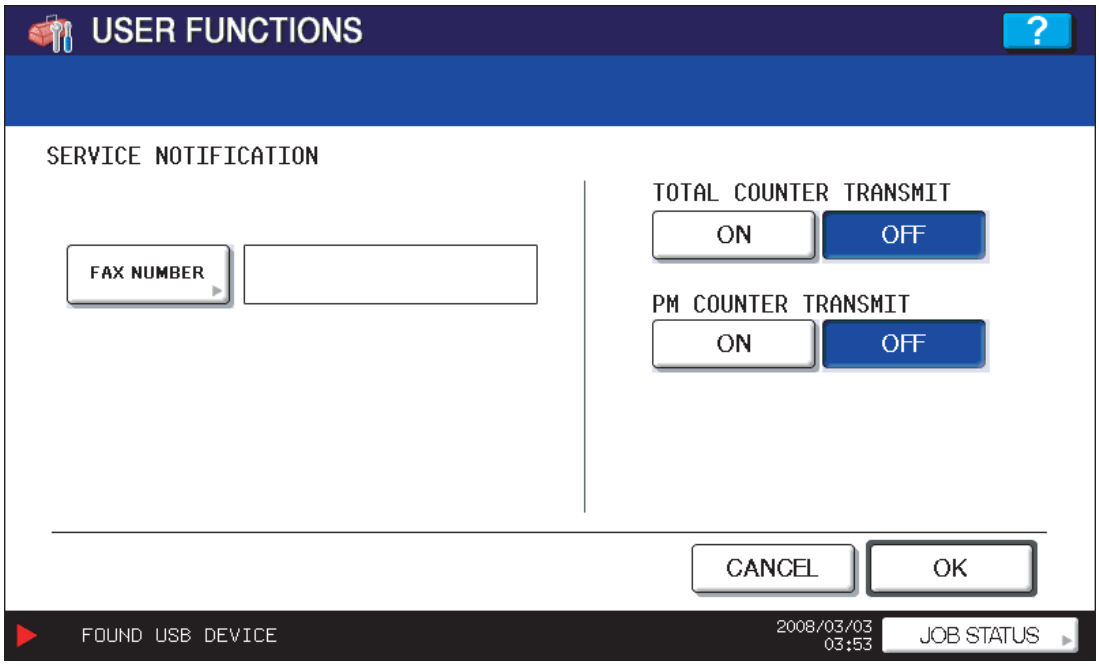


Fig. 27-23

(6) Press the [ON] button to notify or the [OFF] button not to notify each item for E-mail and FAX. When Total Count Transmit is set to ON, the screen to set the notification date is displayed. Then set the notification date with the following procedure.

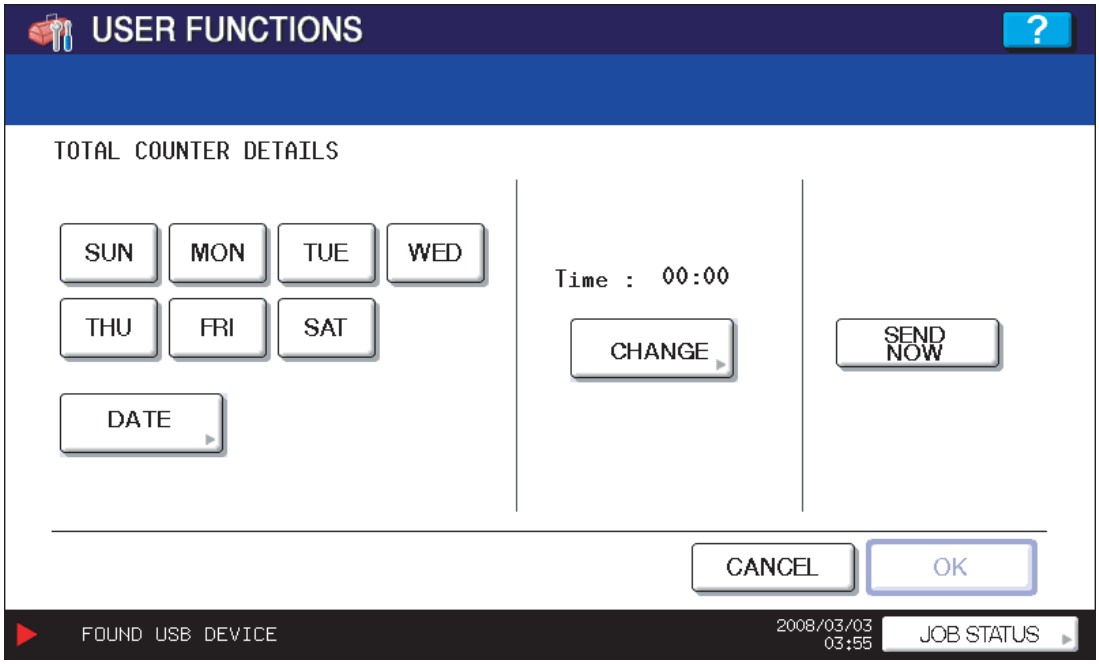


Fig. 27-24

Set the date and time of the Total Counter.
The following 3 items can be specified for the date setting, and more than one day of the week also can be selected.

- Day of the week (More than one day can be selected.)
- Notify Date 1
- Notify Date 2

You can send the Total Counter immediately without the above settings by pressing the [SEND NOW] button.

- **Day of the week ([SUN] to [SAT] buttons)**
  Pressing the buttons ([Sunday] to [Saturday]) of the desired day makes transmission on every specified day. More than one day can be selected.
  * This does not affect the settings of “Notify Date 1” and “Notify Date 2”.

- **Notify Date 1 and Notify Date 2 ([DATE] button)**
  Pressing the [DATE] button sets up to 2 dates on which you wand to send data.
  * This is not affected by the specified day of the week.

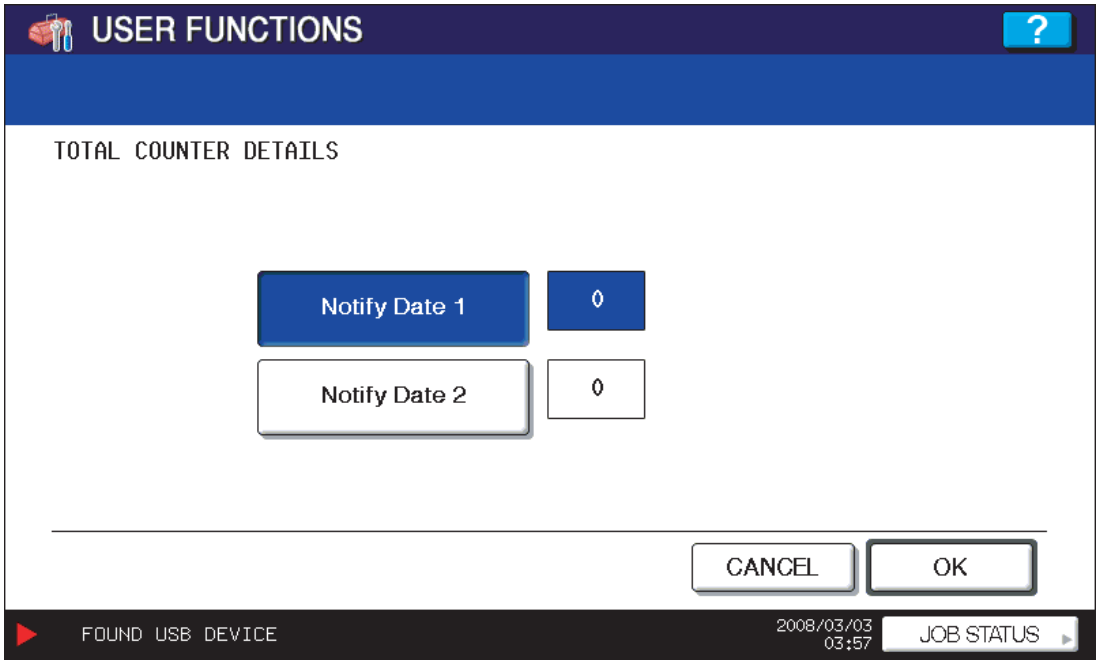


Fig. 27-25

Key in the date (acceptable values: 0-31) in “Notify Date 1” or “Notify Date 2” and press the [OK] button.

- **Time setting ([CHANGE] button)**
  Pressing the [CHANGE] button sets the time at which you wand to send data.
  This is the time when data are sent with “Day of the week”, “Notify Date 1” and “Notify Date 2”.

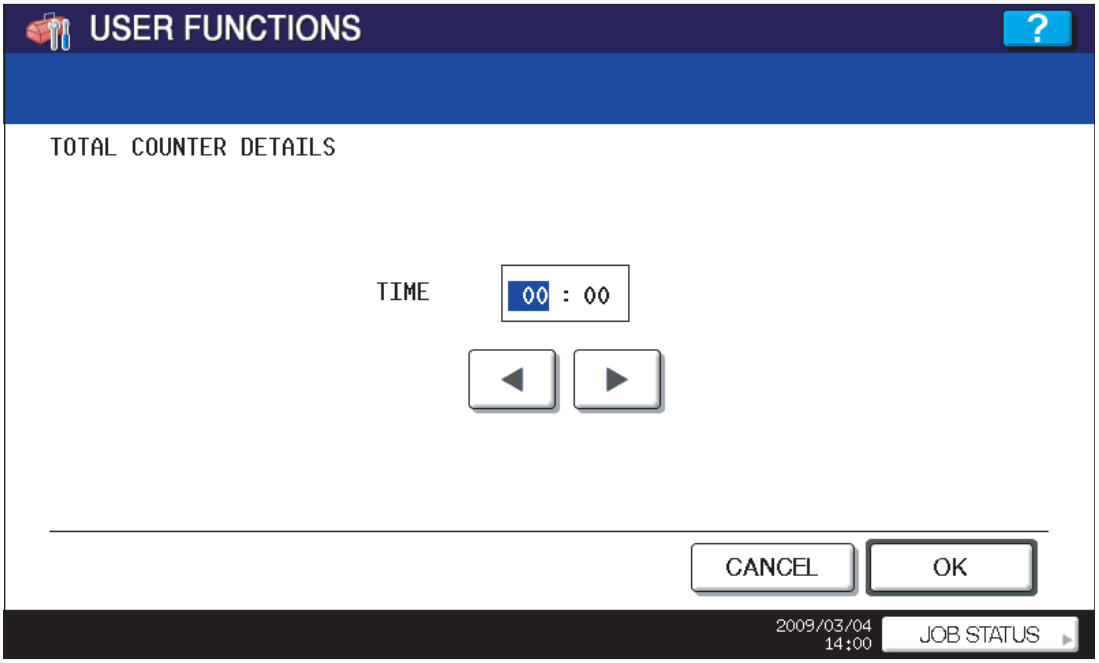


Fig. 27-26

Key in the time (acceptable values: 00:00-23:59) in “Time”.
Key in the time in the hour column of “Time”, press the scroll button, key in the time in the minute column of “Time”.
After all the settings are completed, press the [OK] button. The display returns to the screen in step (5).

(7) Press the [OK] button. The setting completes.

Note:
Service Notification setting is also available from the following setting mode (08).

Items	08 code	Contents
Service Notification setting	767	0: OFF (Invalid) 1:E-mail 2:FAX
E-mail address 1	768	Maximum 192 letters
E-mail address 2	777	Maximum 192 letters
E-mail address 3	778	Maximum 192 letters
FAX number	1145	Maximum 32 digits
Total Counter Transmit setting	769	0: OFF (Invalid) 1: ON (Valid)
Total counter transmission date setting	770	0 to 31
Total counter transmission date setting(2)	9880	0 to 31
Day of total counter data transmission	9881	1 byte 00000000(0)-01111111(127) From the 2nd bit - Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday
Total counter transmission interval setting (Hour/Hour/Minute/Minute)	776	00:00-23:59
Service Call Transmit setting	775	0: OFF (Invalid) 1: ON (Valid)
PM Counter Transmit setting	771	0: OFF (Invalid) 1: ON (Valid)

27.2.3 Items to be notified

The items to be notified are shown below.

1. Total Counter Transmit / PM Counter Transmit by E-mail
   Subject: Counter Notification
   (In case of the PM Counter Transmit, it is shown as “Periodical Maintenance Notification”.)

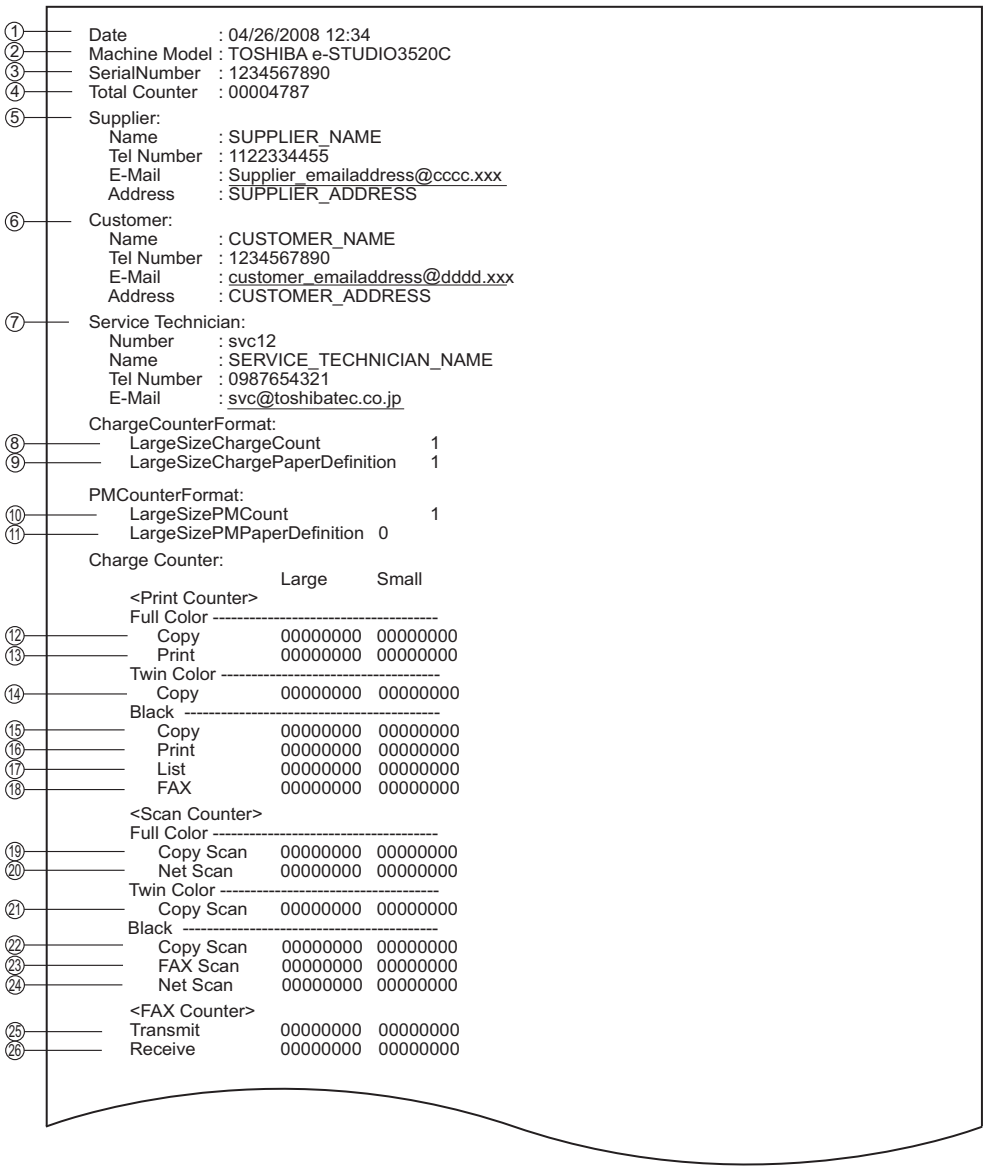


Fig. 27-27

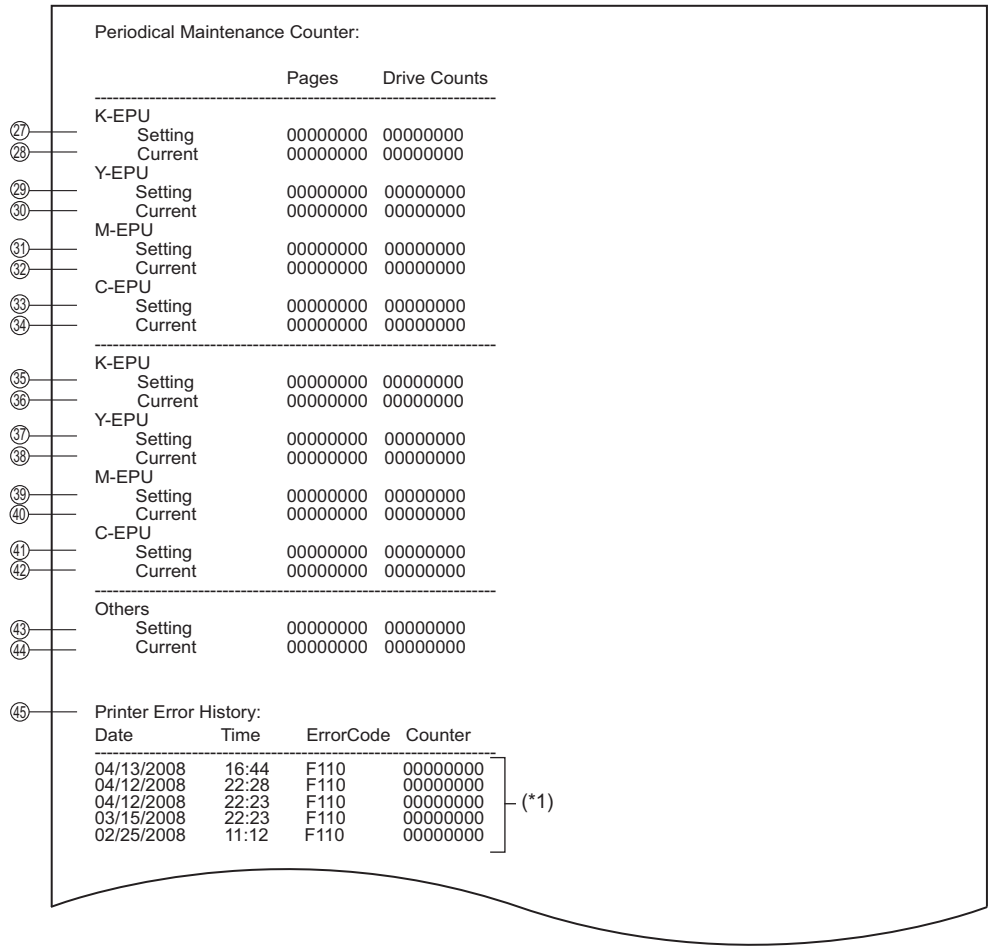


Fig. 27-28

1. Date
2. Machine model name
3. Serial number
4. Total counter value
5. Supplier information
6. Customer information
7. Service technician information
8. Count setting of large-sized paper (Fee charging system counter)
9. Definition setting of large-sized paper (Fee charging system counter)
10. Count setting of large-sized paper (PM)
11. Definition setting of large-sized paper (PM)
12. Number of output pages in the Copier Function (FULL COLOR)
13. Number of output pages in the Printer Function (FULL COLOR)
14. Number of output pages in the Copier Function (TWIN COLOR)
15. Number of output pages in the Copier Function (BLACK)

⑯ Number of output pages in the Printer Function (BLACK)

⑰ Number of output pages at the List Print Mode (BLACK)

⑱ Number of output pages in the FAX Function (BLACK)

⑲ Number of scanning pages in the Copier Function (FULL COLOR)

⑳ Number of scanning pages in the Network Scanning Function (FULL COLOR)

㉑ Number of scanning pages in the Copier Function (TWIN COLOR)

㉒ Number of scanning pages in the Copier Function (BLACK)

㉓ Number of scanning pages in the FAX Function (BLACK)

㉔ Number of scanning pages in the Network Scanning Function (BLACK)

㉕ Number of transmitted pages in the FAX Function (BLACK)

㉖ Number of received pages in the FAX Function (BLACK)

㉗ PM sheet counter setting value / PM driving counter setting value [EPU (K)]

㉘ PM sheet counter present value / PM driving counter present value [EPU (K)]

㉙ PM sheet counter setting value / PM driving counter setting value [EPU (Y)]

㉚ PM sheet counter present value / PM driving counter present value [EPU (Y)]

㉛ PM sheet counter setting value / PM driving counter setting value [EPU (M)]

㉜ PM sheet counter present value / PM driving counter present value [EPU (M)]

㉝ PM sheet counter setting value / PM driving counter setting value [EPU (C)]

㉞ PM sheet counter present value / PM driving counter present value [EPU (C)]

㉟ PM sheet counter setting value / PM driving counter setting value [Developer material (K)]

㊱ PM sheet counter present value / PM driving counter present value [Developer material (K)]

㊲ PM sheet counter setting value / PM driving counter setting value [Developer material (Y)]

㊳ PM sheet counter present value / PM driving counter present value [Developer material (Y)]

㊴ PM sheet counter setting value / PM driving counter setting value [Developer material (M)]

㊵ PM sheet counter present value / PM driving counter present value [Developer material (M)]

㊶ PM sheet counter setting value / PM driving counter setting value [Developer material (C)]

㊷ PM sheet counter present value / PM driving counter present value [Developer material (C)]

㊸ PM sheet counter setting value / PM driving counter setting value [Other parts]

㊹ PM sheet counter present value / PM driving counter present value [Other parts]

㊺ History error

*1 The latest 20 errors are displayed.

2. Total Counter Transmit / PM Counter Transmit by FAX
   *1 In case of the PM Counter Transmit, the title is replaced to “PERIODICAL MAINTENANCE NOTIFICATION”.

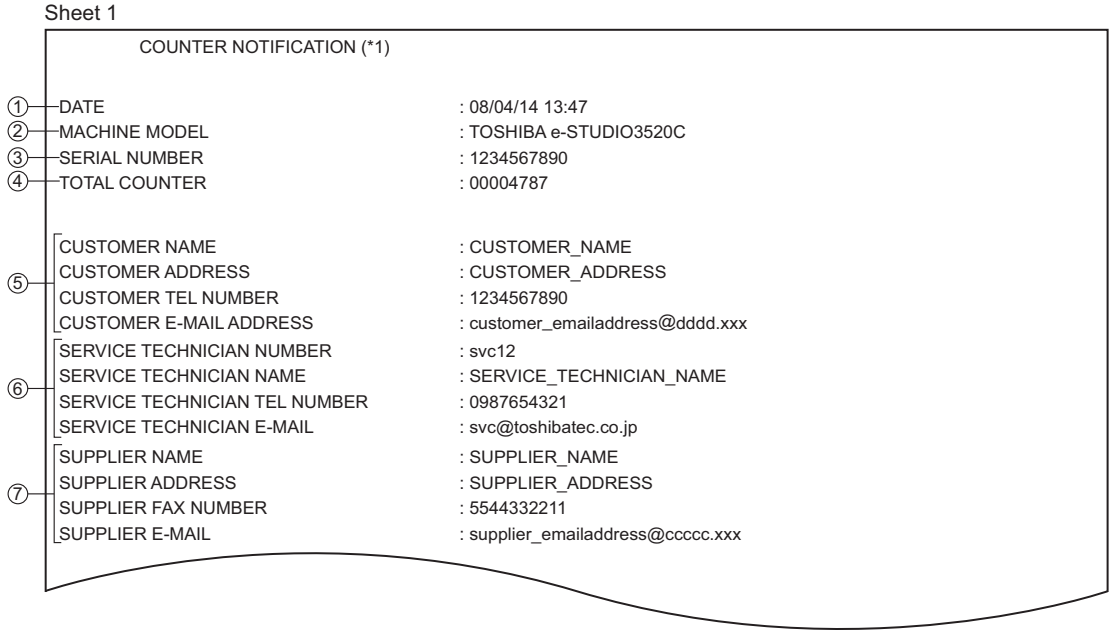


Fig. 27-29

Sheet 2

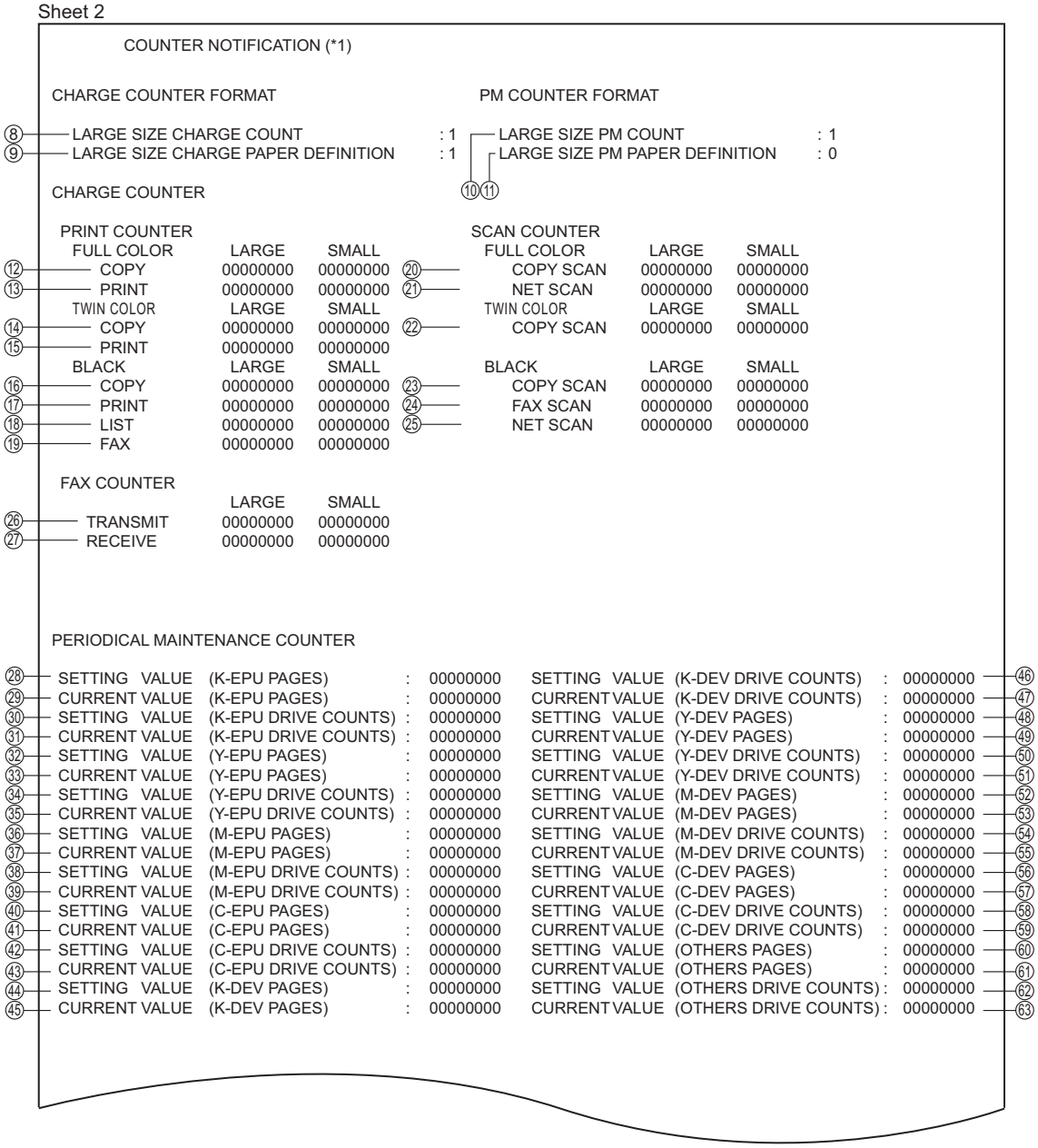


Fig. 27-30

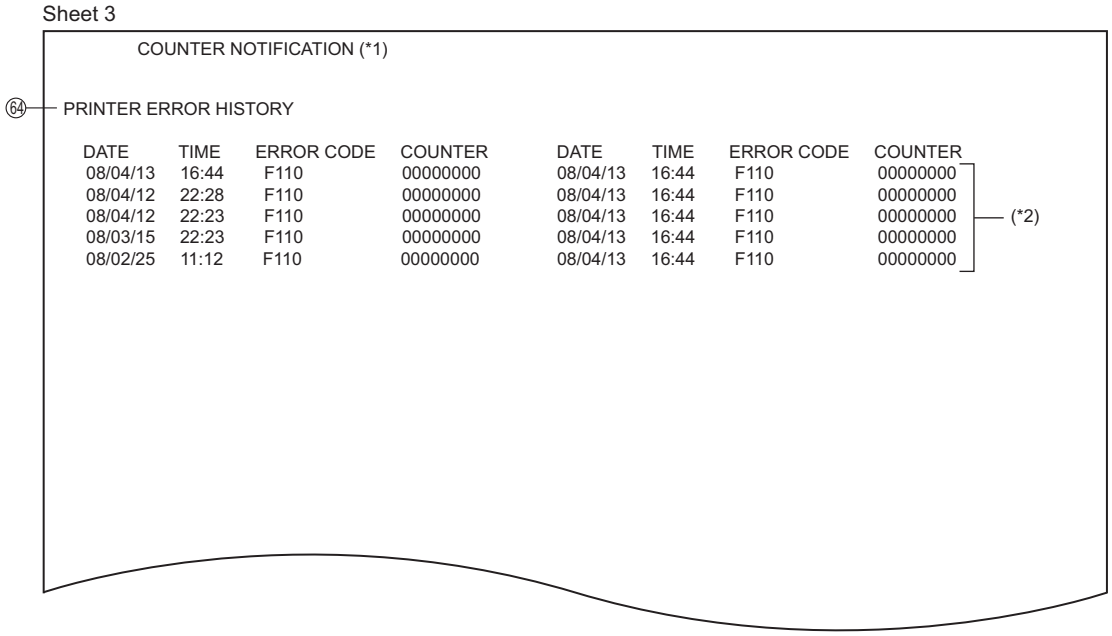


Fig. 27-31

1. Date
2. Machine model name
3. Serial number
4. Total counter value
5. Customer information
6. Service technician information
7. Supplier information
8. Count setting of large-sized paper (Fee charging system counter)
9. Definition setting of large-sized paper (Fee charging system counter)
10. Count setting of large-sized paper (PM)
11. Definition setting of large-sized paper (PM)
12. Number of output pages in the Copier Function (FULL COLOR)
13. Number of output pages in the Printer Function (FULL COLOR)
14. Number of output pages in the Copier Function (TWIN COLOR)
15. Number of output pages in the Printer Function (TWIN COLOR)
16. Number of output pages in the Copier Function (BLACK)
17. Number of output pages in the Printer Function (BLACK)
18. Number of output pages at the List Print Mode (BLACK)
19. Number of output pages in the FAX Function (BLACK)
20. Number of scanning pages in the Copier Function (FULL COLOR)

㉑ Number of scanning pages in the Network Scanning Function (FULL COLOR)

㉒ Number of scanning pages in the Copier Function (TWIN COLOR)

㉓ Number of scanning pages in the Copier Function (BLACK)

㉔ Number of scanning pages in the FAX Function (BLACK)

㉕ Number of scanning pages in the Network Scanning Function (BLACK)

㉖ Number of transmitted pages in the FAX Function (BLACK)

㉗ Number of received pages in the FAX Function (BLACK)

㉘ PM sheet counter setting value [EPU (K)]

㉙ PM sheet counter present value [EPU (K)]

㉚ PM driving counter setting value [EPU (K)]

㉛ PM driving counter present value [EPU (K)]

㉜ PM sheet counter setting value [EPU (Y)]

㉝ PM sheet counter present value [EPU (Y)]

㉞ PM driving counter setting value [EPU (Y)]

㉟ PM driving counter present value [EPU (Y)]

㊱ PM sheet counter setting value [EPU (M)]

㊲ PM sheet counter present value [EPU (M)]

㊳ PM driving counter setting value [EPU (M)]

㊴ PM driving counter present value [EPU (M)]

㊵ PM sheet counter setting value [EPU (C)]

㊶ PM sheet counter present value [EPU (C)]

㊷ PM driving counter setting value [EPU (C)]

㊸ PM driving counter present value [EPU (C)]

㊹ PM sheet counter setting value [Developer material (K)]

㊺ PM sheet counter present value [Developer material (K)]

㊻ PM driving counter setting value [Developer material (K)]

㊼ PM driving counter present value [Developer material (K)]

㊽ PM sheet counter setting value [Developer material (Y)]

㊾ PM sheet counter present value [Developer material (Y)]

㊿ PM driving counter setting value [Developer material (Y)]

(51) PM driving counter present value [Developer material (Y)]

(52) PM sheet counter setting value [Developer material (M)]

(53) PM sheet counter present value [Developer material (M)]

(54) PM driving counter setting value [Developer material (M)]

(55) PM driving counter present value [Developer material (M)]

(56) PM sheet counter setting value [Developer material (C)]

⑤⑦ PM sheet counter present value [Developer material (C)]

⑤⑧ PM driving counter setting value [Developer material (C)]

⑤⑨ PM driving counter present value [Developer material (C)]

⑥⓪ PM sheet counter setting value (Other parts)

⑥① PM sheet counter present value (Other parts)

⑥② PM driving counter setting value (Other parts)

⑥③ PM driving counter present value (Other parts)

⑥④ History of error

*2 The latest 20 errors are displayed.

3. Service Call Transmit
   Subject: Service Call Notification

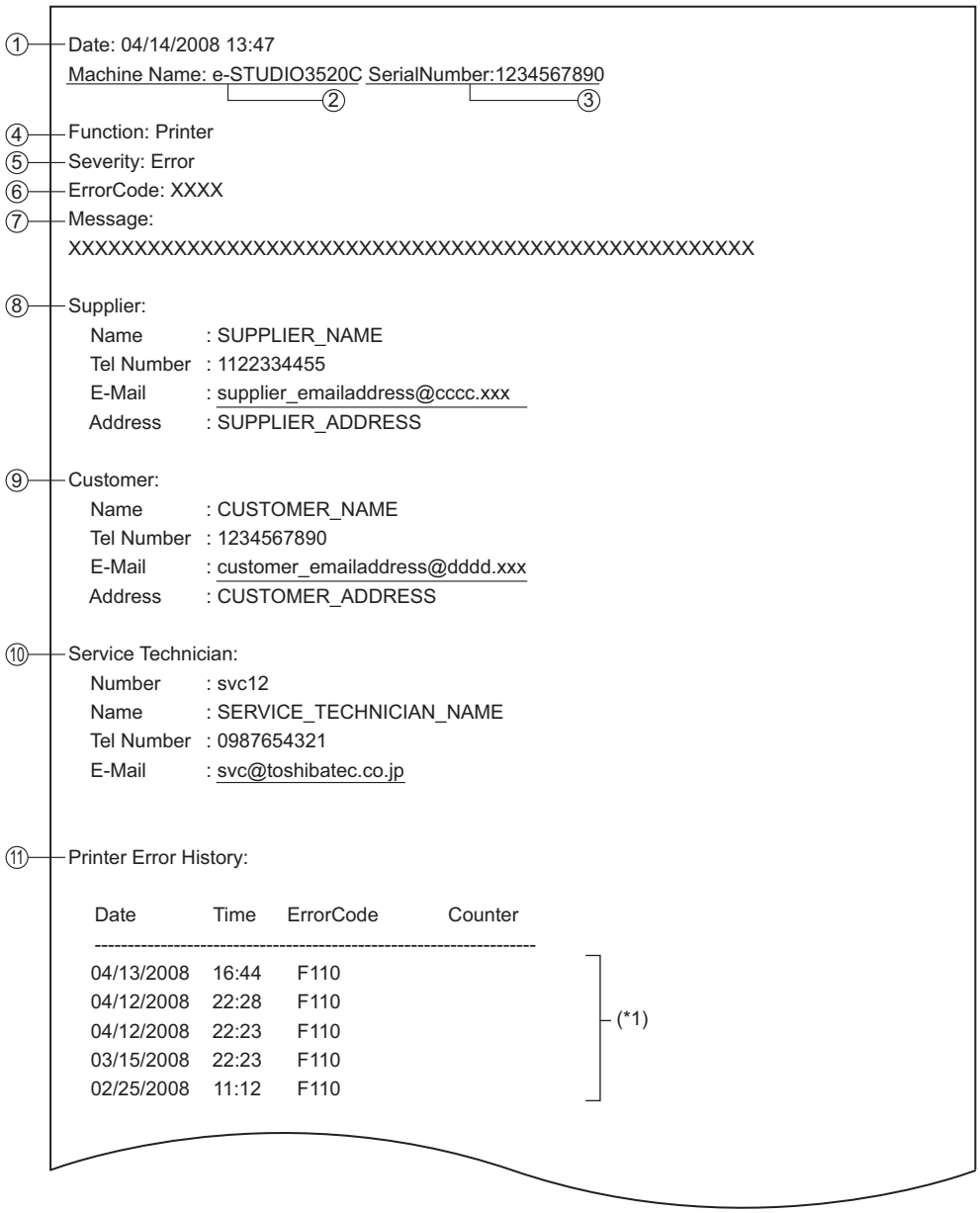


Fig. 27-32

① Date (When an error occurs)

② Machine model name

③ Serial number

④ Function: Fixed at “Printer”

⑤ Severity: Fixed at “Error”

⑥ Error code

⑦ Error message: The content of error is displayed.

⑧ Supplier information

⑨ Customer information

⑩ Service technician information

⑪ History of error

*1 The latest 20 errors are displayed.

28. REMOVAL / INSTALLATION / SETTING / ADJUSTMENT OF OPTION

28.1 Removal and Installation of Options

28.1.1 MR-3018 (Reversing Automatic Document Feeder (RADF))

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover.

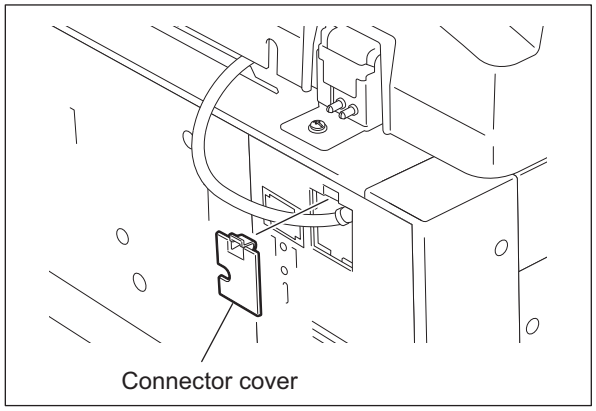


Fig. 28-1

(3) Disconnect the connector.

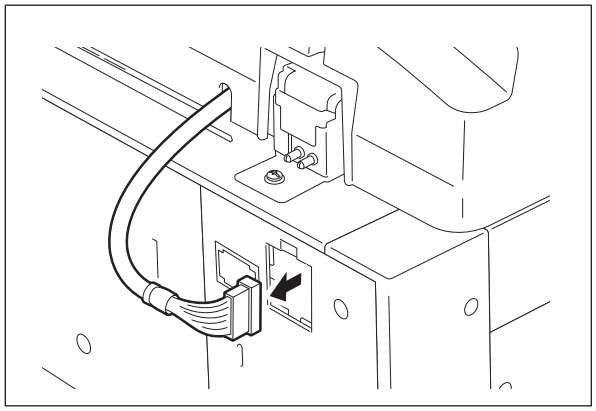


Fig. 28-2

(4) Remove 1 screw and 1 washer on the rear side.

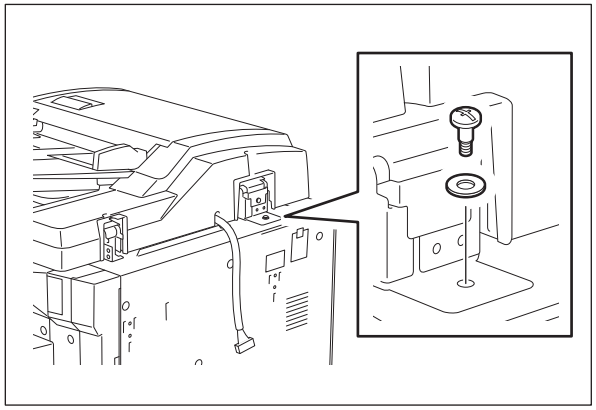


Fig. 28-3

(5) Remove 1 screw on the rear side.

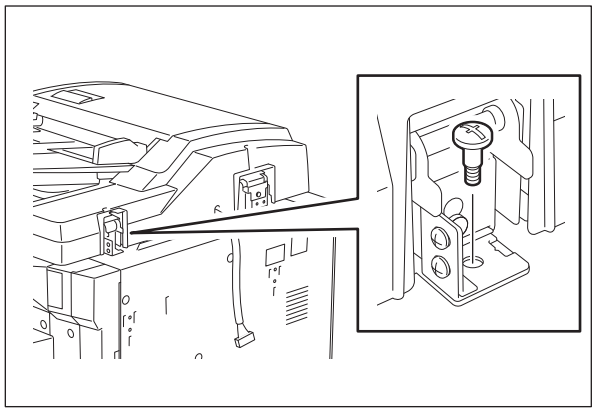


Fig. 28-4

(6) Open the RADF.

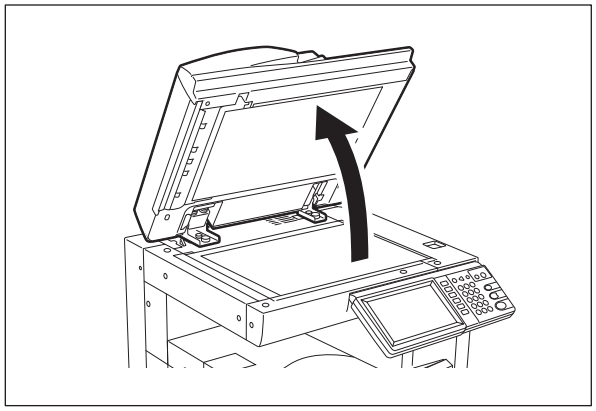


Fig. 28-5

(7) Remove 2 screws on the front side.

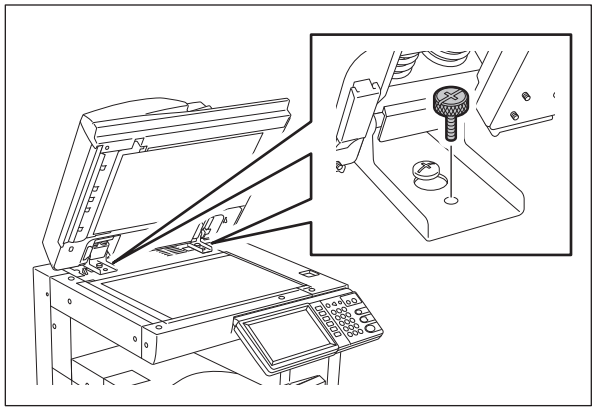


Fig. 28-6

(8) Slide the RADF backward and lift it up to take it off.

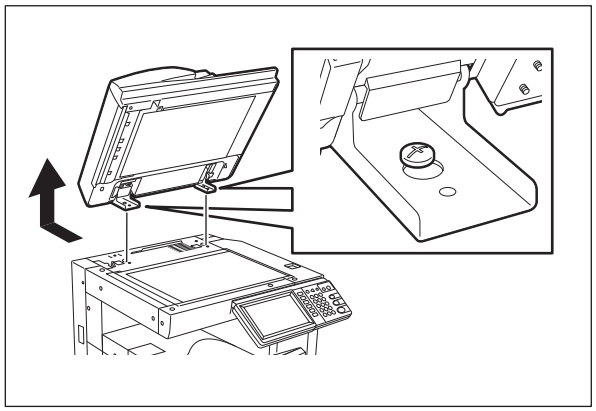


Fig. 28-7

Notes:

When taking off the RADF and installing the platen cover, or taking off the platen cover and installing the RADF, the position of the installing screw for the damper holding bracket of the scanner should be as follows.

1. Remove 1 screw and take off the gel cover.

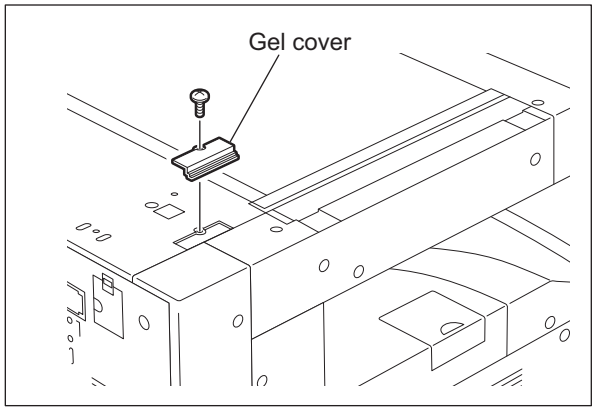


Fig. 28-8

2. Change the position of the installing screw for the damper holding bracket.
   Installing the RADF: A
   Installing the platen cover: B

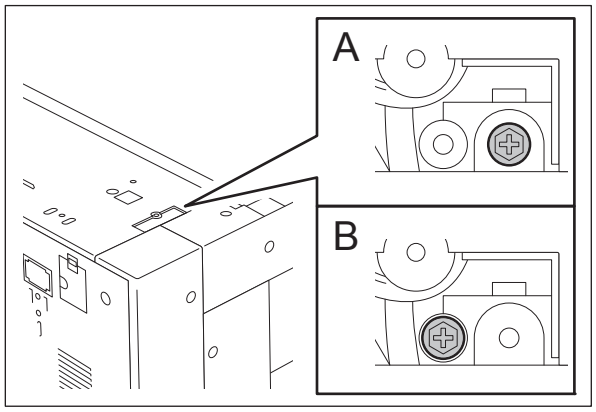


Fig. 28-9

28.1.2 KD-1023 (Paper Feed Pedestal (PFP))

(1) Turn OFF the power and unplug the power cable.
(2) Remove 2 screws and take off the rear cover-1.

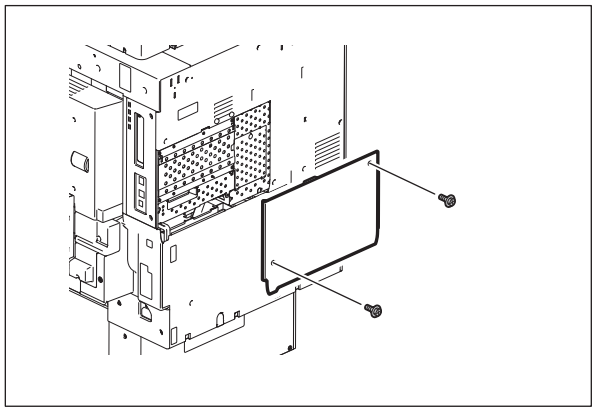


Fig. 28-10

(3) Remove 8 screws and take off the rear cover-2.

Note:
Disconnect the connector of the RADF first when the RADF is installed.

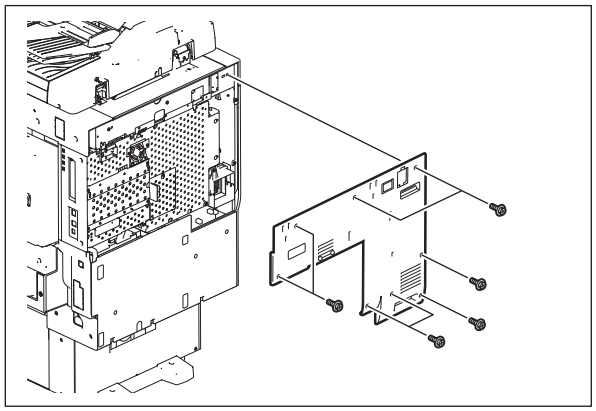


Fig. 28-11

(4) Remove 3 screws and take off the rear cover-3.

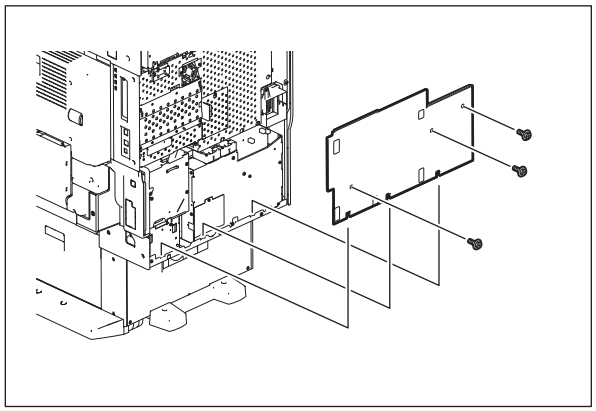


Fig. 28-12

(5) Remove 1 screw and the ground wire, and then disconnect 1 connector.

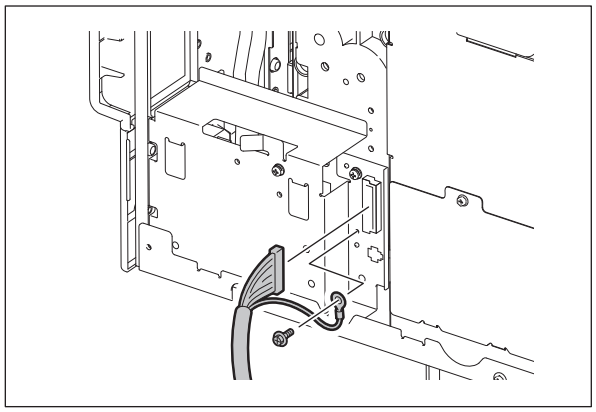


Fig. 28-13

(6) Remove 2 screws and take off 2 fixing brackets on the rear side.

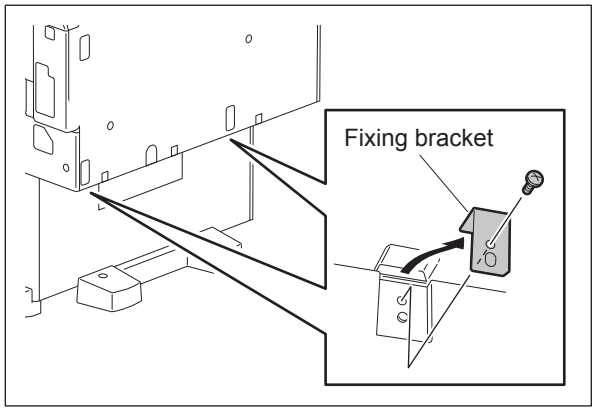


Fig. 28-14

(7) Take off the 2nd drawer of the equipment and PFP 1st drawer.

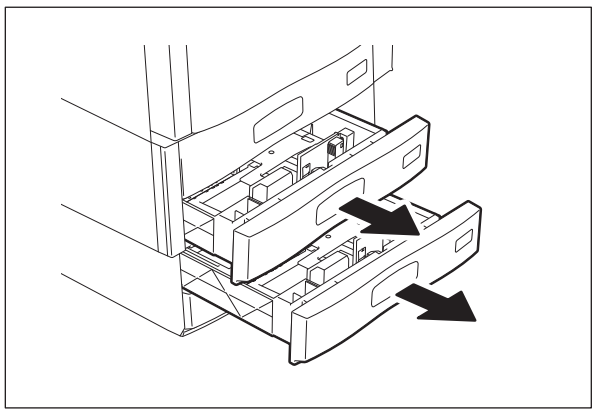


Fig. 28-15

(8) Remove 4 screws and take off 2 fixing brackets on the front side.

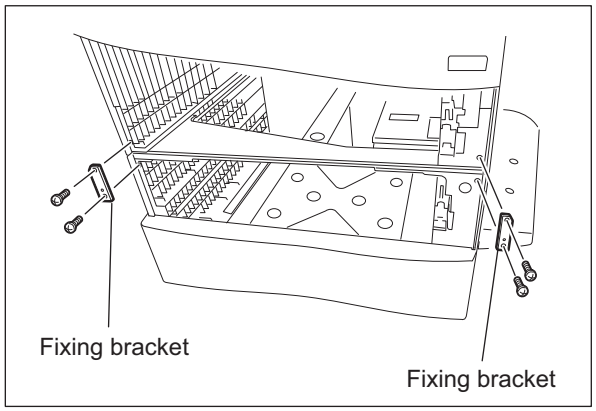


Fig. 28-16

(9) Lift up the equipment and take off the PFP.

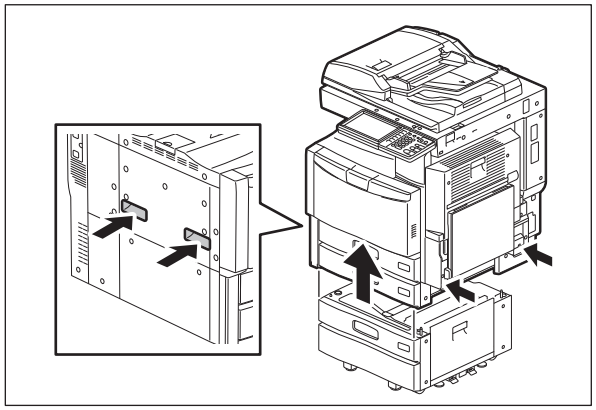


Fig. 28-17

28.1.3 KD-1024 (Large Capacity Feeder (LCF))

(1) Turn OFF the power and unplug the power cable.
(2) Remove 2 screws and take off the rear cover-1.

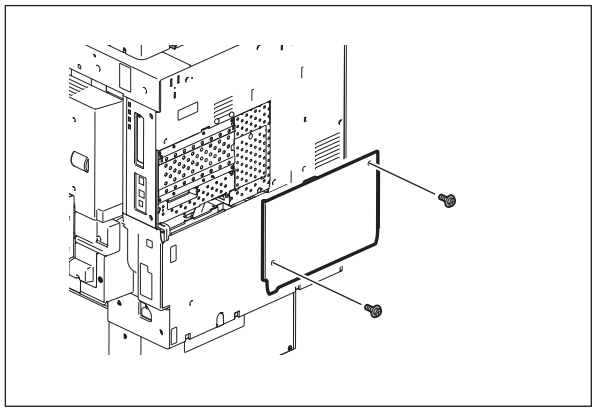


Fig. 28-18

(3) Remove 8 screws and take off the rear cover-2.

Note:
Disconnect the connector of the RADF first when the RADF is installed.

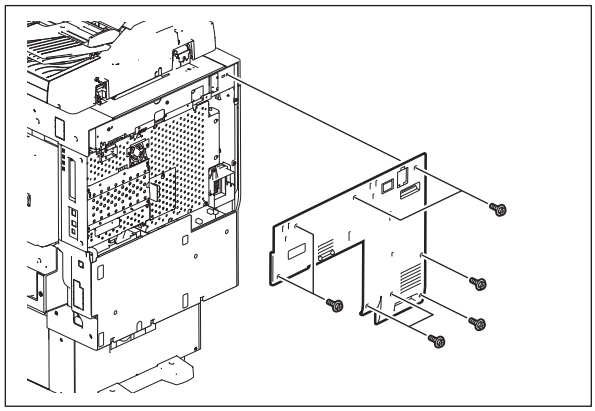


Fig. 28-19

(4) Remove 3 screws and take off the rear cover-3.

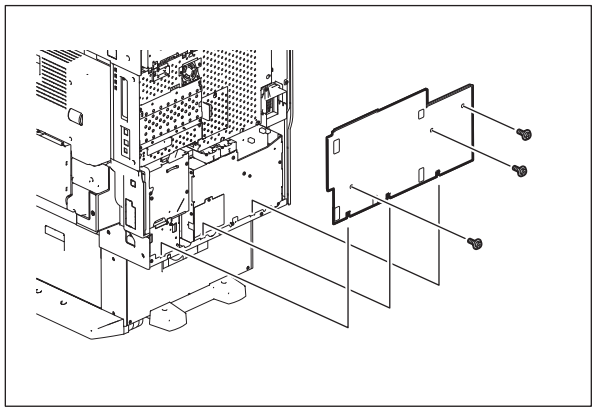


Fig. 28-20

(5) Remove 1 screw and the ground wire, and then disconnect 1 connector.

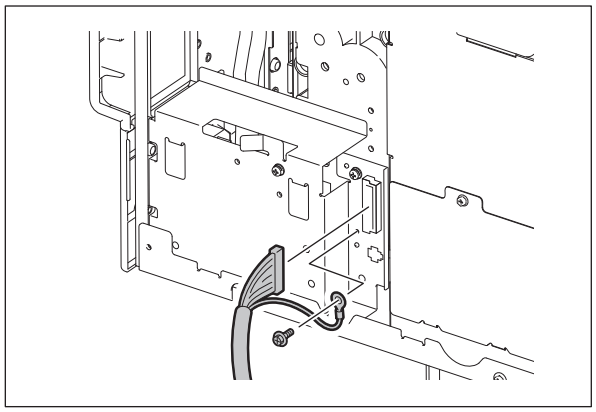


Fig. 28-21

(6) Remove 2 screws and take off 2 fixing brackets on the rear side.

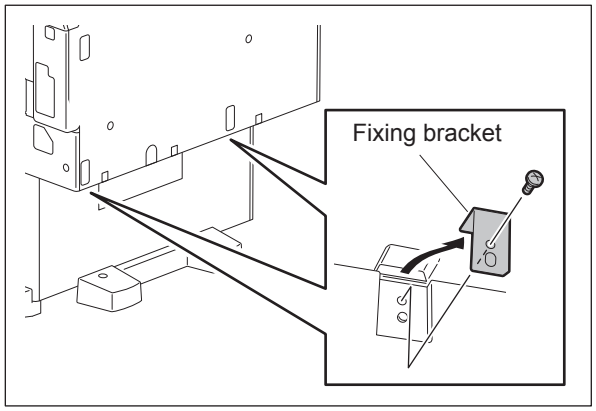


Fig. 28-22

(7) Take off the 2nd drawer of the equipment.

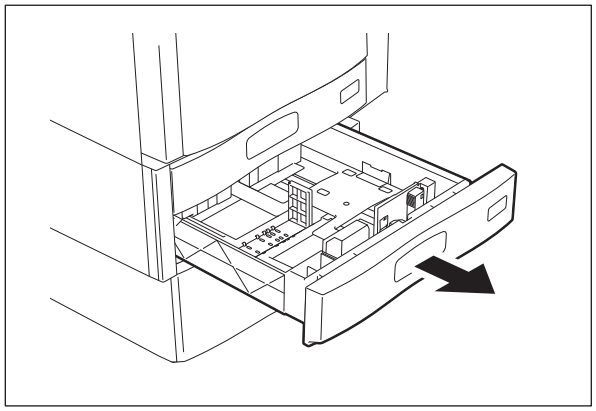


Fig. 28-23

(8) Pull out the LCF drawer.

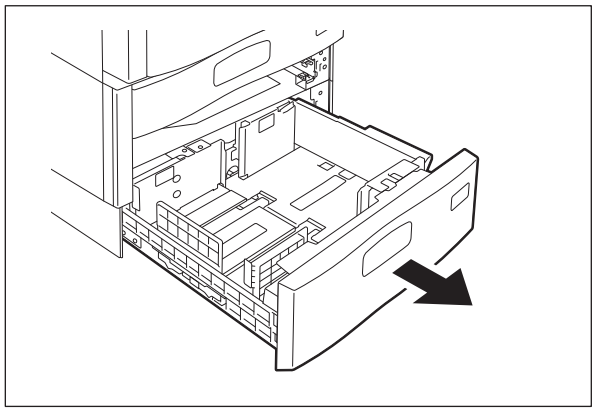


Fig. 28-24

(9) Remove 4 screws and take off 2 fixing brackets on the front side.

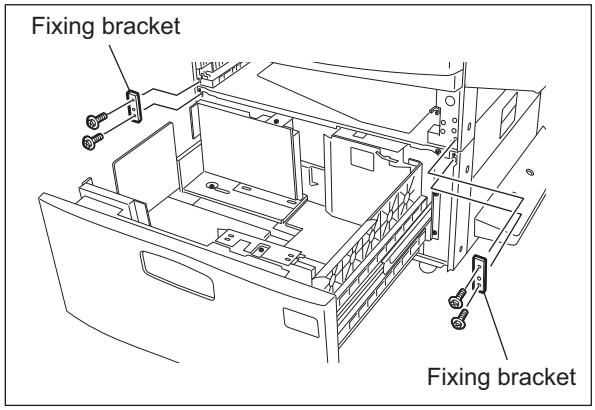


Fig. 28-25

(10) Lift up the equipment and take off the LCF.

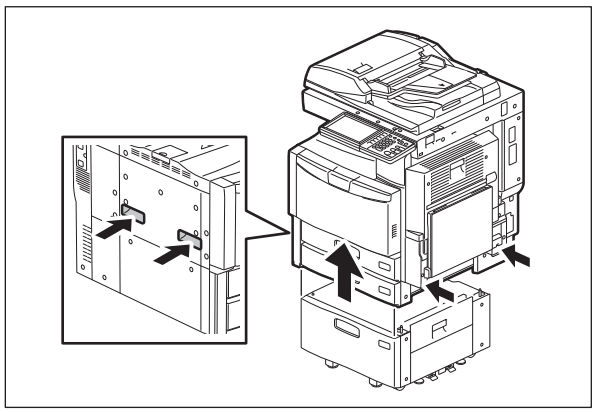


Fig. 28-26

28.1.4 MJ-1101 (Finisher)

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover and disconnect the connector.

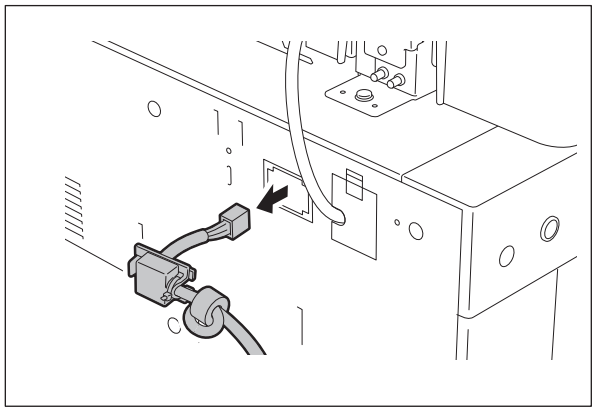


Fig. 28-27

(3) Remove 1 screw and the ground wire.

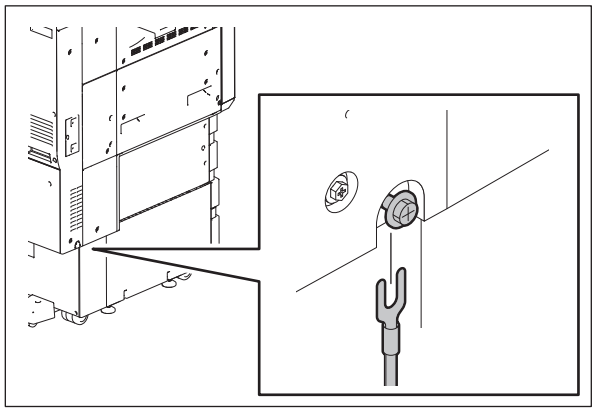


Fig. 28-28

(4) Remove 1 screw and take off the fixing plate.

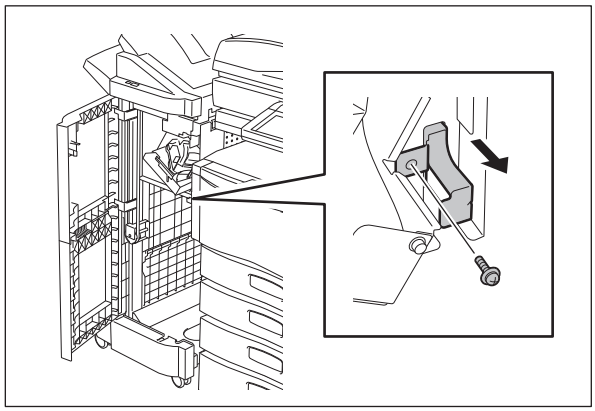


Fig. 28-29

(5) Take off the finisher.

Note:

Be careful not to fell the finisher when moving only the finisher unit.

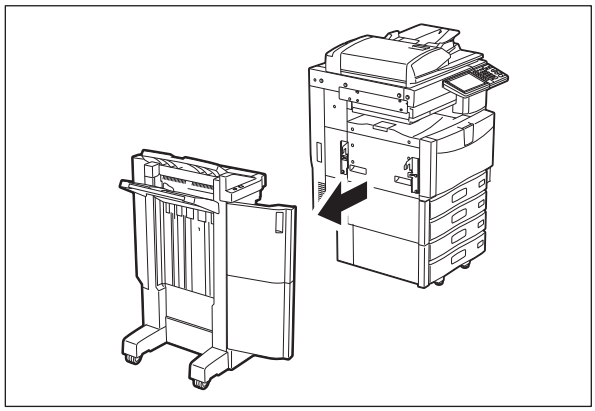


Fig. 28-30

28.1.5 MJ-1030 (Saddle Stitch Finisher)

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover and disconnect the connector.

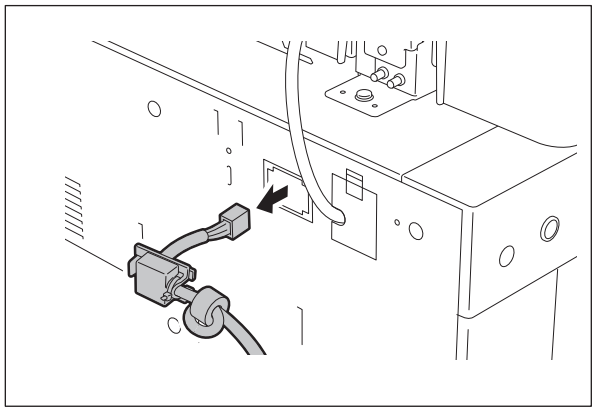


Fig. 28-31

(3) Open the finisher front cover and remove 1 screw.

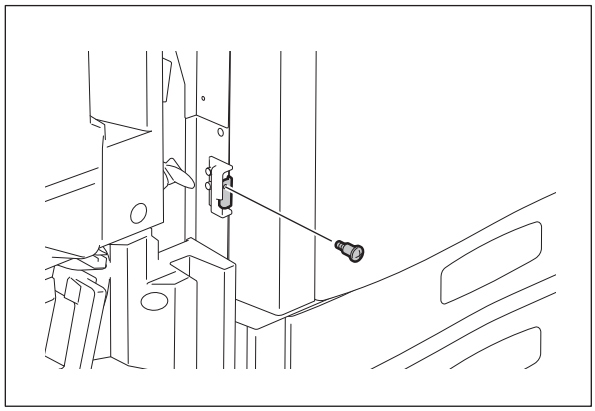


Fig. 28-32

(4) Remove 1 screw and take off the cover of the finisher rear side.

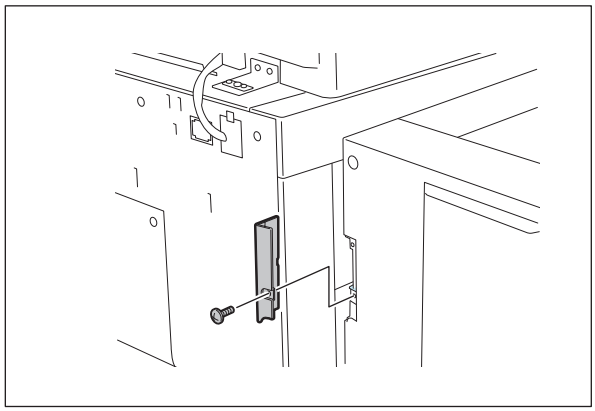


Fig. 28-33

(5) Remove 1 screw.

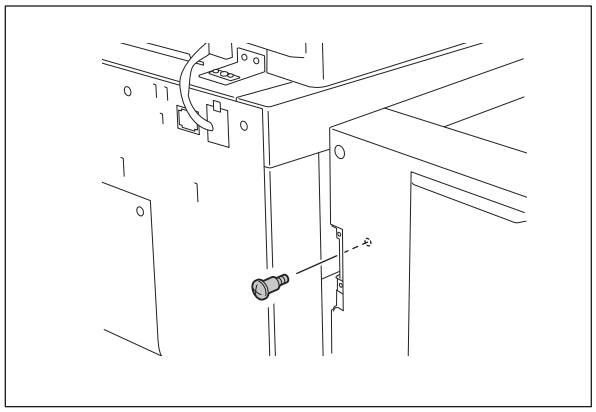


Fig. 28-34

(6) Take off the finisher.

Note:
Be careful not to fell the finisher when moving only the finisher unit.

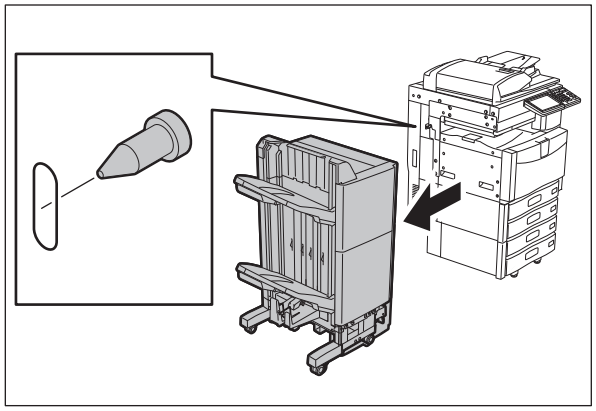


Fig. 28-35

28.1.6 MJ-1031 (Hanging Finisher)

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover and disconnect the connector.

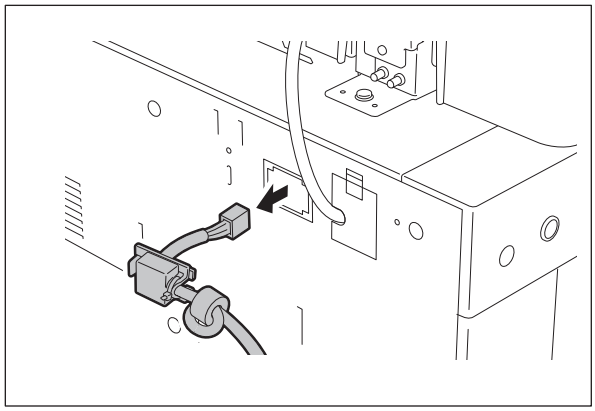


Fig. 28-36

(3) Remove 2 screws and take off 2 fixing brackets.

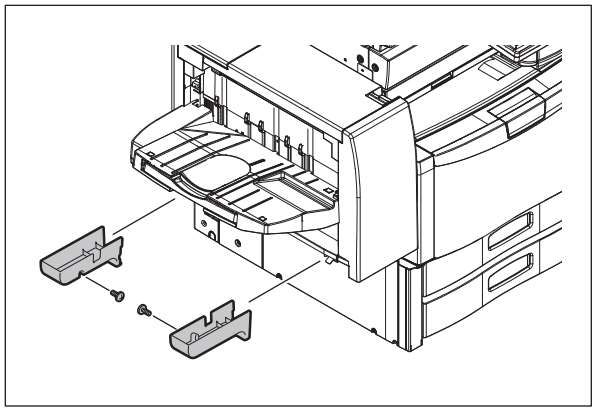


Fig. 28-37

(4) Remove 2 screws and take off 2 fixing brackets.

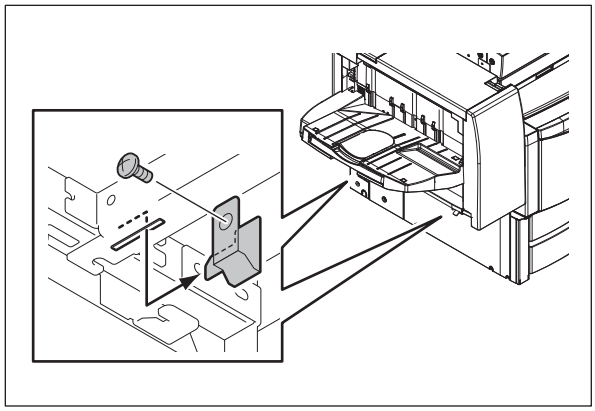


Fig. 28-38

(5) Take off the finisher.

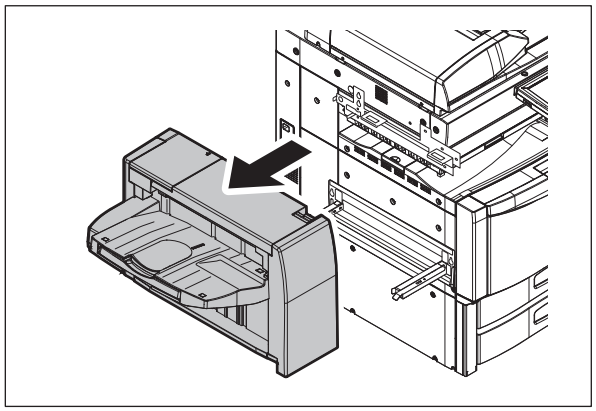


Fig. 28-39

28.1.7 MJ-6004 (Hole punch unit)

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover and disconnect connector.

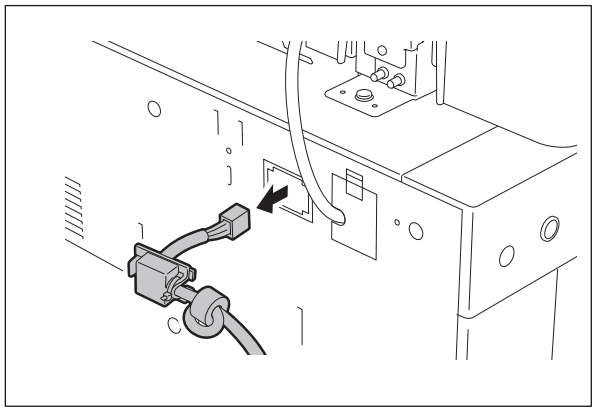


Fig. 28-40

(3) Open the front cover of the hole punch unit and remove 1 screw.

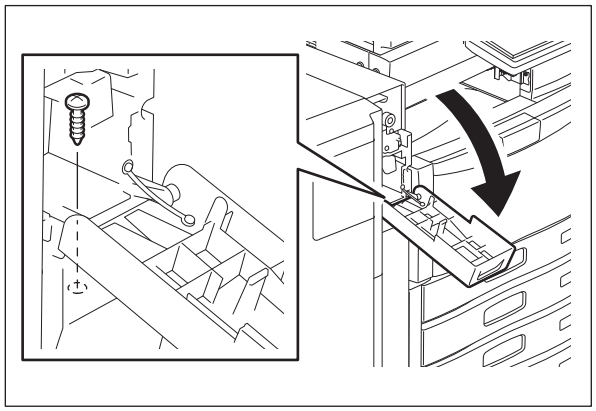


Fig. 28-41

(4) Take off the cover of the punch unit lower side.

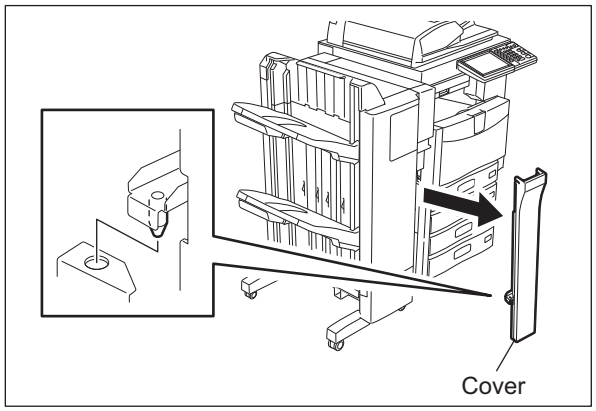


Fig. 28-42

(5) Remove 1 screw.

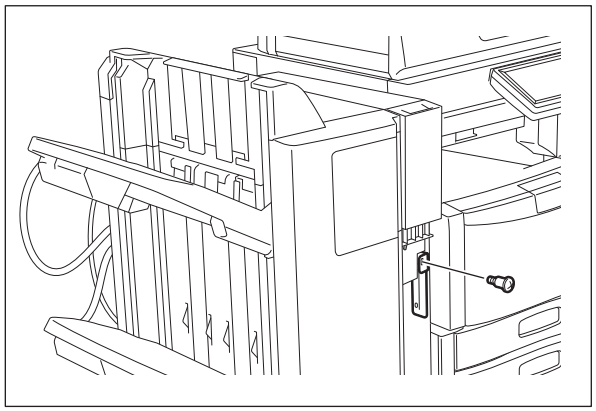


Fig. 28-43

(6) Remove 3 screws and take off the punch unit rear cover.

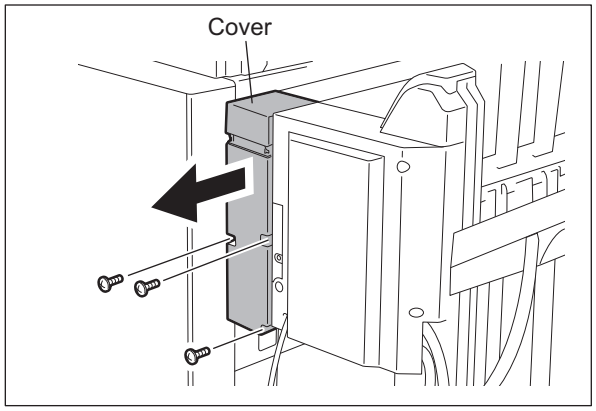


Fig. 28-44

(7) Remove 1 screw.

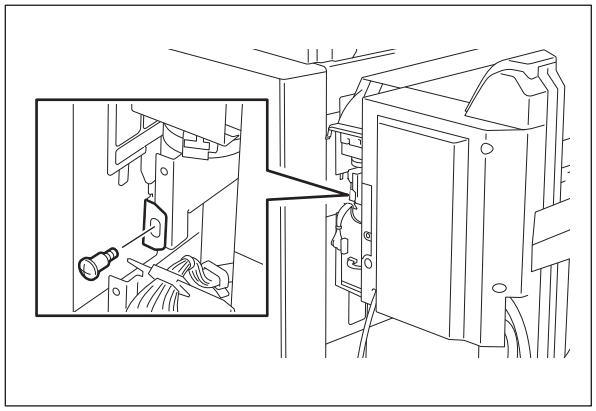


Fig. 28-45

(8) Take off the finisher with the hole punch unit.

Note:
Be careful not to fell the finisher when moving only the finisher unit.

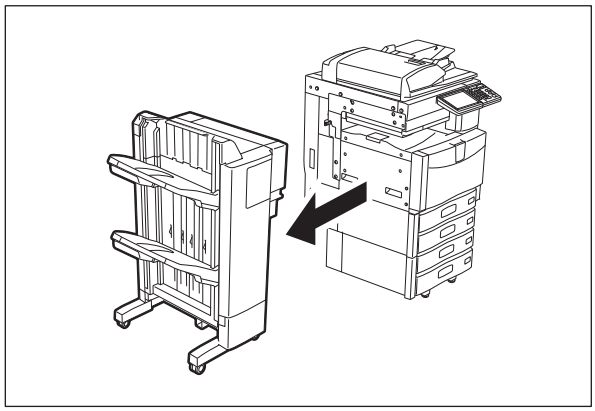


Fig. 28-46

(9) Disconnect 2 connectors.

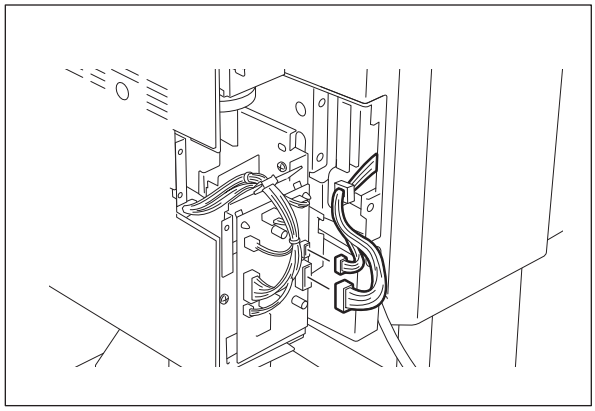


Fig. 28-47

(10) Remove 2 screws.

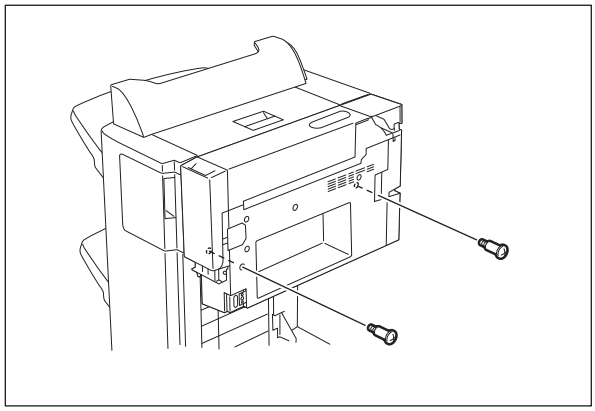


Fig. 28-48

(11) Lift up the punch unit and take it off.

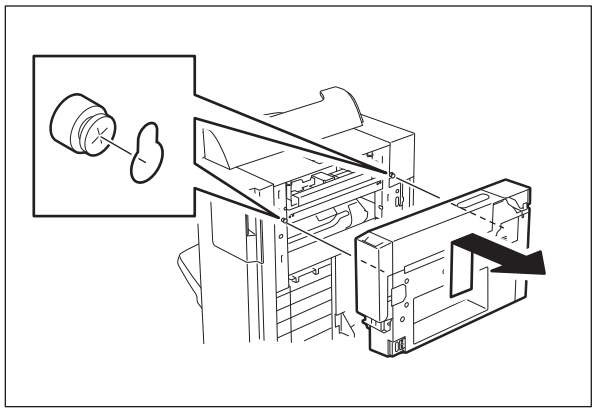


Fig. 28-49

28.1.8 MJ-6101 (Hole punch unit)

(1) Turn OFF the power and unplug the power cable.
(2) Take off the connector cover and disconnect connector.

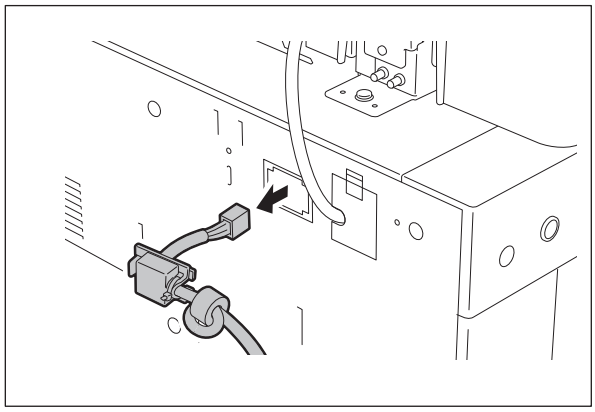


Fig. 28-50

(3) Remove 1 screw and the ground wire.

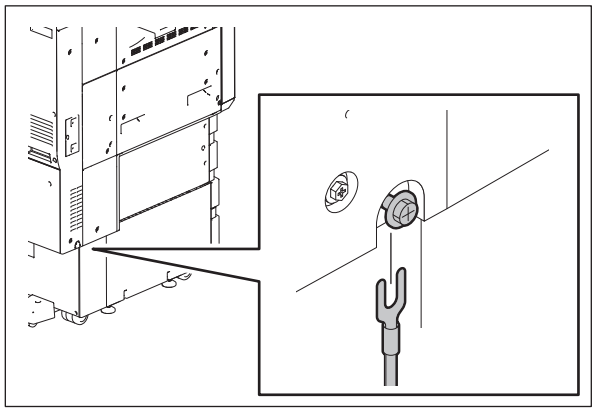


Fig. 28-51

(4) Take off the cover of the punch unit lower side.

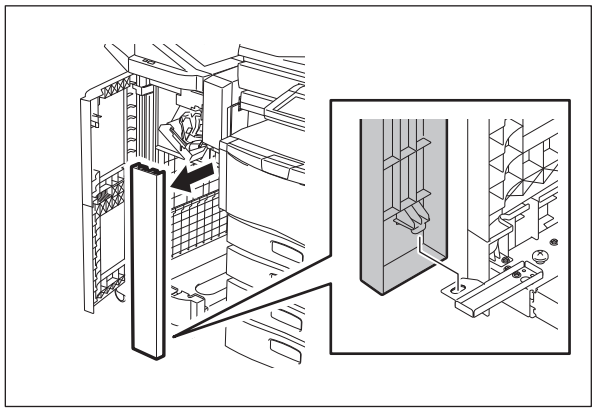


Fig. 28-52

(5) Remove 1 screw and take off the fixing plate.

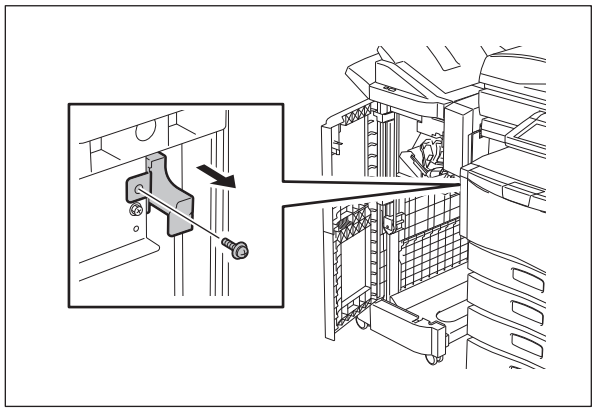


Fig. 28-53

(6) Take off the finisher with the hole punch unit.

Note:

Be careful not to fell the finisher when moving only the finisher unit.

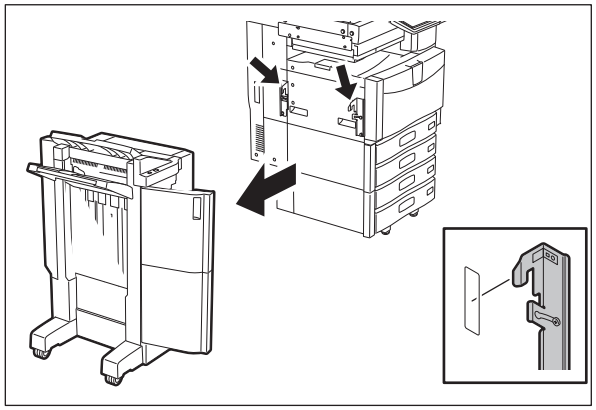


Fig. 28-54

(7) Remove 1 screw and take off the connector cover.

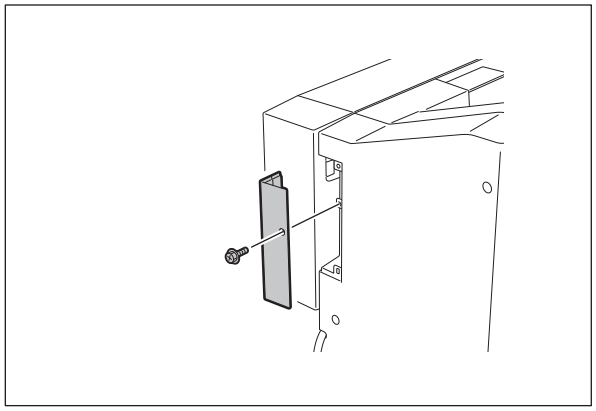


Fig. 28-55

(8) Disconnect 1 connector.

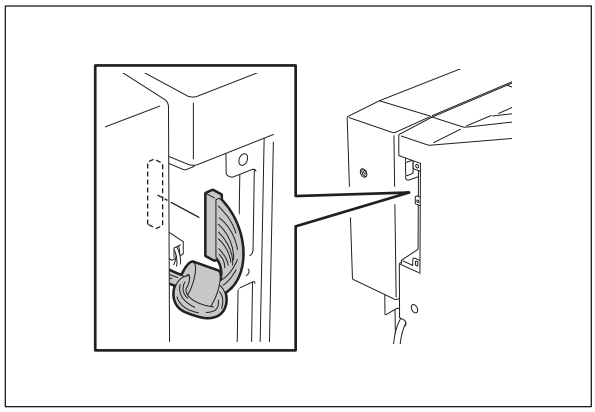


Fig. 28-56

(9) Take off the cover of the punch unit lower side.

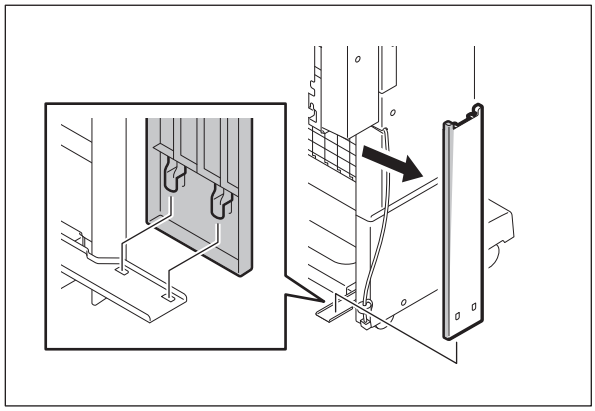


Fig. 28-57

(10) Remove 4 screws. Lift up the punch unit and take it off.

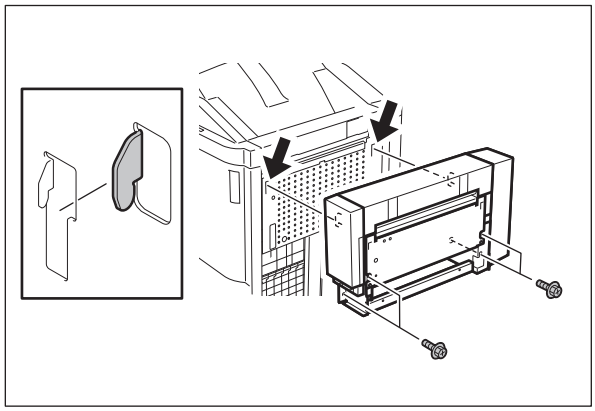


Fig. 28-58

28.1.9 KN-4520 (Bridge unit)

(1) Turn OFF the power and unplug the power cable.
(2) Open the bridge unit. Remove 1 screw.

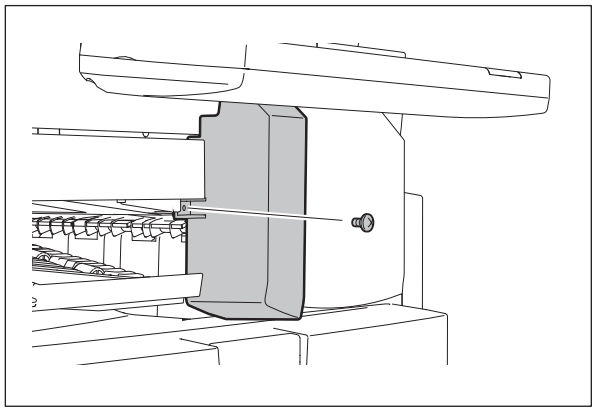


Fig. 28-59

(3) Take off the cover.

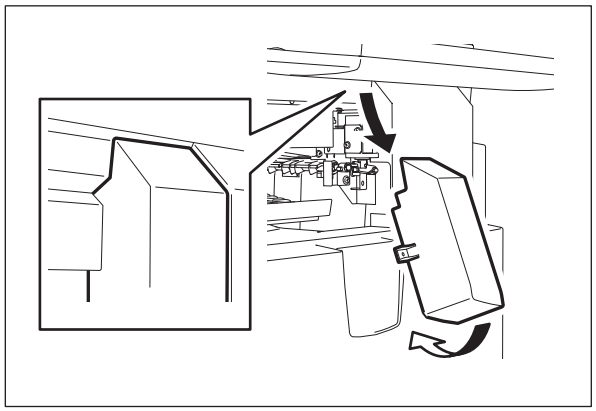


Fig. 28-60

(4) Remove 1 screw.

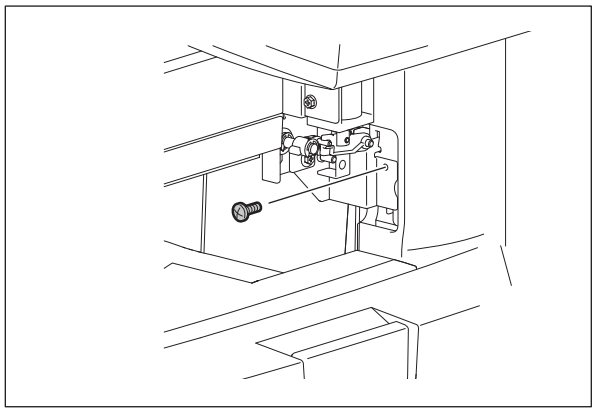


Fig. 28-61

(5) Remove 4 screws and take off the plate.

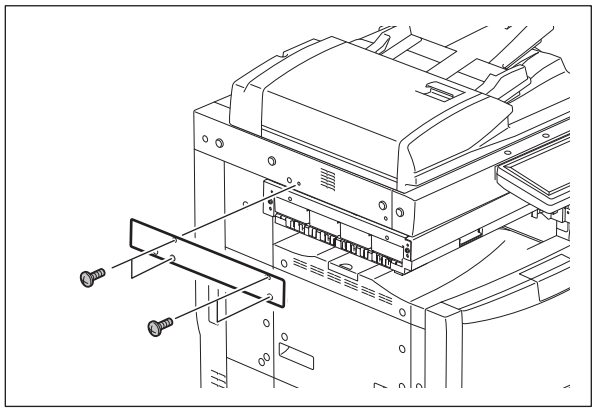


Fig. 28-62

(6) Disconnect 1 connector.

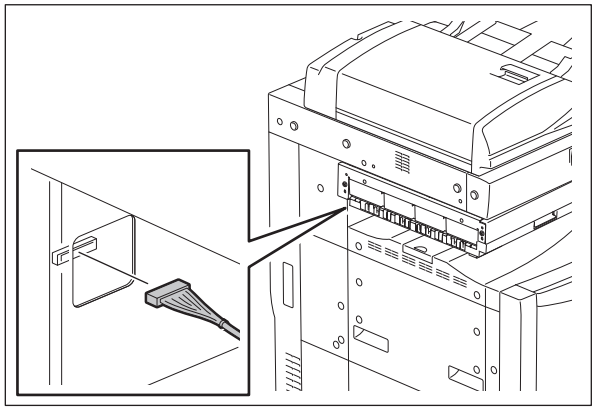


Fig. 28-63

(7) Lift up the bridge unit and release the hook.
Take off the bridge unit toward the front.

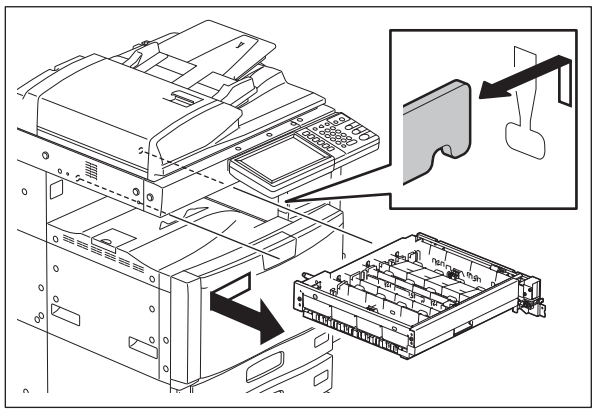


Fig. 28-64

28.1.10 MF-3500 (Damp Heater Kit)

[A] Preparation

Damp Heater Kit (check if all of the following parts are in it), tools

1. Scanner Damp Heater (Left)
2. Scanner Damp Heater (Right)
3. Bracket
4. Edge support
5. Drum Damp Heater (Right)
6. Drum Damp Heater (Left)
7. Fixing screw (for the scanner)
8. Fixing screw (for the drum: right)
9. Fixing screw (for the drum: left)

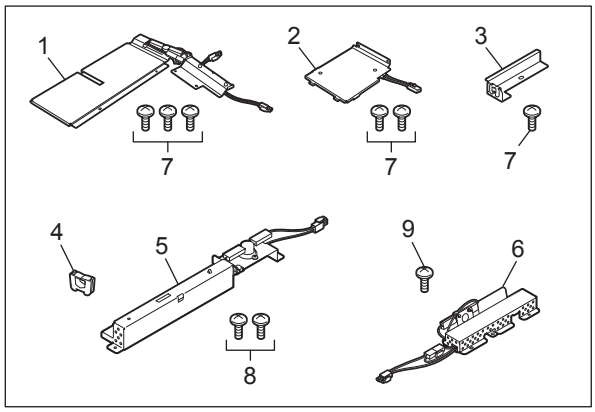


Fig. 28-65

Notes:

1. When installing the Damp Heater, ensure sufficient work space for disassembling the equipment.
2. Turn the power of the equipment OFF and unplug the power cable before the installation.
3. Take off the RADF (optional), the Finisher (optional), or the Hole Punch Unit (optional) before starting the installation, if installed.
4. Be sure not to drop small parts such as screws into the equipment.

[B] Procedure

(1) Remove 4 screws and take off the right upper cover.

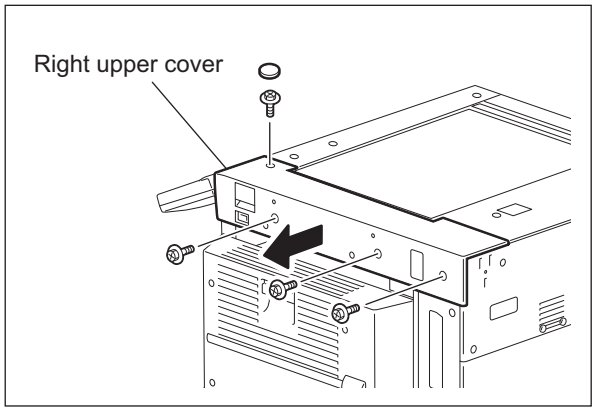


Fig. 28-66

(2) Remove 2 screws and take off the fixing bracket.

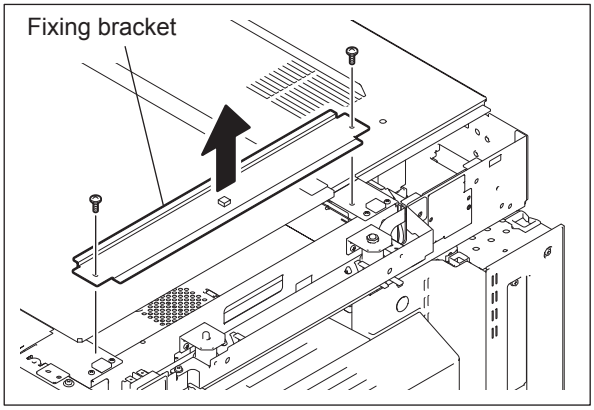


Fig. 28-67

(3) Take off the original glass.

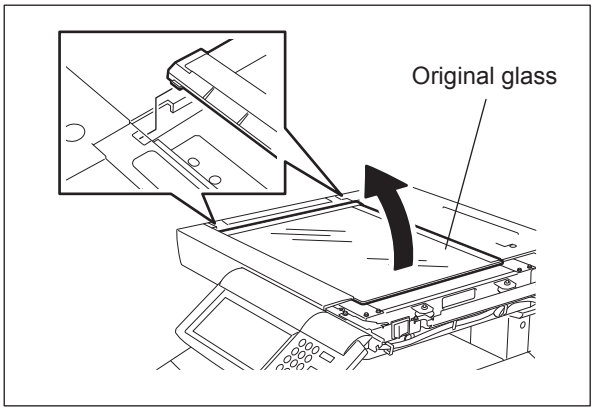


Fig. 28-68

(4) Remove 6 screws and take off the lens cover.

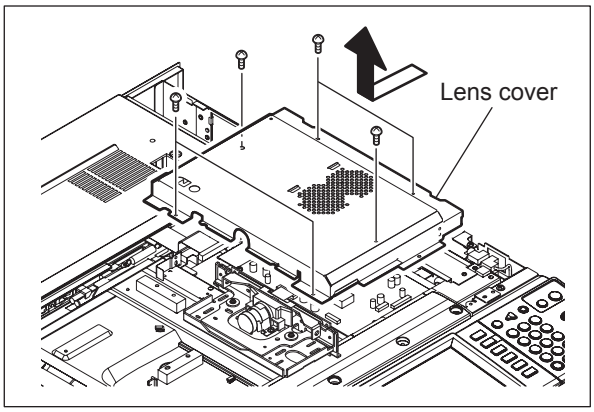


Fig. 28-69

(5) Install the edge support on the lens cover.

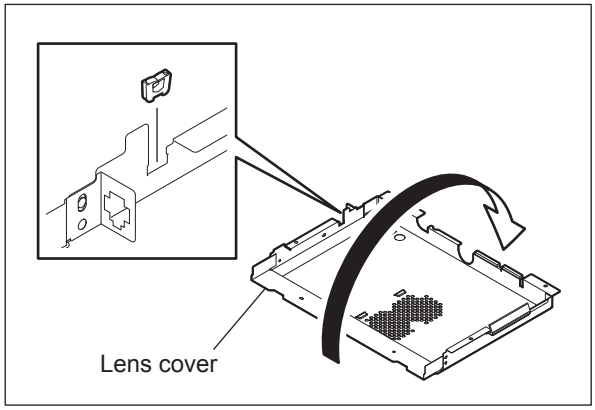


Fig. 28-70

(6) Install the Scanner Damp Heater (Right) on the lens cover with 2 screws and then insert the connector.

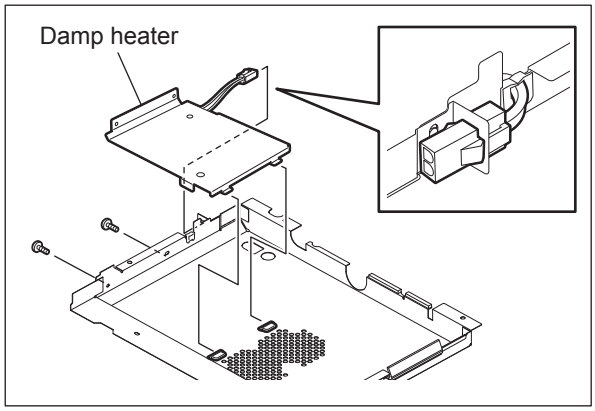


Fig. 28-71

(7) Install the lens cover with 6 screws.

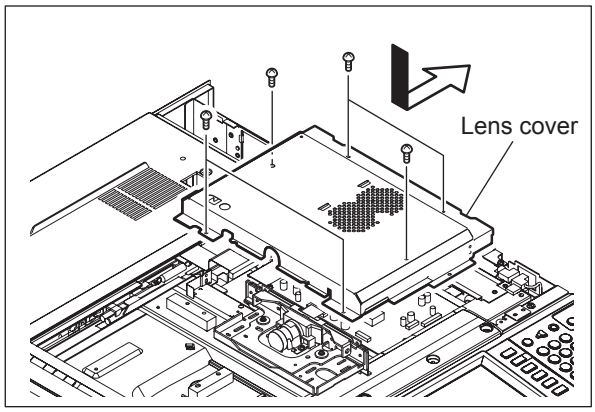


Fig. 28-72

(8) Install the bracket with 1 screw.

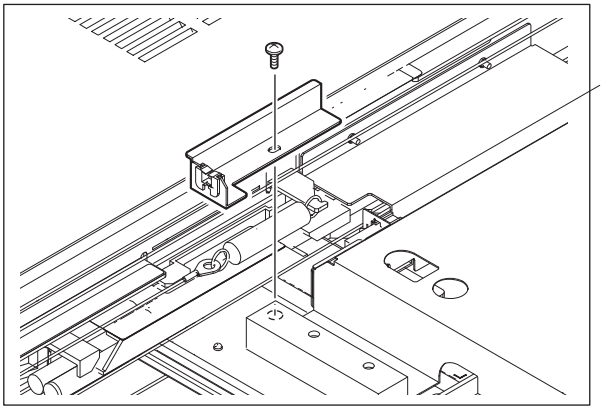


Fig. 28-73

(9) Rotate the pulley to move the carriage to the paper exit side.

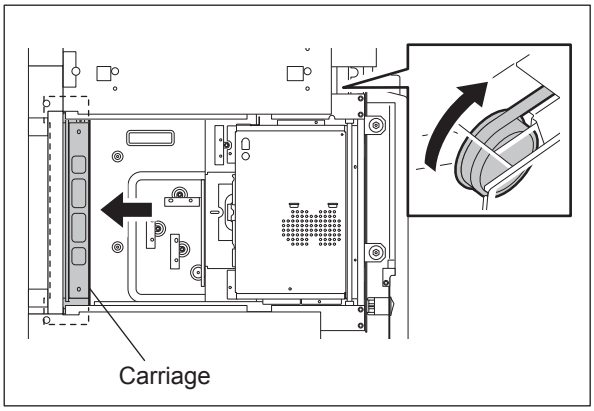


Fig. 28-74

(10) Install the Scanner Damp Heater (Left) with 2 screws.

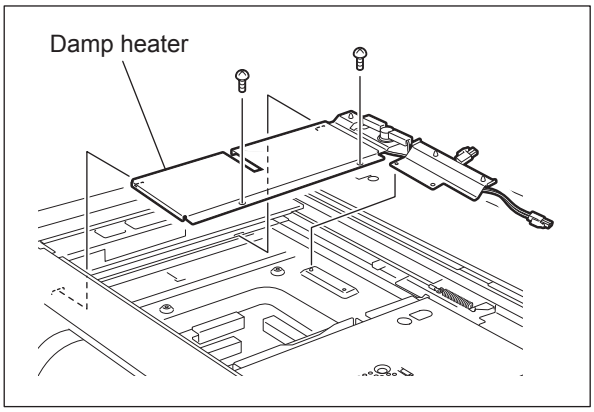


Fig. 28-75

(11) Fix the bracket with 1 screw and then insert 2 connectors.

Note:
Check that no harnesses will be caught by moving the carriage.

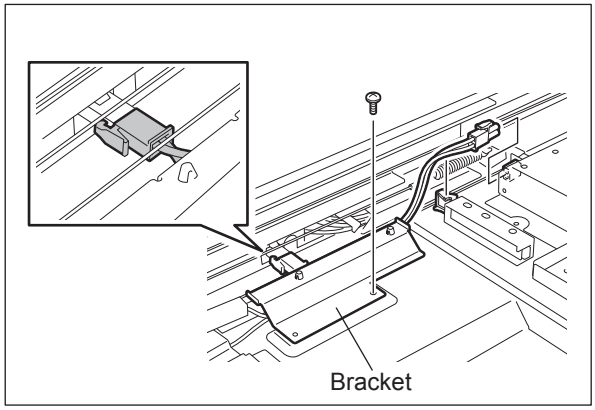


Fig. 28-76

(12) Install the original glass.

Note:
When installing, fit 2 small protrusions of the original glass in the groove of the equipment and fix the original glass with the fixing bracket by pushing it to the left rear direction.

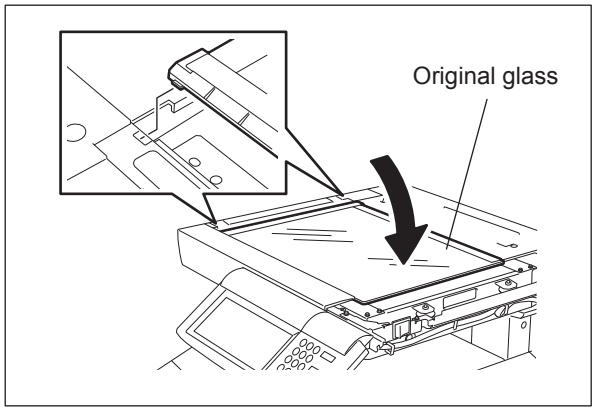


Fig. 28-77

(13) Install the fixing bracket with 2 screws.

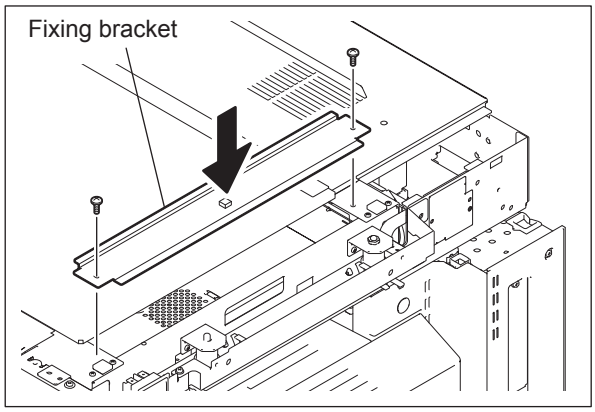


Fig. 28-78

(14) Install the right upper cover with 4 screws.

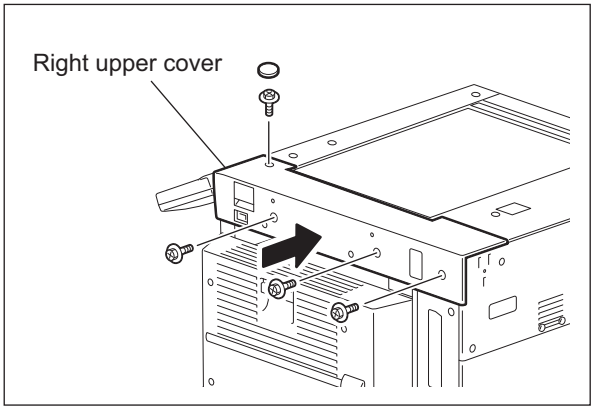


Fig. 28-79

(15) Open the front cover.
(16) Remove 1 screw, and then turn the TBU lifting lever counterclockwise for 90 degrees.

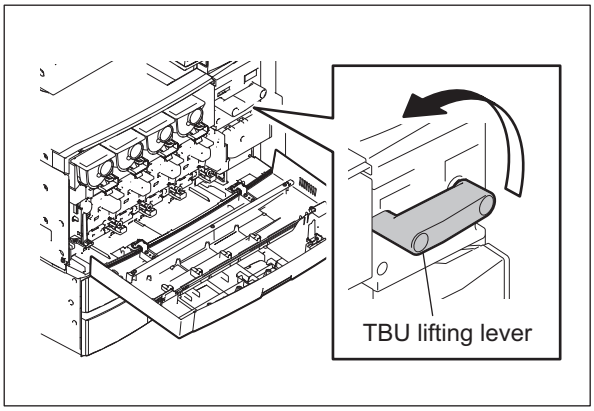


Fig. 28-80

(17) Remove the toner cartridge (Y).

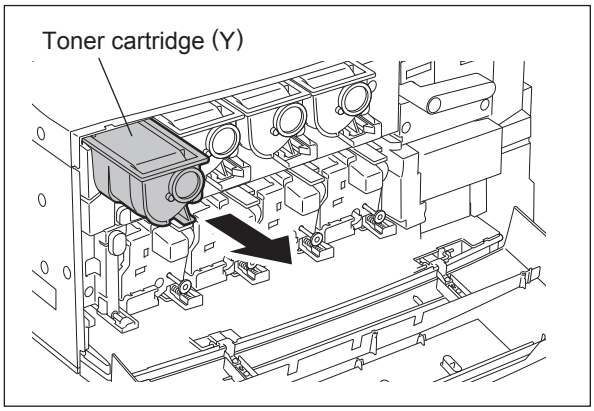


Fig. 28-81

(18) Remove all of the 4 process units (EPUs).

Note:

Hold the A part and B part of the process unit (EPU).

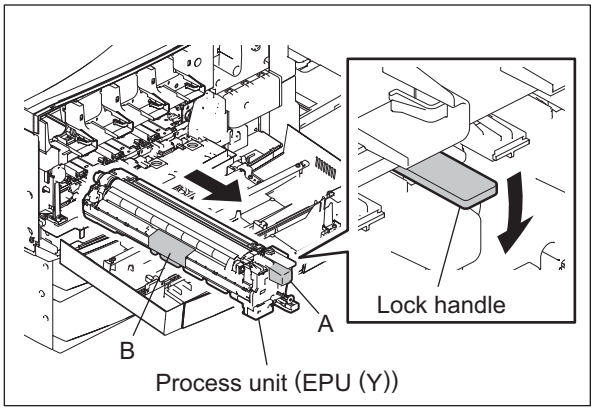


Fig. 28-82

(19) Remove 1 screw, and then pull the transfer belt cleaning duct toward the front to take it off.

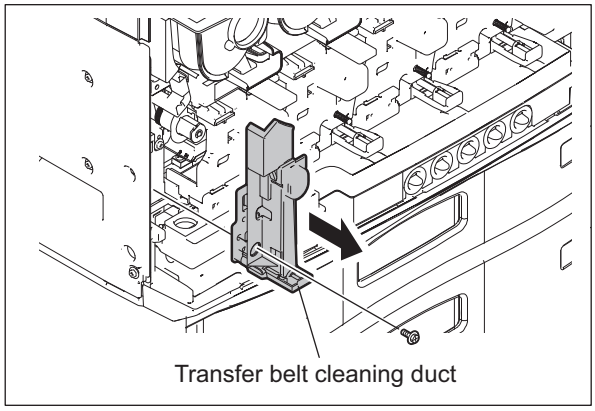


Fig. 28-83

(20) Turn the TBU lifting lever clockwise for 90 degrees.

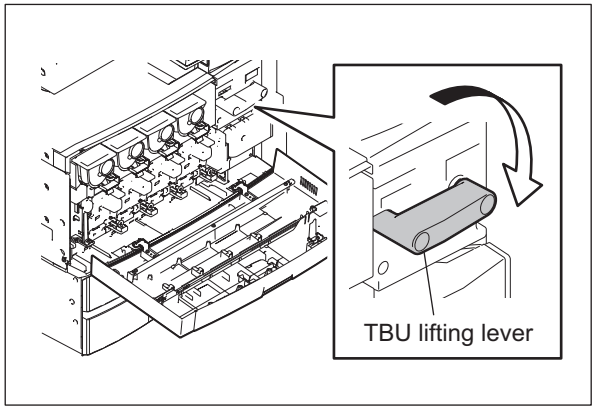


Fig. 28-84

(21) Turn the lever (sky blue) of the transfer belt cleaning unit counterclockwise and pull it out toward you.

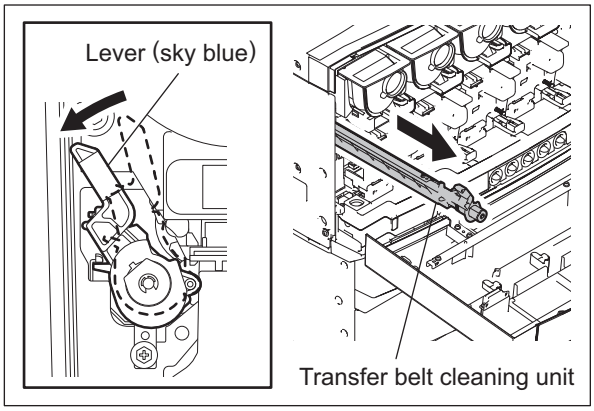


Fig. 28-85

(22) Remove 1 screw and take off the duct.
(23) Release 1 clamp.
(24) Disconnect 1 relay connector from the discharge LED.

Remark:
The right-hand figure shows the duct removed from the discharge LED (K). Take off the ducts from each color of the discharge LED (Y, M, C and K).

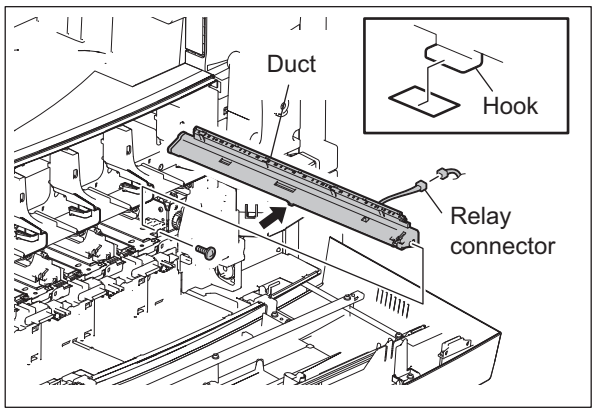


Fig. 28-86

(25) Remove 2 screws and take off the inner cover.

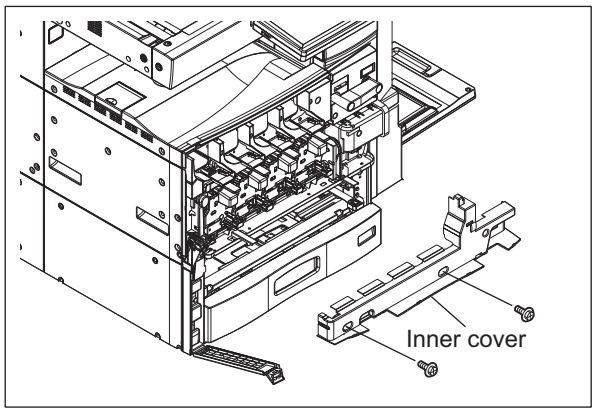


Fig. 28-87

(26) Open the automatic duplexing unit (ADU) and 2nd transfer unit (TRU).

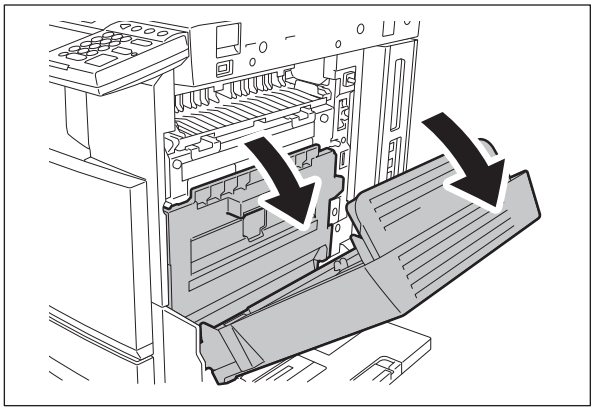


Fig. 28-88

(27) Remove 1 screw of the front hinge, and then take off the automatic duplexing unit (ADU) by lifting it up slightly and sliding it to the rear side.

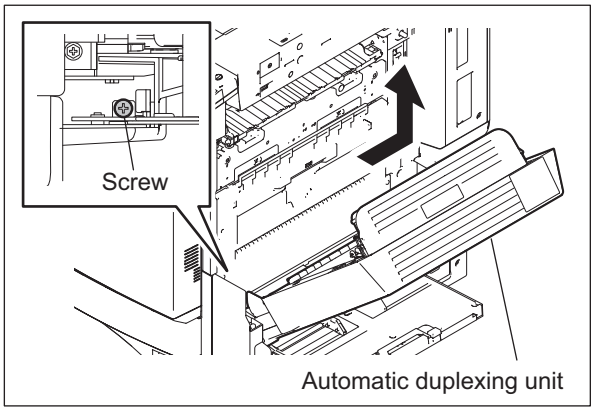


Fig. 28-89

(28) When installing, match the front and rear hinge holes of the equipment and the right and left hinge bosses of the ADU.

Notes:

Be sure to check the following points after moving the ADU to its maintenance position.

- Check that the connector is not disconnected.
- Check that duplex printing on A4 or LT sized paper is performed properly.

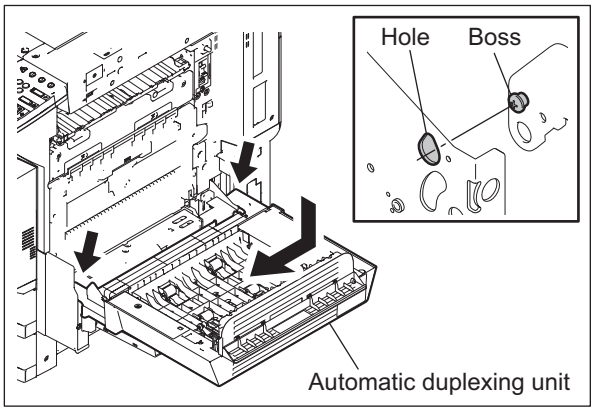


Fig. 28-90

(29) Open the middle guide by holding its knob. Disconnect 1 connector.

Note:

Do not hold the middle guide itself when opening and closing it.

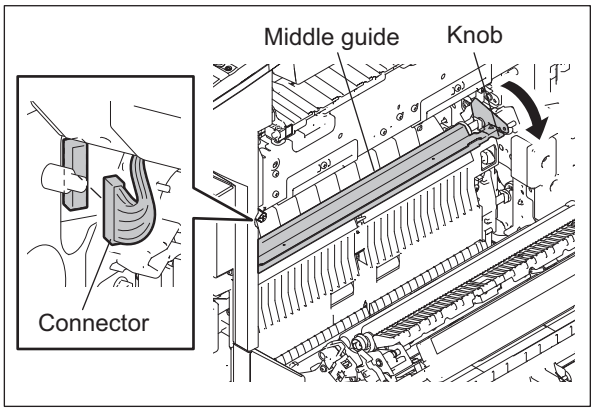


Fig. 28-91

(30) Then turn the TBU lifting lever counterclockwise for 90 degrees.

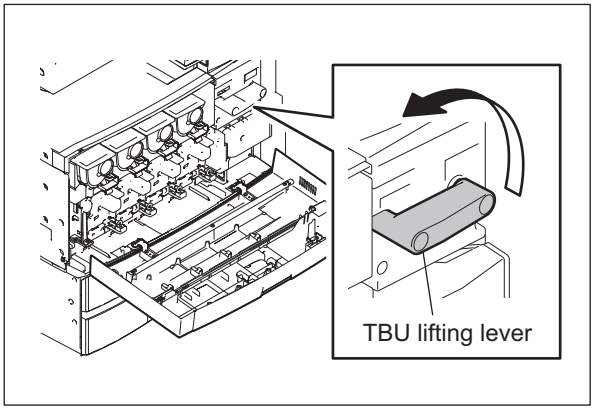


Fig. 28-92

(31) Hold the holder, and then pull out the transfer belt unit (TBU) toward you.

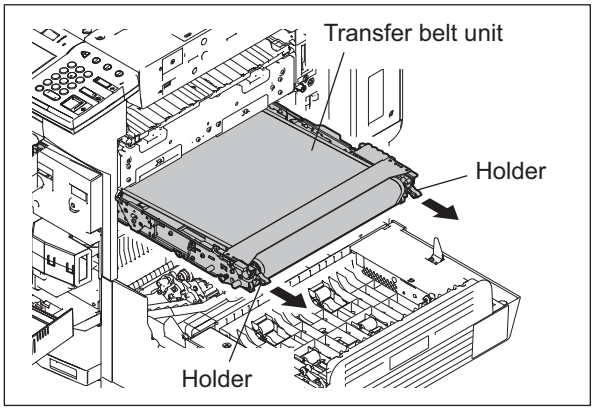


Fig. 28-93

(32) Raise the front handle, and then hold it together with the rear handle (light blue) to take off the transfer belt unit.

Note:

When taking off the transfer belt unit, be sure not to contact the bottom of this unit and the 2nd transfer unit to prevent the transfer belt from being scratched.

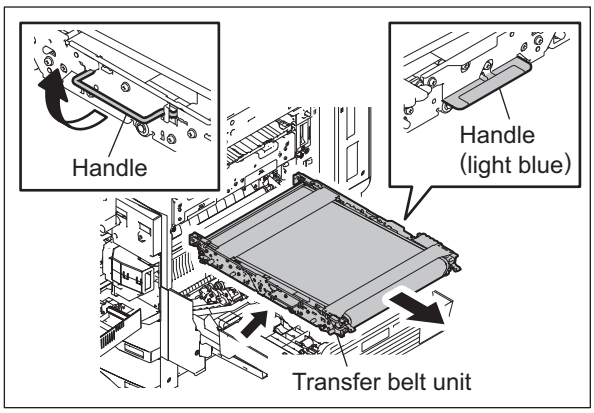


Fig. 28-94

(33) Remove 1 screw, and then take off the ozone filter-1.

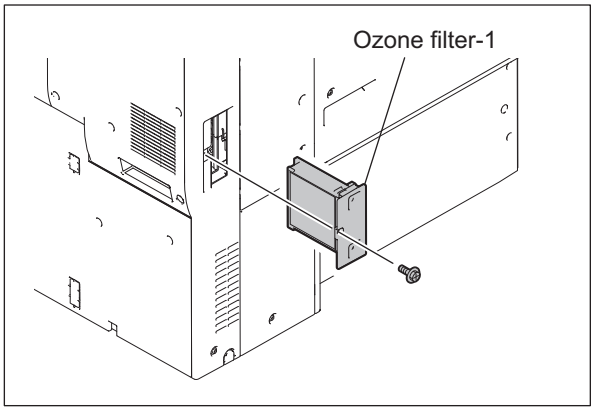


Fig. 28-95

(34) Remove 7 screws and take off the left cover.

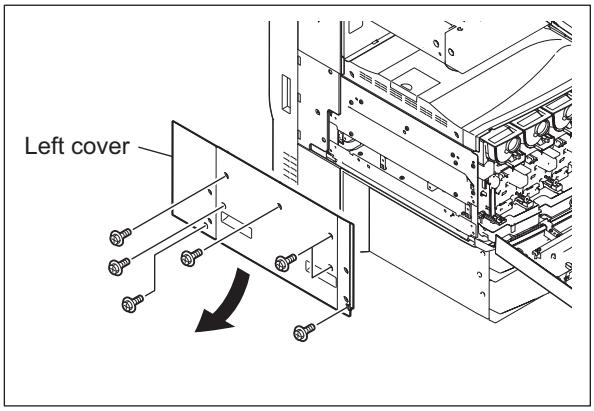


Fig. 28-96

(35) Remove 2 screws and take off the inner tray.

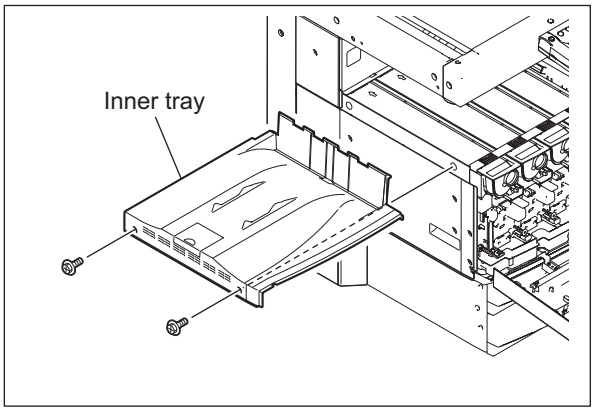


Fig. 28-97

(36) Remove 5 screws and take off the left rear cover.

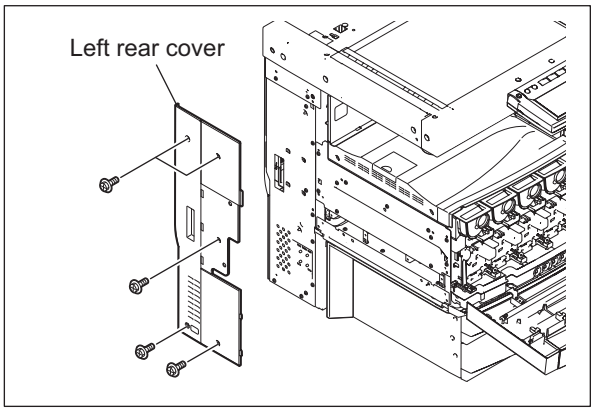


Fig. 28-98

(37) Remove 2 screws and take off the waste toner transport motor.
(38) Release 1 clamp and disconnect 1 connector.

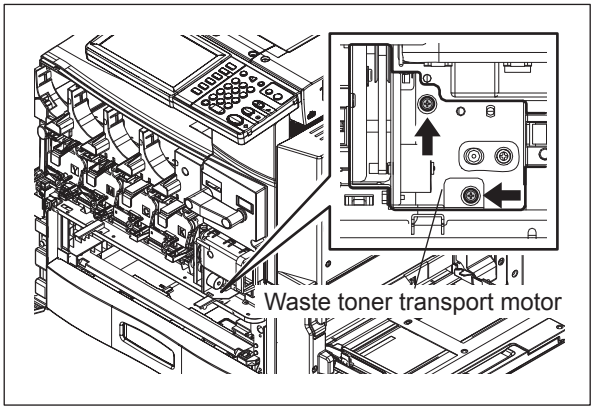


Fig. 28-99

(39) Disconnect 2 connectors.

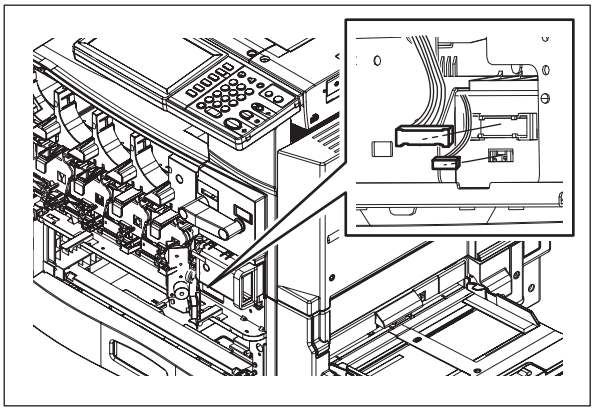


Fig. 28-100

(40) Remove 2 screws fixing the laser optical unit.

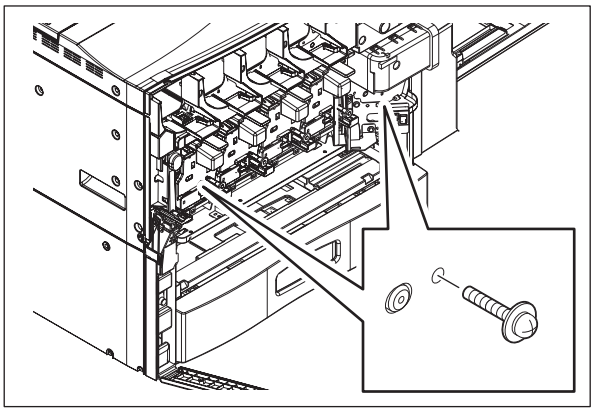


Fig. 28-101

(41) Disconnect 2 connectors and release 2 harness clamps.

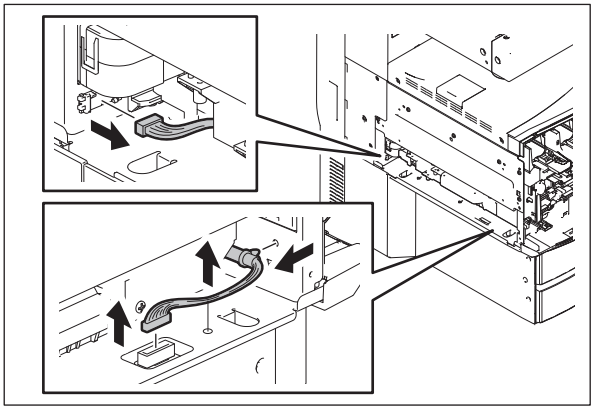


Fig. 28-102

(42) Pull out the laser optical unit.

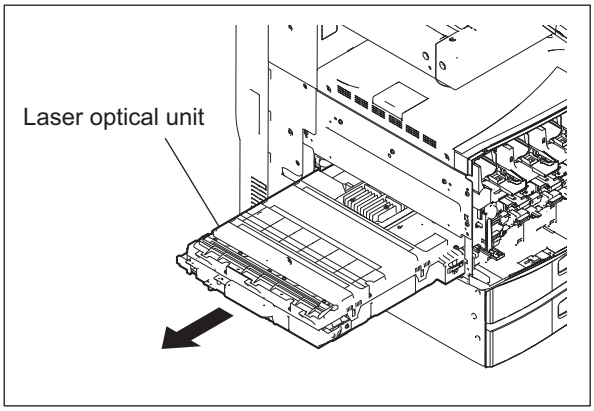


Fig. 28-103

Notes:

1. Do not leave fingerprints or stain on the slit glass of the laser optical unit.
2. Pay close attention not to make an impact or vibration on the laser optical unit because it is a precise apparatus.
3. Place the removed laser optical unit so as not to load on the polygonal motor.
4. Do not disassemble the laser optical unit in the field because it is precisely adjusted and very sensitive to dust and stain.
5. Hold the laser optical unit vertically. Do not press the top of the unit (the cover) where the slit glass and the polygonal motor are installed with your hands or other things.

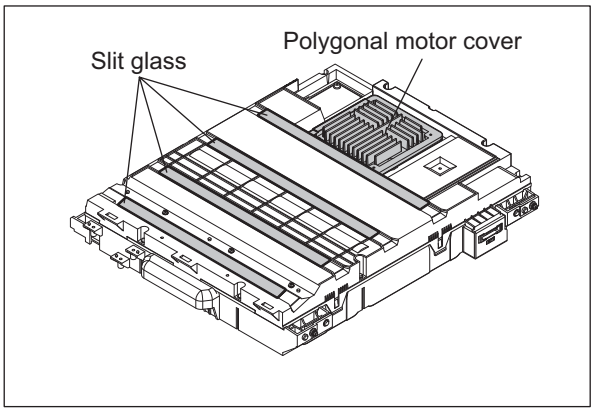


Fig. 28-104

(43) Remove 7 screws and take off the metal plate on the left side.

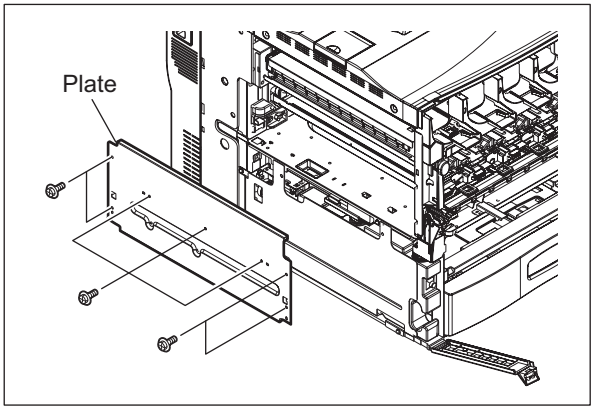


Fig. 28-105

(44) Remove 1 screw and take off the bracket.

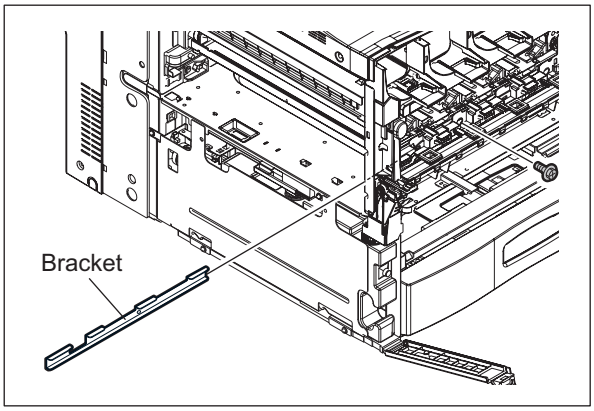


Fig. 28-106

(45) Remove 1 screw, slide the shutter unit to the front, and then pull it out to the exit side.

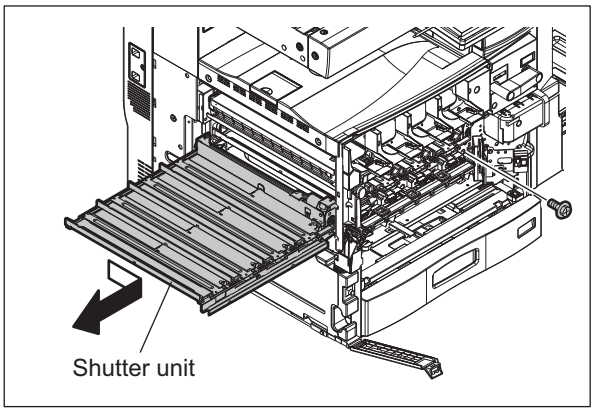


Fig. 28-107

(46) Remove 2 screws and take off the rear cover-1.

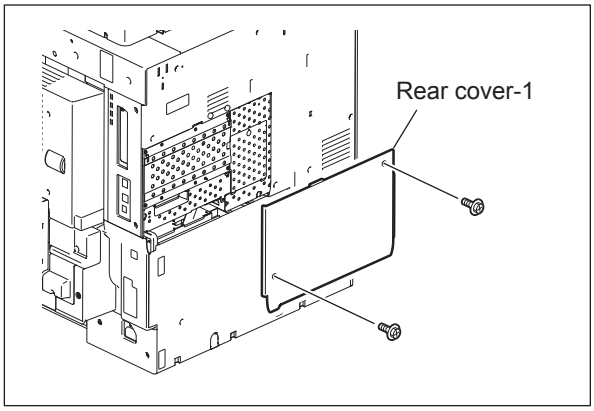


Fig. 28-108

(47) Remove 8 screws and take off the rear cover-2.

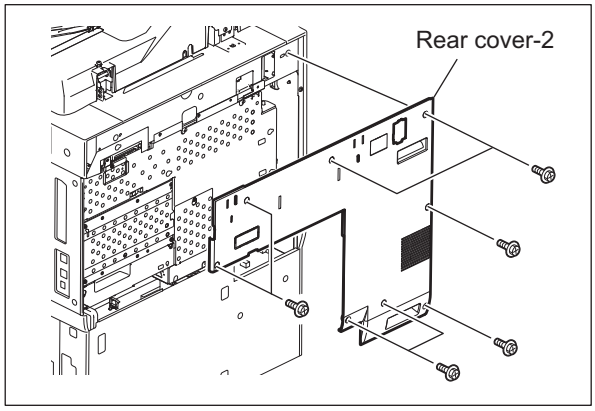


Fig. 28-109

(48) Remove 1 screw of the board cover and then loosen 11 screws.

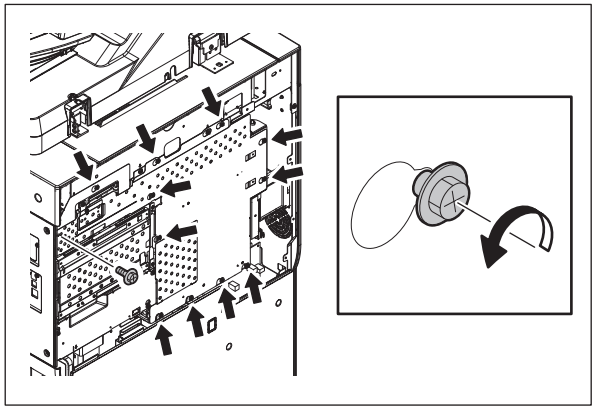


Fig. 28-110

(49) Slide the board cover to take it off.

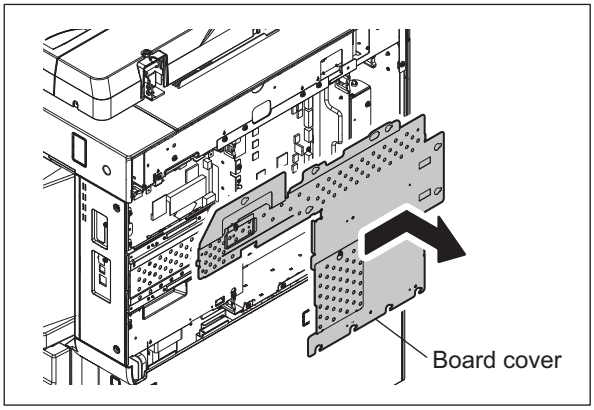


Fig. 28-111

(50) Remove 5 screws.

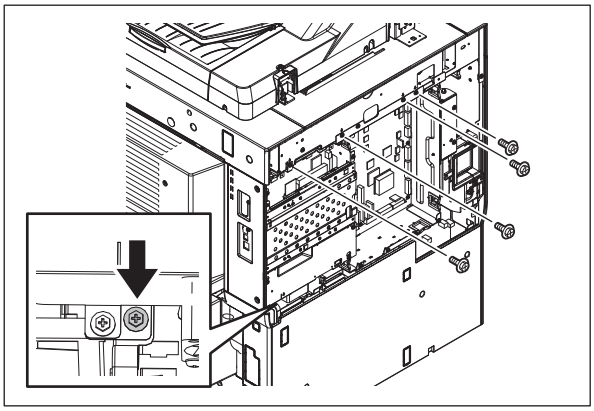


Fig. 28-112

(51) Disconnect the USB terminal and 1 connector from the SYS board.
(52) Disconnect the 1 connector from the IMG board.

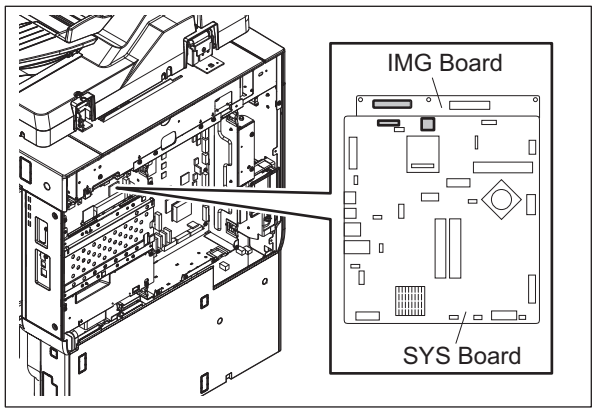


Fig. 28-113

(53) Disconnect 2 connectors from the LGC board.

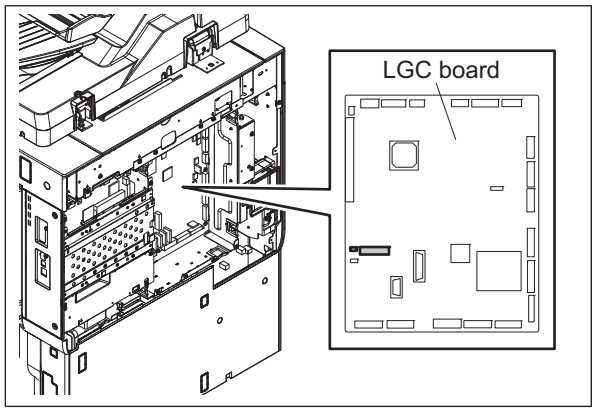


Fig. 28-114

(54) Release harnesses from 4 clamps.

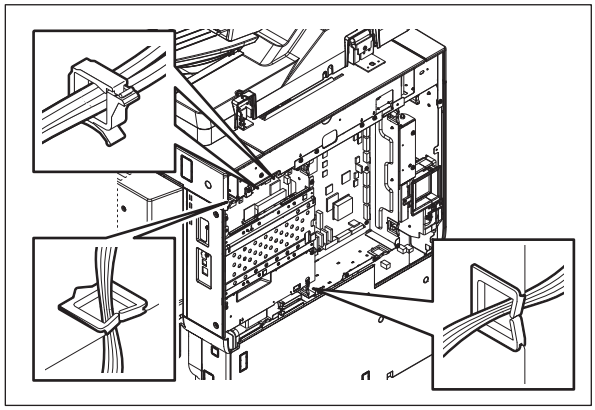


Fig. 28-115

(55) Open the board case.

Note:
Open the board case gently during maintenance work or similar.

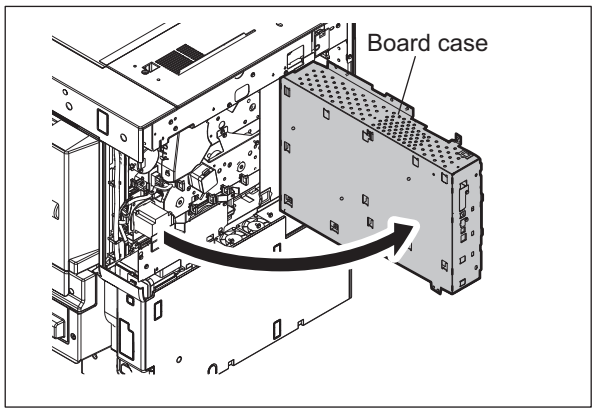


Fig. 28-116

(56) Install the Drum Damp Heater (Right) on the shutter unit with 2 screws.

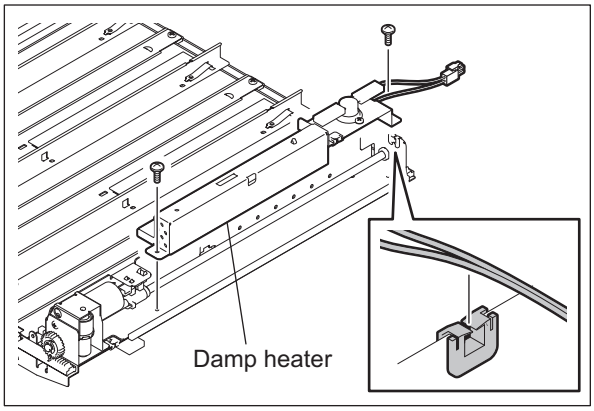


Fig. 28-117

(57) Insert the shutter unit halfway, and then insert the connector of the Drum Damp Heater (Right) into the hole.

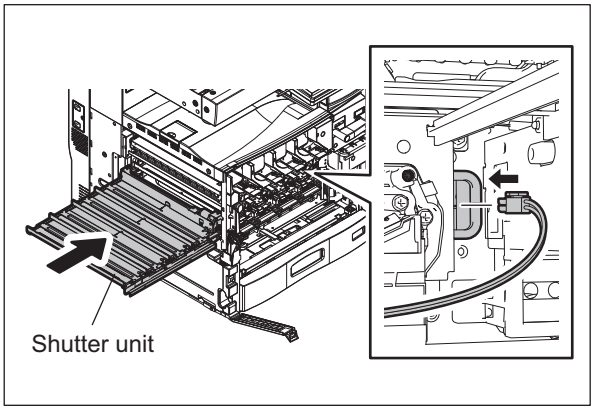


Fig. 28-118

(58) Pull out the connector of the Drum Damp Heater (Right) from the rear side of the equipment.

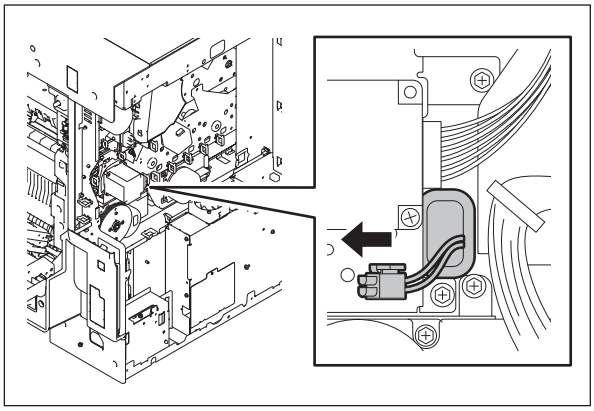


Fig. 28-119

(59) Install the shutter unit with 1 screw.

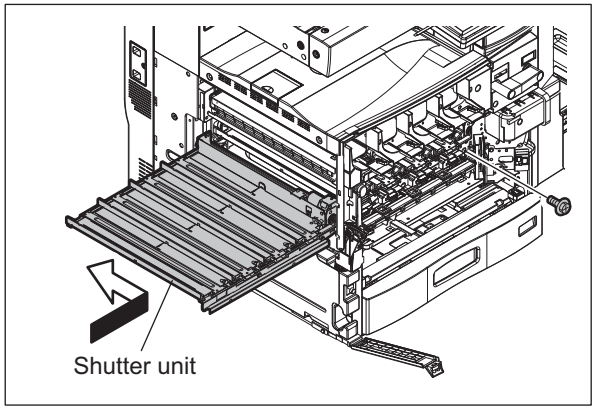


Fig. 28-120

(60) Install the bracket with 1 screw.

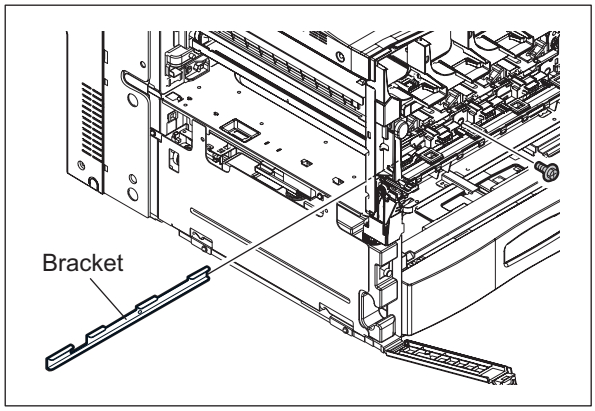


Fig. 28-121

(61) Connect the harness of the Drum Damp Heater (Right) to the connector on the rear side of the equipment. Then hold the harness with the clamps.

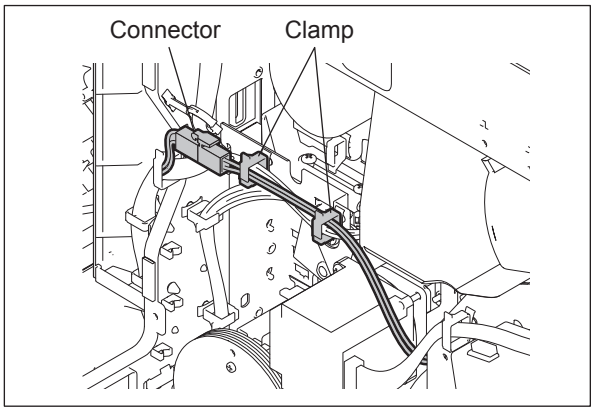


Fig. 28-122

(62) Close the board case.

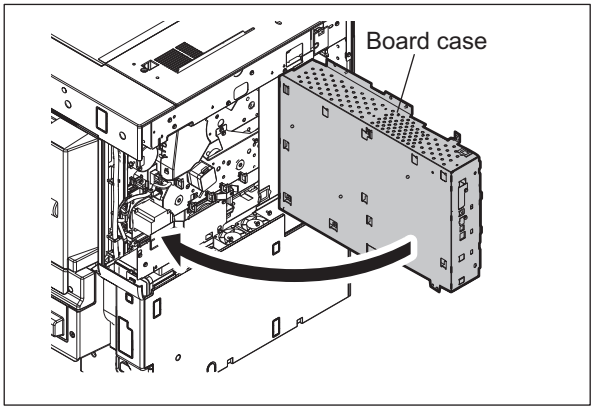


Fig. 28-123

(63) Install 4 clamps.

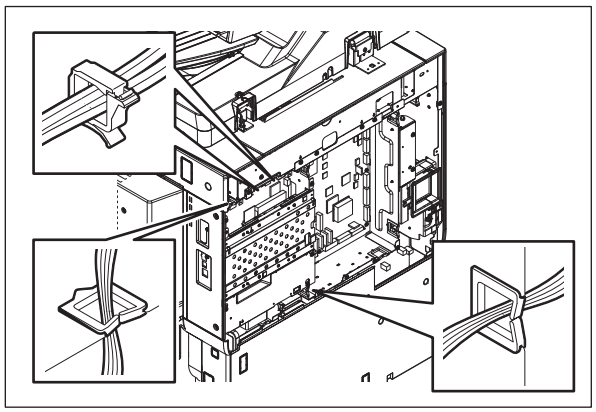


Fig. 28-124

(64) Connect 2 connectors of the LGC board.

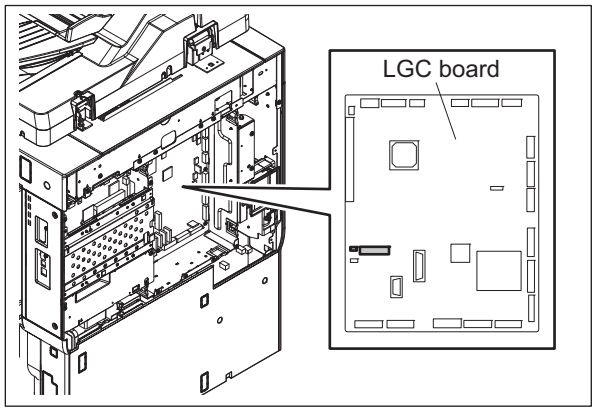


Fig. 28-125

(65) Connect the USB terminal and 1 connector of the SYS board.
(66) Connect 1 connector of the IMG board.

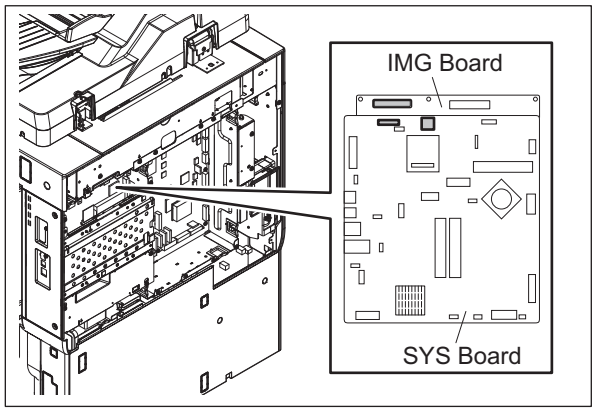


Fig. 28-126

(67) Fix the board case with 5 screws.

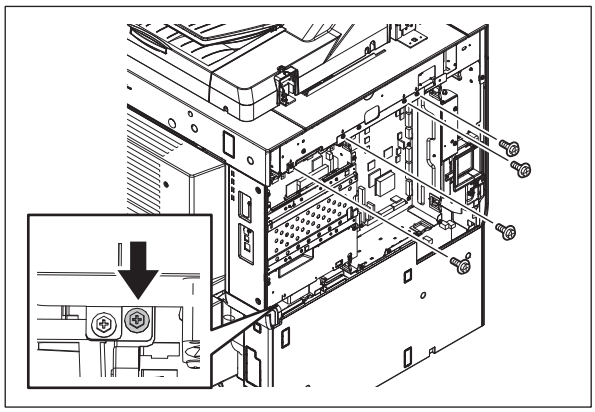


Fig. 28-127

(68) Slide the board cover to install it.

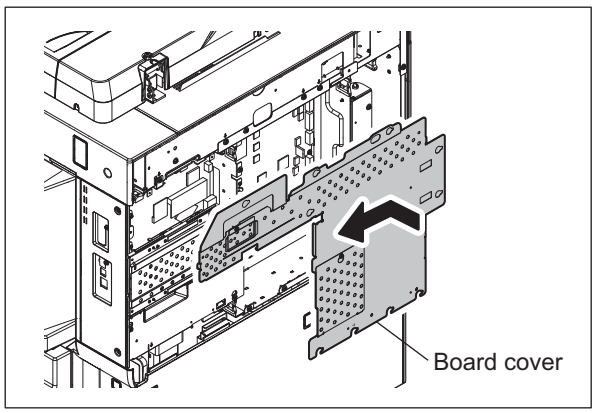


Fig. 28-128

(69) Install 1 screw and tighten 11 screws to fix the board cover.

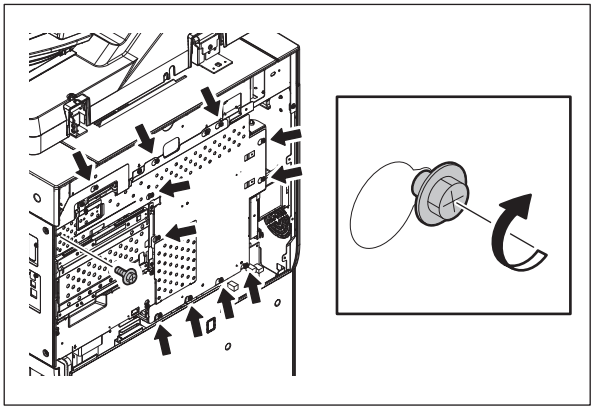


Fig. 28-129

(70) Install rear cover-2 with 8 screws.

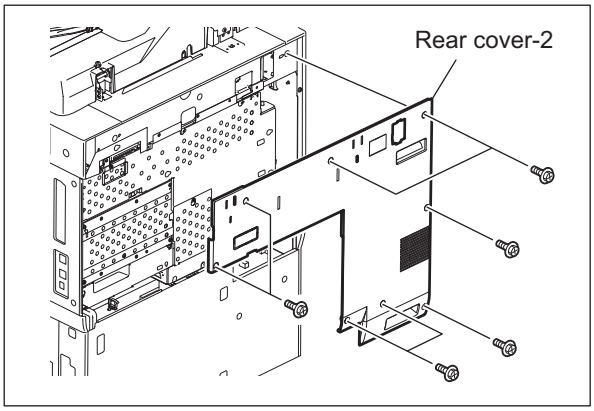


Fig. 28-130

(71) Install rear cover-1 with 2 screws.

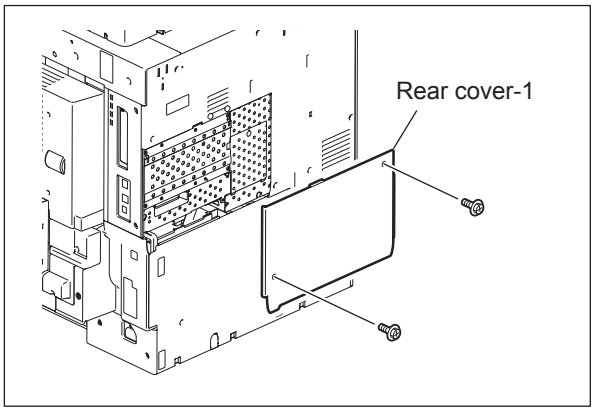


Fig. 28-131

(72) Install the laser optical unit.

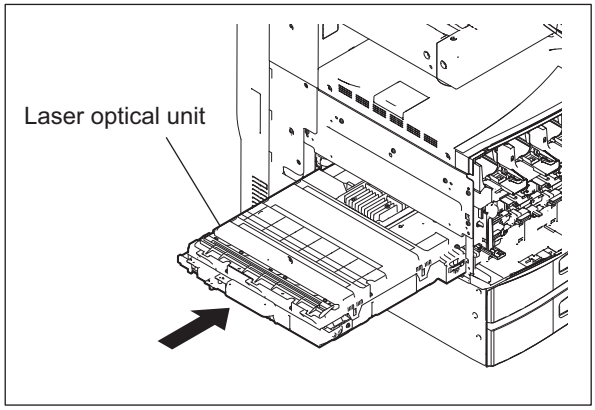


Fig. 28-132

Notes:

1. Do not leave fingerprints or stain on the slit glass of the laser optical unit.
2. Pay close attention not to make an impact or vibration on the laser optical unit because it is a precise apparatus.
3. Place the removed laser optical unit so as not to load on the polygonal motor.
4. Do not disassemble the laser optical unit in the field because it is precisely adjusted and very sensitive to dust and stain.
5. Hold the laser optical unit vertically. Do not press the top of the unit (the cover) where the slit glass and the polygonal motor are installed with your hands or other things.

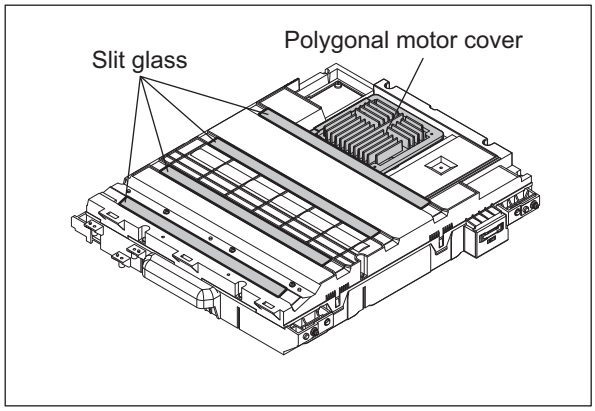


Fig. 28-133

(73) Install 2 connectors and 2 harness clamps.

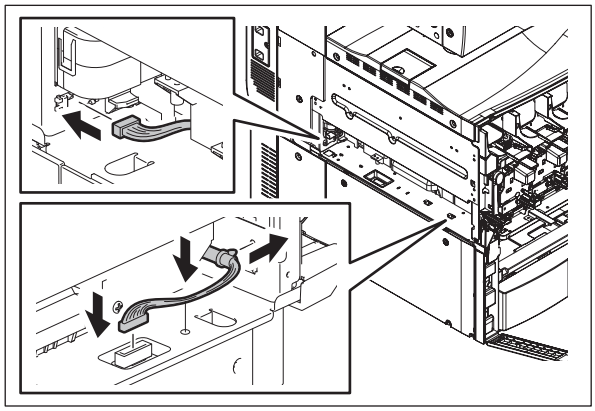


Fig. 28-134

(74) Fix the laser optical unit with 2 screws.

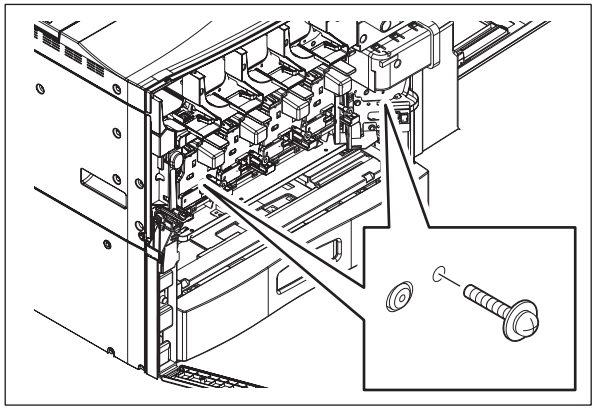


Fig. 28-135

(75) Install the Drum Damp Heater (Left) on the left metal plate with 1 screw.

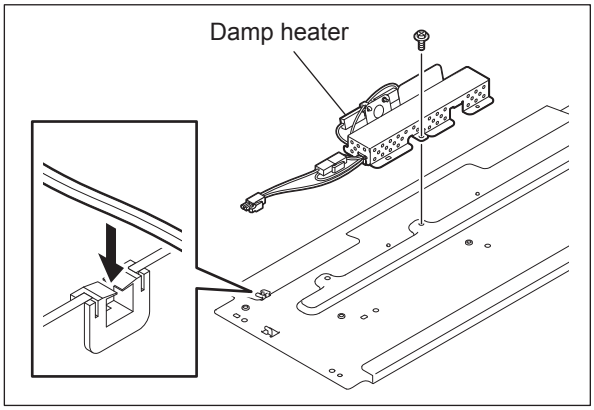


Fig. 28-136

(76) Install the left metal plate on the equipment with 7 screws.

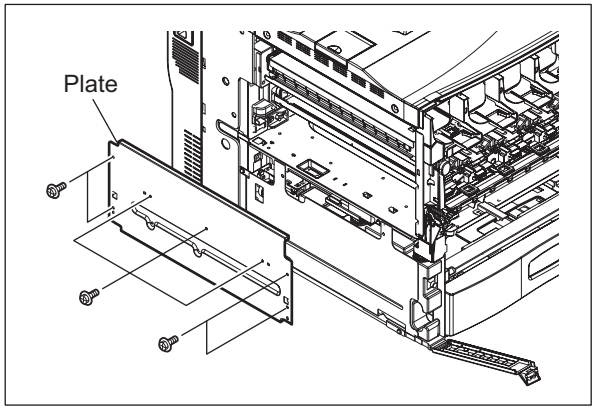


Fig. 28-137

(77) Insert the connector of the Drum Damp Heater (Left) into the connector on the left-hand side of the equipment.

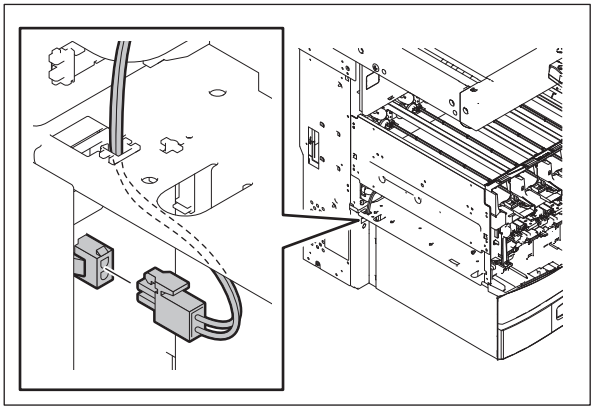


Fig. 28-138

(78) Connect 2 connectors.

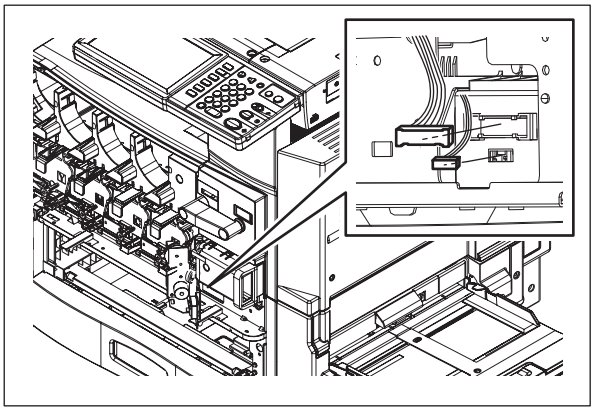


Fig. 28-139

(79) Connect 1 connector and install 1 clamp.
(80) Install the waste toner transport motor with 2 screws.

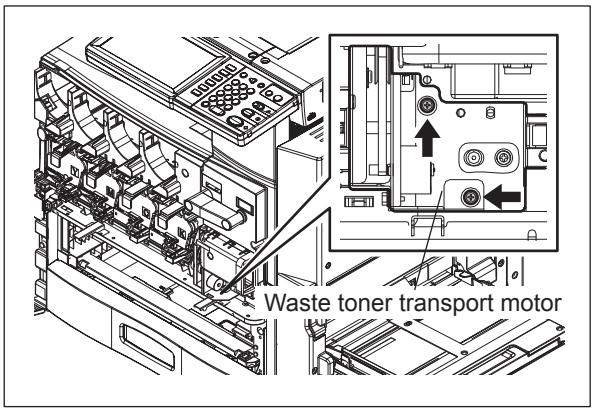


Fig. 28-140

(81) Install the left rear cover with 5 screws.

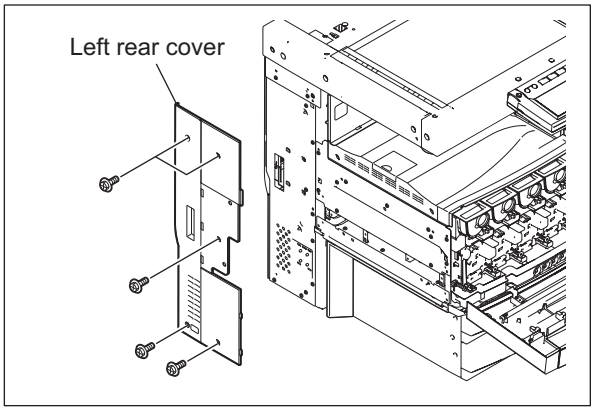


Fig. 28-141

(82) Install the inner tray with 2 screws.

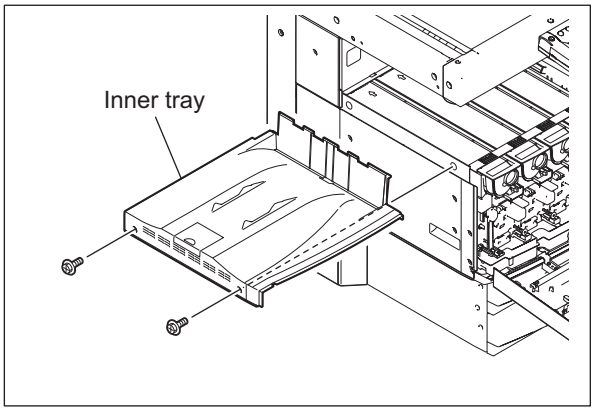


Fig. 28-142

(83) Install the left cover with 7 screws.

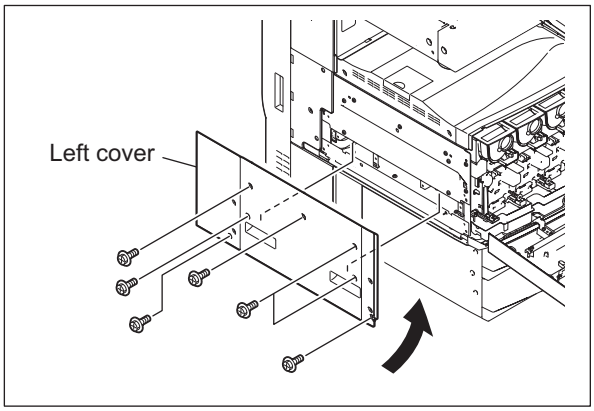


Fig. 28-143

(84) Install the ozone filter-1 with 1 screw.

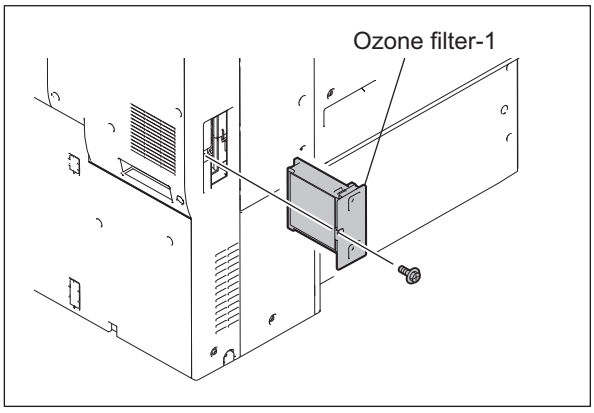


Fig. 28-144

(85) Install the the inner cover with 2 screws.

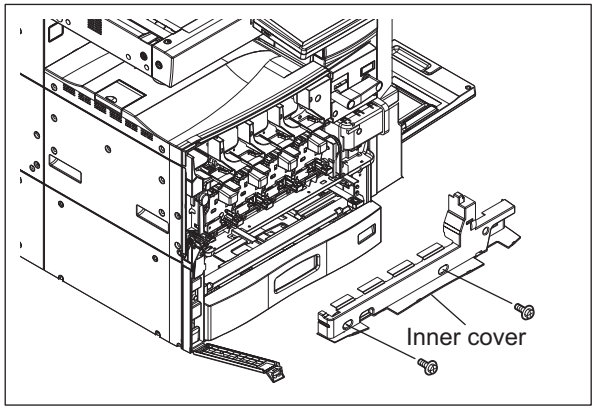


Fig. 28-145

(86) Install 4 ducts with the discharge LEDs (use 1 screw, 1 clamp and 1 relay connector for each duct).

Notes:

1. When installing the duct, hang the 1 hook of the duct on the hole of the frame.
2. When installing the duct, be sure to hold the harness between the duct and main frame in order not to have the duct lose contact with the main frame.
3. Since the actuator is installed on the duct for the discharge LED (ERS-K), be sure to install it in the correct position.

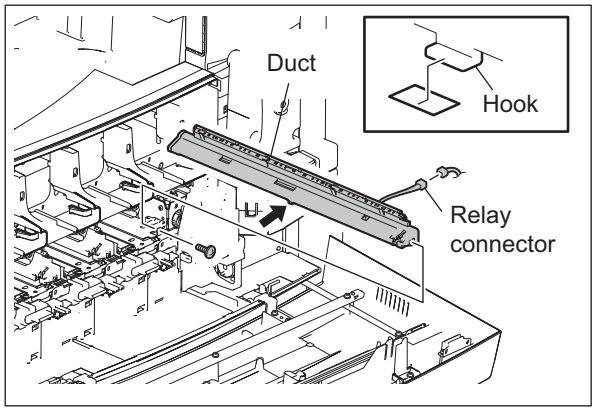


Fig. 28-146

(87) Turn the TBU cleaner pressure hook lever on the TBU to lock the TBU cleaner pressure hook.

Notes:

Follow the procedure below for the installation.

1. Rotate the TBU cleaner pressure hook lever on the transfer belt unit to lock the TBU cleaner pressure hook.
2. Check if the TBU release lever is at the release position (vertical position).
3. Check that the middle guide of the unit is opened.
4. Insert the transfer belt unit by sliding the unit along the rail.
5. Store the front handle, and then push the holder all the way in until it comes to a stop.
6. When the unit has been securely inserted, close the middle guide.

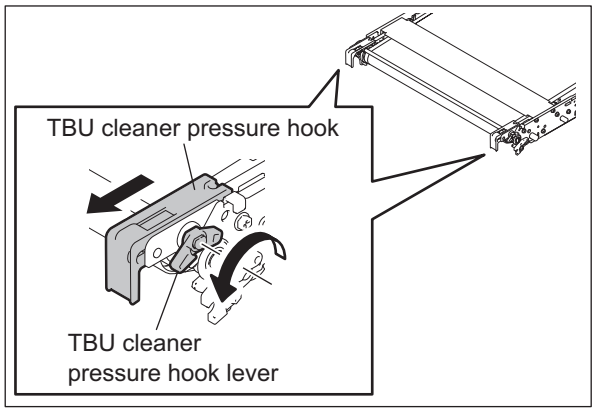


Fig. 28-147

Note:

Be careful not to deform the spring when removing/installing the transfer belt unit.

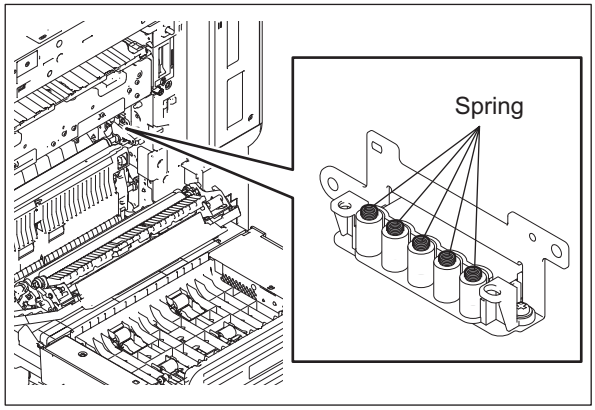


Fig. 28-148

(88) Insert the transfer belt unit (TBU) along the rail and check that the front handle returns to the original position.

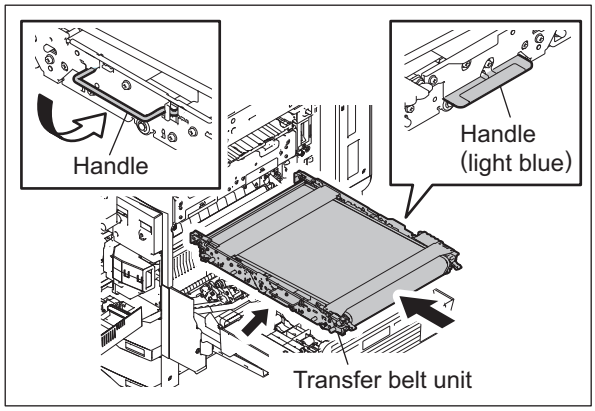


Fig. 28-149

(89) Push the holder until the TBU contacts the end.

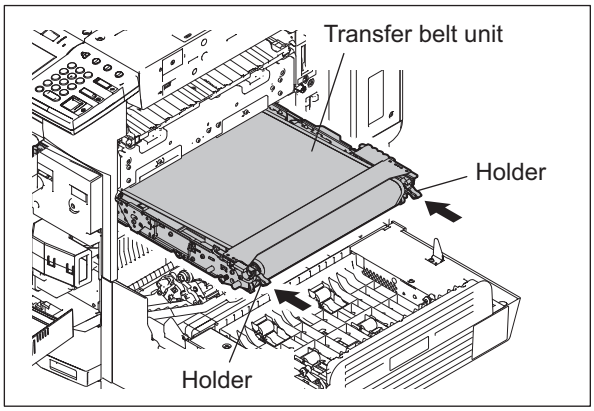


Fig. 28-150

(90) Close the middle guide, and then connect the connector.

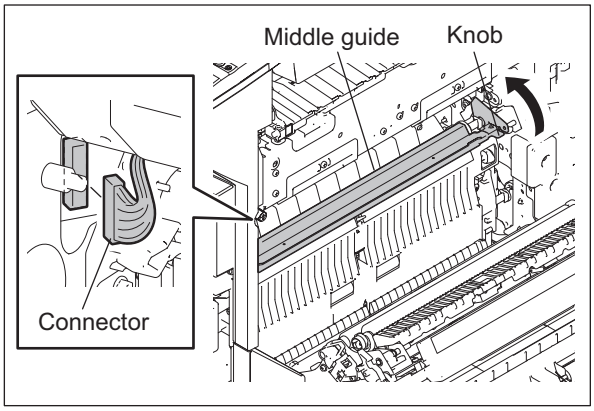


Fig. 28-151

(91) Turn the TBU lifting lever clockwise for 90 degrees.

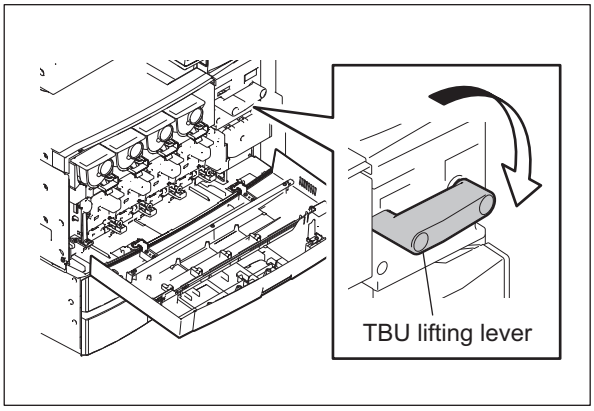


Fig. 28-152

Notes:

Follow the procedure below for the installation.

1. When installing, be sure to check if the TBU separation lever is at the fixed position (horizontal position) with the transfer belt installed.
2. Check if the TBU cleaner pressure hook is locked. If it is released, rotate the TBU cleaner pressure hook lever to lock it as shown in the figure, otherwise the transfer belt cleaning unit cannot be installed.

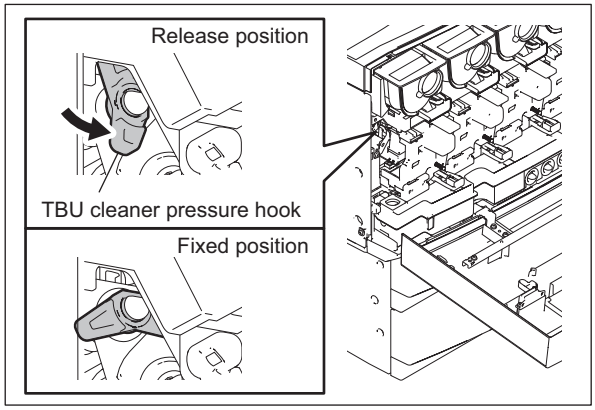


Fig. 28-153

3. Insert the A portion of the transfer belt cleaning unit beneath the stay (B) of the main frame.
4. Align the portion (C) of the transfer belt cleaning unit with the portion (D) of the main frame, then slide the transfer belt cleaning unit along the stay (B) of the main frame all the way in.
5. Rotate the lever E (sky blue) clockwise to lift it up until it clicks.

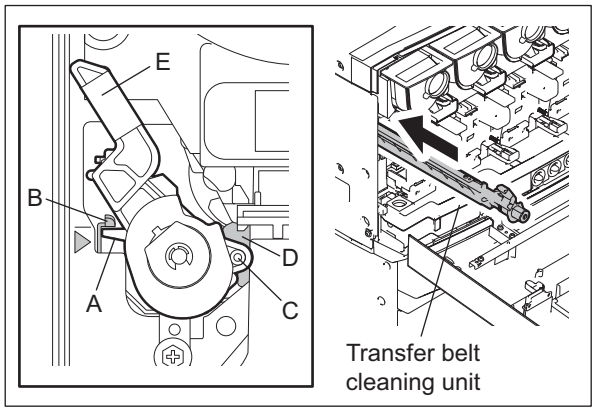


Fig. 28-154

(92) Install the transfer belt cleaning duct.

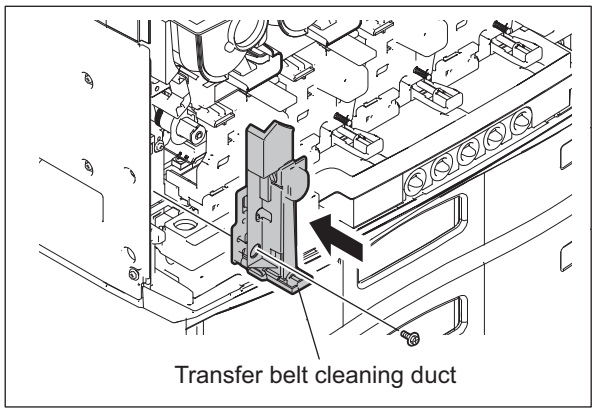


Fig. 28-155

(93) Then turn the TBU lifting lever counterclockwise for 90 degrees.

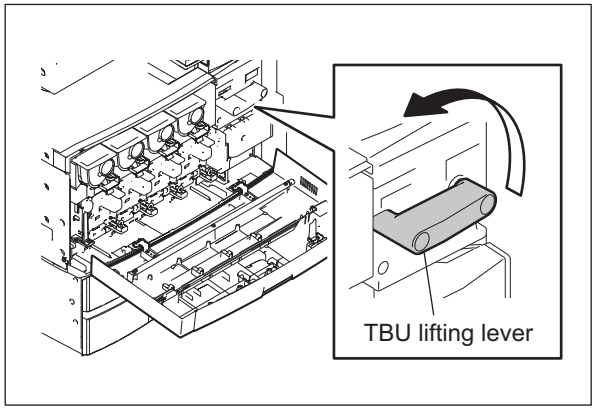


Fig. 28-156

(94) Install the 4 process units (EPUs).

Note:
Hold the A part and B part of the process unit (EPU).

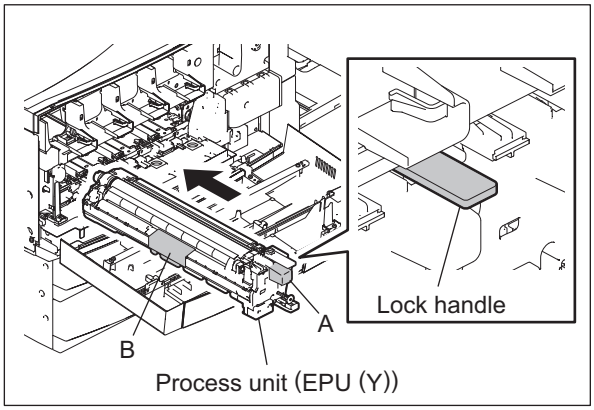


Fig. 28-157

Note:
When installing, wipe out toner on the drawer connector of the equipment because toner attached on the contacts of the connector will cause conduction blockage.

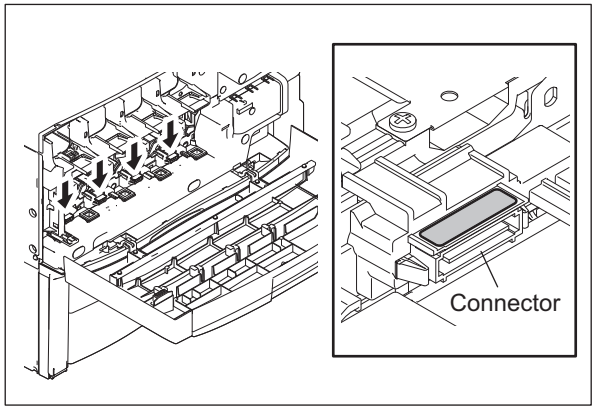


Fig. 28-158

(95) Install the toner cartridge (Y).

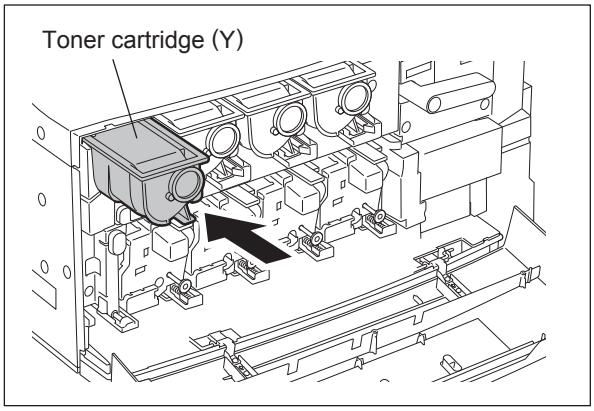


Fig. 28-159

(96) Close the 2nd transfer unit (TRU).

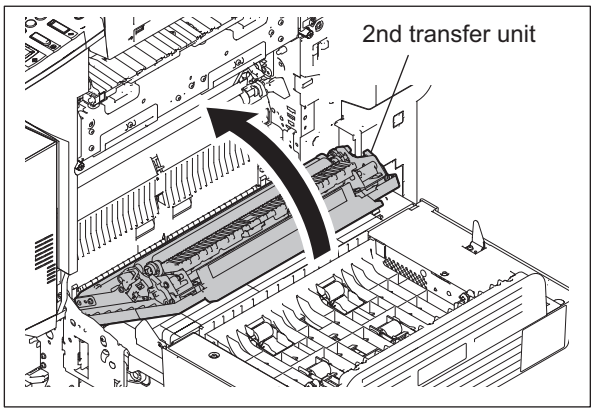


Fig. 28-160

(97) Reinstall the automatic duplexing unit (ADU) on the normal position.

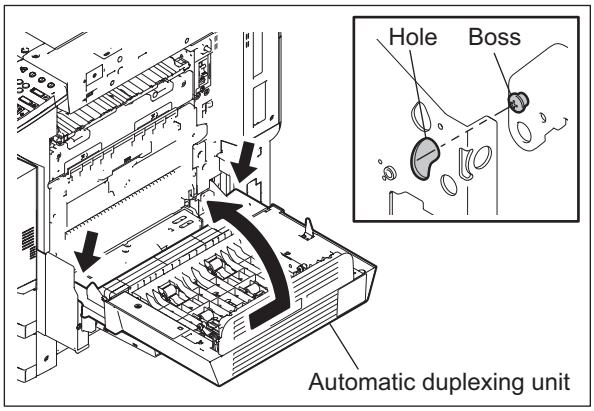


Fig. 28-161

Notes:

- When installing, match the front and rear hinge holes of the equipment and the right and left hinge bosses of the automatic duplexing unit (ADU).
- Be sure to check the following points after moving the ADU to its maintenance position.
  - Check that the connector is not disconnected.
  - Check that duplex printing on A4 or LT sized paper is performed properly.

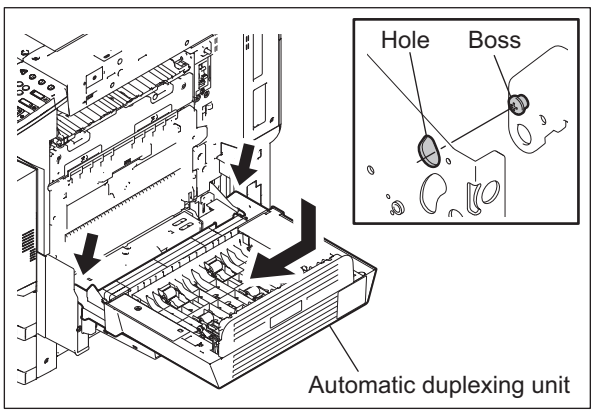


Fig. 28-162

(98) Install 1 screw and close the automatic duplexing unit (ADU).

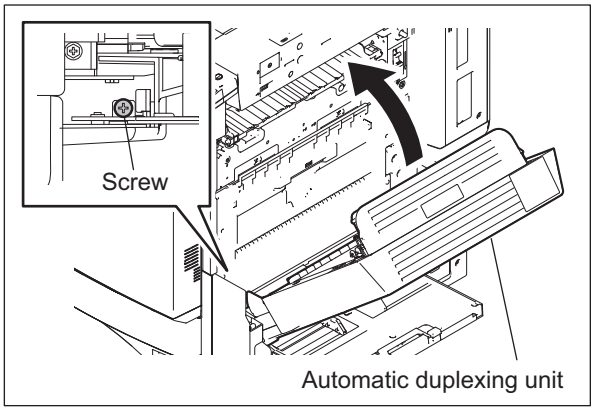


Fig. 28-163

(99) Turn the TBU lifting lever clockwise for 90 degrees and fix it with 1 screw.
(100) Close the front cover.

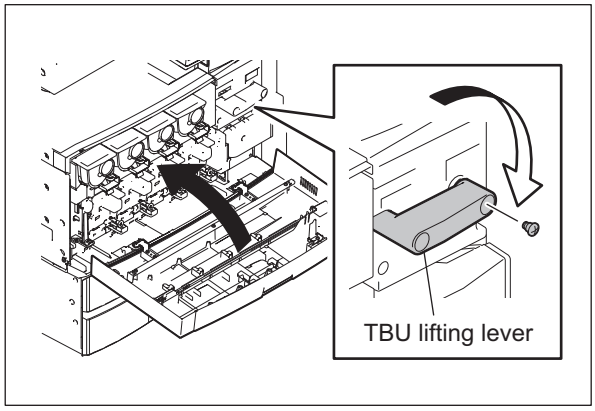


Fig. 28-164

[C] Check the followings after the installation of the Damp Heater

1. Image quality
2. Abnormal heating
3. Any screws not installed

28.2 Adjustment of the Finisher (MJ-1101)

Note:
Before performing each adjustment, make sure that all covers (incl. those of the finisher and host machine) are closed. Otherwise, the power is not supplied to the finisher and the adjustment may not be performed properly.

28.2.1 Adjusting the alignment position

Perform this adjustment after replacing the Finisher control board or when the alignment position must be changed for some reason.

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

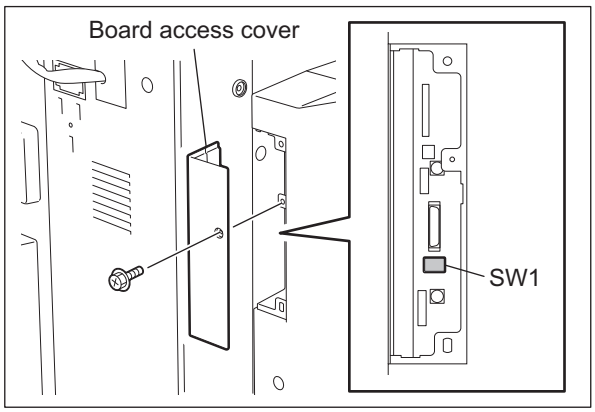


Fig. 28-165

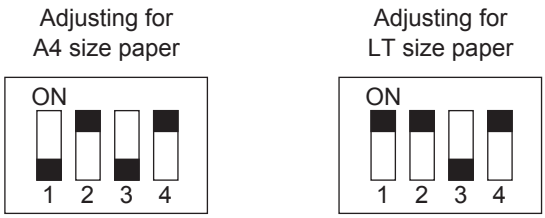


Fig. 28-166

(4) Turn ON the power of the equipment while [0] button and [8] button are pressed simultaneously. The alignment plate moves to the A4 or LT size position and stops.
(It stops at the position of -5 steps from the center value of the adjustment range.)

(5) Press the [Button1] to adjust the alignment position.
Every time the [Button1] is pressed, the alignment plate shifts 1 step (0.419 mm/step) toward the "+ "direction. (The gap between the alignment plates becomes narrower.)
Adjustment range is from -5 to +5 steps.
If the [Button1] is pressed when the alignment position is at the "+5 step", the plate will return to the home position and then moves to the position of "-5 step".

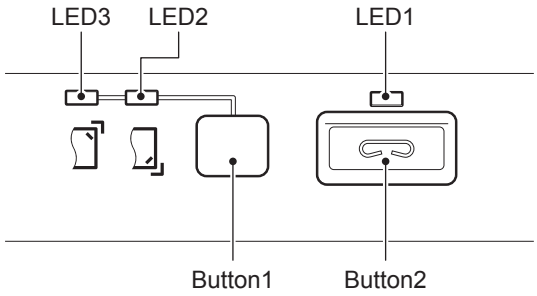


Fig. 28-167

(6) When the adjustment is completed, press the [Button2] on the finisher control panel to store the adjustment value in memory.
When the value is stored normally, the [LED1] on the control panel will blink for a number of times that corresponds to the adjustment value set for the equipment.
See the following table for the number of times the [LED1] blinks and its corresponding adjustment value.

Number of Blinking	Adjustment Value
1	-5
2	-4
3	-3
4	-2
5	-1
6	0
7	+1
8	+2
9	+3
10	+4
11	+5

(7) Turn OFF the power of the equipment.

(8) Turn OFF all bits of the SW1 on the Finisher control board.

(9) Install the board access cover.

28.2.2 Adjusting the stapling position

Perform this adjustment after replacing the Finisher control board or when the stapling position must be changed for some reason.

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

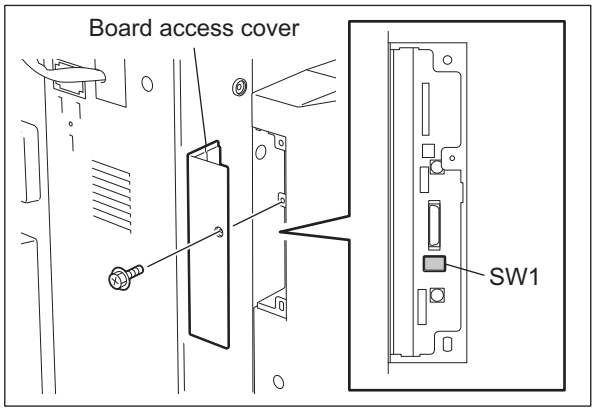


Fig. 28-168

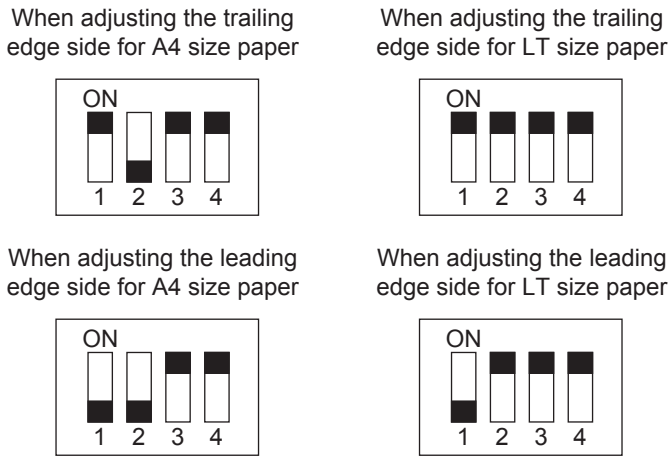


Fig. 28-169

(4) Turn ON the power of the equipment while [0] button and [8] button are pressed simultaneously. The alignment plate moves to the rear or front side stapling position and stops. (It stops at the position of -20 steps from the center value of the adjustment range.)

(5) Press [Button 1] to adjust the stapling position.
Every time [Button 1] is pressed, the alignment plate shifts 4 steps (0.45 mm) toward the "+" direction. (It moves toward the rear side.)
Adjustment range is from -20 to +20 steps. If [Button 1] is pressed when the alignment position is at the “+20 steps”, the plate will return to the home position and then moves to the position of “-20 steps”.

Note:
Stapling for checking the position can be done by pressing [Button 2] with sheets placed on the finishing tray. (stapled on the rear side)

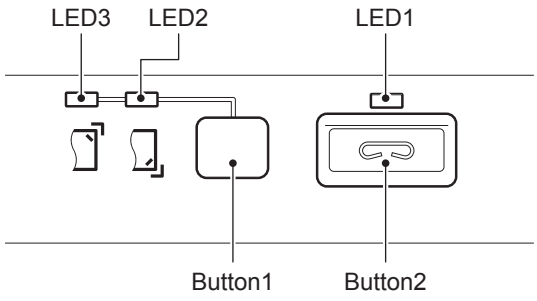


Fig. 28-170

(6) When the adjustment is completed, press [Button 2] on the finisher control panel to store the adjustment value in memory without sheets on the finishing tray.
When the value is stored normally, [LED 1] on the control panel will blink for a number of times that corresponds to the adjustment value set for the equipment.
See the following table for the number of times [LED 1] blinks and its corresponding adjustment value.

Number of blinking	Adjustment value
1	-20
2	-16
3	-12
4	-8
5	-4
6	0
7	+4
8	+8
9	+12
10	+16
11	+20

(7) Turn OFF the power of the equipment.

(8) Turn OFF all bits of the SW1 on the Finisher control board.

(9) Install the board access cover.

28.2.3 B4-size recycled paper mode settings

Set this mode if the trailing edge of the paper gets caught by the exit section of the finisher while B4-size recycled paper is used. This mode increases the paper exiting speed when the paper exits to the movable tray in the sort mode, or to the stationary tray in the non-sort mode.

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

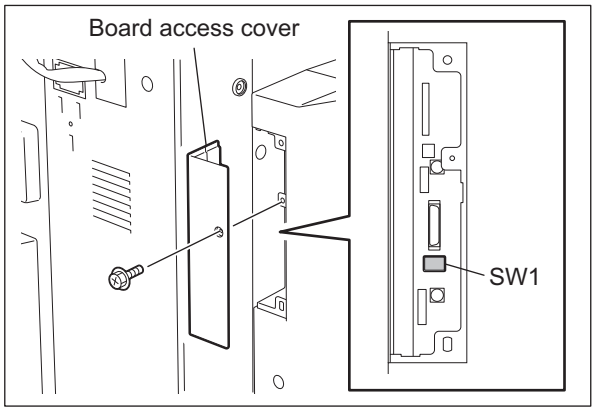


Fig. 28-171

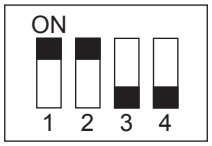


Fig. 28-172

(4) Turn ON the power of the equipment while [0] button and [8] button are pressed simultaneously.

(5) Press [Button1] and [Button2] as described in the following table to set the B4-size recycled paper mode. Press [Button1] and [Button2] on the control panel as below to set the B4-size recycled paper mode.

Note:
Be sure to press [Button1] and [Button2] the correct number of times.
Press [Button1] and [Button2] simultaneously to cancel the operation.

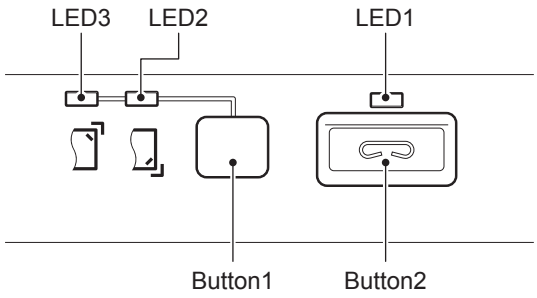


Fig. 28-173

B4-size recycled paper mode

Step	Buttons	Number of pressing	Remarks
1	Button1	1	
2	Button2	1	Confirms the input value
3	Button1	8	
4	Button2	1	Confirms the input value

Note:
To change settings from the B4-size recycled paper mode to the normal mode, perform steps (1) through (4), and then press [Button1] and [Button2] on the control panel as shown below to set the normal mode.

Normal mode

Step	Buttons	Number of pressing	Remarks
1	Button1	1	
2	Button2	1	Confirms the input value
3	Button1	6	
4	Button2	1	Confirms the input value

(6) When the settings are stored normally, [LED1] on the control panel is lit. [LED1] blinks, if an error occurs. In this case, turn the power OFF and make the settings again from step (4).

(7) Turn OFF the power of the equipment.

(8) Turn OFF all bits of the SW1 on the Finisher control board.

(9) Install the board access cover.

28.2.4 Adjusting paper exit speed

[1] Adjusting procedure

[A] DIP switch settings

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

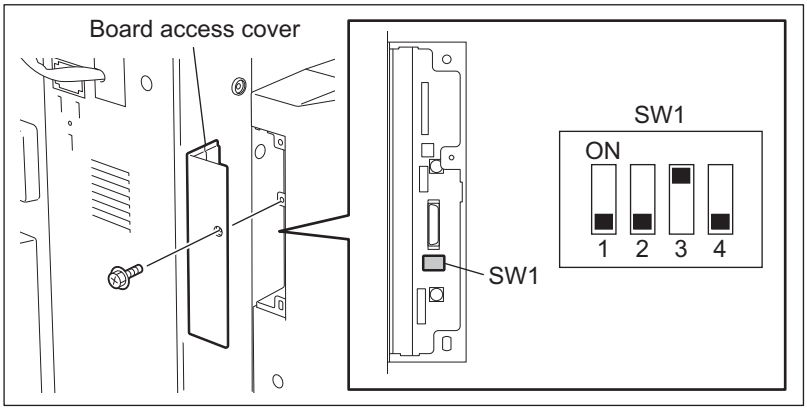


Fig. 28-174

(4) Turn ON the power of the equipment while [0] button and [8] button are pressed simultaneously.

[B] Mode settings / connection model settings / paper type settings

(1) Press [Button1] 11 times and then press [Button2] once.
Check the setting list and press [Button1] as many times as noted for Setting code whose operation you want to check and then press [Button2] once.

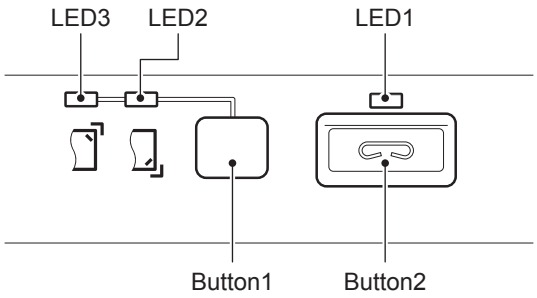


Fig. 28-175

<Setting list>

Mode name	Setting code
Normal paper mode	1
Recycled paper mode	3

* Example of operation
If you want to select the normal paper mode, the number of Setting code is "1".
Therefore press [Button1] 11 times and then press [Button2] once. Then press [Button1] once and then press [Button2] once. This selects the normal paper mode.

(2) Press [Button1] and [Button2] simultaneously.

(3) Press [Button1] 11 times and then [Button2] once.

(4) Press [Button1] 9 times and then press [Button2] once.

(5) Press [Button1] and [Button2] simultaneously.

(6) Press [Button1] 11 times and then press [Button2] once.
Check the setting list and press [Button1] as many times as noted for Setting code whose paper type you want to select and then press [Button2] once.

<Setting list>

Paper type	Setting code
Plain paper	4
Thick paper 1	5
Thick paper 2	6
Thick paper 3	7

* Example of operation
If you want to select the plain paper, the number of Setting code is "4".
Therefore press [Button1] 11 times and the press [Button2] once. Then press [Button1] 4 times and then press [Button2] once. This selects plain paper.

(7) Press [Button1] and [Button2] simultaneously.

[C] Paper size settings

(1) Check the setting list and press [Button1] as many times as noted for Setting code No.1 whose paper size you want to select, and then press [Button2] once. Then check the setting list and press [Button1] as many times as noted for Setting code No.2 whose paper size you want to select, then press [Button2] once.

<Setting list>

Paper size	Setting code No. 1	Setting code No. 2
Others	12	1
A3	12	2
A4	12	3
A4-R	12	4
A5	12	5
A5-R	12	6
A6-R	12	7
B4	12	8
B5	12	9
B5-R	13	1
FOLIO	13	2
LD	13	3
LG	13	4
LT	13	5
LT-R	13	6
ST	13	7
ST-R	13	8
COMP	13	9
13”LG	14	1
8.5”SG	14	2
8K	14	3
16K	14	4
16K-R	14	5
A3 wide	14	7

(2) Press [Button1] and [Button2] simultaneously.

[D] Paper exit speed settings

(1) Check the number of LED blinking times.

The default settings of the number of LED blinking times in the mode setting, media type and paper size, which are set in [B] and [C], are shown in the table below. When A3 and plain paper with the normal paper mode are set in [B] and [C], the number of LED blinking times is 2.

<Normal paper mode>

	Plain paper	Thick paper 1	Thick paper 2	Thick paper 3
Others	2	2	2	2
A3	2	2	2	2
A4	4	4	4	4
A4-R	3	3	3	3
A5	2	2	2	2
A5-R	4	4	4	4
A6-R	2	2	2	2
B4	3	9	9	9
B5	3	3	3	3
B5-R	2	2	2	2
FOLIO	2	2	2	2
LD	5	5	5	5
LG	9	9	9	9
LT	6	6	6	6
LT-R	3	3	3	3
ST	2	2	2	2
ST-R	3	3	3	3
COMP	2	2	2	2
13”LG	2	2	2	2
8.5”SG	2	2	2	2
8K	2	2	2	2
16K	2	2	2	2
16K-R	2	2	2	2
A3 wide	2	2	2	2

<Recycled paper mode>

	Plain paper	Thick paper 1	Thick paper 2	Thick paper 3
Others	2	2	2	2
A3	2	2	2	2
A4	4	4	4	4
A4-R	3	3	3	3
A5	2	2	2	2
A5-R	4	4	4	4
A6-R	2	2	2	2
B4	3	3	3	3
B5	3	3	3	3
B5-R	2	2	2	2
FOLIO	2	2	2	2
LD	5	5	5	5
LG	9	9	9	9
LT	6	6	6	6
LT-R	3	3	3	3
ST	2	2	2	2
ST-R	3	3	3	3
COMP	2	2	2	2
13”LG	2	2	2	2
8.5”SG	2	2	2	2
8K	2	2	2	2
16K	2	2	2	2
16K-R	2	2	2	2
A3 wide	2	2	2	2

*Example
When A3 and plain paper with the recycled paper mode are set in [B] and [C], the number of LED blinking times is 2.

(2) Press [Button1] for the number of LED blinking times you want to set.

Note:
The larger the number you set is, the faster the paper exiting speed becomes.
The smaller the number you set is, the slower the paper exiting speed becomes.
After changing the setting, check the number of LED blinking times.Normally, the number of LED blinking times is increased by 1 from the default. If paper trailing edge still remains, increase the number by 2 from the default.

*Example of operation
To change the number of LED blinking times from 2 to 3, press [Button1] three times.

(3) Press [Button2] once.

(4) Press [Button1] and [Button2] simultaneously.

[E] Paper exit tray switching settings

Set the switching timing of the paper exit from the movable tray to the finishing tray.
If the problem is not suppressed through Steps [A] to [D], perform the following steps.

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

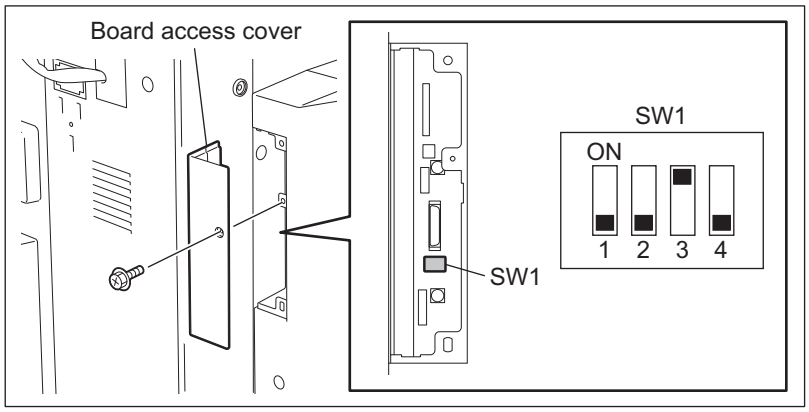


Fig. 28-176

(4) Turn ON the power of the equipment while pressing the [0] button and the [8] button simultaneously.

(5) Press [Button1] 11 times and then press [Button2] once.

(6) Press [Button1] 13 times and then press [Button2] once.

(7) Check the following list and press [Button1] as many times as noted for Adjustment value whose switching timing you want to select.
*The number of blinking times is set to "1" as a default.
If you want to change the adjustment value from "1" to "3", press [Button1] 3 times.

Switching timing	Number of blinking times
Approx. 500 sheets with plain paper	1
0 sheet with plain paper	3

(8) Press [Button2] once.

(9) Press [Button1] and [Button2] simultaneously.

(10) Turn OFF the power of the equipment.

(11) Turn OFF all bits of SW1 on the Finisher control board as shown below.

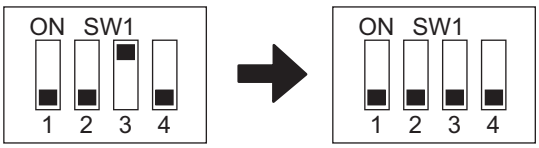


Fig. 28-177

(12) Install the board access cover with 1 screw.

[2] Resetting procedure

The setting values which are set in 🕮 P.28-64 "28.2.4 Adjusting paper exit speed" can be reset with the following steps.

(1) Turn OFF the power of the equipment.

(2) Remove 1 screw and take off the board access cover.

(3) Set the SW1 on the Finisher control board as shown in the figures below.

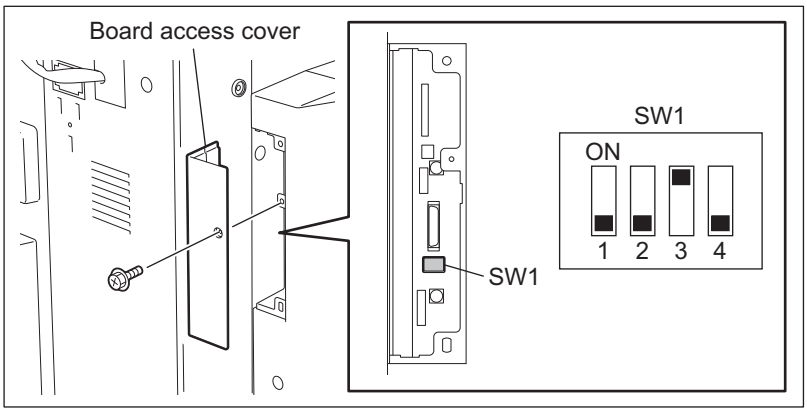


Fig. 28-178

(4) Turn ON the power of the equipment while pressing the [0] button and the [8] button simultaneously.

(5) Press [Button1] 11 times, press [Button2] once, press [Button1] 11 times, and then press [Button2] once.

(6) Press [Button1] and [Button2] simultaneously.

(7) Turn OFF the power of the equipment.

(8) Turn OFF all bits of SW1 on the Finisher control board as shown below.

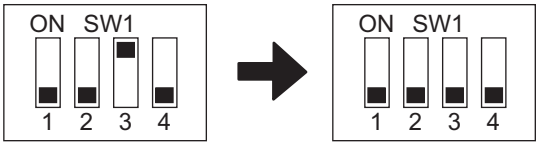


Fig. 28-179

(9) Install the board access cover with 1 screw.

28.3 Adjustment of the Finisher (MJ-1030)

Note:

Before performing each adjustment, make sure that all covers (incl. those of the finisher and host machine) are closed. Otherwise, the power is not supplied to the finisher and the adjustment may not be performed properly.

28.3.1 Adjusting the alignment position (Finisher unit)

Perform this adjustment after replacing the finisher controller PC board or when the alignment position must be changed for some reason.

(1) Remove the rear cover of the finisher unit.
(2) Check that the power is OFF and set SW104 on the finisher controller PC board as follows according to the paper used for adjustment.

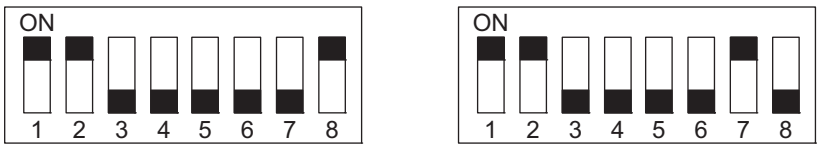


Fig. 28-180

(3) Turn ON the power.
(4) Press SW103 on the finisher controller PC board.
- When SW103 is pressed, the swing guide opens and the alignment plate moves to prescribed position.

(5) Place ten sheets of A4/LT paper between the alignment plates and push them against the stopper.
(6) Press SW101 or SW102 on the finisher controller PC board and push the alignment plate against the paper.
- When SW101 is pressed, alignment plate moves 0.42 mm forward.
- When SW102 is pressed, alignment plate moves 0.42 mm backward.

(7) When adjustment is complete, remove paper and press SW103 on the finisher controller PC board once to store the adjustment in memory.
(8) Turn OFF all bits of finisher controller PC board SW104.
(9) Turn OFF the power and install the rear cover of the finisher unit.

28.3.2 Adjusting the staple position (Finisher unit)

Perform this adjustment after replacing the finisher controller PC board or when the staple position must be changed for some reason. This adjustment adjusts the front/rear stitches with A4/A4-R when the paper used for adjustment is AB type and with LT/LT-R when the paper is INCH type.

(1) Remove the rear cover of the finisher unit.
(2) Check that the power is OFF and set SW104 on the finisher controller PC board as follows according to paper/stitch position used for adjustment.

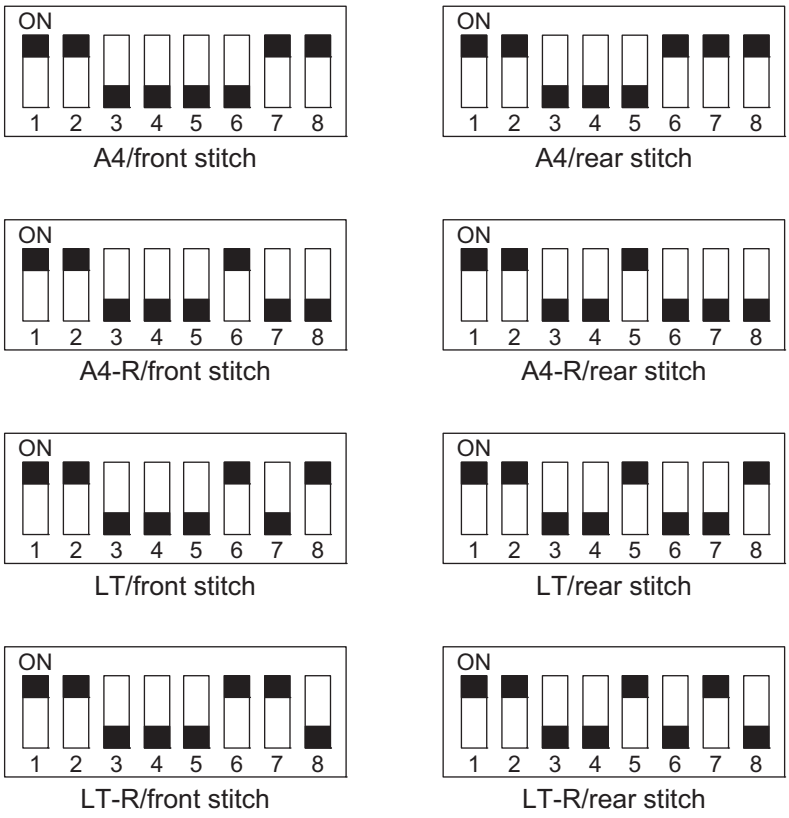


Fig. 28-181

(3) Turn ON the power.
(4) Press SW103 on the finisher controller PC board.
- When SW103 is pressed, the swing guide opens and the alignment plate moves to prescribed position.

(5) Place a sheet of paper between the alignment plates. Push it against the stopper and push the rear edge of the paper against the rear alignment plate. If the gap between the front alignment plate and front edge of the paper is 1 mm or greater, stop the staple position adjustment and repeat the staple position adjustment after completing alignment plate adjustment.
(6) Press SW103 on the finisher controller PC board once to staple. However, remove the stapled paper manually because the paper is not ejected. Press SW103 on the finisher controller PC board once again.
(7) Verify the staple position. If any adjustment is needed, proceed to the step 8). If no adjustment is needed, proceed to the step 9).
(8) Press SW101 or SW102 on the finisher controller PC board to adjust the staple position.
- When SW101 is pressed, the staple position shifts 0.49 mm to the front side.
- When SW102 is pressed, the staple position shifts 0.49 mm to the rear side.

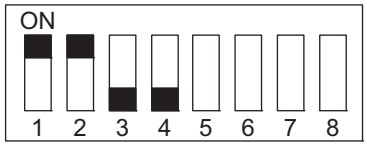
Repeat the steps 5) to 7).

(9) After confirming that the staple position is adjusted correctly, place a sheet of paper between the alignment plates and push it against the stopper and push the rear edge of the paper against the rear alignment plate. Then press SW103 once. (Stapling is performed and the adjustment value is stored in memory.)
    - The staple position adjustment is completed.
(10) Turn OFF all bits of SW104 on the finisher controller PC board.
(11) Turn OFF the power and install the rear cover of the finisher unit.

28.3.3 Adjusting the folding position (Saddle stitcher unit)

The folding position is adjusted by changing setting of bits 6 through 8 of SW504 on the saddle stitcher controller PC board to match the stitching position (adjusting the distance over which the paper positioning plate is moved to the folding position from the stitching position).
If you have replaced the saddle stitcher controller PC board, be sure to set the new SW504 so that the settings will be the same as those on the old SW504. Perform this adjustment if, for any reason, you must change the folding position.

(1) Check that the power is OFF and separate the finisher from the host machine. If the optional puncher unit is installed, remove it from the finisher.
(2) Remove the PC board cover and set bits 1 through 4 of SW504 on the saddle stitcher controller PC board as follows:



Do not change bits 5 through 8.

Fig. 28-182

(3) Remove the rear cover, open the inlet cover of the saddle stitcher unit and tape the actuator of inlet cover sensor (PI9) and inlet door switch (SW1).
(4) Before inserting the paper, mark the top of the paper. You will be using two sheets of A3 or LD paper.

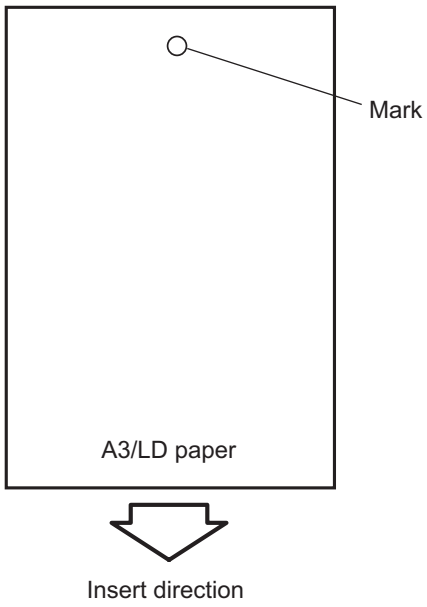


Fig. 28-183

(5) Turn ON the power.
(6) Press SW1 on the saddle stitcher controller PC board so that the feed motor (M1) starts to rotate. (Press SW1 three seconds or more if LD paper is used.)
(7) Open the inlet cover and insert two sheets of paper. Push them in by hand until the front edge of the sheets push against the paper positioning plate.
(8) Close the inlet cover.
(9) Press SW1 on the saddle stitcher controller PC board.
    • The saddle stitcher unit will “stitch” the sheets, and fold and deliver the stack automatically.

(10) Measure the distance (L) between the stitching position and the folding position. Then perform "positive width adjustment" or "negative width adjustment" to suit the relationship between the stitching position and the folding position.
- If the stitching position is below the folding position, perform "positive width adjustment."
- If the stitching position is above the folding position, perform "negative width adjustment."

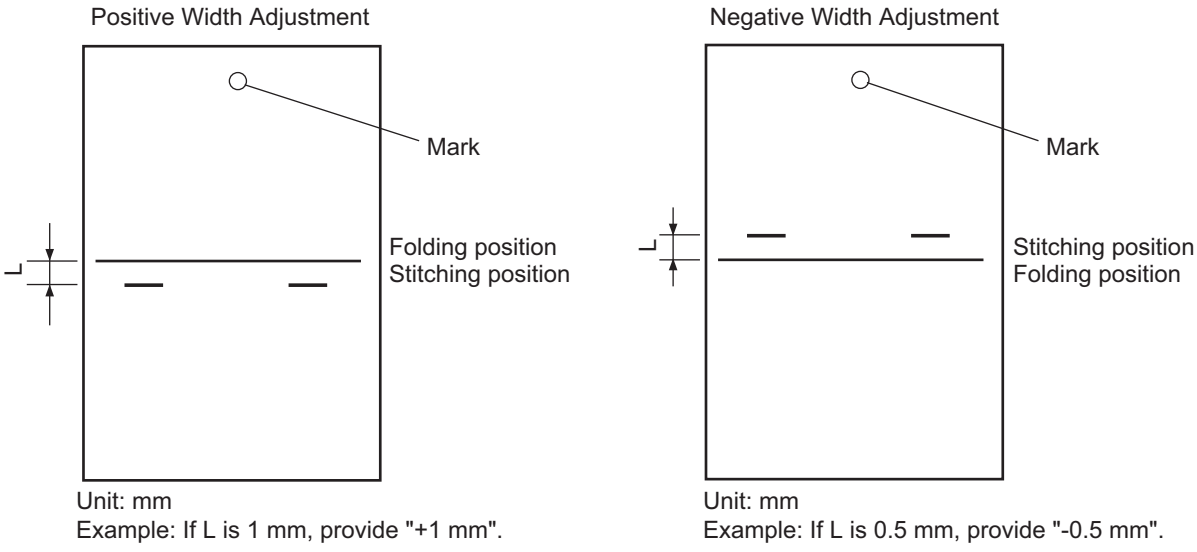


Fig. 28-184

28

(11) Change the settings of bits 6 through 8 on SW504 referring to the following table.
- If the width adjustment is 0
  The stitching position and the folding position match, requiring no change.
- If for "positive width adjustment"
  Set SW504 so that the difference resulting from subtraction of the interval from the appropriate setting in the table below is provided.
  Example: If SW504 is currently set to +2 and the interval is +1 mm, set SW504 to reflect - 2.
- If for "negative width adjustment"
  Set SW504 so that the sum resulting from addition of the interval from the appropriate setting in the table below is provided.
  Example: If SW504 is currently set to -1 and the interval is -0.5mm, set SW504 to reflect +1.

DIPSW1 bit settings			Setting (in units of 0.5 mm)
Bit 6	Bit 7	Bit 8	
OFF	ON	ON	+3
OFF	ON	OFF	+2
OFF	OFF	ON	+1
OFF	OFF	OFF	0
ON	OFF	ON	-1
ON	ON	OFF	-2
ON	ON	ON	-3

Do not use the following setting		
Bit 6	Bit 7	Bit 8
ON	OFF	OFF

(12) Set SW504 bits 1 to 4 to OFF.

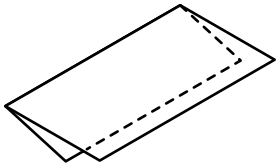
28.3.4 Fine adjustment of binding/folding position (Saddle stitcher unit)

The binding position/folding position can be adjusted in the following (05) codes.

Code	Paper size	Remarks
468-0	A4-R / LT-R	When the value increases, the binding/folding position shifts toward the right page. (0.25mm/step) Acceptable values: -14 to 14 (Default: 0)
468-1	B4	
468-2	A3 / LD	

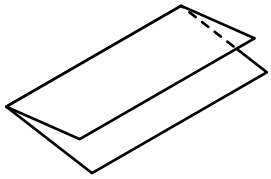
Increase the adjustment value when the sheet of paper which has exited is "A".
Decrease the adjustment value when the sheet of paper which has exited is "B".

A: When the upper side of the folding is longer than the lower side



← Paper feeding direction

B: When the upper side of the folding is shorter than the lower side



← Paper feeding direction

Fig. 28-185

28.3.5 Sensor output adjustment (Puncher unit)

Perform this adjustment when replacing the punch controller PC board, transmittance sensor (photosensor PC board/LED PC board), or deflection sensor (scrap full detector PC board unit).

(1) Check that the power is OFF and then remove the rear cover of the puncher.
(2) Set SW601 on the punch controller PC board as shown below.

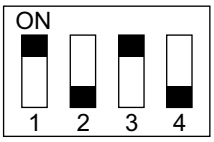


Fig. 28-186

(3) Turn ON the power.
(4) Press SW602 on the punch controller PC board. Sensor output is adjusted automatically when the switch is pressed.
    - Adjustment is complete if LED601 and LED602 on the punch controller PC board blinks alternately.
(5) Press SW602 or SW603 on the punch controller PC board to end the adjustment mode and set all bits of SW601 to OFF.
(6) Turn OFF the power.

28.3.6 Registering the number of punch holes (Puncher unit)

This operation registers which puncher unit is attached to the IC on the punch driver PC board so that the puncher unit can be identified by the finisher. For this reason, this operation must be performed when the punch driver PC board has been replaced.

(1) Check that the power is OFF and then remove the rear cover of the puncher.
(2) Set SW601 on the punch controller PC board as shown below.

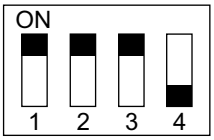


Fig. 28-187

(3) Turn ON the power.
(4) Press SW602 on the punch controller PC board to select the number of punch holes.
- The items in the following table are displayed repeatedly from top to bottom each time SW602 is pressed.

Number of punch holes	LED601/LED602
2 hole (E)	Blinks 1 times per cycle
2/3 hole (N)	Blinks 2 times per cycle
4 hole (F)	Blinks 3 times per cycle
4 hole (S)	Blinks 4 times per cycle

(5) Press SW603 on the punch controller PC board. The number of punch holes is registered to the punch controller PC board each time the switch is pressed.
- Registration is complete if LED601 and LED602 on the punch controller PC board blinks alternately.

(6) Press SW602 or SW603 on the punch controller PC board to end the adjustment mode and set all bits of SW601 to OFF.
(7) Turn OFF the power.

28.4 Adjustment of the Hanging Finisher (MJ-1031)

28.4.1 Adjustment of the offset solenoid

When the offset solenoid was replaced, follow the procedure below to adjust its position.

(1) Turn OFF the power of the equipment.

(2) Fully pull the link [1] of the offset solenoid to the solenoid side.

(3) Adjust the position of the solenoid by making the distance from “A” of the paper exit section to the bottom “B” of the offset roller section fall within 19 +/- 1mm, while the link [1] is fully pulled to the solenoid side.

(4) Fix the offset solenoid with 2 screws [2] while retaining the distance adjusted in step 3).

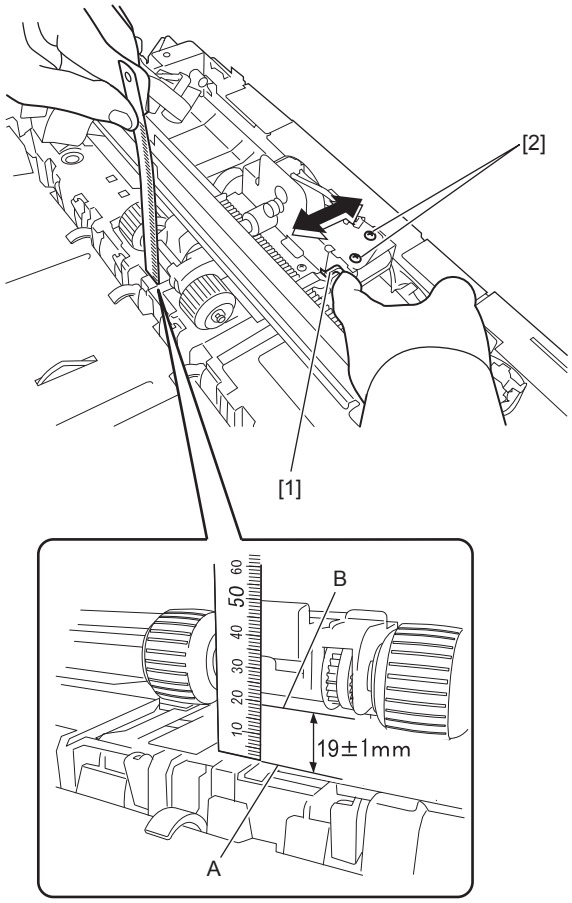


Fig. 28-188

Note:

If the distance from “A” to “B” is not in the acceptable range, an alignment problem or a transport problem may occur.

28.4.2 Position adjustment of the stapler unit

When the stapler unit was replaced, adjust its installation position.

(1) Turn OFF the power of the equipment.

(2) Align a hole on the side of the stapler unit fixing screw and a hole on the lower plate. Then install the stapler unit.

(3) When the stapler unit was installed, perform operation check. Then readjust the position of the unit with scale marks, if required.

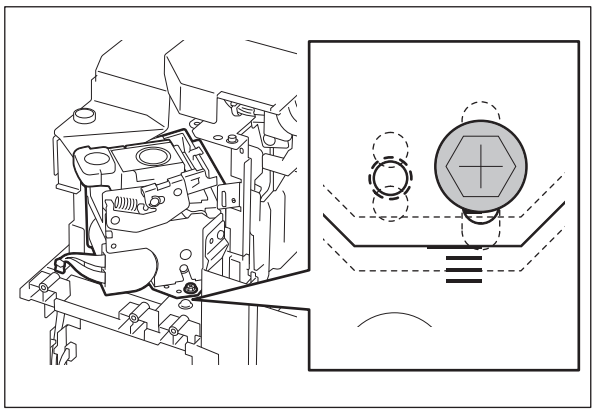


Fig. 28-189

28.5 Adjustment of the RADF (MR-3018)

28.5.1 Adjustment of RADF position

Perform this adjustment when the RADF is not installed in the correct position.

Note:
Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF.

[A] Checking

(1) Open the RADF and install 2 positioning pins (the positioning pins are installed to the back side of the hinge which is on the left side of the RADF).

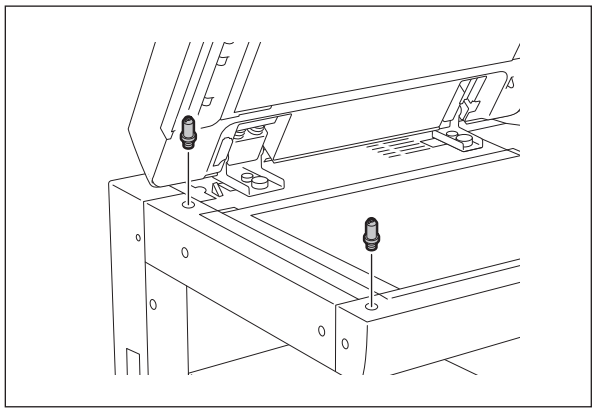


Fig. 28-190

(2) Remove the platen sheet.

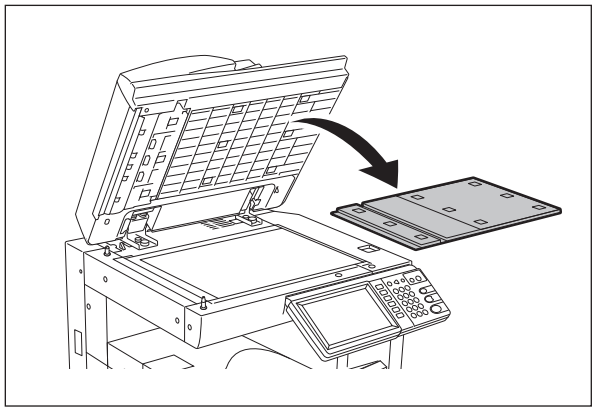


Fig. 28-191

(3) Close the RADF and check if the positioning pins fit the holes on the RADF.

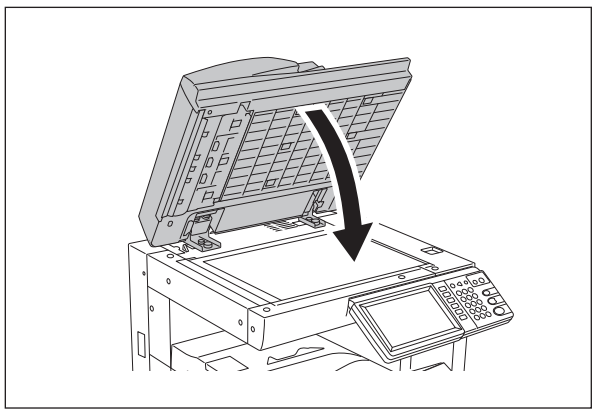


Fig. 28-192

[B] Adjustment

If the pins cannot be fitted into the holes, perform the adjustment according to the following procedure.

(1) Remove the right-hand hinge screw at the rear side.

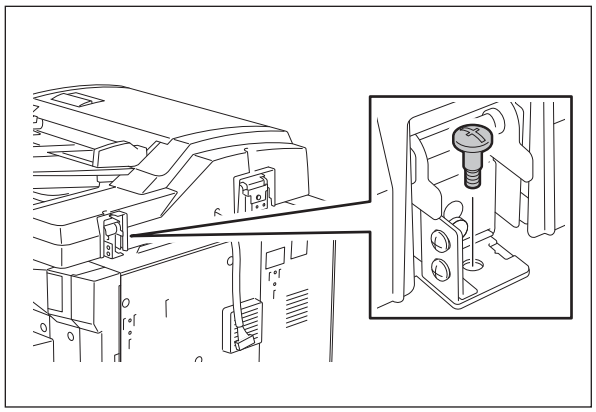


Fig. 28-193

(2) Loosen the left-hand hinge screw at the rear side.

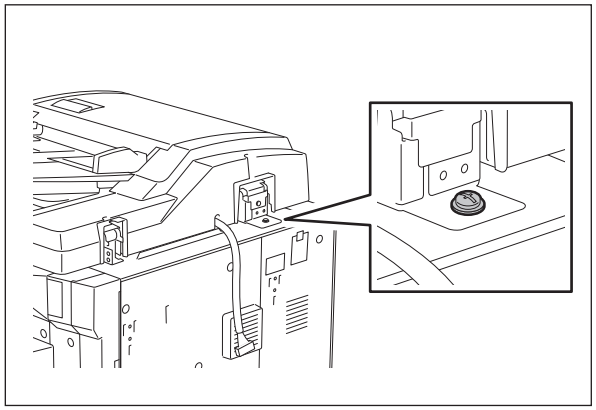


Fig. 28-194

(3) Loosen the hinge screws at the front side.

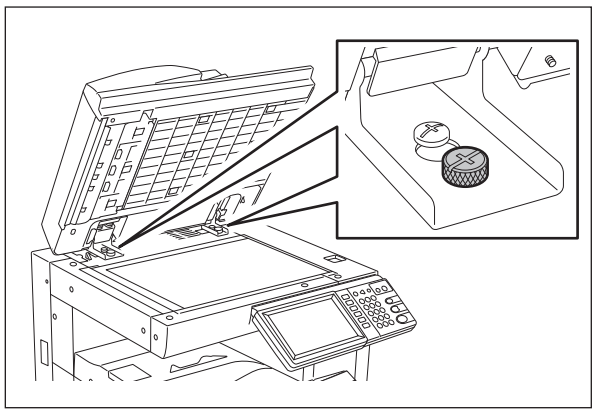


Fig. 28-195

(4) Position the pins with the holes on the RADF by moving it so that the pins fit into the holes when the RADF is closed.

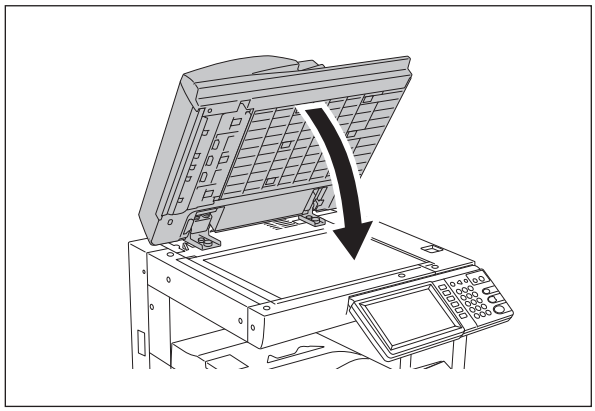


Fig. 28-196

(5) Tighten the left-hand hinge screw at the rear side.

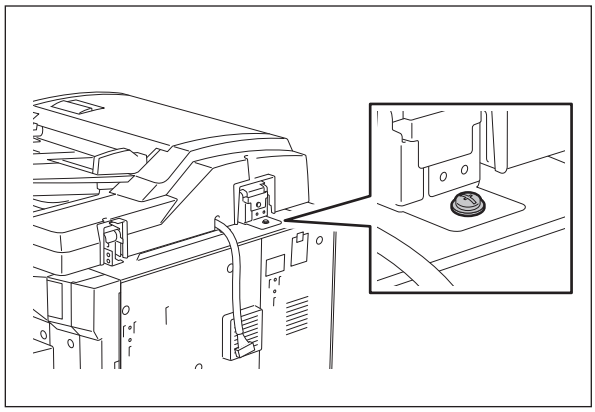


Fig. 28-197

(6) Loosen the hole position adjustment screws on the right hand side.

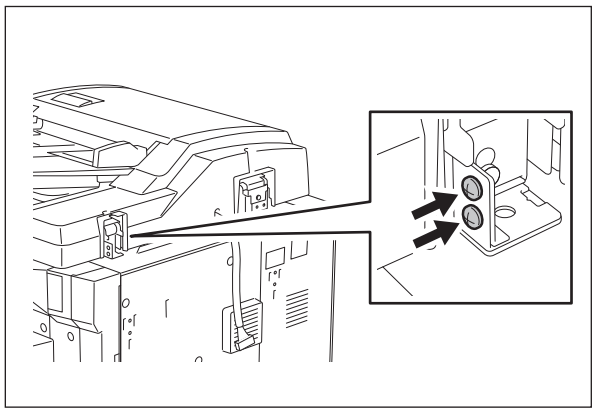


Fig. 28-198

(7) Match the screw hole positions.

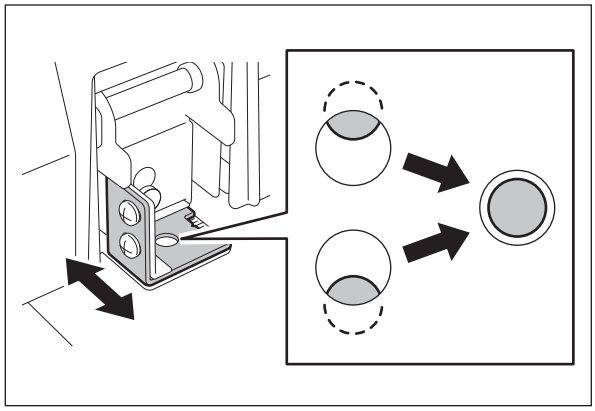


Fig. 28-199

(8) Install the right-hand hinge screw at the rear side.

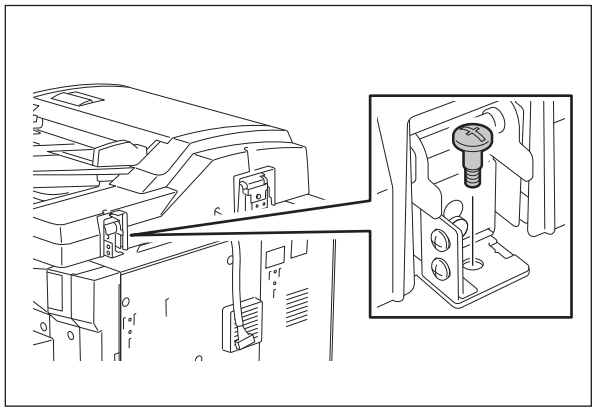


Fig. 28-200

(9) Loosen the hinge screws at the front side.

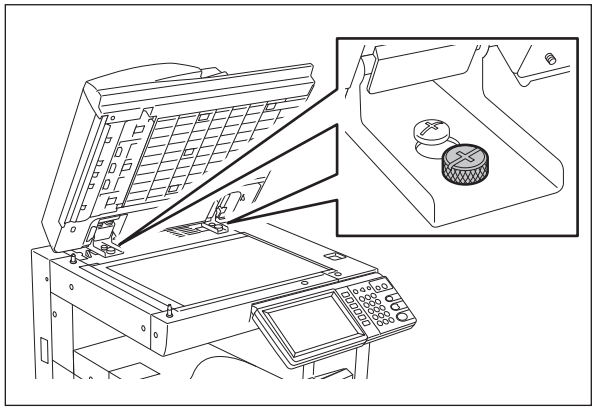


Fig. 28-201

(10) Place the platen sheet on the original glass and align it to the top left corner.
Close the RADF gently and open it to check if the platen sheet is attached properly.

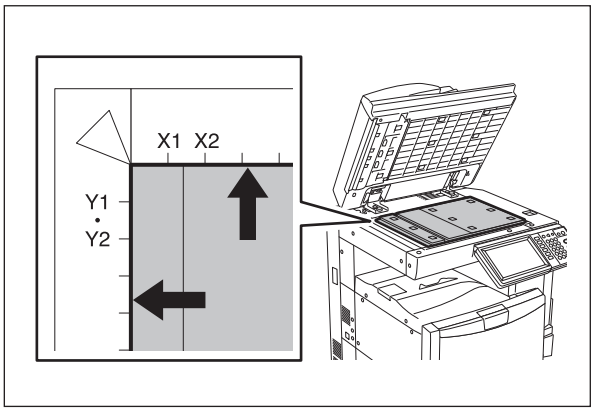


Fig. 28-202

28.5.2 Adjustment of RADF height

Note:

Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF.

[A] Checking

(1) Close the RADF.
(2) Light the exposure lamp.
- Turn the power ON while pressing [0] and [3] simultaneously.
- Key in [267] and then press the [START] button. The exposure lamp is turned ON for a given length of time.

(3) Visually check the gap between platen guide holder "A" and upper surface of the original glass "B" from the left hand side of the equipment. If the value is not within the tolerance, perform the adjustment according to the following procedure.

[Tolerance of the gap]
Rear side: 0 - 0.5 mm
Front side: 0 mm

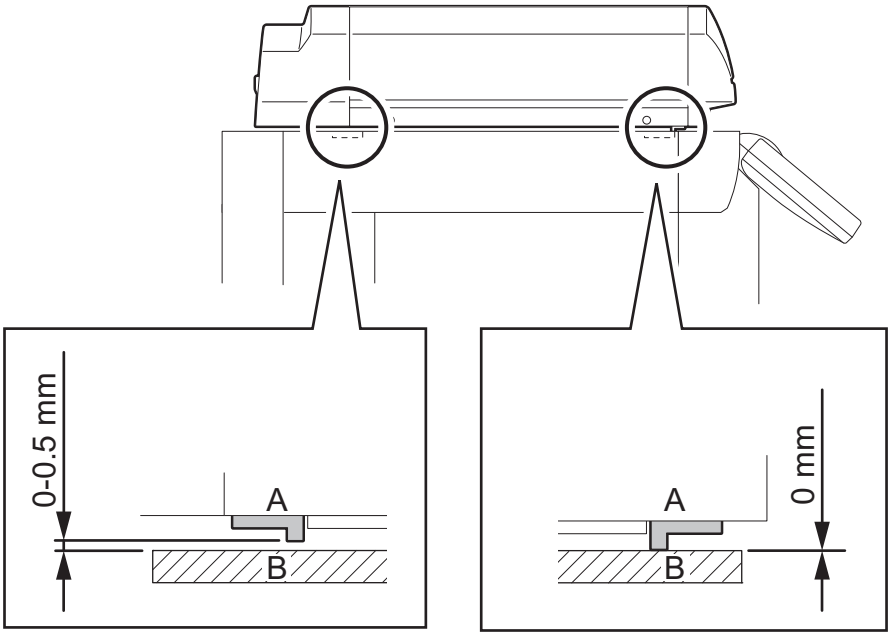


Fig. 28-203

[B] Adjustment

(1) Close the RADF.
(2) Adjust it by turning the adjustment screws on the hinges.
- Adjust the height on the rear side by means of the screw on the hinge on the feed side of the RADF.

Turn it clockwise ..... Heightened
Turn it counterclockwise ..... Lowered

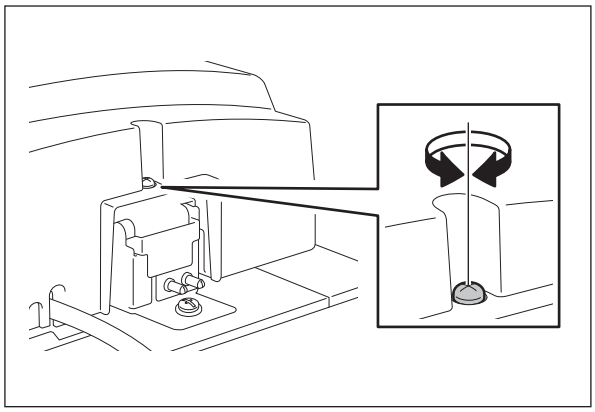


Fig. 28-204

- Adjust the gap on the rear side by means of the screw on the hinge on the feed side of the RADF.

Turn it clockwise ..... Lowered
Turn it counterclockwise ..... Heightened

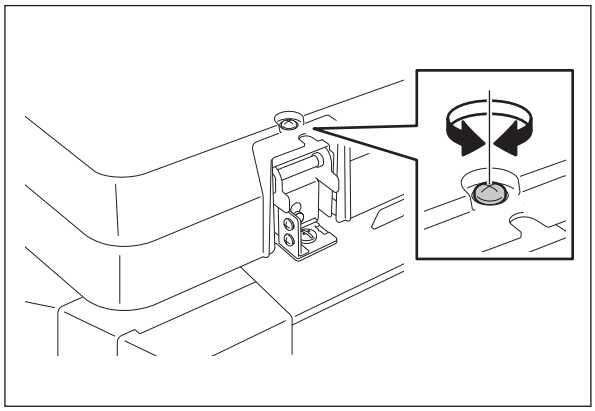


Fig. 28-205

28.5.3 Adjustment of skew

Note:

Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF. Also, the RADF position and height shall be adjusted properly.

[A] Checking

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.

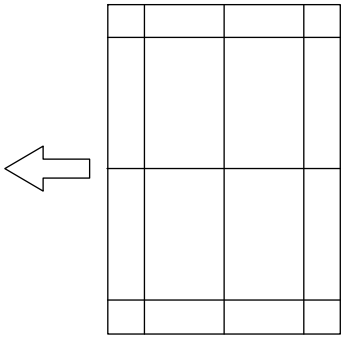


Fig. 28-206 Chart (Original)

Simplex copying:

(1) Place the chart provided as an original with its face up on the original tray of the RADF, select [1 Sided -> 1 Sided] and press the [START] button.
(2) Superimpose the chart on the copy and check the inclination of the copy image.

Duplex copying:

(1) Place the chart provided as an original with its face up on the original tray of the RADF, select [2 Sided -> 2 Sided] and press the [START] button.
(2) Superimpose the chart on the copy and check the inclination of the copy image.

[B] Adjustment

Simplex copying:

(1) Shift the aligning plate with the scale as the guide shown in the figure below to adjust the skew.

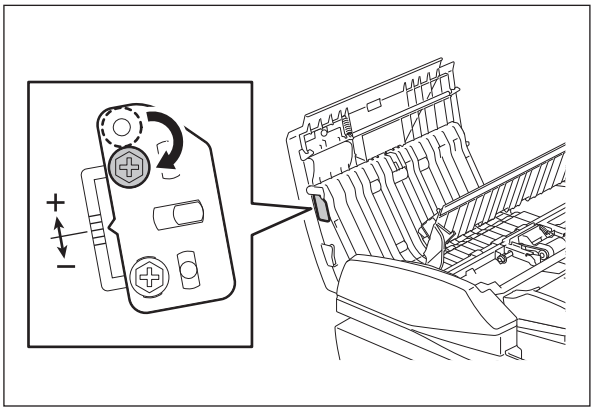


Fig. 28-207

(2) If the image skew is "C" as shown in the figure below, shift the aligning plate in the direction of "+", and if "D", shift it to "-".

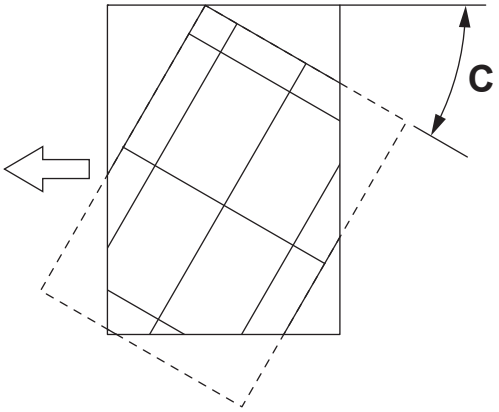


Fig. 28-208

Shift the aligning plate in the direction of "+".

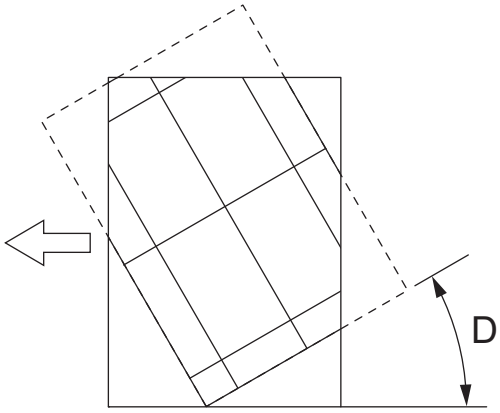


Fig. 28-209

Shift the aligning plate in the direction of "-".

Duplex copying:

(1) Shift the aligning plate with the scale as the guide shown in the figure below to adjust the skew.

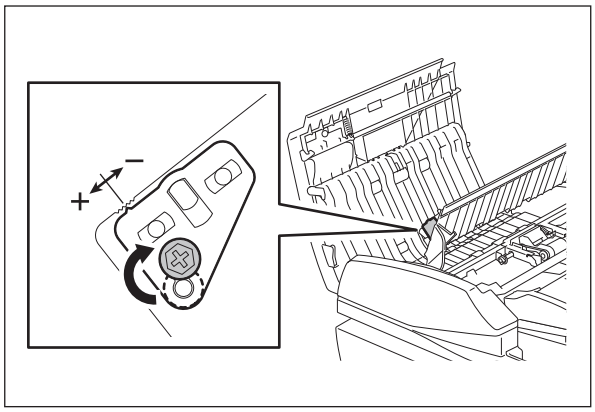


Fig. 28-210

(2) If the image skew is "C" as shown in the figure below, shift the aligning plate in the direction of "-", and if "D", shift it to "+".

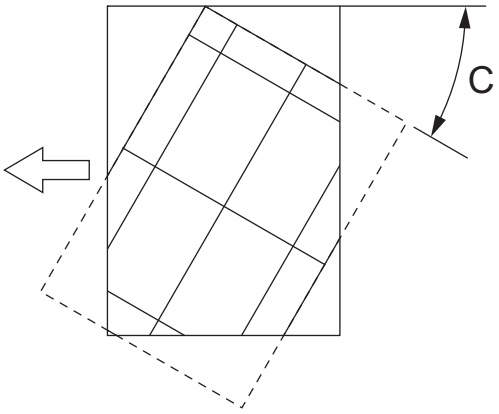


Fig. 28-211

Shift the aligning plate in the direction of "-".

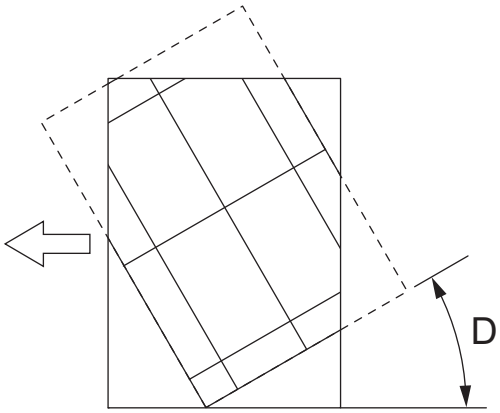


Fig. 28-212

Shift the aligning plate in the direction of "+".

28.5.4 Adjustment of the leading edge position

Note:
Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF. Also, the RADF position and height shall be adjusted properly.

[A] Checking

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.

Simplex copying:

(1) Place the chart provided as an original with its face up on the original tray of the RADF, select [1 Sided -> 1 Sided] and press the [START] button.
(2) Superimpose the chart on the copy and check the leading edge E of the chart and F of the copy.

Duplex copying:

(1) Place the chart provided as an original with its face up on the original tray of the RADF, select [2 Sided -> 2 Sided] and press the [START] button.
(2) Superimpose the chart on the copy and check the leading edge E of the chart and F of the copy.

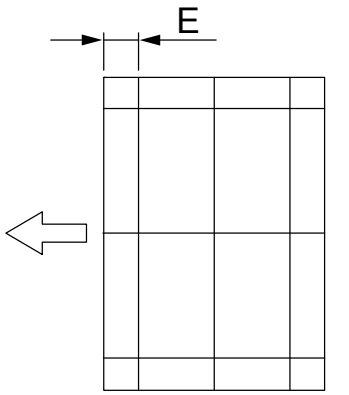


Fig. 28-213 Chart (Original)

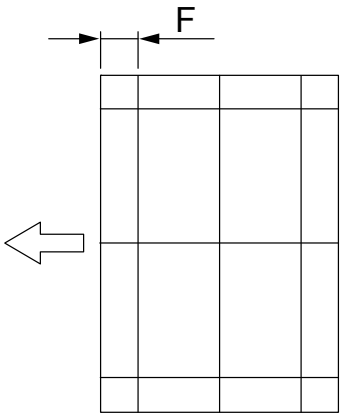


Fig. 28-214 Copy

[B] Adjustment

Simplex copying:

(1) Turn the power ON while pressing [0] and [5] simultaneously, key in [365] and then press the [START] button.
(2) Enter the value.
- If the leading edge (F) margin of the copy image is larger than the (E) margin of the chart, enter a value smaller than the current one.

Note:
Changing one value shifts the copy image by 0.1 mm.

- If the leading edge (F) margin of the copy image is smaller than the (E) margin of the chart, enter a value larger than the current one.

Note:
Changing one value shifts the copy image by 0.1 mm.

(3) Press the [ENTER] button.

Duplex copying:

(1) Turn the power ON while pressing [0] and [5] simultaneously, key in [366] and then press the [START] button.
(2) Enter the value.
- If the leading edge (F) margin of the copy image is larger than the (E) margin of the chart, enter a value smaller than the current one.

Note:
Changing one value shifts the copy image by 0.1 mm.

- If the leading edge (F) margin of the copy image is smaller than the (E) margin of the chart, enter a value larger than the current one.

Note:
Changing one value shifts the copy image by 0.1 mm.

(3) Press the [ENTER] button.

28.5.5 Adjustment of horizontal position

Note:
Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF. Also, the RADF position and height shall be adjusted properly.

[A] Checking

Check the image using the chart (original) with a center line in the following procedure.

(1) Place the chart provided as an original with its face up on the original tray of the RADF.
(2) Press the [START] button.
(3) Fold the copy in half and check if the center line is misaligned.

[B] Adjustment

(1) Turn the power ON while pressing [0] and [5] simultaneously.
(2) Key in [358] and then press the [START] button.
- If the center line of the copy image is shifted to the front side of the equipment, enter a value larger than the current one.

Note:
Changing one value shifts the copy image by 0.0423 mm.

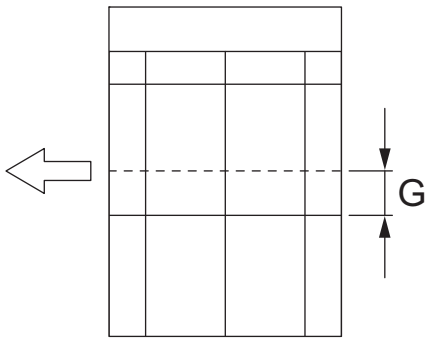


Fig. 28-215

- If the center line of the copy image is shifted to the rear side of the equipment, enter a value smaller than the current one.

Note:
Changing one value shifts the copy image by 0.0423 mm.

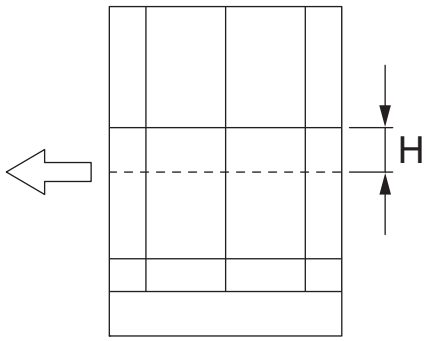


Fig. 28-216

(3) Press the [ENTER] button.

28.5.6 Adjustment of copy ratio

Note:
Check if the image adjustment for the equipment is performed properly before this adjustment of the RADF. Also, the RADF position and height shall be adjusted properly.

[A] Checking

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.

(1) Place the chart provided as an original with its face up on the original tray of the RADF.
(2) Press the [START] button.
(3) Superimpose the chart on the copy and check the image dimension “I”.

[B] Adjustment

(1) Turn the power ON while pressing [0] and [5] simultaneously.
(2) Key in [357] and then press the [START] button.
- If the copy image dimension “I” is larger than the chart dimension, enter a value smaller than the current one.
- If the copy image dimension “I” is smaller than the chart dimension, enter a value larger than the current one.

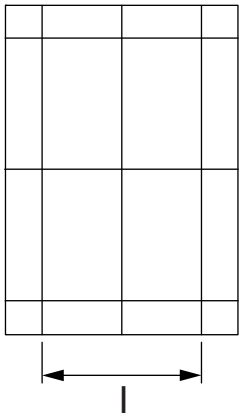


Fig. 28-217

(3) Press the [ENTER] button.

28.5.7 Adjustment of RADF opening/closing sensor

Adjust the bracket position so that the sensor is turned ON when the height “A” becomes 100 mm or less (within the empty weight falling limit).

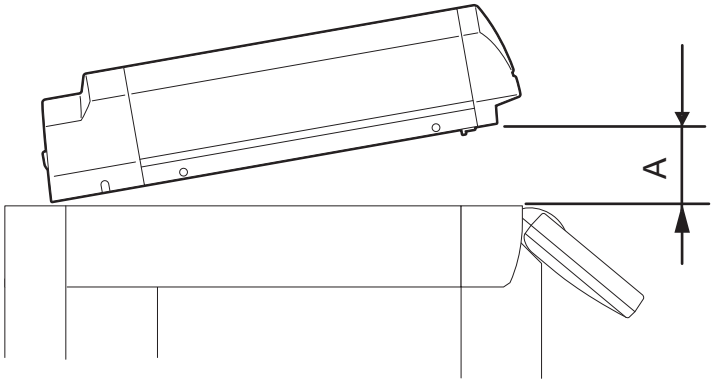


Fig. 28-218

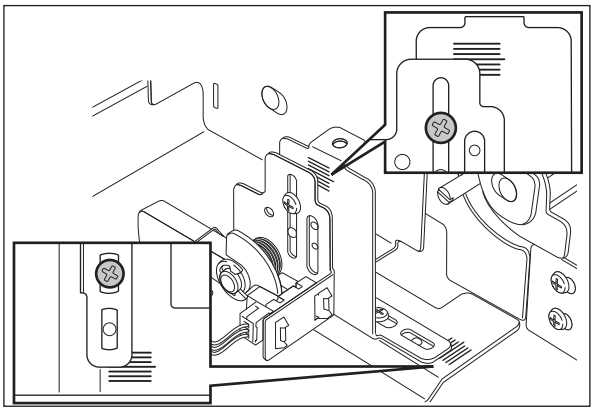


Fig. 28-219

29. EXTERNAL COUNTERS

29.1 Outline

This specification describes the interface between external counters, such as Coin Controller and Key Counter.

29.2 Signal

Note:
Regarding the output signals of TD62385 (CTRON), use 24V supplied from the equipment side as power.

[A] Pin Layout

1. Connector on the LGC board: CN336 (AMP-made 1-292252-6) (Coin Controller)

Pin No.	I/O	Signal name	Function	Voltage level	Remarks	Coin Cont-roller	Key Coun ter
A1	Power	+24V	24V line	DC24V±10%	When cover opened: OFF	In use	-
A2	Out	CTRON	Total Counter On Signal	Open Collector (TD62385F)	L: ON	In use	-
A3	In	CTRCNT	Copy permission Signal 1	L=0V, H=DC5V	L: Allowed	In use	-
A4	Out	MCRUN	Ready to Copy Signal	Open Collector (Equiv. SN7407)	L: Operating	In use	-
A5	Out	EXTCTR	Exit Sensor On Signal	Open Collector (Equiv. SN7407)	L: ON	In use	-
A6	GND	PG	Power ground	0V		In use	-
A7	Out	BKCTR	Black mode Counter Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
A8	Out	MNCTR	Mono color mode Counter Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B1	Out	FLCTR	Full color mode Counter On Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B2	GND	SG	Signal Ground	0V		-	-
B3	Out	SIZE3	Paper size Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B4	Out	SIZE2	Paper size Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B5	Out	SIZE1	Paper size Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B6	Out	SIZE0	Paper size Signal	Open Collector (Equiv. SN7407)	L: ON	-	-
B7	Power	+5V (Sleep)	5V line	DC5V±5%	At the sleep mode:OFF	In use	-
B8	-	N.C.	-	-		-	-

* Equiv. SN7407: 5 V, 24 V Interface

2. Connector on the SYS board: CN127 (JST-made B7B-PH-SM4) (Coin Controller)

Pin No.	I/O	Signal name	Function	Voltage level	Remarks	Coin Cont-roller	Key Coun ter
1	Out	LARGE / SMALL	Paper size Signal	Open Drain (Equiv. LCX07)	L: Large size	In use	-
2	Out	FULL COLOR	Full color mode Signal	Open Drain (Equiv. LCX07)	L: Full color	In use	-
3	Out	TWN/MON COLOR	Twin color / Mono color Mode Signal	Open Drain (Equiv. LCX07)	L: Twin colors	In use	-
4	Out	B/W	Black mode Signal	Open Drain (Equiv. LCX07)	L: Black	In use	-
5	-	N.C.	-	-		-	-
6	GND	GND	Signal Ground	-		In use	-
7	-	N.C.	-	-		-	-

* Equiv. LCX07: 5 V Interface

3. Connector on the LGC board: CN335 (AMP-made 292132-4) (Key Counter)

Pin No.	I/O	Signal name	Function	Voltage level	Remarks	Coin Cont-roller	Key Coun ter
1	GND	SG	Signal Ground	0V		-	In use
2	In	KCTRC	Key Counter Connection Signal	L=0V, H=DC5V	L: Connected H: Not connected	-	In use
3	Power	+24V	24V line	DC24V±10%	When cover opened: OFF	-	In use
4	Out	KCTRON	Key Counter On Signal	Open Collector (TD62308F)	L: ON	-	In use

* TD62308F: 24 V Interface

[B] Details of the signals

1. CTRON signal and KCTRON signal (output signals)
   These signals are synchronized with electronic counter of the equipment and they become “Low” when one sheet of paper is counted up. They are the signals for coin controller, and output from the LGC board. Since TD62385 and TD62308 are used as the driver, the mechanical counter can be driven directly.
   Only with the KCTRON signal, the counter will make “Double count” if 08-352 (count setting of large size paper) is set to “1” or “2”.

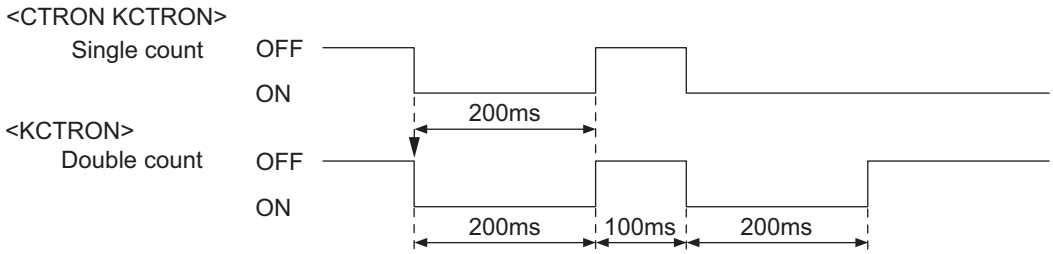


Fig. 29-1

2. CTRCNT signal and KCTRC signal (input signals)
   The CTRCNT signal enables to accept copies when the coin controller is connected, and copies can be accepted with “Low”. In case of “High”, “Set Key Counter” appears and copies cannot be made.
   The KCTRC signal enables to accept copies when the key counter is connected, and copies can be accepted with “Low”. In case of “High”, “Set Key Counter” appears and copies cannot be made.

3. MCRUN signal (output signal)
   The MCRUN signal is changed to “Low” during copying. It becomes “Low” at 30 ms or more before the CTRON signal becomes ON, and becomes “High” at 50 ms or more after the EXTCTR signal becomes OFF.
   However, if copying is interrupted due to forced toner supply or similar, this signal is “High” until the copying is available.
   This is the signal for the coin controller.

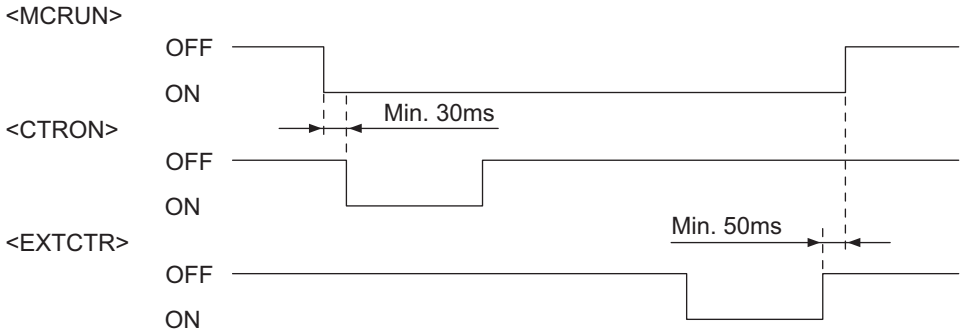


Fig. 29-2

4. EXTCTR signal (output signal)
   The EXTCTR signal is synchronized with “Exit sensor ON” and becomes “Low” (ON) for 200 ms. The coin controller counts the number of times with this signal.
   This is the signal only for the coin controller.

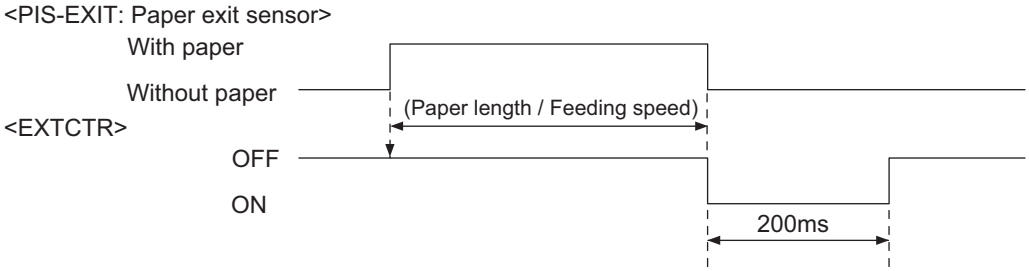


Fig. 29-3

5. LARGE/SMALL signal (output signal)
   When large size paper (A3 / A3 wide / LD) is selected or paper size is not specified with the manual feeding, it outputs “Low” in real time. In other cases, it outputs “High”. The setting change for large size paper is performed with F/W.
   This is the signal only for the coin controller.

6. FULL COLOR signal (output signal)
   If the full color mode is selected, it outputs “Low” in real time. In other cases, it outputs “High”. By default, it outputs “Low” since it is set as full color mode.
   This is the signal only for the coin controller.

7. TWN / MON COLOR signal (output signal)
   If the twin color or mono color mode is selected, it outputs “Low” in real time. In other cases, it outputs “High”. This is the signal only for the coin controller.

8. B/W signal (output signal)
   If the black mode is selected, it outputs “Low” in real time. In other cases, it outputs “High”. This is the signal only for the coin controller.

29.3 Notices

[A] Setting code

Each signal will be enabled by configuring the setting code “08-202” (Counter installed externally).

08-202
0: No external counter (Default)
1: Coin controller
2: Card controller (For Japan only)
3: Key copy counter

[B] Setting value change and restrictions when using the Card Controller

1. Setting value
   - 08-202 (Counter installed externally): Set to “2” (Card controller).
   - 08-381 (Setting for counter installed externally): It should be charged precisely according to the usage.
     Example: To charge only when copies are made, set to “1”.

2. Restrictions
   - 08-352 (Large size double count setting): Set to “0” (Single count).

[C] Setting value change and restrictions when using the coin controller

1. Setting value
   - 08-202 (Counter installed externally): Set to “1” (Coin controller).
   - 08-381 (Setting for counter installed externally): It should be charged precisely according to the usage.
     Example: To charge only when copies are made, set to “1”.

2. Restrictions
   For 08-353 (Large size double count setting), set to “0” when A3 and LD are specified as the large size, and set to “1” when B4, LG, FOLIO and COMP are specified as the large size in addition to A3 and LD.

[D] Setting value change and restrictions when using the key counter

1. Setting value
   - 08-202 (Counter installed externally): Set to “3” (key counter)
   - 08-381(Setting for counter installed externally): It should be charged precisely according to the usage.
     Example: To charge only when copies are made, set to “1”.

2. Restrictions
   For 08-353 (Large size double count setting), set to “0” when A3 and LD are specified as the large size, and set to “1” when B4, LG, FOLIO and COMPUTER are specified as the large size in addition to A3 and LD.

[E] Installation of External Counter

It is not allowed to install more than one external counter (Key Counter, Card Controller and Coin Controller) at the same time. Physically, the card controller and coin controller cannot be installed together since the output signals are in common.

30. PC BOARDS

[A] PWA-F-SYS

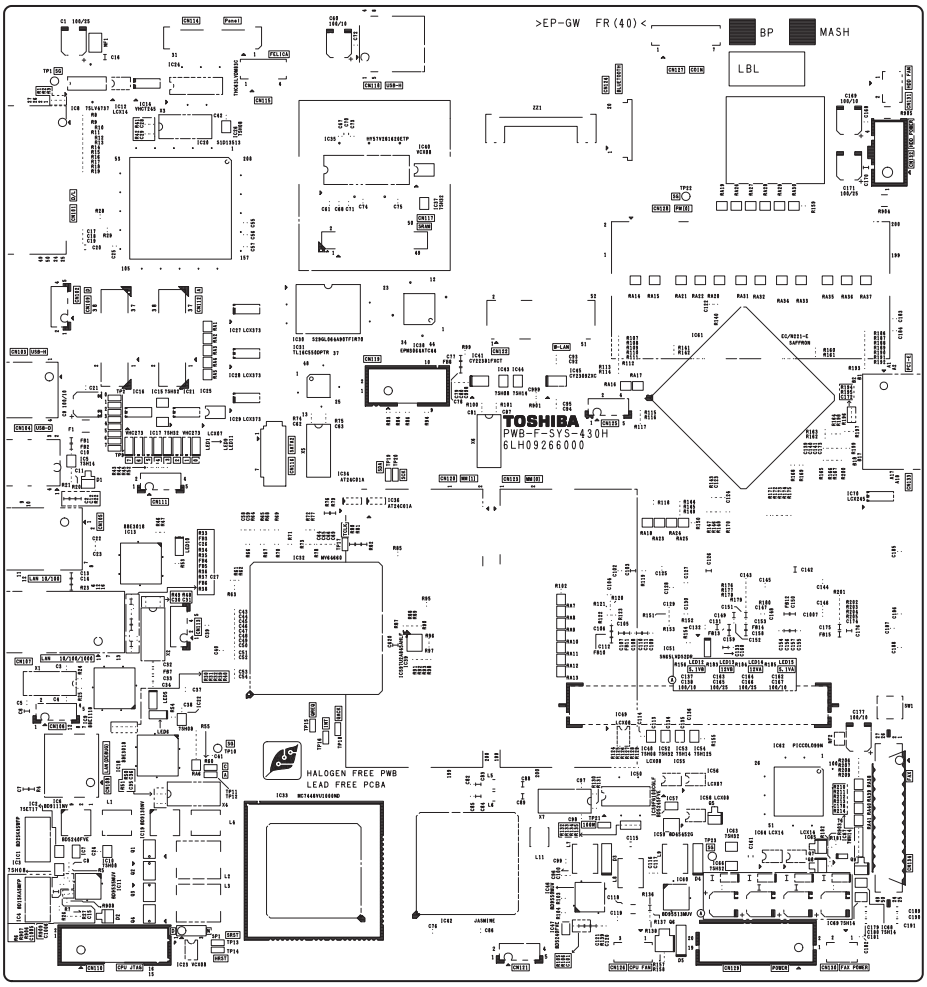


Fig. 30-1

[B] PWA-F-IMG

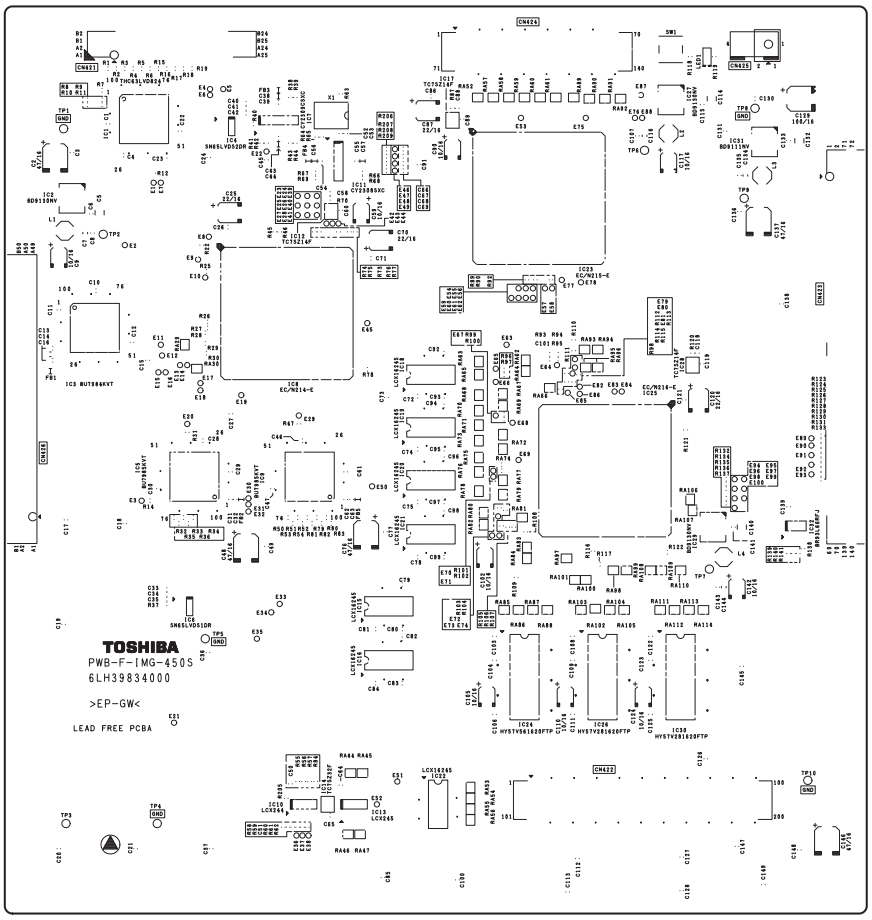


Fig. 30-2

[C] PWA-F-LGC

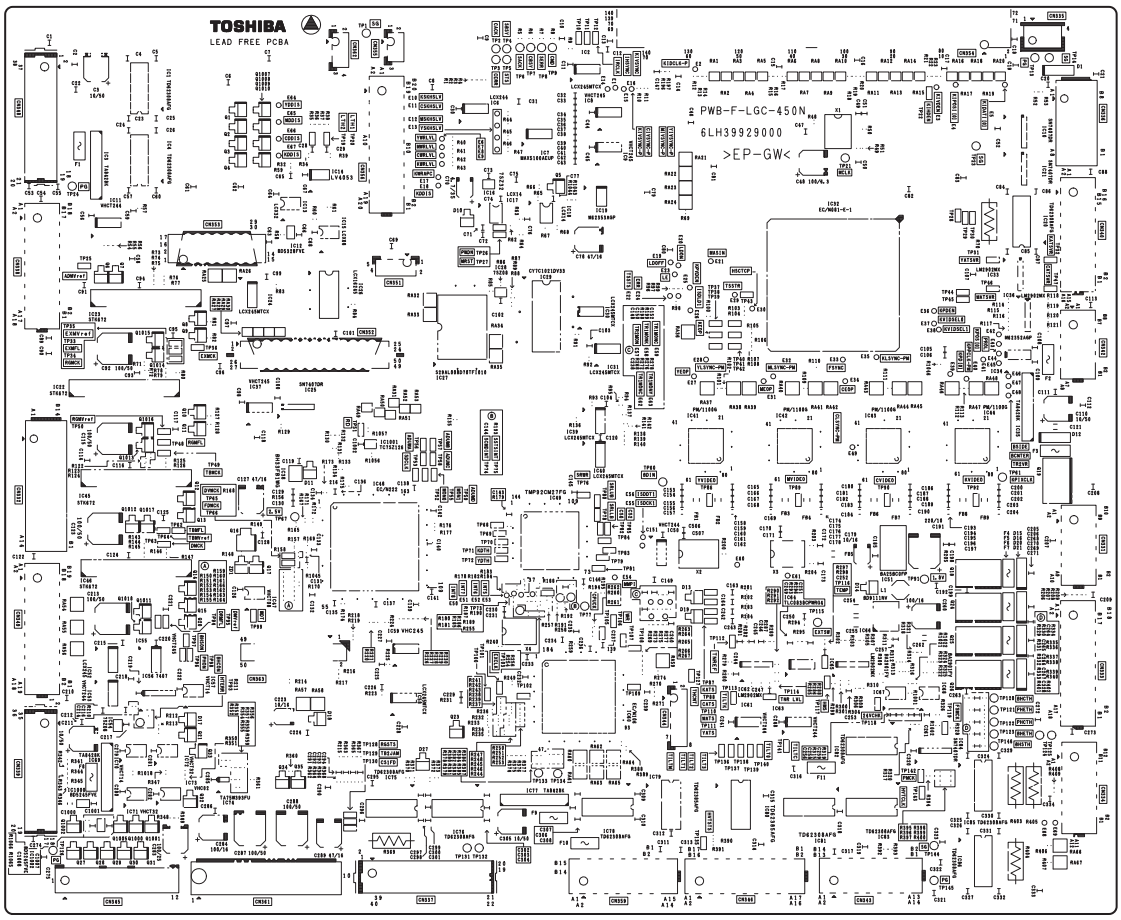


Fig. 30-3

[D] PWA-F-CCD

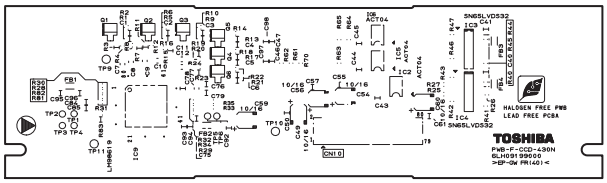


Fig. 30-4

[E] PWA-F-SLG

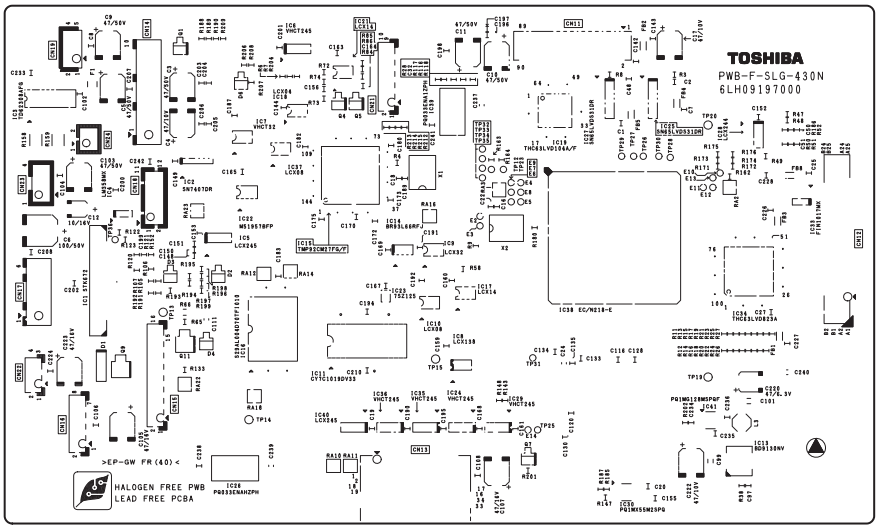


Fig. 30-5

[F] PWA-F-DSP

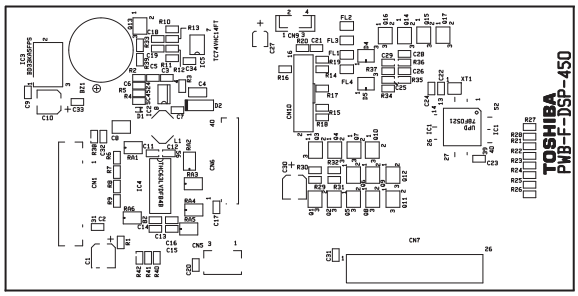


Fig. 30-6

[G] PWA-F-KEY

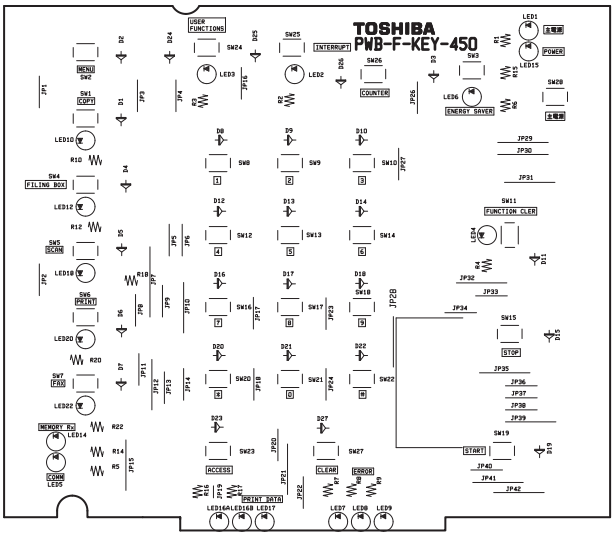


Fig. 30-7

[H] PWA-F-ADU

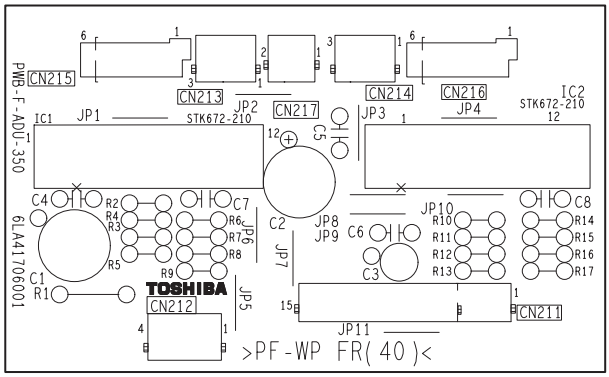


Fig. 30-8

[I] PWA-F-FIL

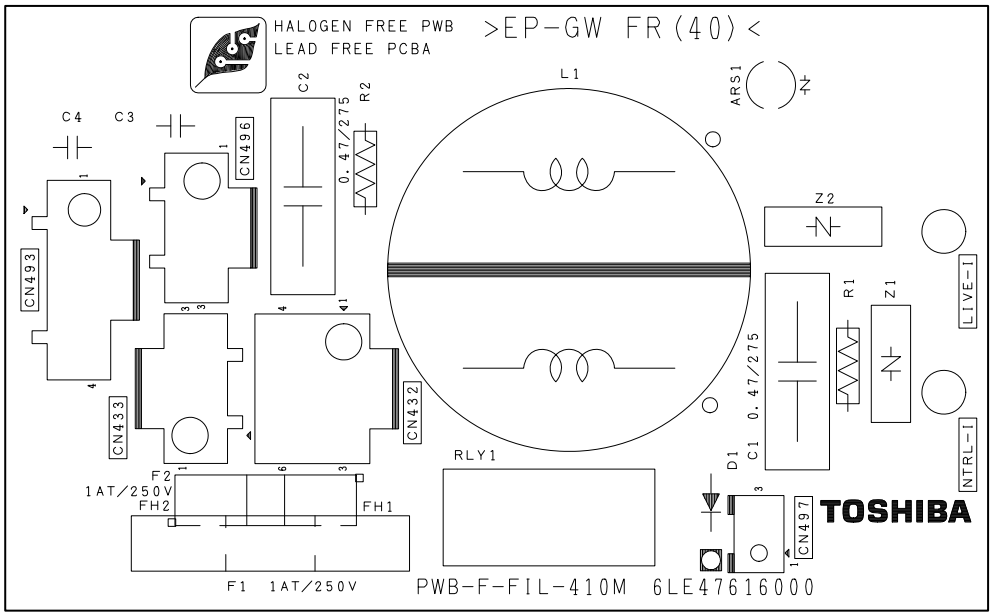


Fig. 30-9

[J] PWA-F-SRAM-S / PWA-F-SRAM-L

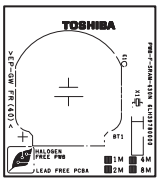
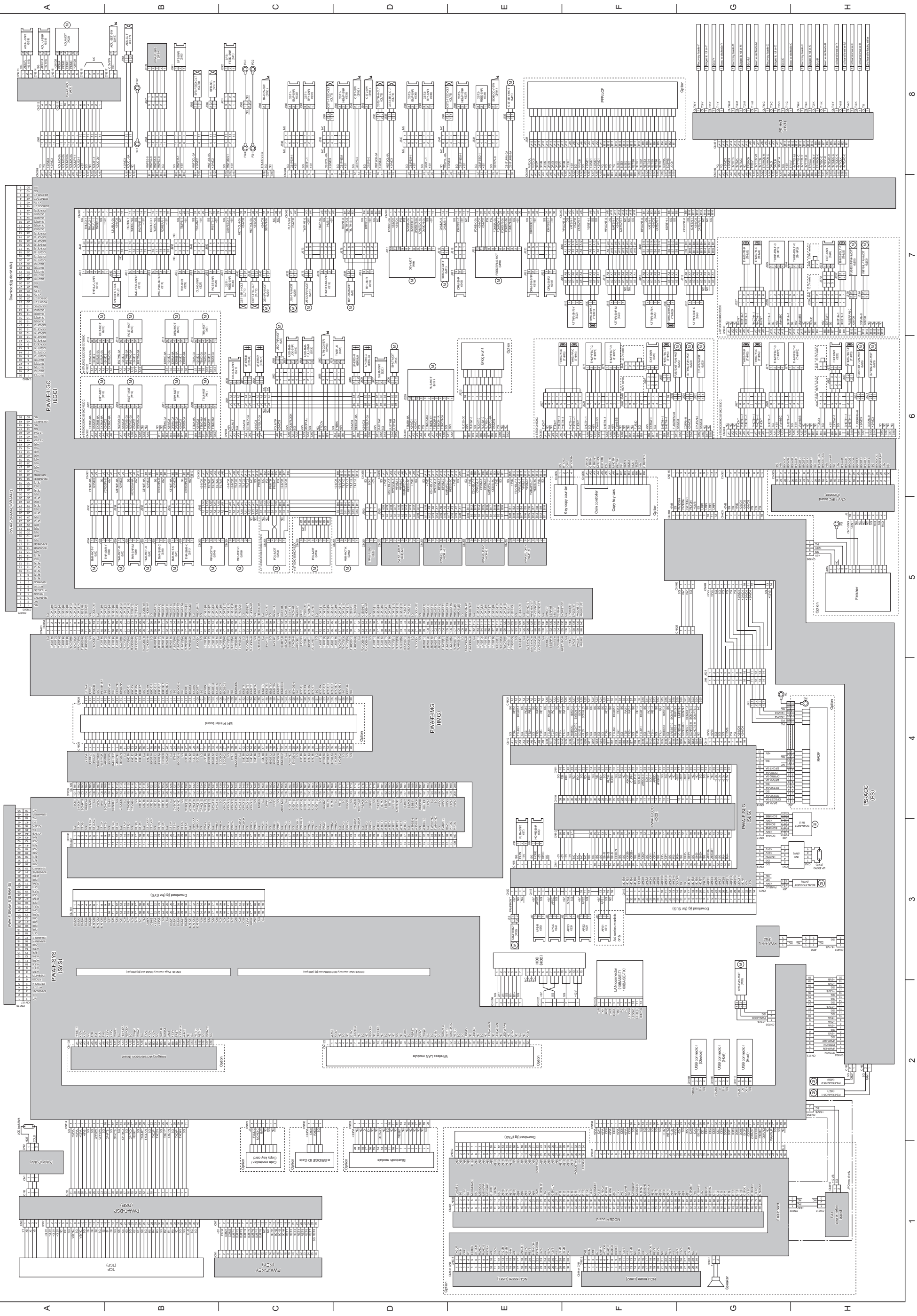


Fig. 30-10

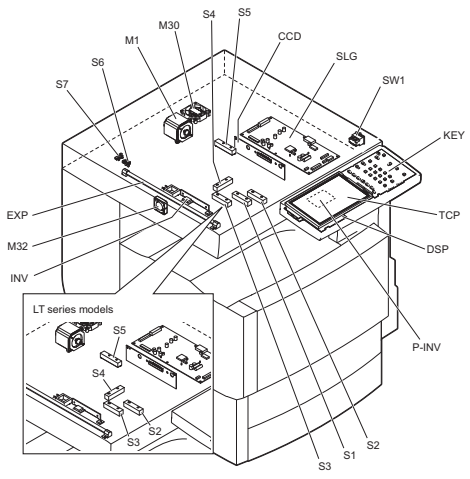
31. DC Wire Harness / Electric Parts Layou

31.1 DC Wire Harness

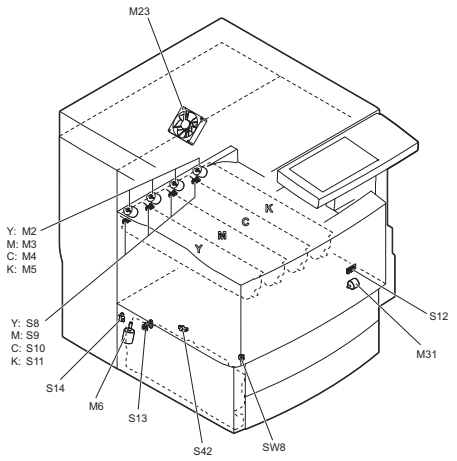


31.2 Electric Parts Layout

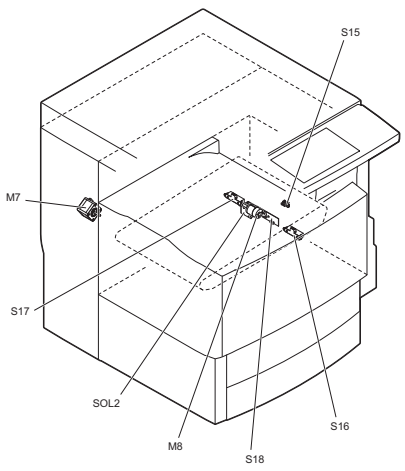
[A] Scanner unit, control panel



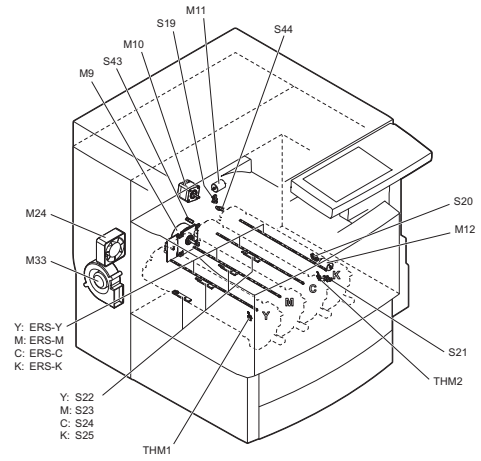
[B] Toner cartridge, waste toner box



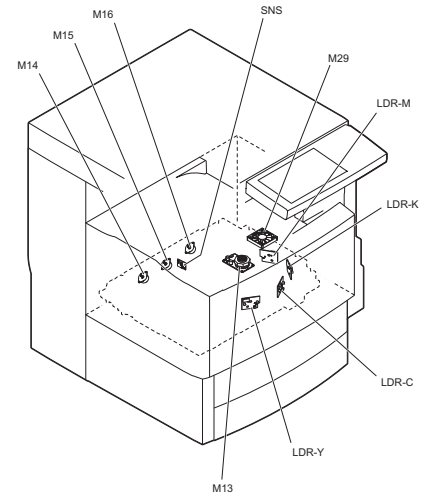
[C] Transfer belt unit



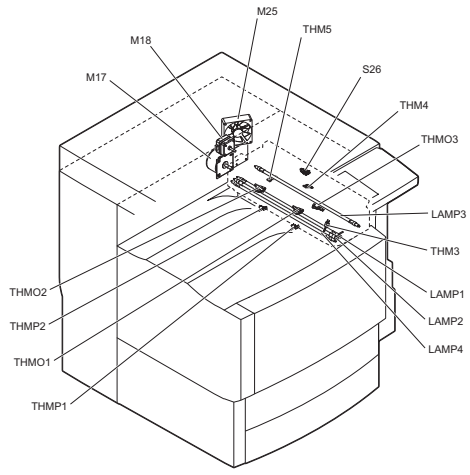
[D] Developer unit



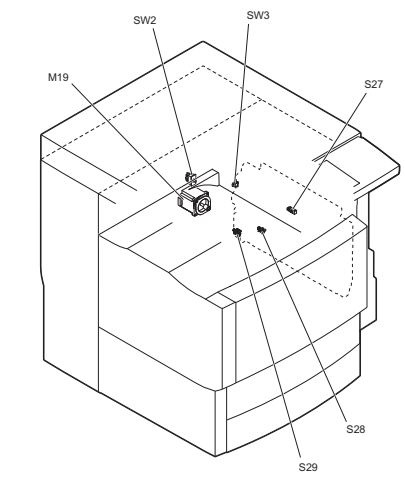
[E] Laser unit



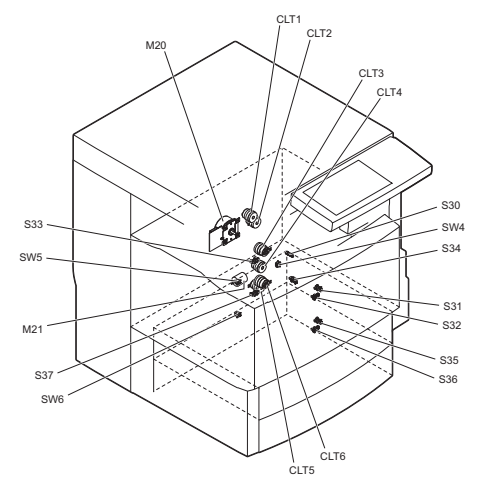
[F] Fuser unit



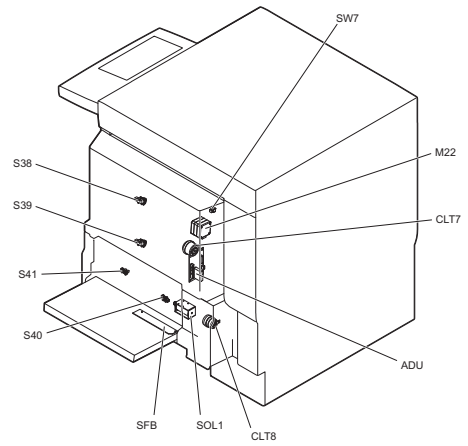
[G] Transfer unit



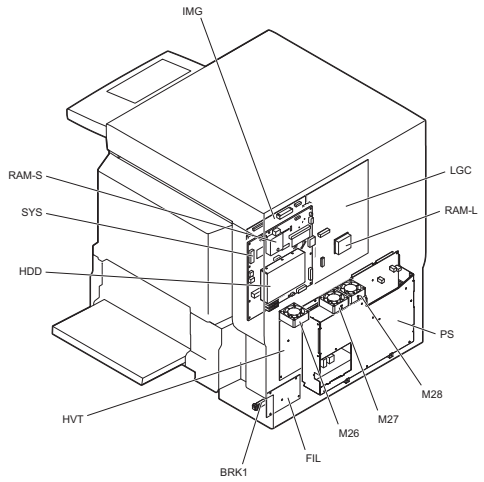
[H] Paper feeding unit



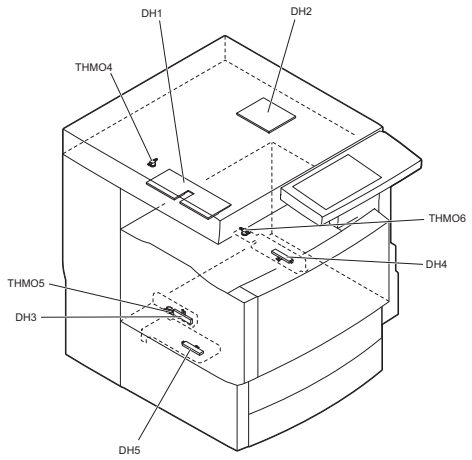
[I] Automatic duplexing unit, bypass feed unit



[J] PC board, power supply



[K] Damp heater



Motors

Symbol	Name	Figure	Wire harness location
M1	SCAN-MOT Scan motor	[A]	3-H
M2	TNR-MOT-Y Toner motor-Y	[B]	5-A
M3	TNR-MOT-M Toner motor-M	[B]	5-B
M4	TNR-MOT-C Toner motor-C	[B]	5-B
M5	TNR-MOT-K Toner motor-K	[B]	5-B
M6	USD-TNR-MOT Waste toner paddle motor	[B]	6-C
M7	TBU-MOT Transfer belt motor	[C]	6-B / 7-B
M8	TR1-CAM-MOT 1st transfer roller cam motor	[C]	7-D
M9	DEV-MOT Developer unit motor	[D]	7-D
M10	DRM-MOT Drum motor	[D]	6-B / 7-B
M11	DRM-SW-MOT Drum switching motor	[D]	7-D
M12	SHUT-MOT Shutter motor	[D]	6-D
M13	POL-MOT Polygonal motor	[E]	5-C
M14	MIR-MOT-M Mirror motor-M	[E]	5-B
M15	MIR-MOT-C Mirror motor-C	[E]	5-C
M16	MIR-MOT-K Mirror motor-K	[E]	5-D
M17	FUS-MOT Fuser motor	[F]	6-D
M18	EXIT-MOT Exit motor	[F]	6-A / 7-A
M19	RGST-MOT Registration motor	[G]	6-B / 7-B
M20	FEED/TRNS-MOT Feed/transport motor	[H]	7-E
M21	CST-TRY-MOT Tray-up motor	[H]	8-E
M22	ADU-MOT ADU motor	[I]	8-A
M23	INTRNL-FAN-MOT Internal cooling fan	[B]	6-G
M24	OZN-FAN-MOT Ozone exhaust fan	[D]	7-C
M25	FUS/EXIT-FAN-MOT Fuser/exit section cooling fan	[F]	6-F
M26	SYS-FAN-MOT SYS board cooling fan	[J]	2-G
M27	PS-FAN-MOT-1 Switching regulator cooling fan-1	[J]	2-H
M28	PS-FAN-MOT-2 Switching regulator cooling fan-2	[J]	2-H
M29	LSU-FAN-MOT Laser unit cooling fan	[E]	7-C
M30	SCAN-FAN-MOT Scanner unit cooling fan	[A]	3-H
M31	UT-CARRY-MOT Waste toner transport motor	[B]	7-C
M32	FANFRONT Exposure lamp cooling fan	[B]	3-E
M33	EPU-FAN EPU cooling fan	[D]	6-G

Sensors and Switches

Symbol	Name	Figure	Wire harness location
S1-5	APS1-3, APS-C, APS-R Automatic original detection sensor * S1: only for A4 series models	[A]	3-E 3-F
S6	HOME-SNR Carriage home position sensor	[A]	3-E
S7	PLTN-SNR Platen sensor	[A]	3-E
S8	TNR-SNR-Y Toner cartridge detection sensor-Y	[B]	5-B
S9	TNR-SNR-M Toner cartridge detection sensor-M	[B]	5-B
S10	TNR-SNR-C Toner cartridge detection sensor-C	[B]	5-B
S11	TNR-SNR-K Toner cartridge detection sensor-K	[B]	5-B
S12	TEMP/HUMI-SNR Temperature/humidity sensor	[B]	7-C
S13	USD-TNR-FLL-SNR Waste toner box full detection sensor	[B]	6-C
S14	USD-TNR-LCK-SNR Waste toner paddle motor lock detection sensor	[B]	6-C
S15	TR1-SNR 1st transfer roller status detection sensor	[C]	7-D
S16	IMG-POS-SNR-F Image position aligning sensor (Front)	[C]	7-B
S17	IMG-POS-SNR-R Image position aligning sensor (Rear)	[C]	7-B
S18	TNR-LVL-SNR Image quality sensor	[C]	7-A
S19	DRM-SW-SNR Drum switching detection sensor	[D]	7-E
S20	SHUT-SNR Shutter status detection sensor	[D]	6-D
S21	CH-CLN-SNR Needle electrode cleaner detection sensor	[D]	6-C
S22	ATTNR-SNR-Y Auto-toner sensor-Y	[D]	7-F
S23	ATTNR-SNR-M Auto-toner sensor-M	[D]	7-F
S24	ATTNR-SNR-C Auto-toner sensor-C	[D]	7-G
S25	ATTNR-SNR-K Auto-toner sensor-K	[D]	7-F
S26	EXIT-SNR Exit sensor	[F]	7-H
S27	CLNG-SNR Paper clinging detection sensor	[G]	7-B
S28	RGST-SNR Registration sensor	[G]	7-B
S29	TR2-SNR 2nd transfer roller position detection sensor	[G]	7-B
S30	CST1-FEED-SNR 1st drawer feed sensor	[H]	7-C
S31	CST1-TRY-SNR 1st drawer tray-up sensor	[H]	8-C
S32	CST1-EMP-SNR 1st drawer empty sensor	[H]	8-C
S33	CST1-NEMP-SNR 1st drawer paper stock sensor	[H]	8-D
S34	CST2-FEED-SNR 2nd drawer feed sensor	[H]	8-E
S35	CST2-TRY-SNR 2nd drawer tray-up sensor	[H]	8-D
S36	CST2-EMP-SNR 2nd drawer empty sensor	[H]	8-D
S37	CST2-NEMP-SNR 2nd drawer paper stock sensor	[H]	8-E
S38	ADU-U-SNR ADU entrance sensor	[I]	8-A
S39	ADU-L-SNR ADU exit sensor	[I]	8-A
S40	SFB-SNR Bypass paper sensor	[I]	8-B
S41	SFB-FEED-SNR Bypass feed sensor	[I]	8-C
S42	TNTRLK Auger lock detection sensor	[B]	6-D
S43	DRM-SNR Color drum phase sensor	[D]	7-E
S44	DRM-SNR2 K drum phase sensor	[D]	7-E
SW1	MAIN-SW Main switch	[A]	AC Wire Harness
SW2	COV-INTLCK-SW Cover interlock switch	[G]	AC Wire Harness
SW3	TR-COV-SW Transfer cover switch	[G]	8-C
SW4	SIDE-COV-SW Side cover switch	[H]	8-E
SW5	CST1-SW 1st drawer detection switch	[H]	8-D
SW6	CST2-SW 2nd drawer detection switch	[H]	8-D
SW7	ADU-SET-SW ADU opening/closing switch	[I]	8-B
SW8	UTN-COVER Waste toner cover open/close detection switch	[B]	6-C

Electromagnetic spring clutches

Symbol	Name	Figure	Wire harness location
CLT1	CST1-TR-H-CLT 1st drawer transport clutch (High speed)	[H]	7-C
CLT2	CST1-TR-L-CLT 1st drawer transport clutch (Low speed)	[H]	7-C
CLT3	CST1-FEED-CLT 1st drawer feed clutch	[H]	8-C
CLT4	CST2-TR-L-CLT 2nd drawer transport clutch (Low speed)	[H]	8-D
CLT5	CST2-TR-H-CLT 2nd drawer transport clutch (High speed)	[H]	8-D
CLT6	CST2-FEED-CLT 2nd drawer feed clutch	[H]	8-D
CLT7	ADU-CLT ADU clutch	[I]	8-B
CLT8	SFB-FEED-CLT Bypass feed clutch	[I]	8-B

Solenoids

Symbol	Name	Figure	Wire harness location
SOL1	SFB-SOL Bypass pickup solenoid	[I]	8-B
SOL2	SNR-SHUT-SOL Sensor shutter solenoid	[C]	7-B

PC boards

Symbol	Name	Figure	Wire harness location
CCD	PWA-F-CCD CCD driving PC board (CCD board)	[A]	4-F
SLG	PWA-F-SLG Scanning section control PC board (SLG board)	[A]	4-G
INV	INV Lamp inverter board	[A]	3-H
DSP	PWA-F-DSP Display PC board (DSP board)	[A]	1-B
KEY	PWA-F-KEY Key PC board (KEY board)	[A]	1-C
P-INV	P-INV Panel inverter board	[A]	1-A
LDR-Y	PWA-F-LDR-Y Laser driving PC board-Y (LDR-Y board)	[E]	5-E
LDR-M	PWA-F-LDR-M Laser driving PC board-M (LDR-M board)	[E]	5-D
LDR-C	PWA-F-LDR-C Laser driving PC board-C (LDR-C board)	[E]	5-E
LDR-K	PWA-F-LDR-K Laser driving PC board-K (LDR-K board)	[E]	5-D
SNS	PWA-F-SNS H-sync detection PC board (SNS board)	[E]	5-D
ADU	PWA-F-ADU ADU control PC board (ADU board)	[I]	8-A
SFB	PWA-F-SFB Paper width detection PC board (SFB board)	[I]	8-B
SYS	PWA-F-SYS System control PC board (SYS board)	[J]	3-A
LGC	PWA-F-LGC Logic PC board (LGC board)	[J]	6-A
IMG	PWA-F-IMG Image processing PC board (IMG board)	[J]	4-D
FIL	PWA-F-FIL Filter PC board (FIL board)	[J]	3-G
RAM-S	PWA-F-SRAM-S SRAM board <for SYS board>	[J]	3-A
RAM-L	PWA-F-SRAM-L SRAM board <for LGC board>	[J]	5-A

Lamps and heaters

Symbol	Name	Figure	Wire harness location
EXP	LP-EXPO Exposure lamp	[A]	3-H
ERS-Y	LP-ERS-Y Discharge LED-Y	[D]	5-B
ERS-M	LP-ERS-M Discharge LED-M	[D]	5-B
ERS-C	LP-ERS-C Discharge LED-C	[D]	5-B
ERS-K	LP-ERS-K Discharge LED-K	[D]	5-B
LAMP1	LP-HTR-C Center heater lamp	[F]	AC Wire Harness
LAMP2	LP-HTR-S Side heater lamp	[F]	AC Wire Harness
LAMP3	LP-PR Pressure roller lamp	[F]	AC Wire Harness
LAMP4	LAMP-TRIPLE Sub heater lamp	[F]	AC Wire Harness
DH1	SCN-DH-L Scanner damp heater (Left)	[K]	AC Wire Harness
DH2	SCN-DH-R Scanner damp heater (Right)	[K]	AC Wire Harness
DH3	DRM-DH-L Drum damp heater (Left)	[K]	AC Wire Harness
DH4	DRM-DH-R Drum damp heater (Right)	[K]	AC Wire Harness
DH5	CST-DH-R Drawer damp heater * Only for JPD models	[K]	AC Wire Harness

Thermistors and thermostats

Symbol	Name	Figure	Wire harness location
THM1	THMS-DRM-Y Drum thermistor-Y	[D]	7-F
THM2	THMS-DRM-K Drum thermistor-K	[D]	7-F
THM3	THMS-FBLT-F Fuser belt front thermistor	[F]	6-F / 6-H / 7-H AC Wire harness
THM4	THMS-PR-C Pressure roller center thermistor	[F]	6-F / 6-G / 7-G AC Wire harness
THM5	THMS-PR-R Pressure roller rear thermistor	[F]	6-E / 6-G / 7-G AC Wire harness
THMP1	THMP-FBLT-C Fuser belt center thermopile	[F]	6-F / 6-G / 7-G AC Wire harness
THMP2	THMP-FBLT-R Fuser belt rear thermopile	[F]	6-F / 6-H / 7-H AC Wire harness
THMO1	THERMO-FBLT-C Fuser belt center thermostat	[F]	AC Wire harness
THMO2	THERMO-FBLT-S Fuser belt rear thermostat	[F]	AC Wire harness
THMO3	THERMO-PR Pressure roller thermostat	[F]	AC Wire harness
THMO4	THERMO-SCN-DH Scanner damp heater thermostat	[K]	AC Wire harness
THMO5	THERMO-DRM-DH-L Drum damp heater thermostat (Left)	[K]	AC Wire harness
THMO6	THERMO-DRM-DH-R Drum damp heater thermostat (Right)	[K]	AC Wire harness

Transformer

Symbol	Name	Figure	Wire harness location
HVT	PS-HVT High-voltage transformer	[J]	8-G

Others

Symbol	Name	Figure	Wire harness location
TCP	TCP Touch panel	[A]	1-B
FS1	FUSE-FUS Fuser unit fuse	[F]	6-F
HDD	HDD Hard disk	[J]	3-E
PS	PS-ACC Switching regulator	[J]	4-H
BRK	BRK Breaker	[J]	AC Wire harness

REVISION RECORD

Ver.14

Ver.14 <2012.08.31>	
Page	**Contents**
25-2, 25-201	08-8633, 8634 and 8635 have been added.

Ver.13

Ver.13 <2012.03.30>	
Page	**Contents**
23-9	Table 2 has been changed.
25-122	08-727 has been changed.

Ver.12

Ver.12 <2011.11.25>	
Page	**Contents**
2	Trademarks have been changed.
2	Copyright description has been changed.
11-43 to 44	Step 1 to 3 has been changed to Step 1 to 5.
20-43	Fig. 20-38 has been changed.
20-45	Fig. 20-43 has been changed.
22-4	08-620, 621, 622, 623, 624, 629, 1472 have been added.
22-4	08-3631, 8624, 8625, 8626, 8628, 8629 have been added.
22-4	08-3506, 3507, 8608, 8609, 8610, 9015, 9103, 9193, 9700 have been added.
22-21	“and scrambler board” has been deleted.
24-2	8026-0 to 2, 8027-0 to 2, 8028-0 to 2, 8029-0 to 2, 8030-0 to 2, 8031-0 to 2, 8032-0 to 2, 8033-0 to 2, 8034-0 to 2, 8035-0 to 2, 8036-0 to 2, 8037-0 to 2, 8038-0 to 2, 8039-0 to 2, 8040-0 to 2, 8041-0 to 2, 8150-0 to 2, 8151-0 to 2, 8152-0 to 2, 8153-0 to 2, 8154-0 to 2, 8155-0 to 2, 8156-0 to 2, 8157-0 to 2 have been added.
24-36	Items of 7025 have been changed.
24-45	8026-0 to 2, 8027-0 to 2, 8028-0 to 2, 8029-0 to 2 have been added.
24-46	8030-0 to 2, 8031-0 to 2, 8032-0 to 2, 8033-0 to 2, 8034-0 to 2, 8035-0 to 2, 8036-0 to 2, 8037-0 to 2, 8038-0 to 2 have been added.
24-47	8039-0 to 2, 8040-0 to 2, 8041-0 to 2 have been added.
24-52	8150-0 to 2 and 8151-0 to 2 has been added.
24-53	8152-0 to 2, 8153-0 to 2, 8154-0 to 2, 8155-0 to 2, 8156-0 to 2, 8157-0 to 2 have been added.
25-2	8624, 8625, 8626 have been added.
25-7	3631 has been added.
25-12	8628 and 8629 have been added.
25-30	Default <Acceptable value> and contents of 08-2692 have been changed. Contents of 08-2693 have been changed.
25-111	Default <Acceptable value> and contents of 08-292 have been changed.
25-140	Item, default <Acceptable value>, and contents of 08-1477 have been changed.
25-151	Contents and procedure of 08-1773 have been changed.
25-152	Contents and procedure of 08-1774 have been changed. Contents and procedure of 08-1775 have been changed.
25-182	08-3631 had been added.
25-192	Contents of 08-3864 have been changed.
25-200	08-8624 has been added.
25-201	08-8625, 08-8626, 8628, 8629 have been added.

Ver.12 <2011.11.25>	
Page	**Contents**
25-212	Item, default <Acceptable value>, and contents of 08-9980 have been changed.
26-144	”pre-registration guide” has been changed to “registration guide”.
26-152	”pre-registration guide” has been changed to “registration guide”.
28-64 to 70	”28.2.4 Adjusting paper exit speed” has been added.
31-1	”31.1 DC Wire Harness” has been added.
31-2	”31.2 Electric Parts Layout” has been added.

Ver.11

Ver.11 <2011.4.25>	
Page	**Contents**
2-10	Description has been changed.
8-29	Description has been changed.
9-3	Description has been changed.
9-7	Description has been changed.
16-21	Step has been changed.
16-22	Step has been added.
16-23	Description has been changed.
21-29	Description has been changed.
22-1	Added in 22.1.2 Precautions.
22-2	Added in 22.1.2 Precautions. Added in 2.Setting data file.
22-4	08-204, 205, 206, 218, 219, 221, 250, 254, 259, 260, 272, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 302, 331, 342, 503, 550, 603, 610, 611, 619, 634, 638, 640, 642, 645, 649, 650, 651, 652, 653, 658, 659, 671, 702, 703, 707, 721, 723, 726, 727, 728, 729, 730, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 969, 970, 973, 978, 979, 1002, 1017, 1022, 1125, 1432, 1740, 1744, 1772, 1780, 3508, 3722, 3723, 3724, 3736, 3737, 3738, 3739, 3740, 3754 have been added.
22-5	08-3755, 3757, 3758, 3759, 3760, 3783, 3785, 3789, 3796, 3797, 3812, 3833, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 8504, 8511, 8543, 8580, 8581, 8582, 8583, 8584, 8585, 8586, 8587, 8588, 8589, 8590-0 to 4, 8591, 8592, 8593, 8604, 8605, 8606, 8615, 8616, 8617, 8618, 8619, 8620, 8803, 8804, 8805, 8817, 8818, 9117, 9120, 9121, 9122, 9123, 9124, 9125, 9126, 9294, 9384, 9629, 9791, 9799, 9829, 9889, 9891, 9957, 9958, 9980, 9984-0 to 4 have been added.
22-8	Added in <When “3: Setting Back Up” is selected>.
22-9	Fig. 22-5 has been changed.
22-11	Added in <When “4: Setting Restore” is selected>.
22-12	Fig. 22-10 has been changed.
22-13	ERROR 12 has been added.
24-2	7380-0 to 2 has been added.
24-39	05-7380-0 to 2 has been added.
25-2	08-8612 has been added.
25-6	08-8590-0 to 4 has been added.
25-7	08-8608, 8609, 8610, 8623 have been added.
25-9	08-8616, 8617, 8618, 8619, 8620 have been added.
25-10	08-8613 has been added.
25-11	08-1776-0 to 15, 3521, 3522, 3523, 3524 have been added.
25-12	08-3870, 3626, 8622, 9984-0 to 4, 3520, 8611, 8615 have been added.
25-13	Procedure 3 has been changed.
25-112	08-331 has been changed.
25-129	08-983 has been changed.

Ver.11 <2011.4.25>	
Page	**Contents**
25-132	08-1021(EFI) has been changed.
25-137	08-1426 has been changed.
25-138	08-1432 has been changed.
25-151	08-1776-0 to 1 has been changed.
25-152	08-1776-2 to 15 has been changed.
25-168	08-3520, 3521, 3522 have been added.
25-169	08-3523, 3524 have been added.
25-179	08-3626 has been added.
25-181	08-3743 has been changed.
25-190	08-3870 has been added.
25-195	08-8589 has been changed. 08-8590-0 to 4 has been added.
25-197	08-8608, 8609, 8610, 8611, 8612, 8613, 8615, 8616, 8617 have been added.
25-198	08-8618, 8619, 8620, 8622, 8623 have been added.
25-210	08-9984-0 to 4 has been changed.
-	25.12 has been deleted.

Ver.10

Ver.10 <2010.11.16>	
Page	**Contents**
3-26	“3.4 System Block Diagram” has been corrected.
6-7	No.90 has been added to "6.2.2 Message".
8-11	“8.5.3 Performing Image Quality Control” has been changed.
9-11	Step (5) of “9.4.1 Laser optical unit” has been changed.
14-16	“Note” has been added to “14.6.4 Transfer belt”.
14-18	A note has been added to “14.6.4 Transfer belt”. “Note” has been added to “14.6.5 Drive roller”.
14-19	“Note” has been added to “14.6.5 Drive roller”. “Note” has been added to “14.6.6 1st transfer roller”.
14-20	“14.6.7 2nd transfer facing roller / 2nd transfer facing roller cleaning Mylar” has been changed.
14-21	Step (2) of “14.6.8 Tension roller” has been changed. Step (3) of “14.6.8 Tension roller” has been deleted.
14-22	The note of “14.6.9 1st transfer roller cam motor (M8)” has been deleted.
14-24	Step (1) and (2) of “14.6.10 1st transfer roller status detection sensor (S15)” have been changed.
18-5	“18.5 Fuse” has been changed.
19-8	A note has been added to “19.4.3 Operational screen”.
19-44	“FLOIL” has been added to “19.10 Grease List”.
20-4	“Note” has been added to “20. FIRMWARE UPDATING”.
21-17	“Note” has been added to “21.2.2 HDD fault diagnosis”.
22-1	“22.1.2 Precautions” has been changed.
22-3	“22.1.4 List of codes available for cloning” has been added.
22-5	The note of “22.1.5 Cloning procedure” has been changed.
22-8	The note of “22.1.5 Cloning procedure” has been changed.
22-12	“22.2.2 Precautions” has been changed.
23-2	(9S-)111, 211, 213 and 214 have been added.
23-3	(9S-)211, 213 and 214 have been added.
23-12	(03-)114 and 164 have been added.
23-16	(9S-)211, 213 and 214 have been added.
23-19	“Note” has been added to “23.4 List Printing”.
23-26	A description of the error logs has been added.
23-27	A description of the total counter list has been added.
24-23	08-2939 has been changed.
25-1	08-9985 and 9986 have been added.
25-2	08-8598, 8591 and 9987 have been added.
25-6	08-3789, 9791, 8584, 8585, 8586, 8587, 8588, 8590, 8605 and 8606 have been added.
25-7	08-8589 has been added.
25-8	08-8594 has been added.
25-11	08-3625, 8595, 8597 and 8601 have been added.
25-12	08-8596, 8599, 8600, 8602, 8603, 8604, 8823 and 9984 have been added.
25-39	08-481 has been changed.
25-105	08-202 has been changed.
25-108	08-265 and 266 have been changed.
25-112	08-331 has been changed.
25-121	08-721 has been changed.
25-128	08-983 has been changed.

Ver.10 <2010.11.16>	
Page	**Contents**
25-130	08-1021 (EFI) has been added. 08-1022 has been changed.
25-136	08-1431 has been changed.
25-137	08-1449 has been changed.
25-175	08-3625 has been added.
25-177	08-3755 (EFI) has been deleted.
25-179	08-3789 has been added.
25-191	08-8584, 8585, 8586, 8587, 8588, 8589, 8590 and 8591 have been added.
25-192	08-8594, 8595, 8596, 8597, 8598, 8599, 8600, 8601, 8602, 8603 and 8604 have been added.
25-193	08-8605 and 8606 have been added.
25-194	08-8823 has been added.
25-197	08-9791 has been added.
25-199	08-9889 has been changed.
25-200	08-9933 has been changed.
25-203	08-9984 and 9985 have been added.
25-204	08-9986 and 9987 have been added.
26-1	“26.1.1 If a problem continues even after performing all troubleshooting” has been added.
26-13	“F140” has been added to “26.2.2 Service call”.
26-24	“<<Error history>>” described in the chapter 26.2.4 has been moved to the chapter 26.2.6. (Configuration change of the contents.)
26-107	“F140” has been added to “26.3.22 Other service call”.
26-165	“26.5.31 Black streaks on image leading edge during scanning” has been added.
28-25	“28.1.10 MF-3500 (Damp Heater Kit) has been added.
29-1	“29. EXTERNAL COUNTERS” has been corrected.
29-2	“29. EXTERNAL COUNTERS” has been corrected.
29-5	08-202 has been changed.

Ver.09

Ver.09 <2010.05.17>	
Page	**Contents**
2-3	The values for Black / Color copy in the “Eliminated portion” have been corrected.
2-9	The values for Black / Color print in the “Eliminated portion” have been corrected.
19-1	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
19-2	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
19-4	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
20-5	“Note” has been added to “20.1 Firmware Updating with USB Media”.
21-32	“21.2.9 Re-registration of the Electronic License Key with one-time dongle” has been added.
23-22	The illustration in the error history list has been corrected.
24-11	The classification of 05-206 has been corrected.
24-54	The default values of 08-8361, 8362, 8363 and 8365 have been corrected.
25-2	“Potential on printing white text” has been corrected to “Potential on white background”.
25-14	The content of 08-400 has been corrected.
25-28	“Potential on printing white text” has been corrected to “Potential on white background”.
25-42	“Note” has been added to the contents of 08-4553.
25-49	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-70	“PM time counter” has been changed to “PM driving counter”.
25-77	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-78	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-79	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-80	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-81	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-82	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
25-105	The content of 08-219 has been corrected.
25-188	The contents of 08-8533 and 8534 have been corrected.
25-189	The items of 08-8548 have been corrected and its contents have been added.
26-64	Step (1) for C580 has been added.
26-66	The procedure of [C5A0] / [C5A1] has been exchanged with that of [C900].
26-74	The contents of [CB31] have been corrected.
26-131	A note has been added to “26.5.3 Poor image density, color reproduction and gray balance”.
27-14	A description for the output sample has been added to “27.1.4 Order Sheet Format” .
27-15	A description for the output sample has been added to “27.1.4 Order Sheet Format” .
27-17	A description for the output sample has been added to “27.1.4 Order Sheet Format” .
27-18	A description for the output sample has been added to “27.1.4 Order Sheet Format” .
27-19	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
27-20	The illustrations in “27.2.2 Setting” have been corrected.
27-21	The illustrations in “27.2.2 Setting” have been corrected.

Ver.09 <2010.05.17>	
Page	**Contents**
27-22	The illustrations in “27.2.2 Setting” have been corrected.
27-23	The illustrations in “27.2.2 Setting” have been corrected.
27-24	The illustrations in “27.2.2 Setting” have been corrected.
27-25	The illustrations in “27.2.2 Setting” have been corrected.
27-26	The illustrations in “27.2.2 Setting” have been corrected.
27-29	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
27-33	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.
27-34	“PM counter” has been changed to “PM sheet counter”. “PM time counter” has been changed to “PM driving counter”.

Ver.08

Ver.08 <2009.12.21>	
Page	**Contents**
Precautions	The model name has been added.
1-1	The model name has been added.
2-2	The model name has been added.
2-4	The model name has been added. Copy speed for e-STUDIO2020C has been added. The paper size for e-STUDIO2330C has been added.
2-7	The model name has been added.
2-8	System copy speed for e-STUDIO2020C has been added.
2-9	Supported Page Description Language, Supported Client OS, and Interface have been changed.
4-3	The model name has been added.
4-13	The model name has been added.
4-14	The model name has been added.
5-5	The model name has been added.
5-7	The model name has been added.
8-8	05-205 has been deleted. 05-206 has been added.
8-9	05-206 has been added.
9-1	The model name has been added.
9-4	The model name has been added.
9-18	Note has been changed.
18-9	The model name has been added.
19-13	The model name has been added.
19-20	The replacement timing for e-STUDIO2020C has been added.
19-21	The replacement timing for e-STUDIO2020C has been added.
19-24	The replacement timing for e-STUDIO2020C has been added.
19-29	The replacement timing for e-STUDIO2020C has been added.
19-32	The replacement timing for e-STUDIO2020C has been added.
19-33	The replacement timing for e-STUDIO2020C has been added.
19-35	The replacement timing for e-STUDIO2020C has been added.
19-42	The model name has been added.
19-44	The model name has been added. The overhauling timing for e-STUDIO2020C has been added.
22-1	The file name has been changed.
22-2	Item has been added, and the file name has been changed.
22-3	Notes have been added.
22-4	Backup items have been added.
22-6	Notes have been added.
22-7	The step and restore items have been changed.
24-4	05-206 has been added.
24-11	05-206 has been added.
24-17	05-2900 has been changed.
24-20	05-2924 has been changed.
24-21	05-2925, 2926, and 2927 have been changed.
24-40	05-7489 has been changed.
24-62	05-467-0 to 4 have been changed.
24-63	05-483 and 485 have been changed.

Ver.08 <2009.12.21>	
Page	**Contents**
24-66	05-4100-2 has been changed.
24-74	05-4122-2 has been changed.
25-1	08-8546 has been added.
25-2	08-9982, 3635, 8540, 2548-0 to 3, 2549-0 to 3, and 2554 have been added.
25-3	08-8548 has been added.
25-4	08-2370, 2381, 2382, 2383, and 2384 have been added.
25-5	08-9933 has been added.
25-6	08-3871 has been added.
25-7	08-8549 has been added.
25-10	08-3508 has been added.
25-11	08-3623, 3624, 8514 have been added.
25-15	08-410-0 to 3 have been changed.
25-16	08-434-0 to 1 have been changed.
25-18	08-450-0 to 3 have been changed.
25-20	08-531-0 to 1 have been changed.
25-23	08-855 has been changed.
25-25	08-2370 has been added.
25-26	08-2381, 2382, 2383, 2384 have been added.
25-28	08-2548-0 to 3, 2549-0 to 3, 2554 have been added.
25-29	08-2692 have been changed.
25-31	08-5293-0 to 3 have been changed.
25-32	08-5294-0 to 3 have been changed.
25-33	08-5296-0 to 3 have been changed. 08-5409-0 to 1 have been changed.
25-34	08-5410-0 to 1 have been changed.
25-38	08-481 has been changed.
25-40	08-4016-0 to 1 have been changed.
25-41	08-4553-0 to 4 have been changed.
25-42	08-4586 has been changed.
25-48	08-4621 (EFI) has been added.
25-49	08-251 has been changed.
25-73	08-1416-0 to 3 have been changed.
25-77	08-5550 has been changed.
25-78	08-5552, 5554, 5556, 5558 have been changed.
25-79	08-5560 and 5562 have been changed.
25-82	08-6192 has been changed.
25-83	08-6452-0 to 3 have been changed.
25-84	08-6453-0 to 3 and 6454-0 to 3 have been changed.
25-104	08-202 has been changed.
25-105	08-206 and 219 have been changed.
25-111	08-343 has been changed.
25-118	08-683 has been changed.
25-122	08-774 has been changed.
25-126	08-983 has been changed.
25-133	08-1132 has been deleted.
25-135	08-1432 has been changed.
25-136	08-1478 has been changed.

Ver.08 <2009.12.21>	
Page	**Contents**
25-146	08-1772 and 1773 have been changed.
25-147	08-1774 and 1775 have been changed.
25-159	08-1934 has been deleted.
25-163	08-3508 has been added.
25-173	08-3623, 3624, and 3635 have been added.
25-181	08-3841 has been changed.
25-182	08-3852, 3854, and 3855 have been changed.
25-183	08-3857, 3859, 3860, and 3862 have been changed.
25-184	08-3871 has been added.
25-185	08-8514 has been added.
25-186	08-8529-0 to 2 have been changed.
25-187	08-8530-0 to 2 have been changed.
25-188	08-8531-0 to 2 have been changed.
25-189	08-8540, 8546, 8548, and 8549 have been added.
25-190	08-9059 has been changed.
25-196	08-9933 has been added.
25-199	08-9982 has been added.
25-228	08-1150 and 1152 have been changed.
25-229	08-1154, 1156, 1158, 1160, 1162, and 1164 have been changed.
25-230	08-1174, 1176, 1178, 1180, 1182, and 1184 have been changed.
25-231	08-1186, 1188, 1190, 1192, 1194, and 1196 have been changed.
25-232	08-1198, 1200, 1202, 1204, and 1206 have been changed. 08-1214 has been added.
25-233	08-1216, 1218, 1220, and 1228 have been added. 08-1232 and 1240 have been changed.
25-234	08-1250, 1270, 1272, 1274, 1276, 1282, and 1284 have been changed.
25-235	08-1286, 1290, 1292, 1294, 1298, 1300, 1302, 1306, 1308, and 1310 have been changed.
25-236	08-1312, 1314, 1316, 1320, 1322, 1324, 1328, 1330, and 1332 have been changed.
25-237	08-1340, 1342, 5600, 5602, 5604, and 5606 have been changed.
26-24	5110, 5212, 5BD0, 5C10, 5C11, 5C20, 5C21, and 5C22 have been added.
26-69	The model name has been added.
26-123	5110, 5212, 5BD0, 5C10, 5C11, 5C20, 5C21, and 5C22 have been added.

Ver.07

Ver.07 <2009.9.18>	
Page	**Contents**
9-16	"Note" for the screws to fix the motor has been added.
12-25	"Note" for the screws to fix the motor has been added.
13-24	"Note" for the screws to fix the motor has been added.
13-27	"Note" for the screws to fix the motor has been added.
13-32	"Note" for the screws to fix the motor has been added.
13-37	The adjustment procedure for the doctor sleeve gap has been changed.
13-38	The adjustment procedure for the doctor sleeve gap has been changed.
14-23	"Note" for the screws to fix the motor has been added.
16-9	The name has been corrected from "IH coil" to "heater lamp".
19-3	An explanation of PM display has been added.
19-41	The maintenance part list has been changed.
19-42	An illustration (item No. 15) has been added.
20-4	The note for the firmware updating has been corrected.
21-24	Procedures have been added to "21.2.5 Procedures and settings when replacing the SLG board".
21-28	The procedure of "[J] Reinstall options" has been changed.
24-3	(05) 7489 has been added.
24-4	The code has been changed from "(05) 467-0 to 1" to "(05) 467-0 to 4".
24-40	(05) 7489 has been added.
24-57	A description has been added to the contents for (05) 349.
24-62	The procedure for (05) 467-0 to 1 has been corrected. (05) 467-2 to 4 have been added.
25-3	(08)4621 and 4622 have been added.
25-5	(08)9981 has been added.
25-46	(08)4621 and 4622 have been added.
25-100	The default value of (08) 206 has been changed.
25-104	The function of (08) 286, 288 and 289 have been corrected from "ALL" to "SCN". The contents of (08) 289 has been corrected.
25-142	The contents of (08) 1775 has been changed.
25-154	A description has been added to the contents for (08) 1928.
25-192	(08) 9981 has been added.
26-9	C450, C451 and C452 have been added.
26-61	C450, C451 and C452 have been added.
26-123	The troubleshooting for an error has been added.

Ver.06

Ver.06 <2009.6.22>	
Page	**Contents**
6-6	The message and the note have been changed.
19-22	Fig.19-19 has been changed. The items to check for the developer unit in preventive maintenance have been changed.
19-23	An item concerning the cleaning of the developer unit has been added. How to remove foreign matter inside the developer unit has been added.
19-25	The description of the area to be cleaned for the oil seal has been deleted.
19-39	An error in the PM KIT has been corrected.
21-18	Fig.21-37 has been changed.
21-22	"[I] Adjustment image quality" has been added.
21-23	The procedure in "21.2.4 Precaution and Procedures when replacing the SYS board" has been changed.
21-24	The procedure in "21.2.5 Procedures and settings when replacing the SLG board" has been changed.
26-105	The contents of the error code [F200] have been changed.

Ver.05

Ver.05 <2009.1.27>	
Page	**Contents**
7-9	The behavior inside the exposure lamp has been corrected. Correction has been made in the illustration.
9-17	Correction has been made in the illustration.
13-25	The disassembly procedure has been changed. (The coupling has been added.)
14-11	The content of step 2 has been changed. The illustration in Fig. 14-5 has been changed.
16-19	Note for installing the pressure roller cover has been added. The illustration in Fig. 16-14 has been added.
19-19	"Pad" for G4 has been corrected to "Felt".
19-21	"G5: Recovery blade" has been corrected to "G4: Felt". "G6: Drum thermistor" has been corrected to "G5: Recovery blade".
20-6	A note regarding updating with the USB media has been added.
20-10	The contents of Notes have been changed.
20-19	The contents of Notes have been changed.
21-18	A note has been added to "21.2.3 Precautions and procedures when replacing the HDD".
21-24	A note has been added to "21.2.6 Precautions and procedure when replacing the SRAM board (for the SYS board)".
21-28	The description of 05 code for HVT label has been changed.
21-30	"21.2.8 Firmware confirmation after the PC board/HDD replacement" has been added.
21-31	"21.3 Precautions for Disposal of the HDD and PC boards" has been changed to "21.3 Precautions for Installation of GP-1070 and Disposal of HDD/Board".
22-3	The procedure has been corrected. The contents of Note have been changed.
22-6	The procedure has been corrected. The contents of Note have been changed.
23-16	A version list has been added to the table in "23.4 List printing".
23-25	A version list has been added.
26-33	E090 troubleshooting has been changed. (An item for the page memory has been added.)

Ver.04

Ver.04 <2008.10.31>	
Page	**Contents**
19-1	The contents of PM display have been added.
19-2	The contents of PM display have been added.
19-3	The contents of PM display have been added.
20-1	"20. FIRMWARE UPDATING" The item of "Imaging Acceleration Board (GE-1170)" has been added.
20-2	"20. FIRMWARE UPDATING" The item of "Imaging Acceleration Board (GE-1170)" has been added.
20-5	"20.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
20-6	"20.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
20-8	"20.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
20-17 to 20-21	"20.1.2 Imaging Acceleration Board ROM (GE-1170)" The update procedure has been added.
20-56	"20.4 Confirmation of the updated data" The item of "Imaging Acceleration Board (GE-1170)" has been added.
24-2	(05) 8066 has been added.
24-3	(08) 8187, 8188, 8190 and 8191 have been added.
24-33	The default value of (05) 1688 has been changed.
24-43	The default value of (05) 7767 has been changed.
24-49	(05) 8066 has been added.
24-52	(08) 8187, 8188, 8190 and 8191 have been added.
24-64	The default value of (05) 483-0 has been changed. The default value of (05) 483-3 has been changed.
24-65	The default value of (05) 485-0 has been changed. The default value of (05) 485-3 has been changed.
25-2	(08) 9051 and 3846 have been added.
25-6	(08) 8535, 8536, 9957, 9958, 9959 and 9980 have been added. (08) 3506 and 3507 have been deleted.
25-7	(08) 1021 and 9749 have been added.
25-8	(08) 9746 and 9798 have been added.
25-9	(08) 9965 has been added.
25-10	(08) 3630 has been added.
25-11	(08) 3797, 8513-0, 9966, 8534, 8537 and 9799 have been added.
25-27	The setting value of (08) 2380 has been changed.
25-40	The acceptable value of (08) 481 has been changed. (08) 482 (EFI) has been added.
25-113	The setting value of (08) 331 has been changed.
25-132	(08) 1021 has been added.
25-138	The acceptable value of (08) 1431 has been changed.
25-140	The acceptable value of (08) 1471 has been changed.
25-153	(08) 1779 (EFI) has been added.
25-168	(08) 3506 and 3507 have been deleted.
25-178	(08) 3630 has been added.
25-180	(08) 3754 (EFI) and 3755 (EFI) have been added.
25-181	(08) 3767 (EFI) has been added.
25-183	(08) 3797 has been added.
25-184	The default value of (08) 3805 has been changed.

Ver.04 <2008.10.31>	
Page	**Contents**
25-186	(08) 3846 has been added.
25-187	The default value of (08) 3850 has been changed.
25-190	(08) 8513-0 has been added. The default value of (08) 8518 has been changed.
25-193	(08) 8534, 8535, 8536 and 8537 have been added.
25-194	(08) 8800 (EFI), 8802 (EFI), 8804 (EFI) and 8805 (EFI) have been added.
25-195	(08) 9051 has been added.
25-198	(08) 9746 and 9749 have been added.
25-199	(08) 9798 and 9799 have been added.
25-203	(08) 9957 and 9958 have been added.
25-204	(08) 9959, 9965, 9966 and 9980 have been added.
26-12	CC90 has been added.
26-76	CB80 (MJ-1031) has been added.
26-85	CC90 has been added.
26-118	Imaging Acceleration Board (GE-1170) has been added.
26-125	Imaging Acceleration Board (GE-1170) has been added.

Ver.03

Ver.03 <2008.09.30>	
Page	**Contents**
5-2	The initialization for "5.2.1 Warming-up" has been corrected.
7-6	The description for "Carriage speed" has been added to "7.4.1 Scanning operation".
7-7	Fig.7-7 has been corrected.
7-12	The pixel count of CCD has been corrected from "7500" to "7450".
7-21	"7.6.4 Exposure lamp (EXP)" Note for moving the carriage has been added.
7-26	"7.6.7 Carriage-1" Note for moving the carriage has been added.
7-27	"7.6.7 Carriage-1" The procedure for installing the lamp harness has been corrected.
7-28	"7.6.8 Inverter board (INV)" Step (2) has been changed to step (2) and (3), and Fig.7-42 has been corrected. Step (3) has been changed to step (4), and Fig.7-43 has been added.
7-34	"7.6.14 Exposure lamp cooling fan (M32)" Note for moving the carriage has been added.
8-3	"8.3 IMAGE PROCESSING PC BOARD (IMG)" has been corrected to "8.3 Image Processing PC Board (IMG)".
8-6	Fig.8-7 and Fig.8-8 have been deleted.
8-8	"8.4 SYSTEM CONTROL PC BOARD (SYS)" has been corrected to "8.4 System Control PC Board (SYS)".
8-10	Fig.8-8 has been changed.
8-17	"2. Printer related adjustment" has been corrected to "2. Printer-related image dimensional adjustment". "3. Scanner related adjustment" has been corrected to "2. Scanner-related image dimensional adjustment".
8-23	"Single-sided grid pattern in CK Mode" has been corrected to "Single-sided grid pattern in K(4) Mode" and the description of K (4) system has been added.
8-31	"10 mm" has been corrected to "5 mm". "10±0.5 mm" has been corrected to "5±0.5 mm".
8-33	"[F] Top margin" "Printer" has been deleted.
8-34	"[G] Right margin" "Printer" has been deleted.
8-35	"[H] Bottom margin" "Printer" has been deleted.
8-36	"10±0.5 mm" has been corrected to "5±0.5 mm".
8-39	The codes in the list have been corrected.
8-44	"Remarks" in "8.6.5 Background adjustment" has been corrected.
8-46	"8.6.9 Setting range correction (Adjustment of background peak)" has been deleted.
8-56	"[Fax]" has been corrected to "[FAX]".
8-57	"8.7.3 Color balance adjustment (Color Mode)" has been corrected to "8.7.3 Color balance adjustment". "[Fax]" has been corrected to "[FAX]".
8-62	"8.7.15 Thin line width lower limit adjustment" has been added.
8-65	"Remarks" in "8.8.3 Background adjustment (Color Mode)" has been corrected.
8-68	"8.8.7 Setting range correction (Adjustment of background peak)" has been deleted.
8-72	"Notes" has been added to "8.9.2 Beam level conversion setting".
16-34	"16.6.11 Pressure roller thermostat (THMO3)" Note for installing the thermostat has been added.
16-38	"16.6.13 Fuser belt center thermostat (THMO1)" Note for installing the thermostat has been added.

Ver.03 <2008.09.30>	
Page	**Contents**
16-39	"16.6.14 Fuser belt rear thermostat (THMO2)" Note for installing the thermostat has been added.
19-13	The description for "C3:Separation roller" has been changed. "C6:Drive gear" has been changed to "C7:Drive gear". The description for "C7:Drive gear" has been changed.
19-15	The description for "E3:Separation roller" has been changed.
19-21	"H4:Front shield (unified with the doctor blade)" has been added.
19-37	"19.8 Maintenance Part List" The parts list of Harness jig has been corrected.
19-38	The illustration for "19.8 Maintenance Part List" has been changed.
20-11	"[C] Adjustment" has been added.
20-24	"[C] Adjustment" has been added.
21-4	"21.1.5 SYS board" Step (6) has been corrected.
21-5	"21.1.7 LGC board" Fig.21-12 has been corrected.
21-18	Fig.21-37 has been corrected.
21-20	"[C] Print out "function list" has been corrected to "[C] Print out "FUNCTION" list".
21-21	"[H] Reset "function list" has been corrected to "[H] Reset "FUNCTION" list".
21-22	The content of "[D] Reinstall options" has been corrected.
21-24	Fig.21-39 has been corrected.
21-27	"GA-1010" has been corrected to "GS-1010”. "GA-1020" has been corrected to "GS-1020”.
22-1	22.1.2 Precautions "Program file name" has been corrected. The capacity of USB memory has been corrected.
22-12	Fig.22-13 has been corrected.
22-14	"[C] Print out "function list" has been corrected to "[C] Print out "FUNCTION" list". Step (4) has been corrected.
22-16	"[H] Reset "function list" has been corrected to "[H] Reset "FUNCTION" list".
23-2	207 has been deleted. 300 has been added.
23-3	207 has been deleted.
23-17	207 has been deleted. "All CSV files" has been added.
24-2	8240 has been added.
24-28	678-0, 678-1, 678-2, 678-3 and 678-4 have been corrected.
24-31	The contents of 1070,1071 and 1072 have been corrected.
24-41	The content of 7475 has been corrected. The content of 7478 has been corrected.
24-52	8240 has been added.
25-2	7000, 7001, 7300, 7301, 7400 and 7500 have been added.
25-3	The code name of 2692 and 2693 has been corrected.
25-9	3869 has been added. 9046 has been deleted.
25-10	The code name of 8508, 8509 and 8510 has been corrected.
25-11	Procedure 5 has been deleted.
25-27	The items of 2692 and 2963 have been corrected. The contents of 2692 and 2693 have been corrected.
25-101	7000 has been added. 7001 has been added.

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Page	**Contents**
25-102	7300 has been added. 7301 has been added.
25-103	7400 has been added. 7500 has been added.
25-104	The number in "Procedure" has been changed to "1".
25-149	The number in "Procedure" has been changed to "1".
25-150	The number in "Procedure" has been changed to "1".
25-151	The number in "Procedure" has been changed to "1".
25-162	The number in "Procedure" has been changed to "1".
25-180	The item of 3800-0 has been corrected.
25-186	The items of 8508, 8509 and 8510 have been corrected.
25-191	9046 has been deleted.
25-199	The content of 9955 code has been changed. 9956 has been added.
25-238	The items of 8508, 8509 and 8510 have been corrected.
26-89	<Color toner low density> has been added.
26-97	<Color toner low density> has been added.
26-103	<Color toner low density> has been added.
26-127	The content of "Measure" to "Fusing drive" has been changed.
28-32	The content of "28.3 Adjustment of the Saddle Stitch Finisher (MJ-1030)" has been corrected.

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Page	**Contents**
-	GENERAL PRECAUTIONS The model name "e-STUDIO2330C" has been added.
1-1	1. FEATURE The model name "e-STUDIO2330C" has been added.
2-2	2.1.1 General The model name "e-STUDIO2330C" has been added.
2-4	2.1.2 Copy The model name "e-STUDIO2330C" has been added.
2-4	2.1.2 Copy - [3] Copy speed (Copies/min.) The copy speed of the e-STUDIO2330C has been added.
2-7	2.1.2 Copy - [4] System copy speed The system copy speed of the e-STUDIO2330C has been added.
3-16	3.2 Electric Parts Layout - [J] PC board, power supply SW9 (Damp heater switch) has been added.
3-22	3.3 Symbols and Functions of Various Components SW9 (damp heater switch) has been added.
4-3	4.2 Description of Operation The model name "e-STUDIO2330C" has been added.
4-13	4.4 Comparison with e-STUDIO2500C/3500C/3510C The model name "e-STUDIO2330C" has been added.
5-5	A timing chart for the e-STUDIO2330C is to be added.
5-7	A timing chart for the e-STUDIO2330C is to be added.
6-18	Step (6) in the disassembling procedure in "6.5.4 DSP board" has been corrected. The illustration in Fig.6-20 has been corrected.
8-21	"PFP upper drawer" has been changed to "3rd drawer". "PFP lower drawer" has been changed to "4th drawer".
8-25	"[C] Reproduction ratio of secondary scanning direction (Fine adjustment of transfer belt motor rotation speed)" has been corrected.
8-26 8-27	"PFP upper drawer" has been changed to "3rd drawer". "PFP lower drawer" has been changed to "4th drawer".
8-37	"SRAM board(LGC board)" has been changed to "SRAM board(LGC board, SYS board)".
8-39	The description of the note in "8.6.2 Density adjustment" has been changed.
8-42	"ACS/Black text/Photo" has been changed to "ACS/Black/Text/Photo". "ACS/Black text" has been changed to "ACS/Black/Text". "ACS/Black Photo" has been changed to "ACS/Black/Photo".
8-43	The content of the "Remarks" field in the table in "8.6.5 Background adjustment" has been changed.
8-44	The codes 7808 and 7809 have been added in the table in "8.6.7 Sharpness adjustment".
8-45	The content of the "Remarks" field in the table in "8.6.8 Setting range correction" has been changed.
8-51	The note in "8.6.17 Black header density level adjustment" has been deleted. Descriptions for the codes in "8.6.19 Judgment threshold adjustment for blank originals" have been corrected.
8-53	"SRAM board(LGC board)" has been changed to "SRAM board(LGC board, SYS board)"
8-58	"8.7.4 Adjustment of smudged/faint text" has been changed to "8.7.4 Adjustment of faint text". Descriptions for the codes in "8.7.4 Adjustment of faint text" have been changed.
8-62	Descriptions for the codes in "8.7.14 Sharpness adjustment" have been corrected. The default value has been added in the "Remarks" field in the table in "8.7.15 Offsetting adjustment for background processing". An operational procedure has been added in "8.7.15 Offsetting adjustment for background".

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8-64	The content of the "Remarks" field in the table in "8.8.2 Density adjustment" has been corrected.
8-67	Descriptions for "8.8.6 Setting range correction" have been corrected. The content of the "Remarks" field in the table in "8.8.6 Setting range correction" has been corrected.
9-1	The model name has been changed from "e-STUDIO2820C/2830C/3520C" to "e-STUDIO2330C/2820C/2830C/3520C". The illustration in Fig. 9-1 has been changed.
9-5	The model name has been changed from "e-STUDIO2820C/2830C/3520C" to "e-STUDIO2330C/2820C/2830C/3520C".
10-1	The "magnet roller" has been changed to the "magnetic roller".
12-22	The removing procedure for the discharge LEDs has been changed.
13-12	PM mark has been added to the title of 13.5.2.
13-22	The amount of grease to be applied has been changed.
13-32	The removing procedure for the toner cover has been changed.
16-24	A note regarding to the handling of the pressure roller lamp has been added in step (8).
16-29	A note regarding to the handling of the heater lamps has been added in step (9).
16-35	The illustration of the pressure roller rear thermistor in Fig.16-51 has been corrected.
16-50	Descriptions in the adjustment procedure (1) have been changed.
18-6	Descriptions for "AC OFF detection" have been changed.
18-9	The model name "e-STUDIO2330C" has been added.
19-9	The description about the e-STUDIO2330C has been added in the table in No. 1 in Notes. The model name "e-STUDIO2330C" has been added in No. 2 in Notes. The model name "e-STUDIO2330C" has been added to the name of the service parts list in No. 5 in Notes.
19-16 19-17 19-20	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table.
19-21	The amount of grease to be applied has been changed.
19-23 19-26 19-27	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table..
19-28	"Fuser belt thermopile (center/rear)" has been added in the table as "M14".
19-29	Descriptions for cleaning the fuser belt thermopiles have been added.
19-35	The part name of the ozone filter 1 has been changed from "FLTR-OZN-F380" to "FLTR-OZN-45X-CB0-600M". The slit glass cleaner pad has been added in the "Component" field for DEV-KIT-FC28K.
19-36	A harness jig for the converter board has been added as No. 14 in the "Maintenance Part List" table. Descriptions under the Table have been changed.
19-37	The illustration of a harness jig for the converter board has been added.
19-38	The model name "e-STUDIO2330C" has been added to the name of the service parts list under the table "19.9 Grease List". Descriptions for the e-STUDIO2330C have been added in "19.10 Operational Items in Overhauling".
20-1	20. FIRMWARE UPDATING Descriptions about the necessity of a harness jig for the converter firmware update have been added.
20-2	E. Engine ROM The illustration of the download jig has been corrected.

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20-18	20.2.1 Writing the data to the download jig (PWA-DWNLD-350-JIG2) - [A] Precautions when writing the System ROM data A precaution "Loading the data file into the buffer by means of the following settings." has been added.
20-18	20.2.1 Writing the data to the download jig (PWA-DWNLD-350-JIG2) - [A] Precautions when writing the System ROM data-[A-1] System ROM The name of the system ROM file has been corrected.
20-19	20.2.1 Writing the data to the download jig (PWA-DWNLD-350-JIG2) - [B] Precautions when writing the Engine ROM data Precautions when writing the Engine ROM data have been added.
20-21	20.2.2 System ROM - [A] Update procedure Step 9: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch. Step 10: The procedure for starting up the equipment has been changed to turning ON the power with the main switch.
20-22	20.2.3 Engine ROM - [A] Update procedure Step 1:The procedure has been corrected to "Write the ROM data to be updated to the download jig (PWA-DWNLD-350-JIG2)."
20-23	20.2.3 Engine ROM - [A] Update procedure Step 6: The illustration has been corrected. Step 11: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-26	20.3.1 Scanner ROM - [A] Update procedure Step 8: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-28	20.3.2 RADF firmware (MR-3018) - [A] Update procedure Step 7: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-30	20.3.3 Finisher firmware (MJ-1101) - [A] Update procedure Step 7: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-34	20.3.4 Converter Firmware (MJ-1101) - [A] Update procedure Step 12: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-35	20.3.5 Hole punch unit firmware (MJ-6101) - [A] Checking the hole punch position Step 1: The procedure has been changed to turning OFF the power with the [ON/OFF] button. Step 3: The procedure has been changed to turning ON the power with the [0], [8] and [ON/OFF] buttons. Step 4: A procedure to set the DIP-SW1 back has been added as step (4).
20-37	20.3.5 Hole punch unit firmware (MJ-6101) - [B] Update procedure Step 10: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-41	20.3.6 Finisher firmware/Saddle stitcher firmware (MJ-1030) - [A] Update procedure Step 8: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-44	20.3.7 Finisher firmware (MJ-1031) - [A] Update procedure Step 9: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
20-47	20.3.8 Fax unit firmware (GD-1250) - [A] Update procedure Step 7: The procedure for shutting down the equipment has been changed to turning OFF the power with the main switch.
21-1	The illustration in Fig. 21-1 has been corrected.
21-4	The illustration in Fig. 21-9 has been corrected.
21-5	The illustration in Fig. 21-12 has been corrected.

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21-10	Step (3) in the content of the disassembling procedure in "21.2.11 Board Case" has been divided to steps (3) and (4). The illustration in Fig. 21-25 has been corrected. The illustration in Fig. 21-26 has been corrected.
21-12	The content of "Fig. 21-28" in "21.1.12 SRAM board<for LGC board>" has been divided to "Fig. 21-29" and "Fig. 21-30". A note and an illustration Fig. 21-31 have been added.
21-13	The illustration in Fig. 21-32 has been corrected. The content of "Fig. 21-30" in "21.1.13 SRAM board<for SYS board>" has been divided to "Fig. 21-33" and "Fig. 21-34".
21-14	A note and an illustration Fig. 21-35 have been added.
21-18	The illustration in Fig. 21-37 has been corrected.
21-20	A new procedure has been added in step (1) in "[E] Replace / Format HDD".
21-22	Descriptions in "21.2.4 Procedures and precautions when replacing the SYS board" has been corrected.
21-23	A new procedure has been added in step (1) in "21.2.5 Procedures and settings when replacing the SLG board".
21-24	The title "21.2.6 Procedures and settings when replacing SRAM (SYS board)" has been corrected to "21.2.6 Procedures and settings when replacing SRAM board (for SYS board)".
21-28	The title "21.2.7 Procedures and settings when replacing SRAM (LGC board)" has been corrected to "21.2.7 Procedures and settings when replacing SRAM board (for LGC board)".
21-28	A new note has been added in "21.2.7 Procedures and settings when replacing SRAM board (for LGC board)".
21-28	The introductory part of "21.2.7 Procedures and settings when replacing SRAM board (for LGC board)" has been corrected.
21-28	The illustration of Fig.21-40 has been corrected.
21-28	The procedure in "[A] Replace SRAM board" has been corrected.
21-30	Descriptions in "21.3 Precautions for Disposal of the HDD and PC Boards" have been corrected.
23-17	A new clause 23.4 has been added.
24-1	The content of the Classification List in 24.1 has been changed.
24-9	Descriptions for the codes 98 and 99 have been corrected.
24-12	The default values for the codes 380-x have been changed.
24-16	The description in the "Items" field for the code 2411 has been corrected.
24-17	Descriptions about the e-STUDIO2330C have been added in the "Contents" field for the codes 2900-x.
24-17	The default values for the codes 2900-x have been changed.
24-17	The descriptions in the "Items" field for the codes 2900-x have been corrected.
24-18	The descriptions in the "Items" field for the codes 2905-x have been corrected.
24-19	The descriptions in the "Items" field for the codes 2920-x have been corrected.
24-20	The descriptions in the "Items" field for the codes 2921-x have been corrected.
24-20	Descriptions about the e-STUDIO2330C have been added in the "Contents" field for the codes 2924-x.
24-20	The default values for the codes 2924-x have been changed.
24-21	Descriptions about the e-STUDIO2330C have been added in the "Contents" field for the codes 2925-x and 2926-x.
24-21	The default values for the codes 2925-x have been changed.
24-22	Descriptions about the e-STUDIO2330C have been added in the "Contents" field for the codes 2927-x.
24-43	New codes 7808 and 7809 have been added.

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24-59	The code number 3009 has been changed to 361.
24-76	The contents of the "Items" field for the codes 4703 and 4704 have been corrected.
24-78	New codes 4758 and 4759 have been added.
25-1	The content of the Classification List in 25.1 has been changed.
25-15	Sub codes have been provided for the code 434.
25-18	A new code 461 has been added.
25-19	Sub codes have been provided for the code 531.
25-25	A new code 2380 has been added.
25-28	A new code 5241 has been added.
25-32	New codes 5299, 5308, 5309 and 5310 have been added.
25-33	New codes 5409 and 5410 have been added.
25-38	The code 482 (EFI) has been deleted.
25-39	A new description has been added in the "Contents" field for the code 1912.
25-91	The description in the "Items" field for the codes 6858-x has been corrected.
25-101	The code 8012 has been deleted.
25-101	A description has been added in the "Contents" field for the codes 8304-x.
25-134	The content of the "Function" field for the code 1149 has been corrected.
25-137	The code 1482 (EFI) has been deleted.
25-138	The code 1496 (EFI) has been deleted.
25-150	The contents of the "Function" fields for the codes 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797 and 1798 have been corrected.
25-164	The contents of the "Function" fields for the codes 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607 and 3608 have been corrected.
25-175	The maximum value of the acceptable values and the description in the "Contents" field for the code 3754 have been changed.
25-177	The descriptions in the "Items" fields for the codes 3781 and 3782 have been corrected.
25-178	A new code 3796 has been added.
25-179	The description in the "Contents" field for the code 3805 has been corrected.
25-182	The description in the "Contents" field for the code 3850 has been corrected.
25-184	The contents of the "Items" and "Function" fields for the codes 8508, 8509, 8510 and 8511 have been corrected.
25-192	The descriptions in the "Default <Acceptable value>", "RAM", "Contents" and "Procedure" fields for the code 9747 have been corrected.
25-226	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1150 and 1152.
25-227	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1154, 1156, 1158, 1160, 1162, 1164 and 1174.
25-228	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1176, 1178, 1180, 1182, 1184, 1186 and 1188.
25-229	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1190, 1192, 1194, 1196, 1198, 1200 and 1202.
25-230	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1204, 1206, 1228, 1232, 1240, 1250, 1270 and 1272.
25-230	The codes 1214, 1216, 1218, 1220 and 1228 have been deleted.
25-231	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1274, 1276, 1282, 1284, 1286, 1290, 1292, 1294 and 1298.
25-232	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1300, 1302, 1306, 1308, 1310, 1312, 1314, 1316 and 1320.
25-233	The default values for the codes 5600-x have been changed.

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25-233	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1322, 1324, 1328, 1330, 1332, 1340, 1342 and 5600.
25-234	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 5602, 5604 and 5606. Also the default values for these codes have been changed.
25-235	The codes 08-482, 1482 and 1496 have been deleted.
26-68	The model name "e-STUDIO2330C" has been added in the troubleshooting procedure for [CA10].

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-	GENERAL PRECAUTIONS The weight of the equipment has been corrected from "approximately 120 kg (264.55 lb.)" to "approximately 121 kg (266.75 lb.) or 123 kg (271.16 lb.)".
2-2	2.1.1 General The version name of the equipment has been added to "Machine version". 2.1.1 General The weight of the equipment has been corrected from "Approx. 120 kg (264.55 lb.)" to "Approx. 121 kg (266.75 lb.) (for NAD and MJD) and Approx. 123 kg (271.16 lb.) (for others)".
2-12	2.3 Options The model name of the EFI Printer Board has been corrected from "GA-1300" to "GA-1211".
2-14	2.5 System List The model name of the EFI Printer Board has been corrected from "GA-1300" to "GA-1211".
8-8	8.4 Image Related Adjustment Section 8.4 is now "SYSTEM CONTROL PC BOARD (SYS)" and "Image Related Adjustment" has been moved to section 8.5.
8-11	8.5.2 Adjustment of the Auto-Toner Sensor (used to be 8.4.2) The illustration of the procedure in step (5) has been changed.
12-5	New sections "12.4 Description of Operation" and "12.4.1 Drum phase registration mechanism" have been added.
13-38	"13.6.1 Adjustment of the Auto-Toner Sensor" has been deleted because it is already mentioned in 8.5.2.
14-18	"Reflection tape" in "Notes" item No. 2 in step (7) has been corrected to "serial number".
14-19	PM mark has been removed from "14.6.5 Drive roller" because it is not a PM part.
14-21	"Never attempt to loosen 2 red screws shown in the figure." has been added to "Note".
18-6	"Noise filter" has been added to the diagram in "18.6 Configuration of Power Supply Unit".
19-12	The contents of C6 and C7 in the table in "19.5.3 Feed unit" have been corrected.
19-20	"H9: Developer unit upper cover" has been added to the figure and the table in "19.5.8 Developer unit (K, Y, M, and C)".
19-22	The content of "Handling precautions" in "*J1: Transfer belt" has been corrected.
19-23	"Handling precautions" and "Cleaning procedure" of "*J8: Transfer belt cleaning blade" have been added.
19-25	"M12" in the figure of "19.5.13 Fuser unit" has been corrected to "M2".
19-32	In the table, "FR-KIT-FC35" has been corrected to "FR-KIT-FC28", "FR-FC35-U" has been corrected to "FR-FC28-U" and "HR-FC35-L" has been corrected to "HR-FC28-L".
20-5	The data file name "menteusb2.o" of update program loader in the table "Program necessary for updating" has been corrected to "mentusb2.o".
20-7	Precautions for options (GP-1070/1080, GS-1010/1020) have been added to "Important". The data file name "menteusb2.o" of update program loader in step (1) of "[A] Update procedure" has been corrected to "mentusb2.o".
20-18	A data writing error handling procedure has been added to "[A] Precautions when writing the data".
20-21	A note for update procedure has been added. A procedure for unplugging and re-plugging the power cable has been added.
21-10	A disassembling procedure in "21.1.11 Board case" has been changed from step (2) to (2), (3), (4) and (5), and from step (3) to (6).
21-23	The model name of the EFI printer board in "[K] Set EFI Printer Board" has been corrected from "GA-1300" to "GA-1211".
21-26	The model name of the EFI printer board in "[F] Set EFI Printer Board" has been corrected from "GA-1300" to "GA-1211".
21-26	"[G] Reinstall options" has been added.

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21-29	A procedure in "21.3.1 Precautions when disposing of the HDD" has been changed.
24-37	Description of the contents of 05-7322 has been added.
24-38	Description of the contents of 05-7323 has been added.
25-5	The code 08-8822 has been deleted from [IPsec].
25-8	The classification of the codes 08-9883 and -9884 has been corrected to "Hardcopy security printing".
25-64	Description of the contents of 08-1376 has been added.
25-82	Description of the contents of 08-6817 has been added.
25-83	Descriptions of the contents of 08-6850, -6851, -6852, -6853, -6854, -6855 and -6856 have been added.
25-84	Descriptions of the contents of 08-6857, -6858, -6859 and -6860 have been added.
25-85	Descriptions of the contents of 08-6861 and -6862 have been added.
25-86	Descriptions of the contents of 08-6863, -6864, -6900 and -6901 have been added.
25-87	Descriptions of the contents of 08-6905, -6906, and -6907 have been added.
25-88	Descriptions of the contents of 08-6908, -6925, and -6926 have been added.
25-89	Descriptions of the contents of 08-6927, -6928, and -6929 have been added.
25-90	Descriptions of the contents of 08-6930, -6931, and -6932 have been added.
25-91	Descriptions of the contents of 08-6933, -6935, and -6950 have been added.
25-92	Descriptions of the contents of 08-6955, -6956, and -6960 have been added.
25-93	Description of the contents of 08-6962 has been added.
25-176	The default values of 08-8508 and -8509 have been corrected.
25-180	The code 08-8822 has been deleted.
25-185	The item names of 08-9883 and -9884 have been corrected.
25-222	The default values of 08-1214, -1216, -1218, -1220 and -1228 have been corrected.
25-226	The default values of 08-5600, -5602, -5604 and -5606 have been corrected.
26-100	New items to check have been added to "CE71 Drum phase adjustment abnormality".
26-121	The model name of the EFI printer board has been corrected from "GA-1300" to "GA-1211".
26-158	"26.5.30 Faint image (immediately after equipment installation)" has been added.
29-2	"3. Counter on the LGC board" has been corrected to "3. Connector on the LGC board".
29-2	The connector number in "3. Connector on the LGC board" has been changed from CN355 to CN335.

TOSHIBA

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