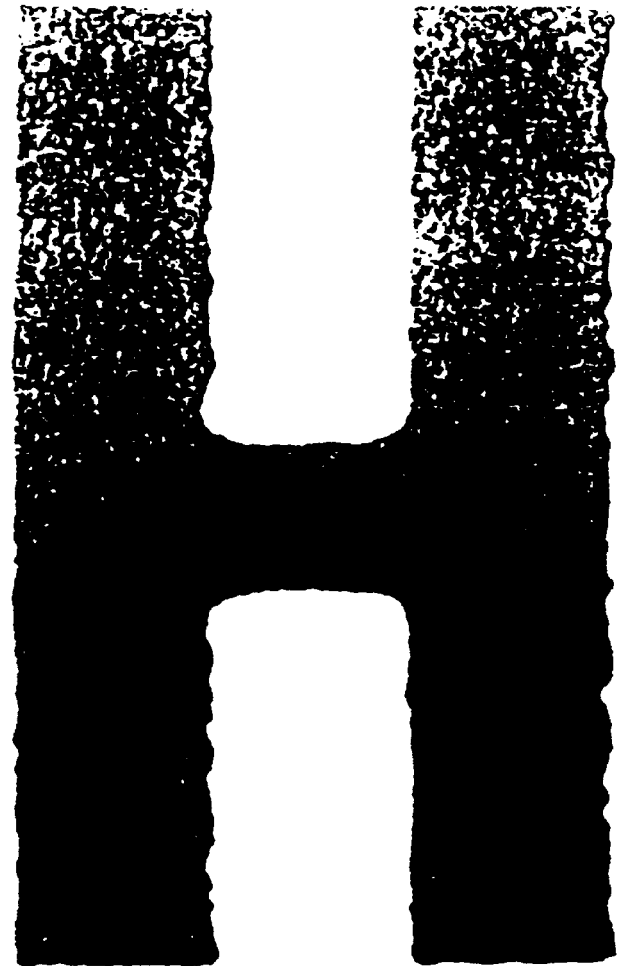


TOSHIBA
Leading Innovation >>>

SERVICE HANDBOOK

MULTIFUNCTIONAL DIGITAL COLOR SYSTEMS
e-STUDIO02020C/2330C/2820C
e-STUDIO02830C/3520C/3530C
e-STUDIO04520C



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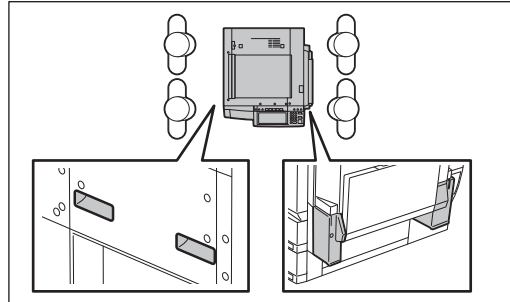
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GENERAL PRECAUTIONS REGARDING THE SERVICE FOR e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C

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 wristband 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.

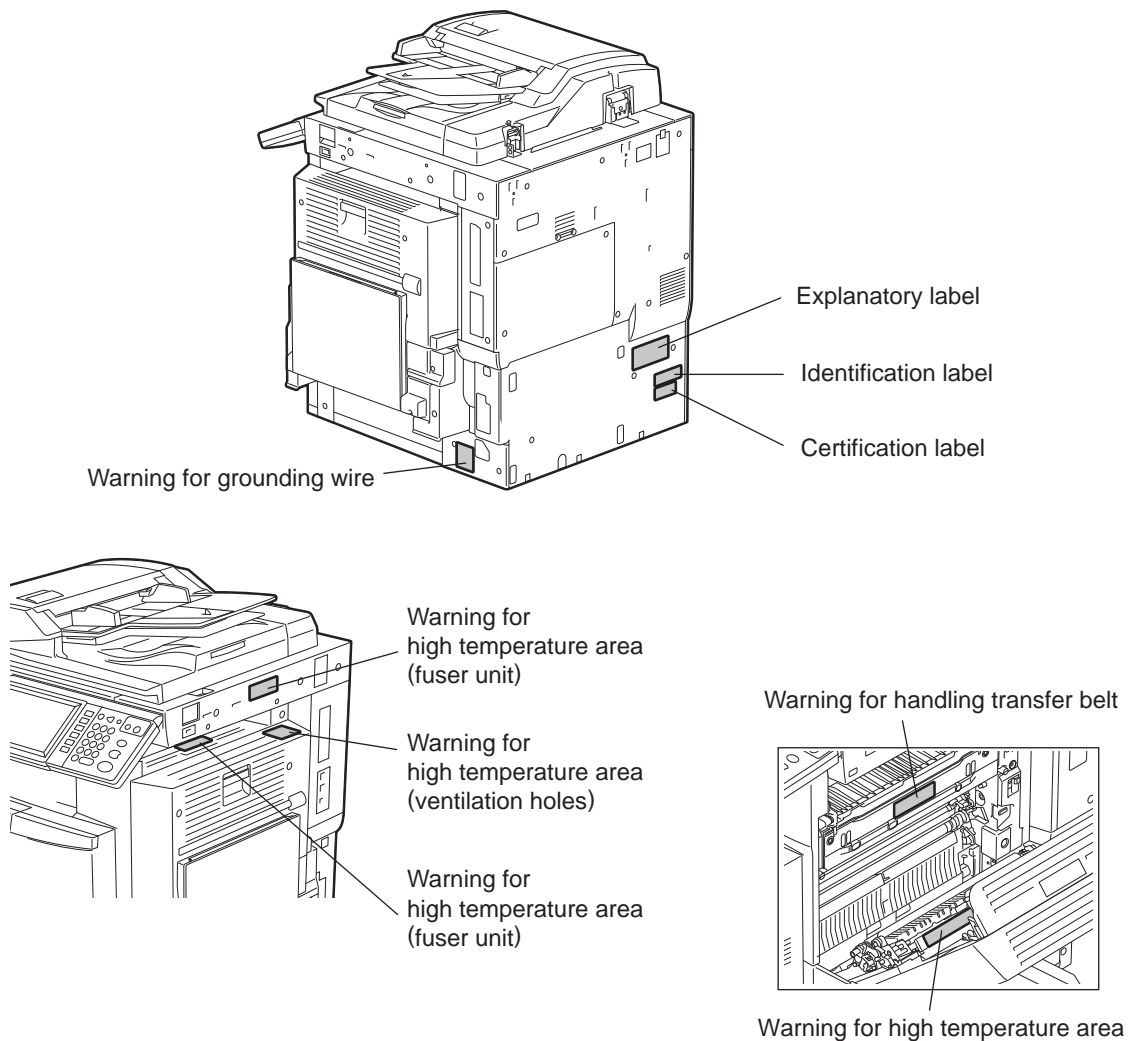
- Avoid expose to laser beam during service. This equipment uses a laser diode. Be sure not to expose your eyes to the laser beam. Do not insert reflecting parts or tools such as a screwdriver on the laser beam path. Remove all reflecting metals such as watches, rings, etc. before starting service.
- 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 back-light 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:

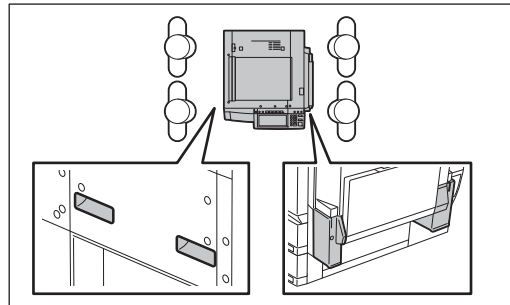
Entsorgung der gebrauchten Batterien und IC-RAMs (inclusive der Lithium-Batterie) nach diesem Handbuch.

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 Bedienfeld, 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 entfernten 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.

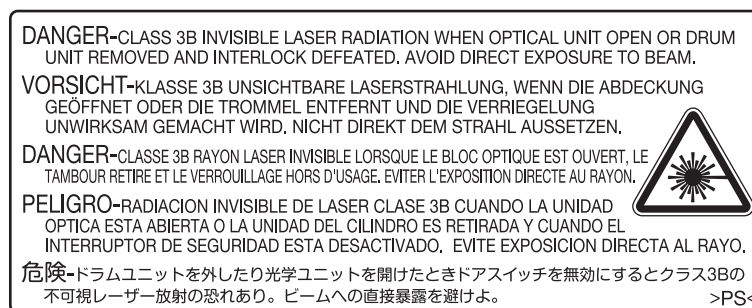
- Vorsichtsmaßnahmen im Zusammenhang mit Lasern

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“ („Netz Kabel 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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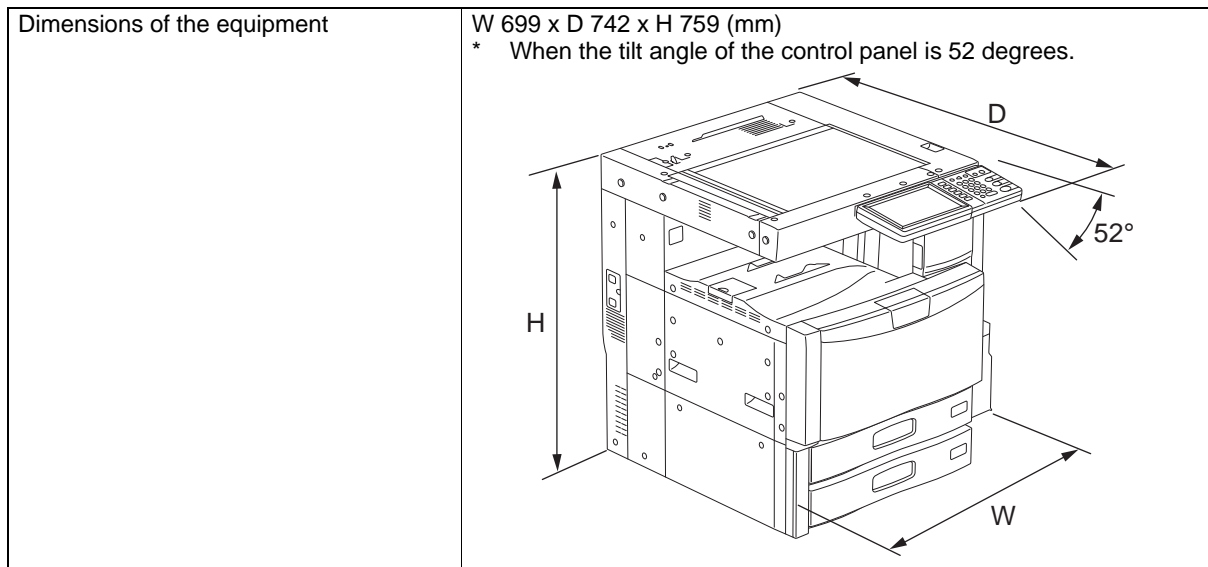
1. SPECIFICATIONS/ACCESSORIES/OPTIONS/SUPPLIES

1.1 Specifications

1.1.1 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)



1.1.2 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)
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/m² to 105 g/m² (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/m² to 163 g/m² (- 90 lb. Index)
- Thick 2: 164 g/m² to 209 g/m² (- 110 lb. Index)
- Thick 3: 210 g/m² to 256 g/m² (- 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/m² to 280 g/m² (- 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	1 set	33.00 (34.74)	26.29 (34.30)	26.29 (28.21)
↓ Single-sided copies	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	1 set	38.42 (40.16)	31.60 (36.61)	31.60 (33.83)
↓ Double-sided copies	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	1 set	70.50 (72.75)	61.71 (67.18)	61.71 (64.43)
↓ Double-sided copies	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	1 set	65.89 (67.05)	55.11 (64.19)	55.11 (58.50)
↓ Single-sided copies	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	1 set	22.33 (28.21)	22.33 (24.10)	18.03 (24.10)
↓ Single-sided copies	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	1 set	30.60 (33.83)	30.60 (31.00)	30.95 (31.00)
↓ Double-sided copies	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	1 set	61.02 (64.43)	61.02 (64.45)	58.17 (64.45)
↓ Double-sided copies	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	1 set	55.12 (58.50)	55.12 (58.02)	53.89 (58.02)
↓ Single-sided copies	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	1 set	18.03 (19.35)
↓ Single-sided copies	3 sets	46.92 (47.82)
	5 sets	73.46 (74.35)
Single-sided originals	1 set	30.95 (26.39)
↓ Double-sided copies	3 sets	61.03 (55.61)
	5 sets	83.51 (84.97)
Double-sided originals	1 set	58.17 (60.50)
↓ Double-sided copies	3 sets	116.96 (118.88)
	5 sets	175.09 (177.28)
Double-sided originals	1 set	53.89 (56.41)
↓ Single-sided copies	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.

1.1.3 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)

1.1.4 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

1.1.5 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

1.1.6 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

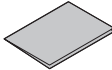




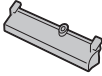
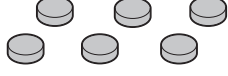

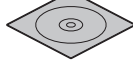




[2] Internet FAX receiving

Format of receive attachment	TIFF-FX (Profile S, F, J)
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1.1.7 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

1.2 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






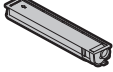
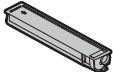
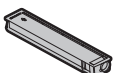
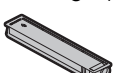

1.3 Options

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).

1.4 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 (except for Europe and China) PS-TBFC28E (for Europe) PS-TBFC28C (for China)

1.5 System List

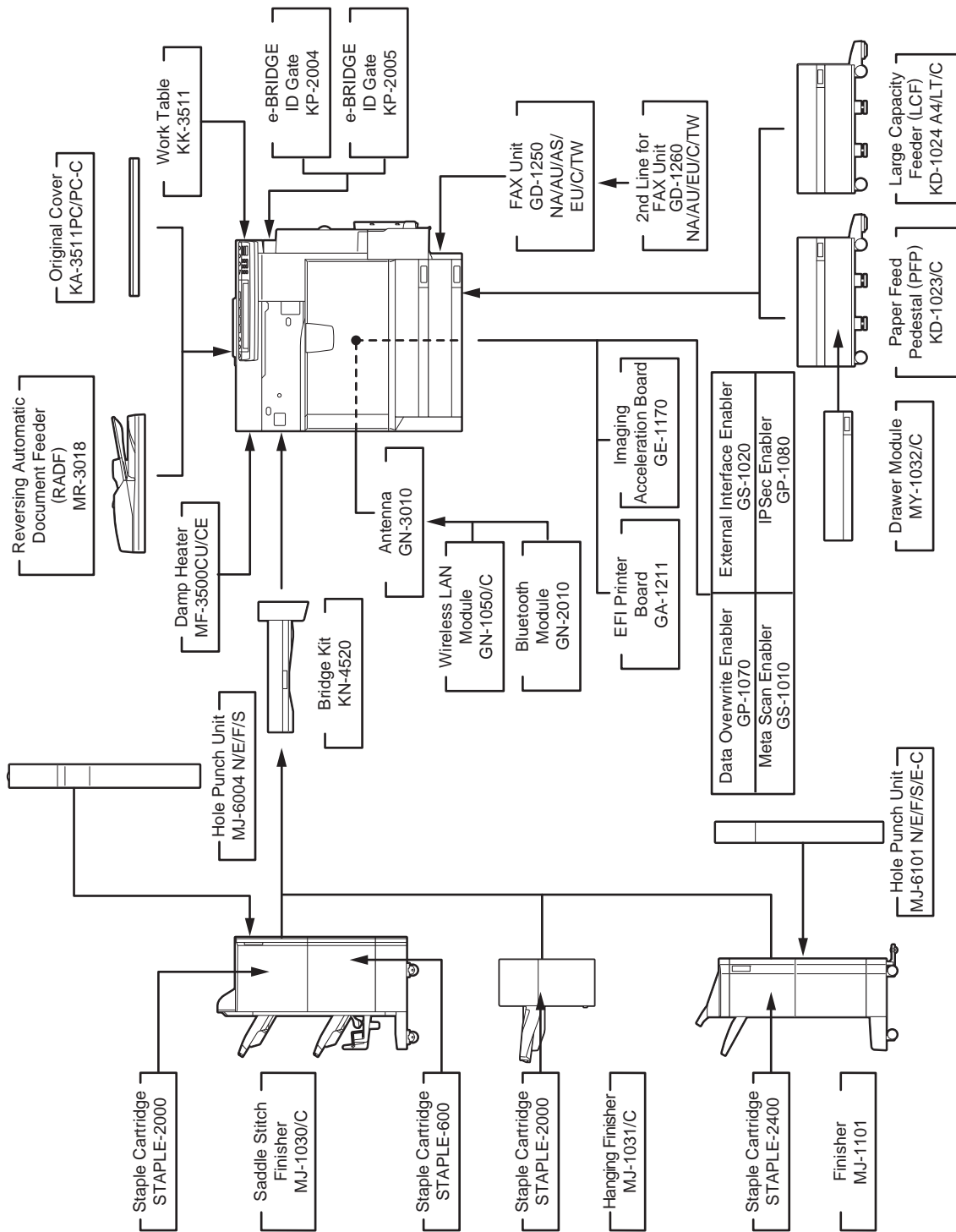


Fig. 1-1

2. SELF-DIAGNOSTIC MODE

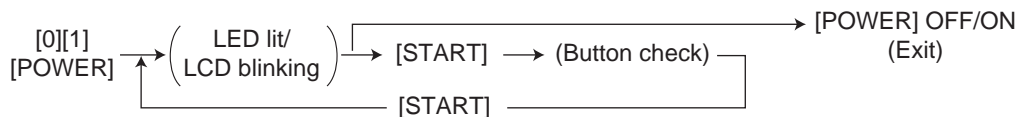
Mode	For start	Contents	For exit	Display
Control panel check mode	[0]+[1]+ [POWER]	All LEDs on the control panel are lit, and all the LCD pixels blink.	[POWER] OFF/ON	-
Test mode	[0]+[3]+ [POWER]	Checks the status of input/output signals.	[POWER] OFF/ON	100% C A4 TEST MODE
Test print mode	[0]+[4]+ [POWER]	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.

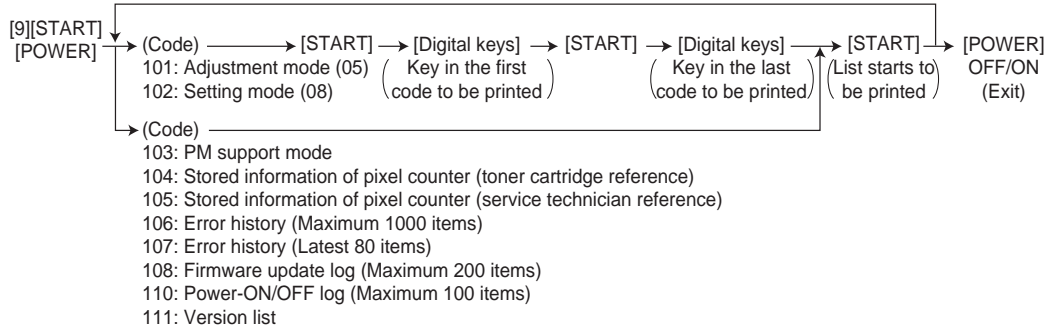
- Control panel check mode (01):
<Operation procedure>



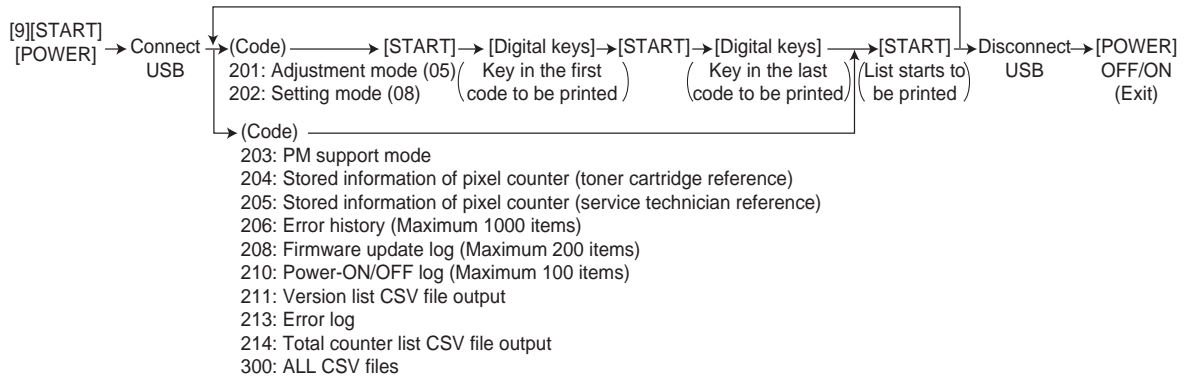
Notes:

- A mode can be canceled by [POWER] OFF/ON when the LED is lit and the LCD is blinking.
 - 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.2-4 "2.1 Input check \(Test mode 03\)"](#) and [P.2-12 "2.2 Output check \(test mode 03\)"](#).
 - Test print mode (04): Refer to [P.2-15 "2.3 Test print mode \(test mode 04\)"](#).
 - Adjustment mode (05): Refer to [P.2-28 "2.5 ADJUSTMENT MODE \(05\)"](#)
 - Setting mode (08): Refer to [P.2-76 "2.6 SETTING MODE \(08\)"](#)
 - List print mode (9S): The procedure varies depending on the code.
<Operation procedure>

PRINT



USB (CSV format, txt format)



Notes:

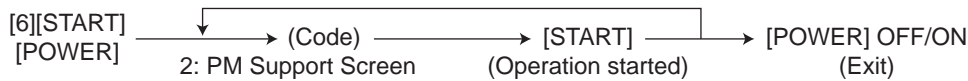
Precautions when storing information into USB media

- 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 “8.FIRMWARE UPDATING”.
- State transition diagram of self-diagnosis modes

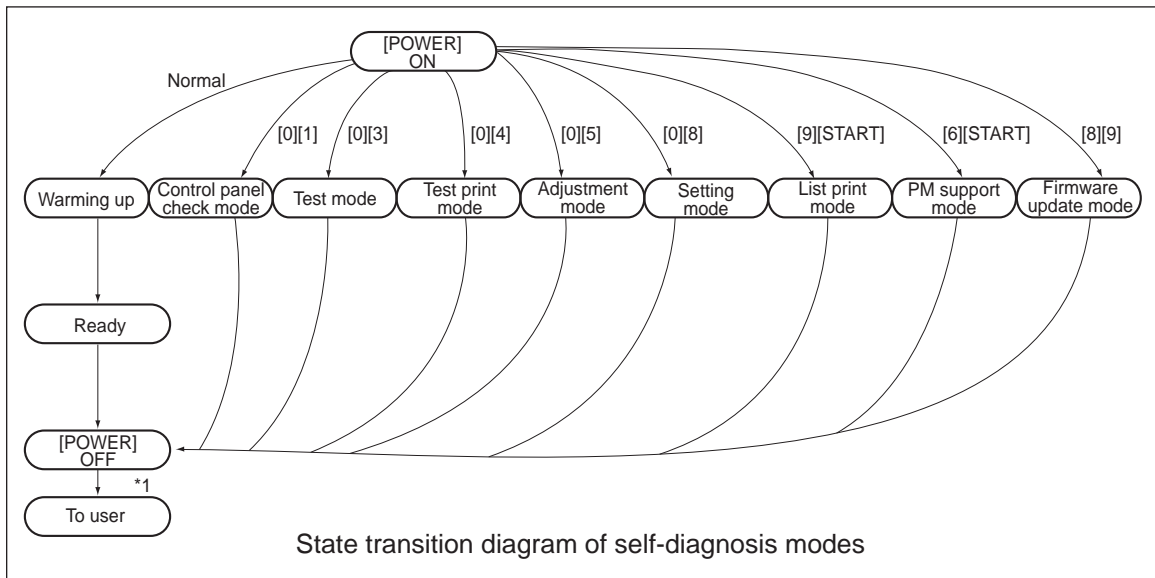


Fig. 2-1

*1 Turn OFF the power after using the self-diagnosis mode, and leave the equipment to the user.

2.1 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. 2-2 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. 	Normal display e.g. 
[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	Normal display
			e.g. 	e.g. 
[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. 	Normal display e.g. 
[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 cover opened	Platen cover closed
	H	Carriage home position sensor	Home position	Other than home position



Digital key	Button	Items to check	Contents	
			Highlighted display	Normal display
			e.g. 	e.g. 
[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	H	LD / LT	A3 / A4
H	H	L	-	B5-R
H	L	H	ST-R	A5-R
L	H	H	LD / LT	A3 / A4
L	H	L	-	Postcard
L	L	H	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. 	Normal display e.g. 
[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	Normal display
			e.g. 	e.g. 
[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

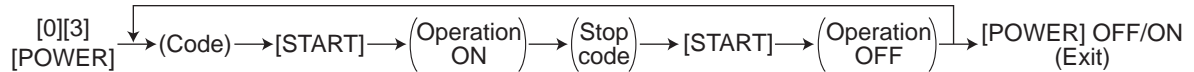
- Be sure to install the USB storage device to the equipment and check if the device can be used with this code.
- Be sure to turn OFF the write protection (the function to prevent data from erasure by the accidental recording or deleting) of the USB storage device before performing the check, otherwise 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.

2.2 Output check (test mode 03)

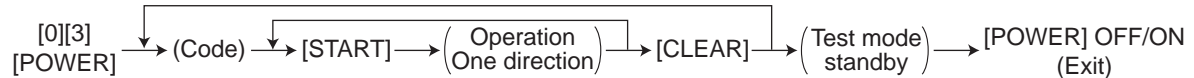
Status of the output signals can be checked by entering the following codes in the test mode 03.

<Operation procedure>

Procedure 1



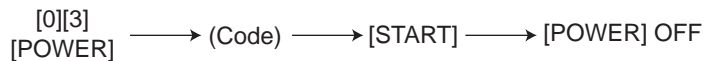
Procedure 2



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 OFF ¹	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

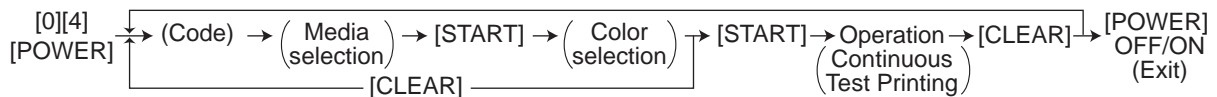
2.3 Test print mode (test mode 04)

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.

2.4 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
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Fig. 2-3

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.2-28 "2.5 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
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Fig. 2-4

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.2-76 "2.6 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
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Fig. 2-5

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.5-1 "5. 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. 2-6

Pixel counter data (toner cartridge reference) are output in a list. See the following page for the pixel counter:

 P.2-99 "2.6.7 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. 2-7

Pixel counter data (service call reference) are output in a list. See the following page for the pixel counter:

 P.2-99 "2.6.7 Pixel counter"

- Error history

ERROR HISTORY LIST															
					S/N: xxxxxxxx	TOTAL:	9999999								
					TOSHIBA e-STUDIOxxx	DF COUNTER:	9999999								
'08-02-08 20:13															
CODE	COUNTER	DATE	TIME	ZOOM_XY	ABCD	EFHI	JLO	CODE	COUNTER	DATE	TIME	ZOOM_XY	ABCD	EFHI	JLO
F110	00000000	071212-151809	064	064	3400	1000	011	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								

Fig. 2-8

The error history is output. See the following page for the parameters for each error:

 P.6-21 "6.1.4 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
T430SYQJ001	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
T430SYQJ002	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
T430SYQJ003	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
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Fig. 2-9

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 TOSHIBA e-STUDIO3520C			
'08-05-10 17:35							
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				
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.	.	.	.				

Fig. 2-10

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. 2-11

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

- yyymmddhhmm_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					
TOTAL					
		FULL COLOR	TWIN/MONO	COLOR BLACK	TOTAL
SMALL	37	0	1	38	
LARGE	0	0	0	0	
TOTAL	37	0	1	38	
FAX					
TOTAL					
		FULL COLOR	TWIN/MONO	COLOR BLACK	TOTAL
SMALL	0	0	0	0	
LARGE	0	0	0	0	
TOTAL	0	0	0	0	
PRINTER					
TOTAL					
		FULL COLOR	TWIN/MONO	COLOR BLACK	TOTAL
SMALL	118	0	60	178	
LARGE	4	0	0	4	
TOTAL	122	0	60	182	
LIST					
TOTAL					
		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					
TOTAL					
		FULL COLOR	TWIN/MONO	COLOR BLACK	TOTAL
SMALL	7	0	1	8	
LARGE	0	0	0	0	
TOTAL	7	0	1	8	
FAX					
TOTAL					
		FULL COLOR	TWIN/MONO	COLOR BLACK	TOTAL
SMALL	0	0	0	0	
LARGE	0	0	0	0	
TOTAL	0	0	0	0	
NETWORK					
TOTAL					
		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. 2-12

The list of total counter is output.

2.5 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.

2.5.1 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

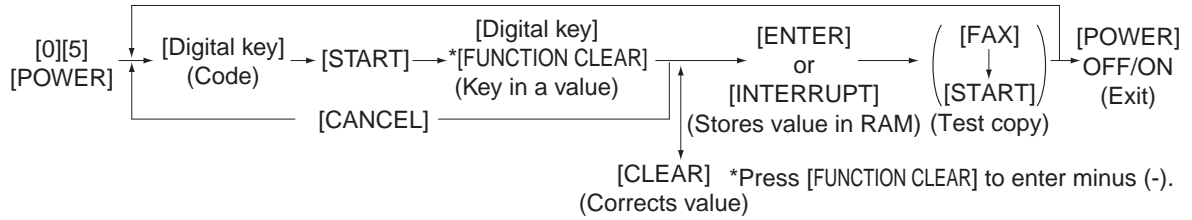
Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Image	[Saturation]		8325, 8326, 8327, 8373
	[Background processing]		1070, 1071, 1072, 1688, 1689, 1690, 1691, 1692, 1698, 1699, 1700, 1701, 1702, 7025, 7033, 7034, 7041, 7042, 7043, 7044, 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

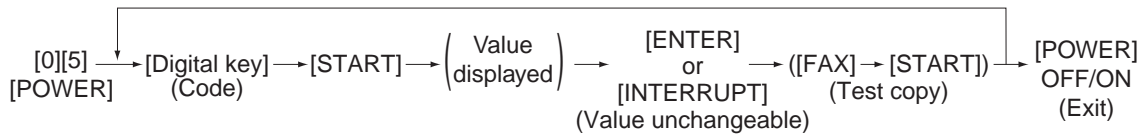
Classification		Adjustment Mode (05)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Transfer	[1st transfer]	2900-0 to 11, 2905-0 to 11, 2981-0 to 1, 2985-0 to 1, 2986-0 to 1, 2987-0 to 1, 2988-0 to 1, 2920-0 to 11, 2921-0 to 11	
	[2nd transfer]	2924-0 to 8, 2925-0 to 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

2.5.2 Operating Procedure

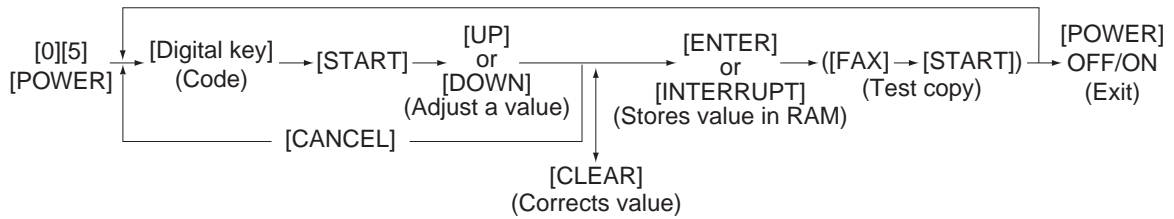
Procedure 1



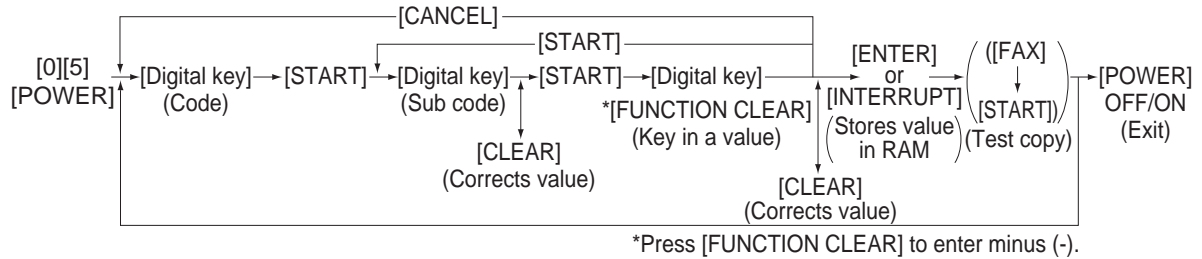
Procedure 2



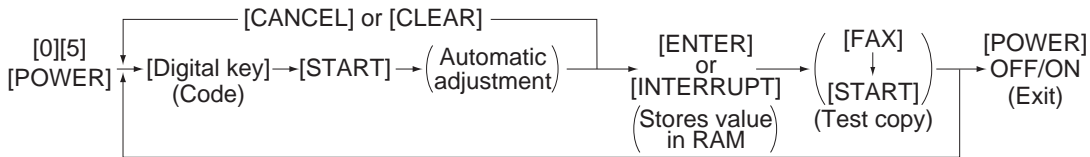
Procedure 3



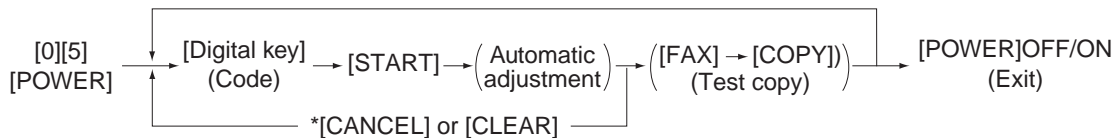
Procedure 4



Procedure 5

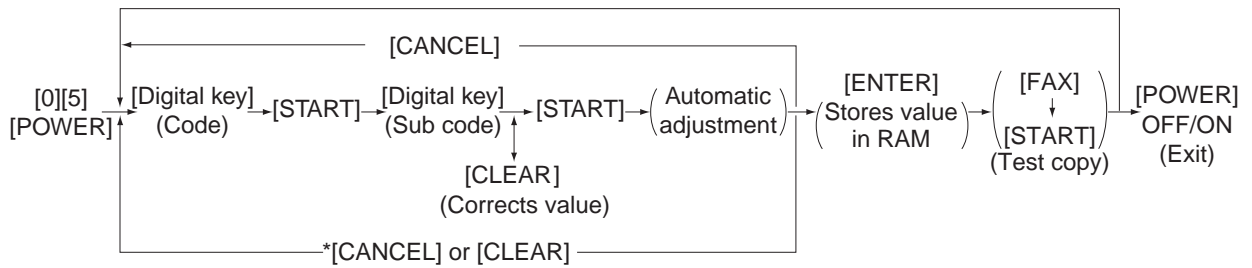


Procedure 6



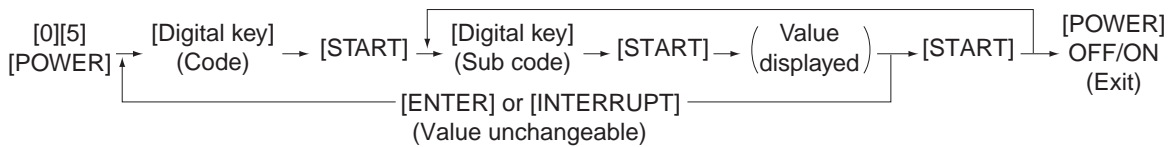
- * When the automatic adjustment ends abnormally, an error message is displayed.
- * Return to standby screen by pressing the [CANCEL] or [CLEAR] button.

Procedure 7

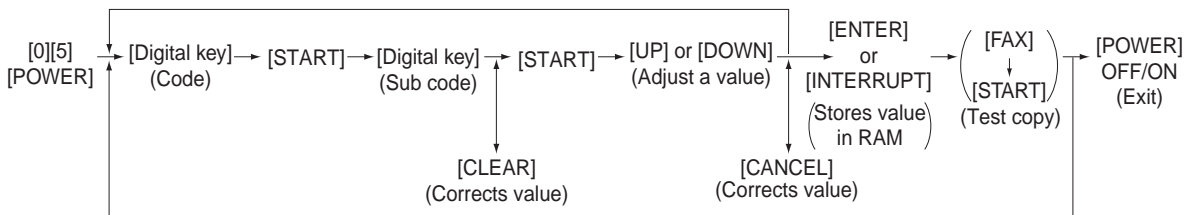


- * When the automatic adjustment ends abnormally, an error message is displayed.
- * Return to standby screen by pressing the [CANCEL] or [CLEAR] button.

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.

2.5.3 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 3.1.8Image dimensional adjustment at the printing section
4	Copier gamma adjustment pattern (Color & black integrated / All media types)	Refer to 3.2.1Automatic gamma adjustment
5	Copier gamma adjustment pattern (Color / All media types)	Refer to 3.2.1Automatic gamma adjustment
6	Copier gamma confirmation pattern (Black / All media types)	Refer to 3.2.1Automatic gamma adjustment
7	Copier gamma confirmation pattern (Color / All media types)	Refer to 3.2.1Automatic gamma adjustment
8	Grid pattern (Color)	
10	Copier gamma adjustment pattern (Black / All media types)	Refer to 3.2.1Automatic 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 3.1.7Paper alignment at the registration roller
56	Grid pattern (Full Color / Thick paper 3)	Refer to 3.1.7Paper alignment at the registration roller
57	Grid pattern (Full Color / OHP)	Refer to 3.1.7Paper alignment at the registration roller
58	Grid pattern (Black / Thick paper 2)	Refer to 3.1.7Paper alignment at the registration roller
59	Grid pattern (Black / Thick paper 3)	Refer to 3.1.7Paper alignment at the registration roller
60	Grid pattern (Black / OHP)	Refer to 3.1.7Paper 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 3.3.1Automatic gamma adjustment
71	Printer gamma correction table confirmation pattern (Plain paper)	Refer to 3.3.1Automatic gamma adjustment
74	Printer gamma correction table creation pattern	Refer to 3.3.1Automatic gamma adjustment
75	Printer gamma correction table confirmation pattern (Recycled paper)	Refer to 3.3.1Automatic gamma adjustment
76	Printer gamma correction table creation pattern (Thick paper 1)	Refer to 3.3.1Automatic gamma adjustment
77	Printer gamma correction table confirmation pattern (Thick paper 1)	Refer to 3.3.1Automatic gamma adjustment

Code	Types of test pattern	Remarks
78	Printer gamma correction table creation pattern (Thick paper 2)	Refer to 3.3.1Automatic gamma adjustment
79	Printer gamma correction table confirmation pattern (Thick paper 2)	Refer to 3.3.1Automatic gamma adjustment
80	Printer gamma correction table creation pattern (Thick paper 3)	Refer to 3.3.1Automatic gamma adjustment
81	Printer gamma correction table confirmation pattern (Thick paper 3)	Refer to 3.3.1Automatic gamma adjustment
82	Printer gamma correction table creation pattern (Thick paper 4)	Refer to 3.3.1Automatic gamma adjustment
83	Printer gamma correction table confirmation pattern (Thick paper 4)	Refer to 3.3.1Automatic gamma adjustment
84	Printer gamma correction table creation pattern (Special paper 1)	Refer to 3.3.1Automatic gamma adjustment
85	Printer gamma correction table confirmation pattern (Special paper 1)	Refer to 3.3.1Automatic gamma adjustment
86	Printer gamma correction table creation pattern (Special paper 2)	Refer to 3.3.1Automatic gamma adjustment
87	Printer gamma correction table confirmation pattern (Special paper 2)	Refer to 3.3.1Automatic gamma adjustment
98	Grid pattern -2 (For printing K(4) / Plain paper)	Refer to 3.1.8Image 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 3.2.1Automatic gamma adjustment
201	Copier gamma confirmation pattern (Color / Plain paper)	Refer to 3.2.1Automatic gamma adjustment
204	Copier gamma adjustment pattern (Color & black integrated / Recycled paper)	Refer to 3.2.1Automatic gamma adjustment
205	Copier gamma confirmation pattern (Color / Recycled paper)	Refer to 3.2.1Automatic gamma adjustment
206	Copier gamma adjustment pattern (Color & black integrated / Thick paper 1)	Refer to 3.2.1Automatic gamma adjustment
207	Copier gamma confirmation pattern (Color / Thick paper 1)	Refer to 3.2.1Automatic gamma adjustment
208	Copier gamma adjustment pattern (Color & black integrated / Thick paper 2)	Refer to 3.2.1Automatic gamma adjustment
209	Copier gamma confirmation pattern (Color / Thick paper 2)	Refer to 3.2.1Automatic gamma adjustment
210	Copier gamma adjustment pattern (Color & black integrated / Thick paper 3)	Refer to 3.2.1Automatic gamma adjustment
211	Copier gamma confirmation pattern (Color / Thick paper 3)	Refer to 3.2.1Automatic gamma adjustment
212	Copier gamma adjustment pattern (Color & black integrated / Thick paper 4)	Refer to 3.2.1Automatic gamma adjustment

Code	Types of test pattern	Remarks
213	Copier gamma confirmation pattern (Color / Thick paper 4)	Refer to 3.2.1Automatic gamma adjustment
214	Copier gamma adjustment pattern (Color & black integrated / Special paper 1)	Refer to 3.2.1Automatic gamma adjustment
215	Copier gamma confirmation pattern (Color / Special paper 1)	Refer to 3.2.1Automatic gamma adjustment
216	Copier gamma adjustment pattern (Color & black integrated / Special paper 2)	Refer to 3.2.1Automatic gamma adjustment
217	Copier gamma confirmation pattern (Color / Special paper 2)	Refer to 3.2.1Automatic gamma adjustment

2.5.4 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.3.1.2	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
206	Development	Initialization of auto-toner		ALL	- <0-255>	M		5
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
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

2.5.5 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)	-	-	<ul style="list-style-type: none"> 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
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			Photo	FAX (black)	128 <0-255>	SYS		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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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>
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	

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
1642	Image	Automatic gamma adjustment (Color / Black)	All media types	PPC (color)	-	SYS	<ul style="list-style-type: none"> 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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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.3-38 "3.2.10 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	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
			Text					
			User custom mode					
7033	Image	Background adjustment (Black / Automatic density adjustment)	Text/Photo	PPC (black)	128 <0-255>	SYS		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		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		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		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
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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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
7668	Image		Text	PPC (black)	1 <0-1>	SYS	1: Background peak - Varied	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		Text/Photo	PPC (black)	128 <0-255>	SYS		1
7679	Image		Text	PPC (black)	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)									
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure	
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	
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		
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	
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	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
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		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
7959-1			M	PPC (black)	128 <0-255>	SYS			4
7959-2			H	PPC (black)	128 <0-255>	SYS			4

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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	
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	

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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	
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	

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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	
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	

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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	
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>
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	

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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
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
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
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

2.5.6 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

2.5.7 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.3.1.9)	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
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
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

2.5.8 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
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	
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
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
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
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
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
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

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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

2.6 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.

2.6.1 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		
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 to 1, 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

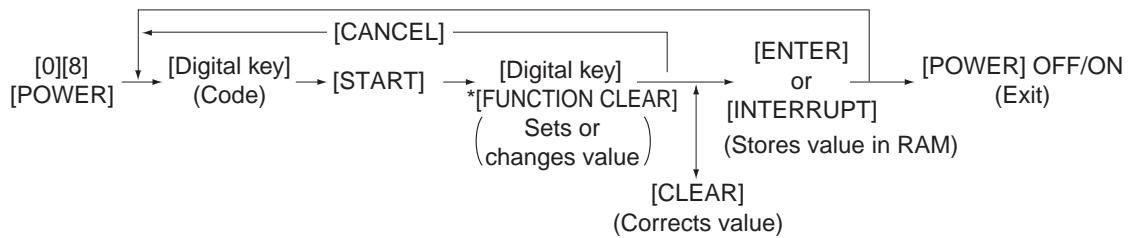
Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
Maintenance	[Calibration]		9059
	[Emergency Mode]	710, 711	
	[Service notification]	702, 703, 707, 715, 716, 717, 718, 719, 720, 721, 723, 767, 768, 769, 770, 771, 772, 773, 775, 776, 777, 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	
	[P JL]	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		

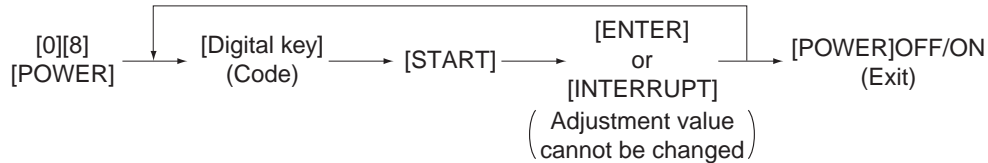
Classification		Setting Mode (08)	
		Given in the Service Manual	Given in the Service Manual and Service Handbook
General	[Default setting of color mode]	8629	

2.6.2 Operating Procedure

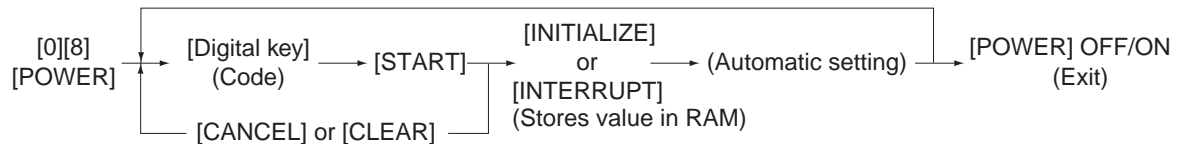


* Press [FUNCTION CLEAR] to enter minus (-).

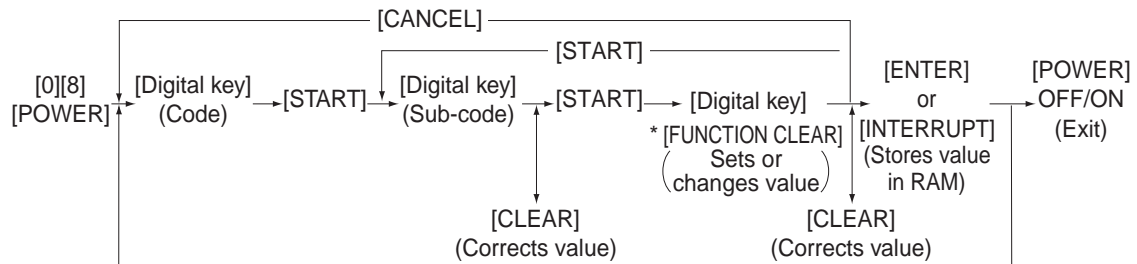
Procedure 2



Procedure 3

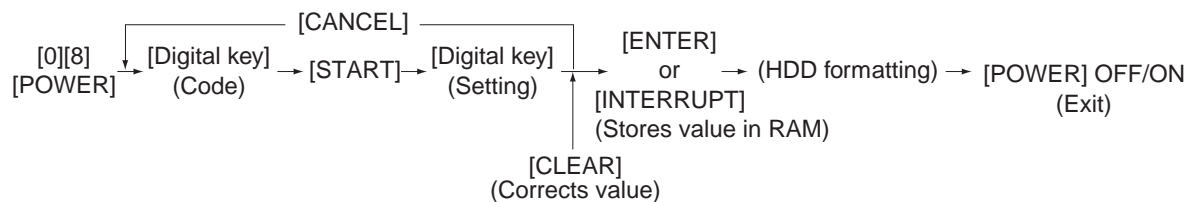


Procedure 4

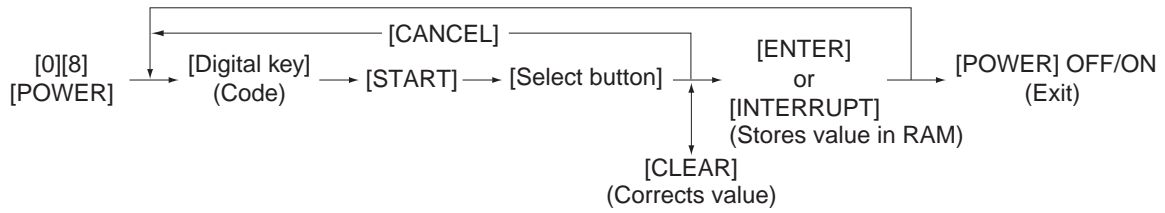


* Press [FUNCTION CLEAR] to enter minus (-).

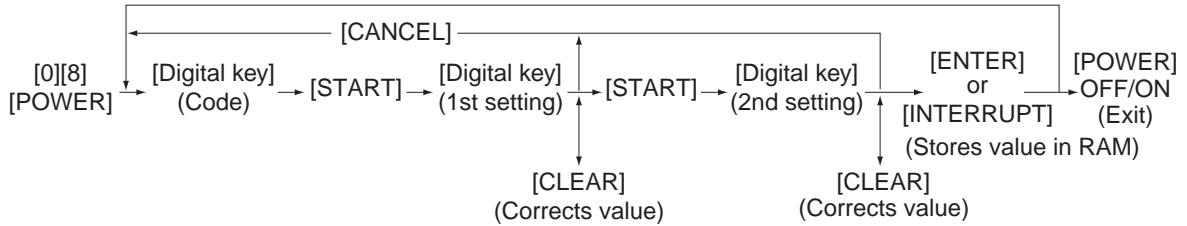
Procedure 7



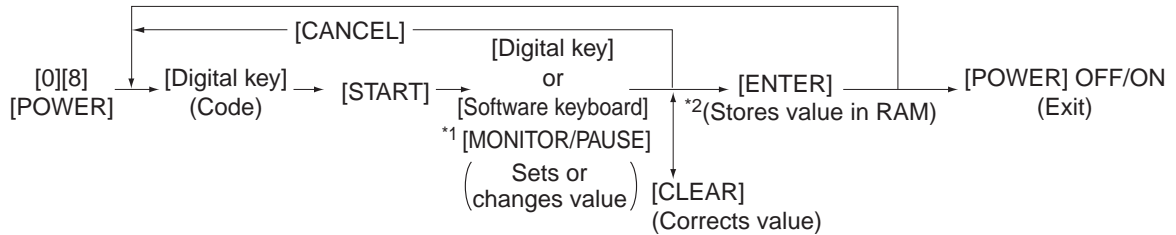
Procedure 9



Procedure 10

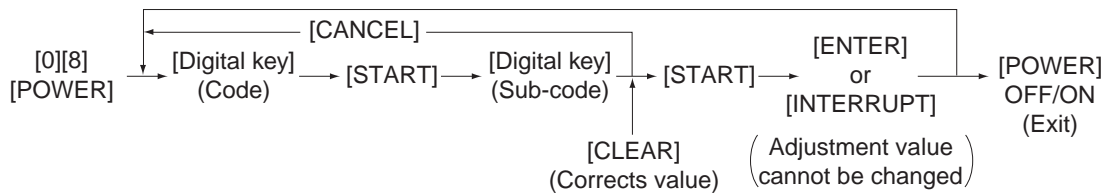


Procedure 11 and 12



- *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



2.6.3 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
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
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
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

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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

2.6.4 Printer

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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

2.6.5 Counter

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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
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
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

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.

2.6.6 System

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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
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
662	General	Clearing of SMS partition	ALL	-	SYS	Clears SMS partition. (Performs when the service call [F106] has occurred.)	3
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.7.2.2)	2
684	General	Rebuilding all databases	ALL	-	SYS	Rebuilds all databases.	3
690	General	HDD formatting	ALL	2 <2>	SYS	2: Normal formatting	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

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
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
774	Maintenance (Remote)	Display setting of [Service Notification] button	ALL	NAD, MJD: 1 Other: 0 <0-1>	SYS	0: Not displayed 1: Displayed	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
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

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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
947	General	Initialization after software version upgrade	ALL	-	SYS	Perform this code when the software in this equipment has been upgraded.	3
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
1426	General	Forcible HDD data clearing	ALL	-	-	HDD data is cleared in the procedure set in 08-1424.	3
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
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

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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
9826	General	Disabling Media File Save	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
9965	Version	Imaging Acceleration Board SROM version	ALL	-	-	I-XX.X.X	2

2.6.7 Pixel counter

[A] 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:

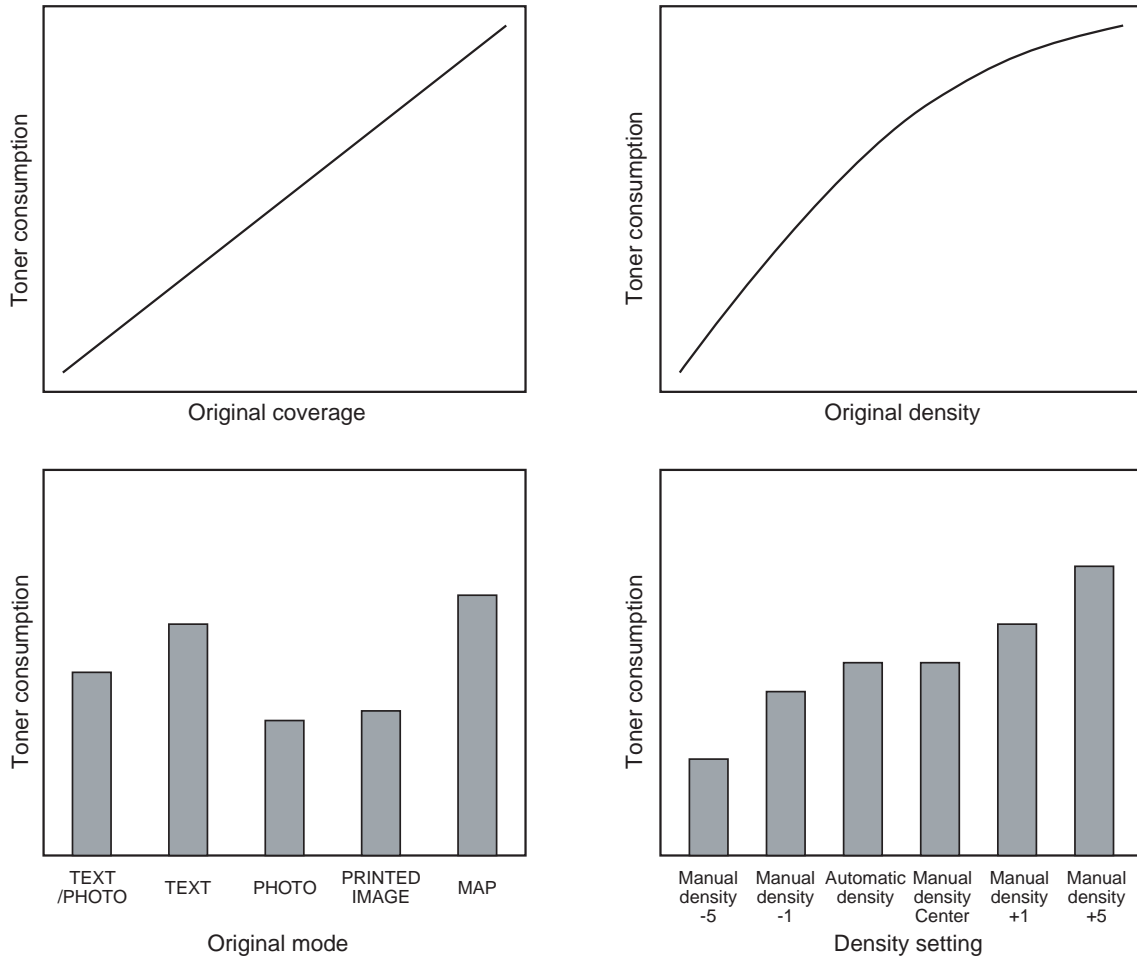


Fig. 2-1 Factors affecting toner consumption and the tendency

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					
	Yellow	Magenta	Cyan	Black	Full color/Twin color					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:

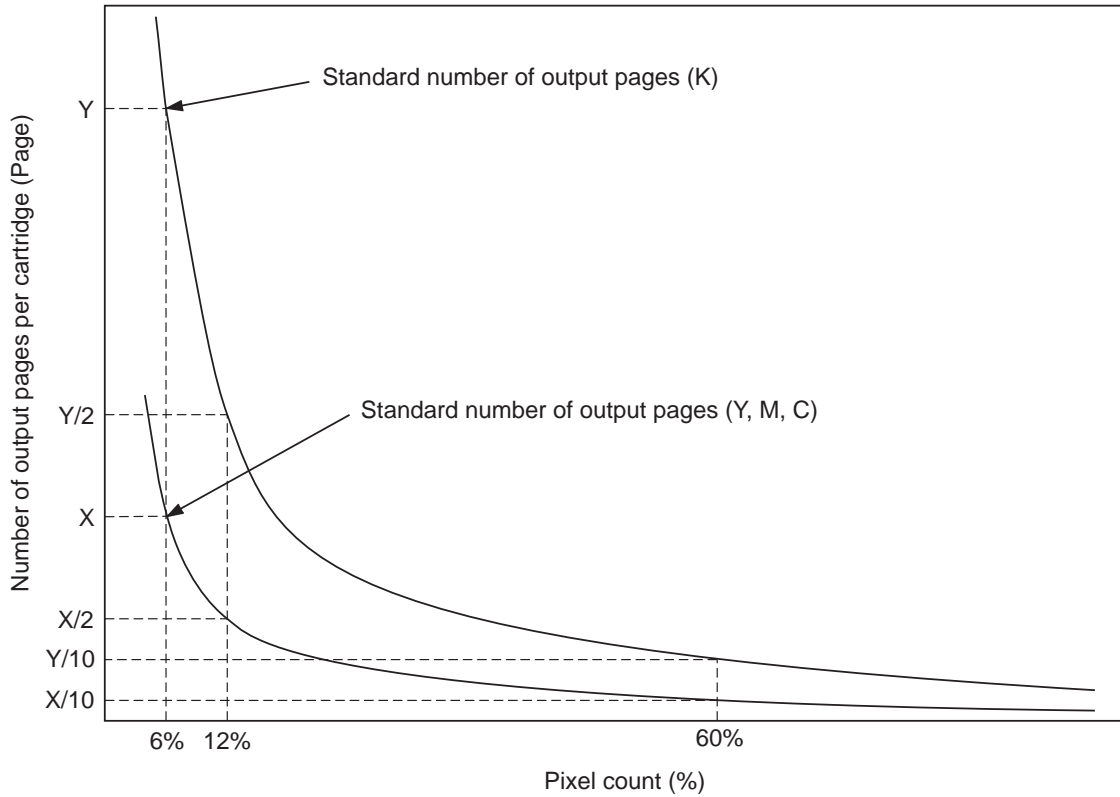


Fig. 2-2 Pixel count and number of output pages per cartridge

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.)

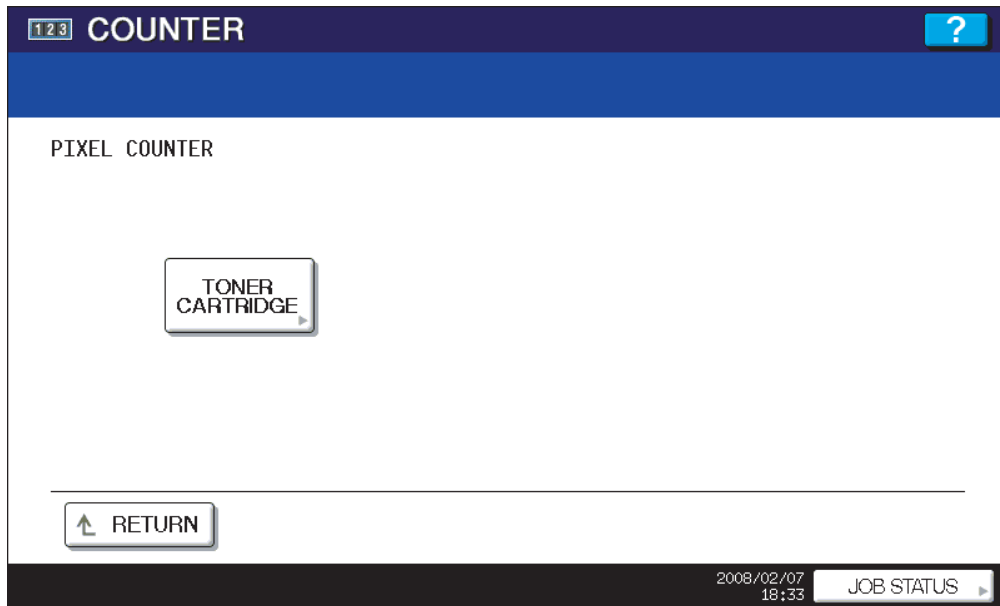


Fig. 2-3

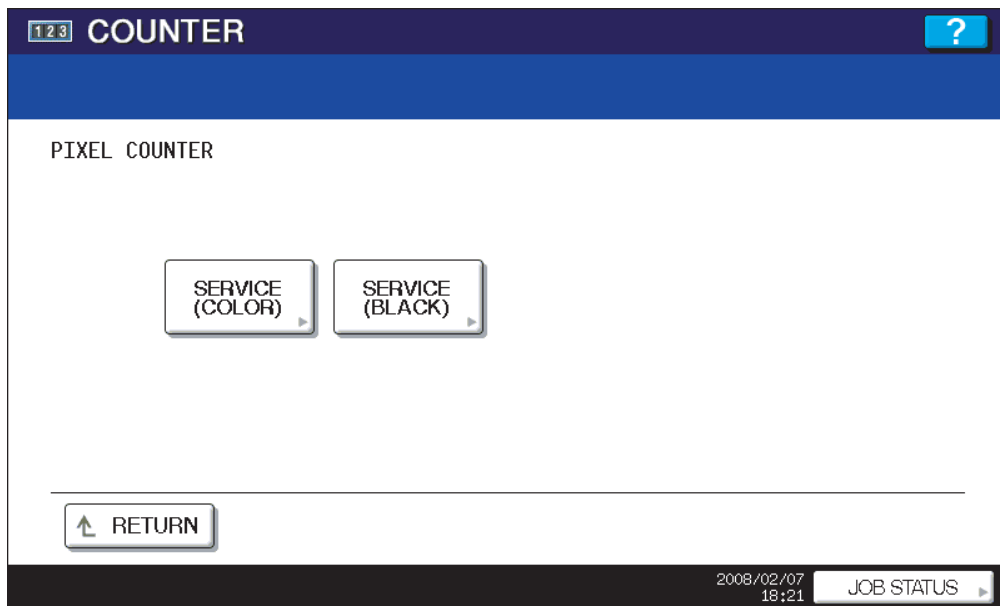


Fig. 2-4 Reference selection screen

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.

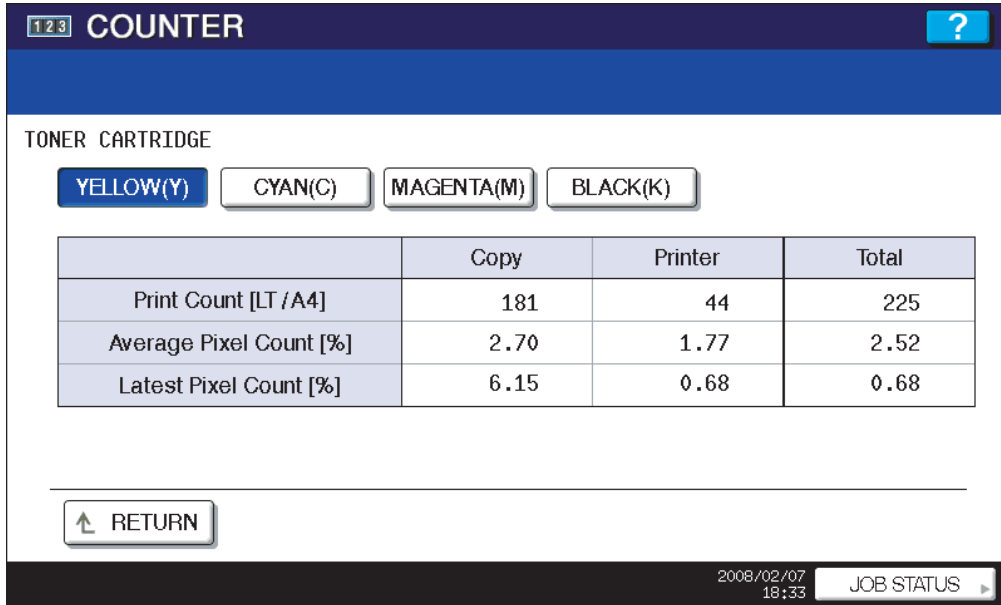


Fig. 2-5 Information screen of toner cartridge reference

The following screen is displayed when pressing the [SERVICE (COLOR)] button.

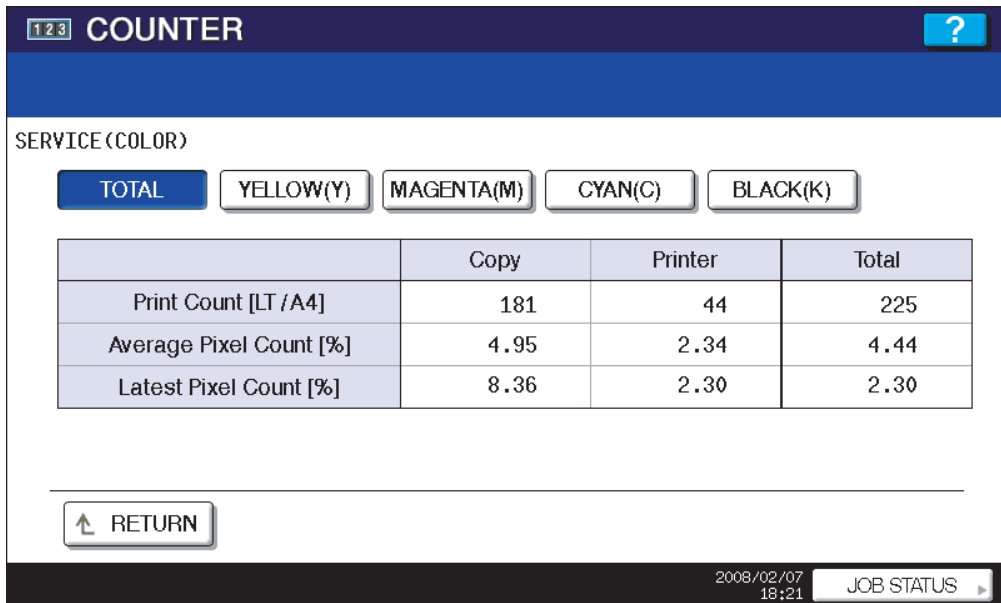


Fig. 2-6 Information screen of service technician reference (full color)

The following screen is displayed when pressing the [SERVICE (BLACK)] button.

The screenshot shows a service technician reference screen titled "SERVICE (BLACK)". At the top left, it says "123 COUNTER" and at the top right, there is a question mark icon. Below the title, there is a table with the following data:

	Copy	Printer	Fax	Total
Print Count [LT / A4]	91	91	8	190
Average Pixel Count [%]	7.29	4.09	25.38	6.52
Latest Pixel Count [%]	0.15	0.96	29.98	0.15

Below the table, there is a "RETURN" button with an upward arrow icon. At the bottom right, the date and time "2008/02/07 18:23" and a "JOB STATUS" button with a right arrow icon are visible.

Fig. 2-7 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. 2-8 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. 2-9 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.2-94 "2.6.5 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

[B] 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
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

2.6.8 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 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 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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000
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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000
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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000
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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000
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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000
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 Sub-code 1: 40,000/46,000/56,000/56,000/70,000/70,000/70,000 Sub-code 4: 170,000/170,000/170,000/170,000/170,000/170,000/170,000/170,000

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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 Sub-code 1: 120,000/120,000/120,000/120,000/120,000/120,000/120,000/120,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000/160,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000/160,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 160,000/160,000/160,000/160,000/160,000/160,000/160,000/160,000

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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000
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 Sub-code 1: 80,000/80,000/80,000/80,000/80,000/80,000/80,000/80,000

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 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 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 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 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 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 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

2.6.9 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

3. ADJUSTMENT

3.1 Image Related Adjustment

3.1.1 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.

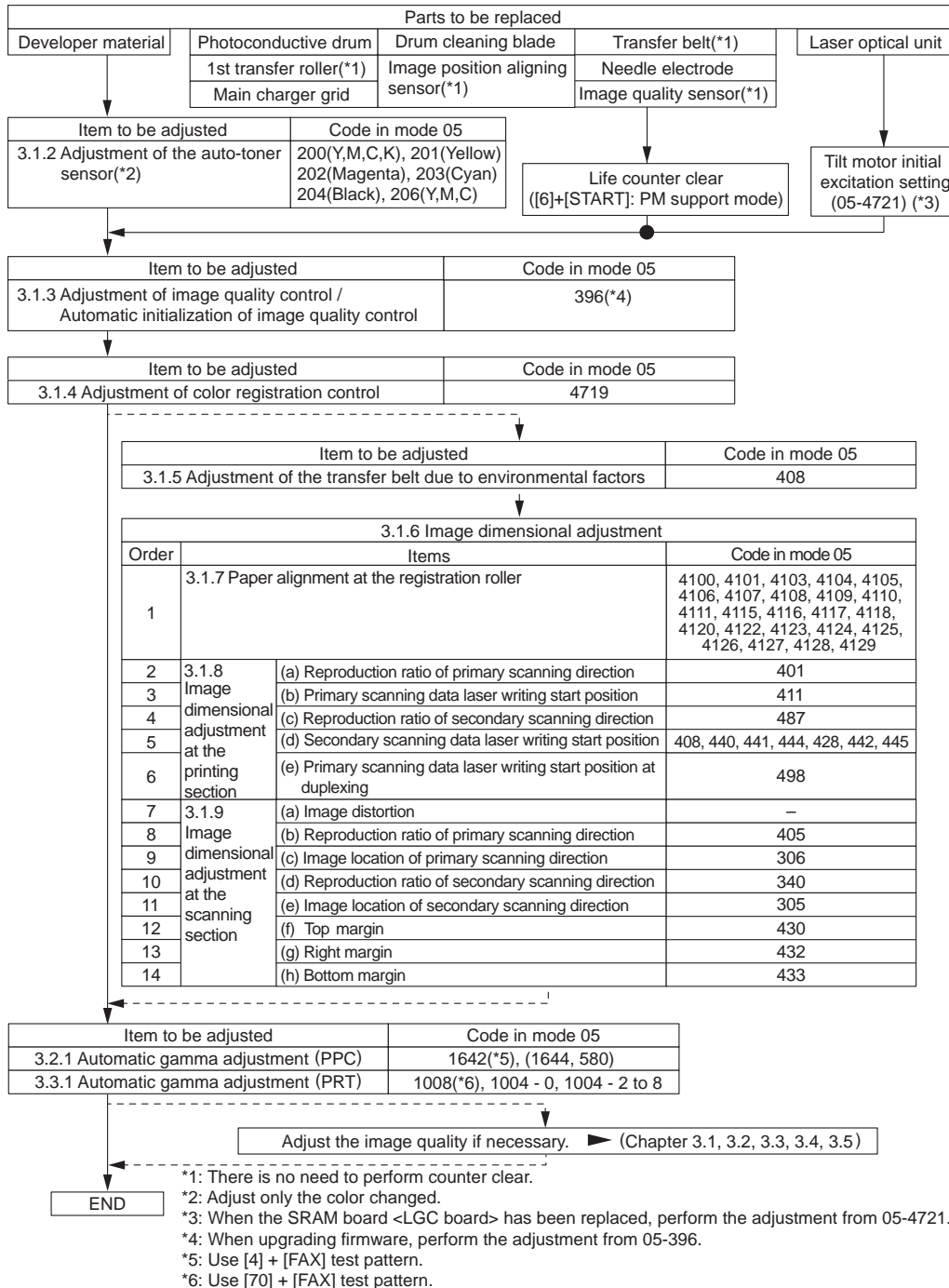


Fig. 3-1

3.1.2 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.

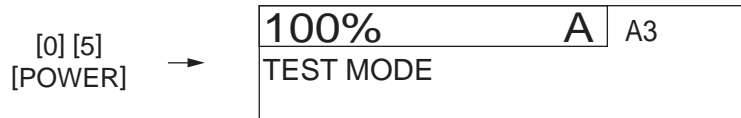


Fig. 3-2

- (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

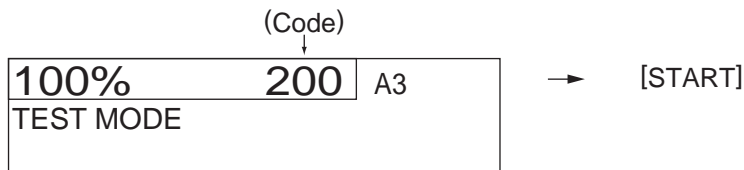
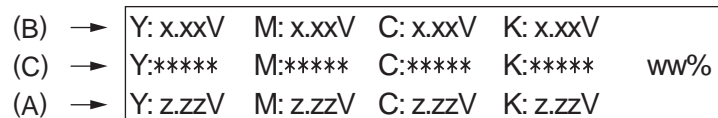


Fig. 3-3

- (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. 3-4

- (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.

e-STUDIO2820C / 2830C / 3520C / 4520C				
(B) →	Y: x.xxV	M: x.xxV	C: x.xxV	K: x.xxV
(C) →	Y: yyy	M: yyy	C: yyy	K: yyy
(A) →	Y: z.zzV	M: z.zzV	C: z.zzV	K: z.zzV

e-STUDIO3530C				
(B) →	Y: ****V	M: ****V	C: ****V	K: x.xxV
(C) →	Y: ****	M: ****	C: ****	K: yyy
(A) →	Y: ****V	M: ****V	C: ****V	K: z.zzV

(B): Current sensor voltage (V)

(C): Sensor output control value (bit value)

(A): Target value (V) for adjustment reference voltage

Fig. 3-5

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.

3.1.3 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	<p><Procedure></p> <ol style="list-style-type: none"> 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. <p>When an error occurs</p> <p><When "Waste toner box replacement" is displayed></p> <ol style="list-style-type: none"> 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. <p><When an adjustment error is displayed></p> <ol style="list-style-type: none"> 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. <p><Other abnormalities></p> <p>Take the appropriate action described in Troubleshooting. P.6-1 "6. ERROR CODE AND TROUBLESHOOTING"</p>

Code	Item to be adjusted	Contents
396	Automatic initialization of image quality control	<p><Procedure></p> <ol style="list-style-type: none"> 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. <p>When an error occurs</p> <p><When "Waste toner box replacement" is displayed></p> <ol style="list-style-type: none"> 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. <p><When an adjustment error is displayed></p> <ol style="list-style-type: none"> 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. <p><Other abnormalities></p> <p>Take the appropriate action described in Troubleshooting.  P.6-1 "6. ERROR CODE AND TROUBLESHOOTING"</p>

3.1.4 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	<p><Procedure></p> <ol style="list-style-type: none"> 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. <p>When an error occurs</p> <p><When "Waste toner box replacement" is displayed></p> <ol style="list-style-type: none"> 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. <p><When an adjustment error is displayed></p> <ol style="list-style-type: none"> 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. <p><Other abnormalities></p> <p>Take the appropriate action described in Troubleshooting.  P.6-1 "6. ERROR CODE AND TROUBLESHOOTING"</p>

3.1.5 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.3-72 "3.10.1 Adjustment of the transfer belt due to environmental factors"

3.1.6 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).

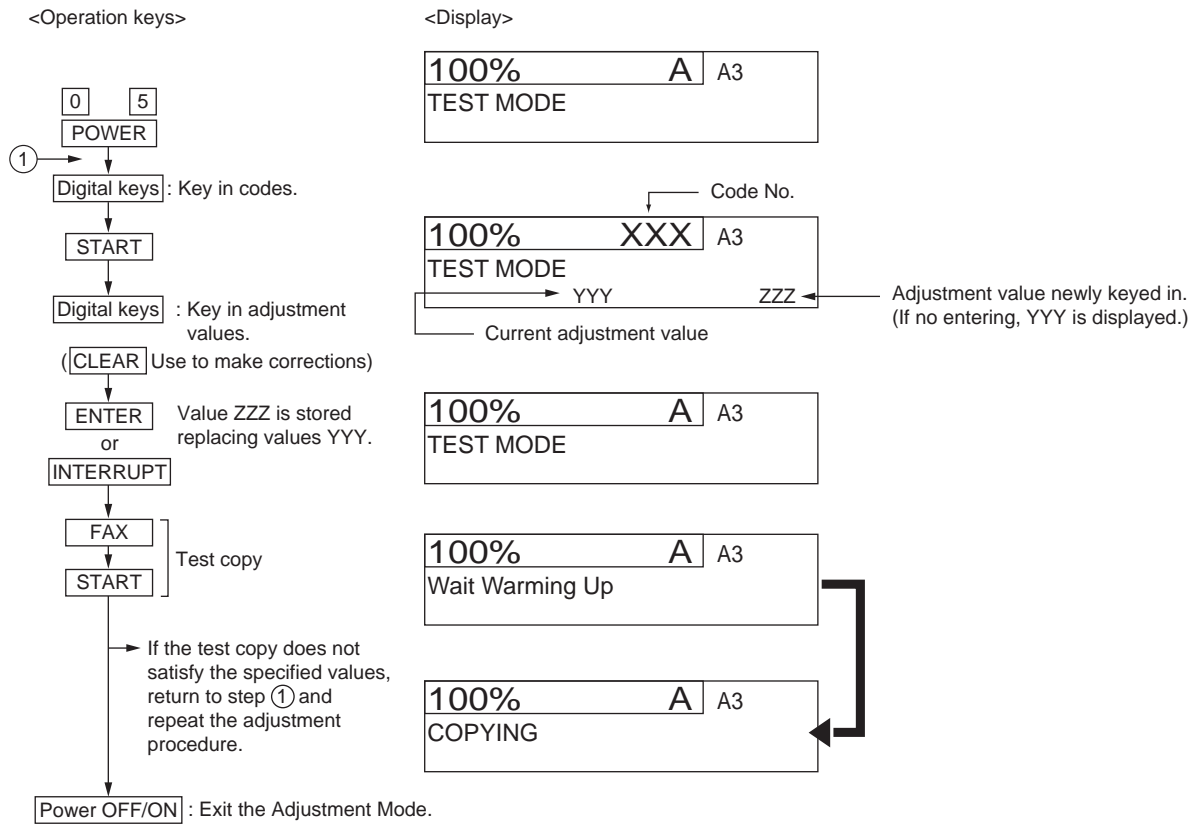


Fig. 3-6

3.1.7 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. 3-7

2. Select the paper size.



Fig. 3-8

3. Select the media type.



Fig. 3-9

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

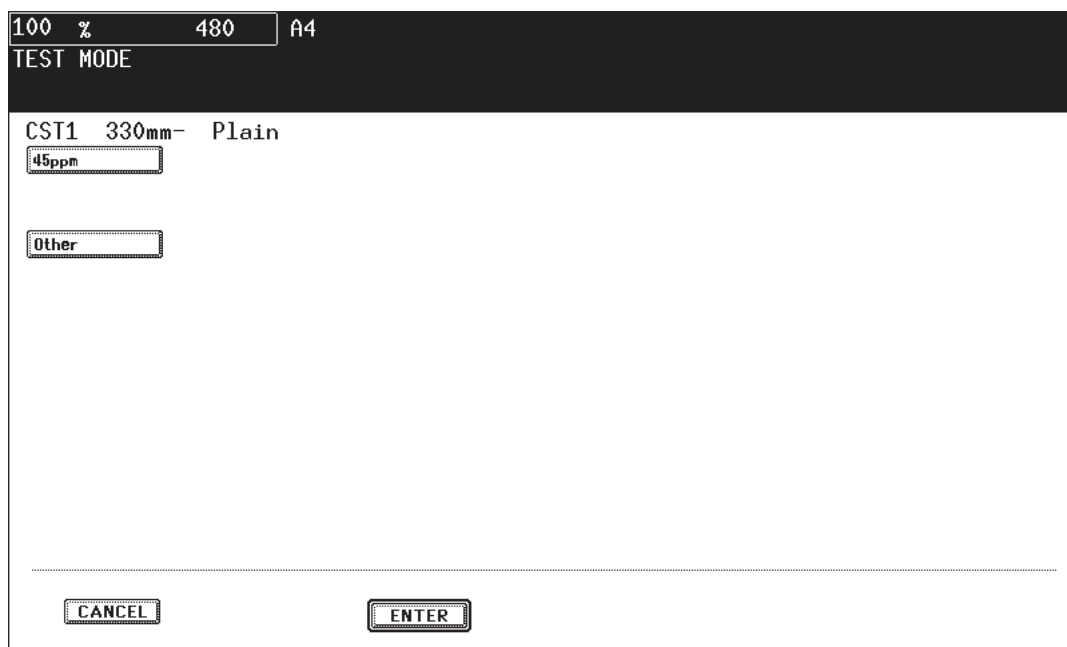


Fig. 3-10

5. Key in the adjustment value.

100 % 480 A4
TEST MODE
30 30
CST1 330mm- Plain Other
45ppm
Other
CANCEL ENTER

Fig. 3-11

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/m² (17 lb. Bond to 28 lb. Bond)

Thick paper 1: 106 to 163 g/m² (28 lb. Bond to 60 lb. Cover (90 lb. Index))

Thick paper 2: 164 to 209 g/m² (61 lb. Cover to 77.3 lb. Cover (115.7 lb. Index))

Thick paper 3: 210 to 256 g/m² (77.3 lb. Cover to 94.5 lb. Cover (141.4 lb. Index))

Thick paper 4: 257 to 280 g/m² (94.5 lb. Cover to 100 lb. Cover (150 lb. Index))

<Procedure>

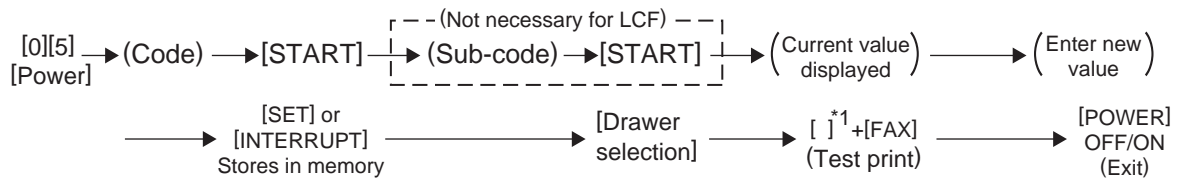


Fig. 3-12

- (*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.

3.1.8 Image dimensional adjustment at the printing section

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

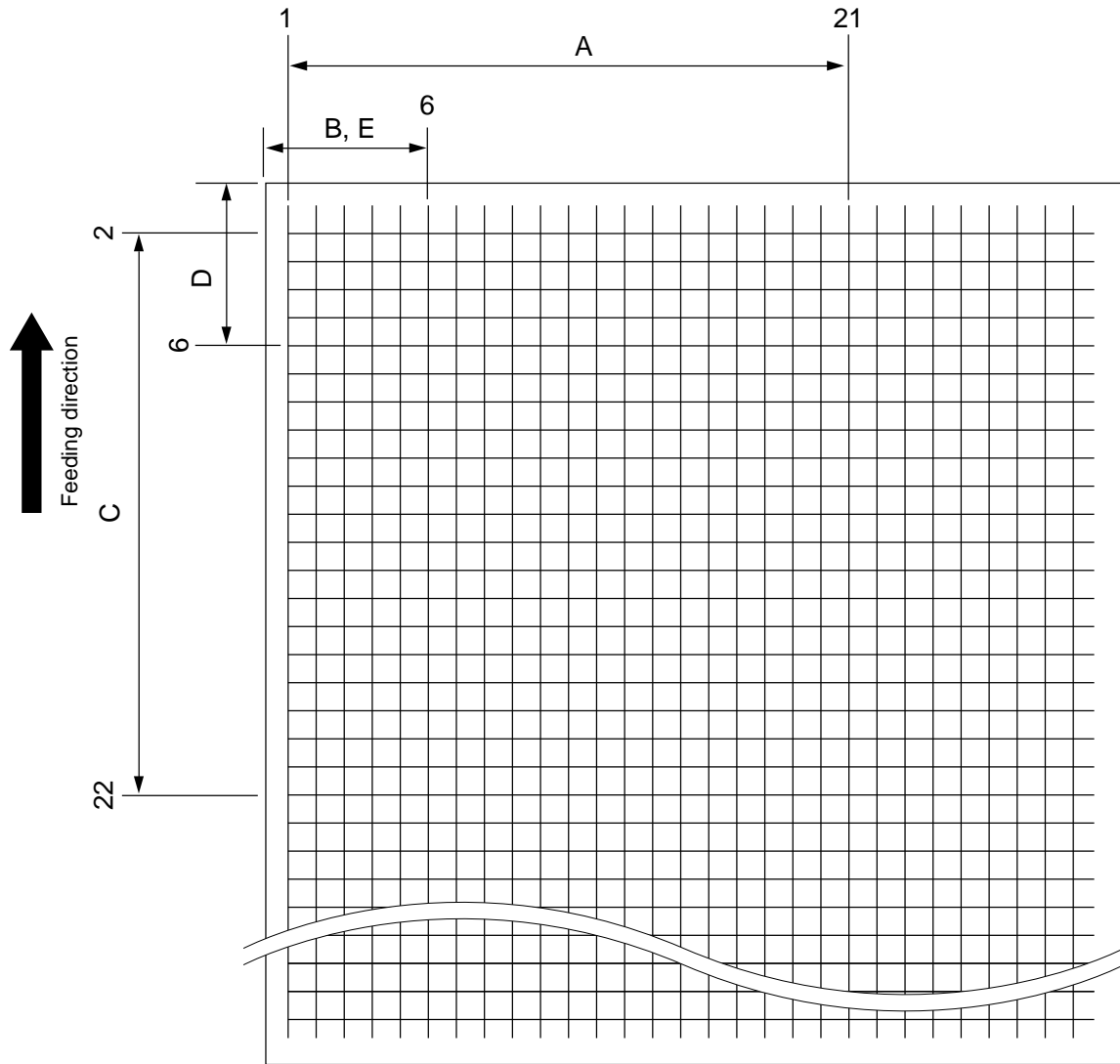


Fig. 3-13

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

[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) → 52 ± 0.5 mm (0.15 mm/step)
	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)
E:	05-498-0 (2nd drawer, A3/LD), → 52 ± 0.5 mm (0.04 mm/step)
	05-498-1 (1st drawer, A4/LT)

3.1.9 Image dimensional adjustment at the scanning section

[A] Image distortion

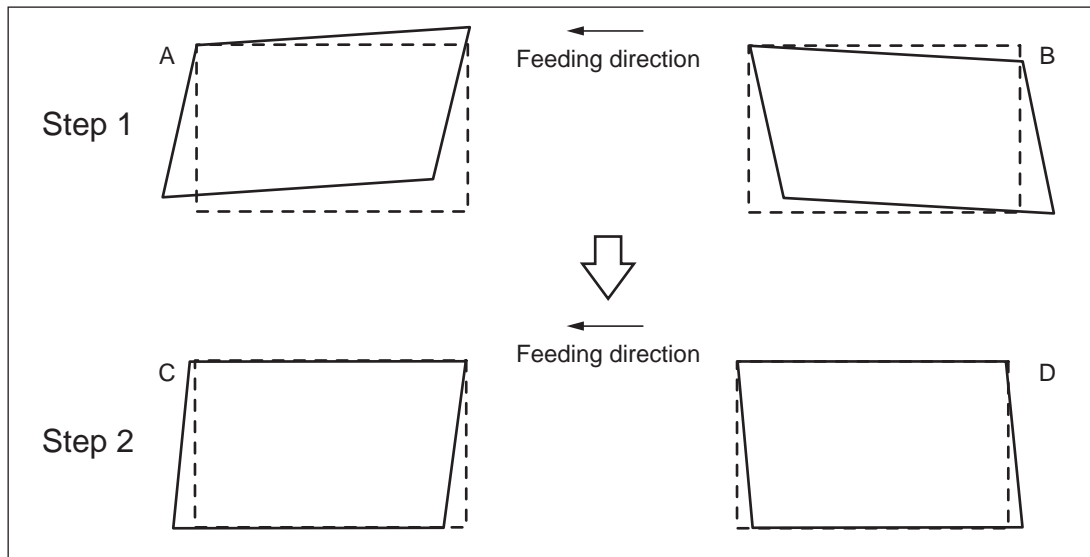


Fig. 3-14

- (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).

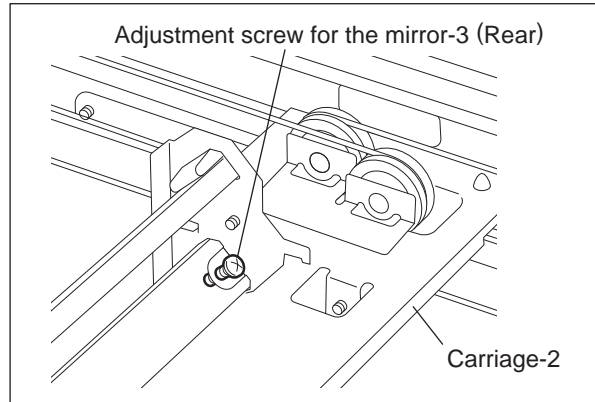


Fig. 3-15

Step 2

In case of C:

Tighten the mirror-1 adjustment screw (CW).

In case of D:

Loosen the mirror-1 adjustment screw (CCW).

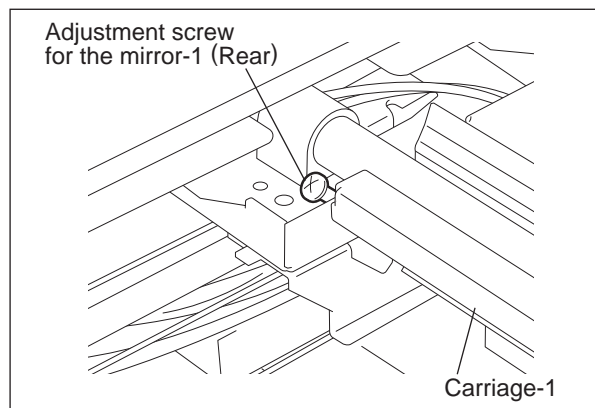


Fig. 3-16

- (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.3-27 " 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).

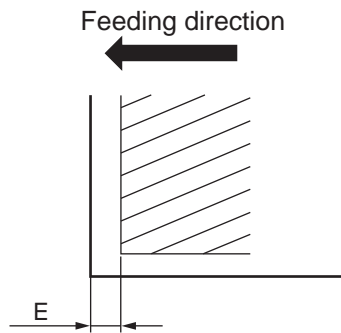


Fig. 3-17

Note:

Paper jams tend to occur in equipment in which thin paper such as 64g/m² (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).

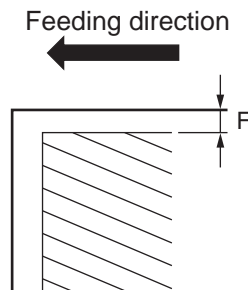


Fig. 3-18

[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).

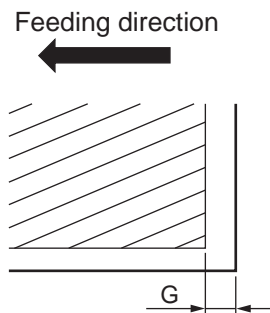


Fig. 3-19

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

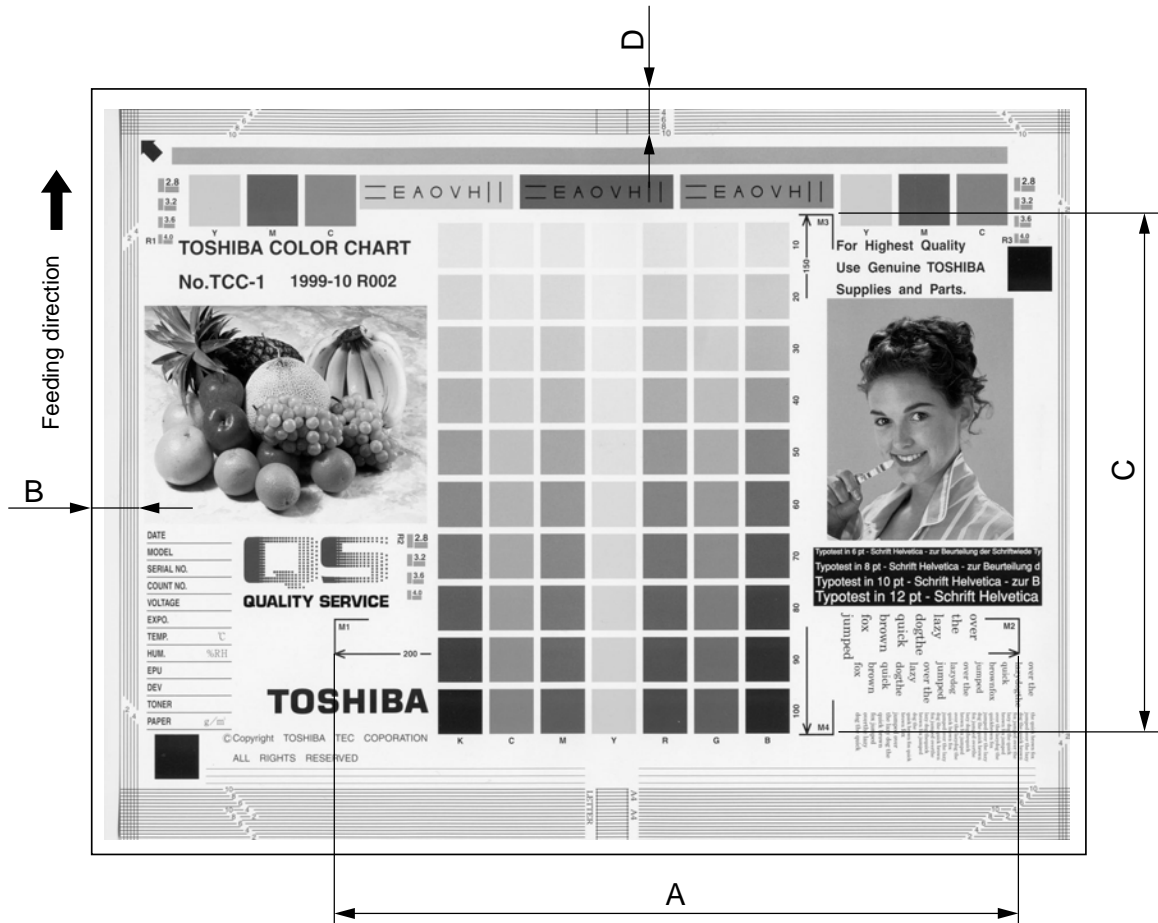


Fig. 3-20

<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

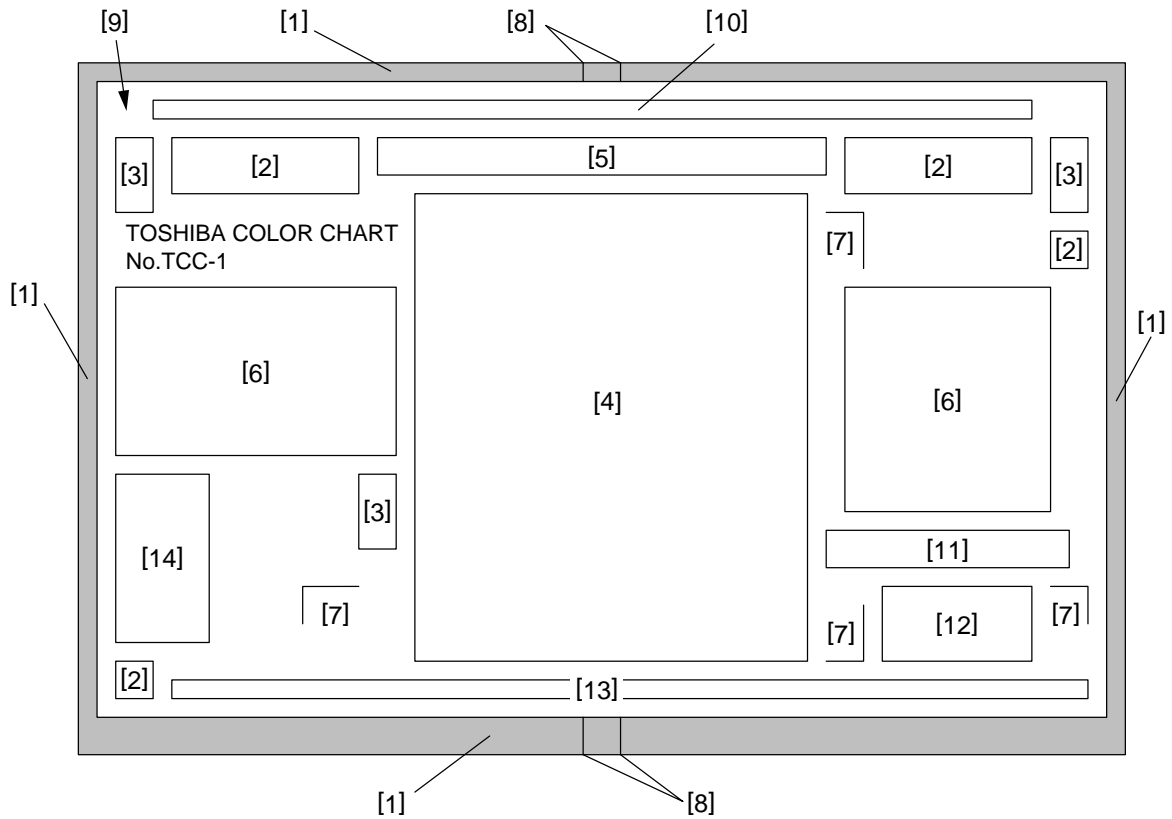


Fig. 3-21

- | | | |
|------|-------------------------------|---|
| [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. |

3.2 Image Quality Adjustment (Copying Function)

3.2.1 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
 - Transfer belt
 - Needle electrode
 - Image quality sensor
 - Developer material
 - 1st transfer roller
 - Main charger grid
 - SRAM board (LGC board, SYS board)
 - Laser optical unit
 - Drum cleaning blade
 - Image position aligning sensor
- (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.3-4 "3.1.3 Performing Image Quality Control (ICQ)" and P.3-8 "3.1.6 Image Dimensional Adjustment".
2. Normally, only the adjustment of color/black integrated pattern is needed. When the adjustment of P.3-39 "3.2.11 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.

3.2.2 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.3-29 "3.2.1 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).

3.2.3 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.3-29 "3.2.1 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).

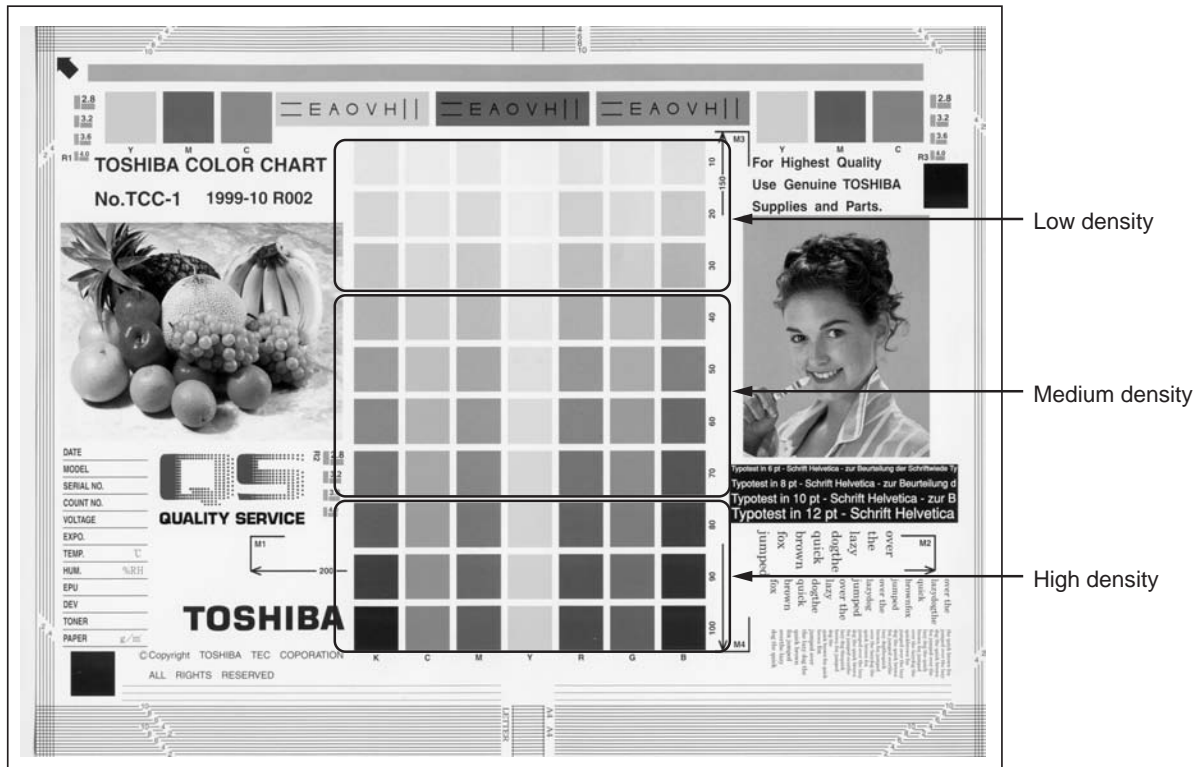


Fig. 3-22

3.2.4 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 custom		
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.3-29 "3.2.1 Automatic gamma adjustment".

<Procedure>

The procedure is the same as that of  P.3-32 "3.2.3 Color balance adjustment".

3.2.5 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 custom	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.3-31 "3.2.2 Density adjustment".

3.2.6 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.3-31 "3.2.2 Density adjustment".

3.2.7 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*	<ul style="list-style-type: none"> 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	
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.3-31 "3.2.2 Density adjustment".

3.2.8 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	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.3-31 "3.2.2 Density adjustment".

3.2.9 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.3-31 "3.2.2 Density adjustment".

3.2.10 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).

3.2.11 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.

3.2.12 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.3-31 "3.2.2 Density adjustment".

3.2.13 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.3-29 "3.2.1 Automatic gamma adjustment".

<Procedure>

The procedure is the same as that of  P.3-31 "3.2.2 Density adjustment".

3.2.14 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.3-31 "3.2.2 Density adjustment".

3.2.15 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.3-31 "3.2.2 Density adjustment".

3.2.16 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.
	7812	Text	
Full Color	7816	User custom	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

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.3-31 "3.2.2 Density adjustment".

3.2.17 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.3-32 "3.2.3 Color balance adjustment".

3.2.18 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)

3.2.19 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	

3.3 Image Quality Adjustment (Printing Function)

3.3.1 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.

- When unpacking or any of the following parts has been replaced, be sure to make this adjustment:
 - Photoconductive drum
 - Transfer belt
 - Needle electrode
 - Image quality sensor
 - Developer material
 - 1st transfer roller
 - Main charger grid
 - SRAM board (LGC board, SYS board)
 - Laser optical unit
 - Drum cleaning blade
 - Image position aligning sensor
- 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.3-4 "3.1.3 Performing Image Quality Control (ICQ)" and P.3-8 "3.1.6 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>

- While pressing [0] and [5] simultaneously, turn the power ON. → Adjustment Mode
- 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.


3.3.2 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.3-44 "3.3.1 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.3-44 "3.3.1 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).

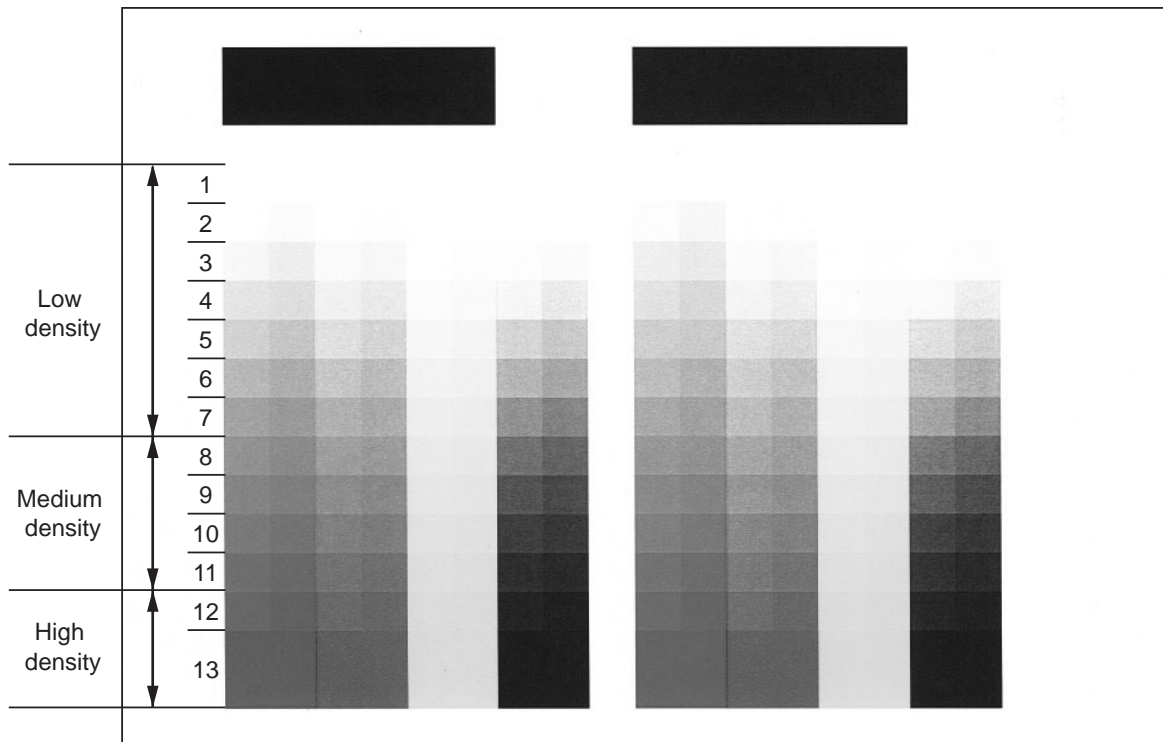


Fig. 3-23


3.3.3 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.3-44 "3.3.1 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.3-46 "3.3.2 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.3-44 "3.3.1 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.3-47 "Fig. 3-23")).

3.3.4 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).


3.3.5 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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.6 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.3-49 "3.3.4 Adjustment of faint text".

Note:


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

3.3.7 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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.8 "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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.9 “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.3-49 "3.3.4 Adjustment of faint text".

3.3.10 “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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.11 “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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.12 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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.13 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.3-49 "3.3.4 Adjustment of faint text".


3.3.14 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)>

monochrome	PS				EFI	Item to be adjusted	Remarks
	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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.3.15 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.3-49 "3.3.4 Adjustment of faint text".

3.3.16 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.3-46 "3.3.2 Gamma balance adjustment (Black Mode)".

3.4 Image Quality Adjustment (Scanning Function)

3.4.1 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).

3.4.2 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)>

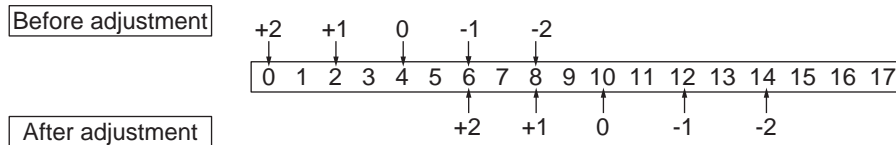
Black				Gray Scale	Item to be adjusted	Remarks
Original mode						
Text/Photo	Text	Photo	User custom			
845	846	847	7475	848	Manual density center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255 (Default: 128)
860	861	862	7478	863	Automatic density	

<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).

3.4.3 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).

3.4.4 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.3-55 "3.4.2 Density adjustment".

3.4.5 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	<ul style="list-style-type: none">• 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.3-55 "3.4.2 Density adjustment".

3.4.6 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	8334	Range correction (Automatic density adjustment)	0: Background peak - fixed 1: Background peak - varied
8361	8362	8363	8365	8365	Range correction (Manual density adjustment)	

<Procedure>

The procedure is the same as that of  P.3-55 "3.4.2 Density adjustment".

3.4.7 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).

3.4.8 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).

3.4.9 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.
8326	Printed Image	The smaller the value is, the duller the image becomes.
8327	Photo	Acceptable values: 0 to 255 (Default: 128)
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).

3.4.10 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.3-55 "3.4.2 Density adjustment".

3.5 Image Quality Adjustment (FAX Function)

3.5.1 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.

3.5.2 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.

3.6 Adjustment of the Process unit Related Section

3.6.1 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.

3.7 Adjustment of the Scanner Section

3.7.1 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.

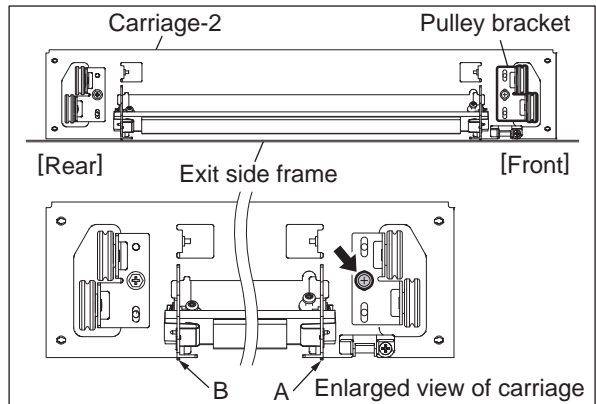


Fig. 3-24

- (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.

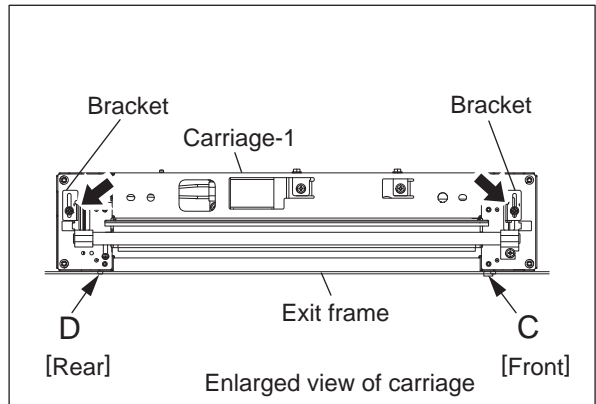


Fig. 3-25

3.7.2 Belt tension adjustment of the Scan motor

- (1) Hook the belt tension jig to the motor bracket and the frame.
- (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.

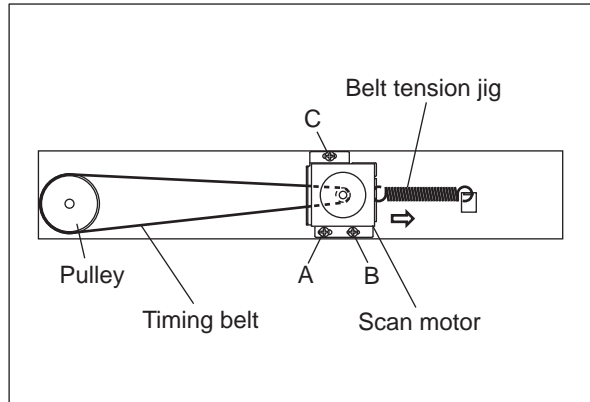


Fig. 3-26

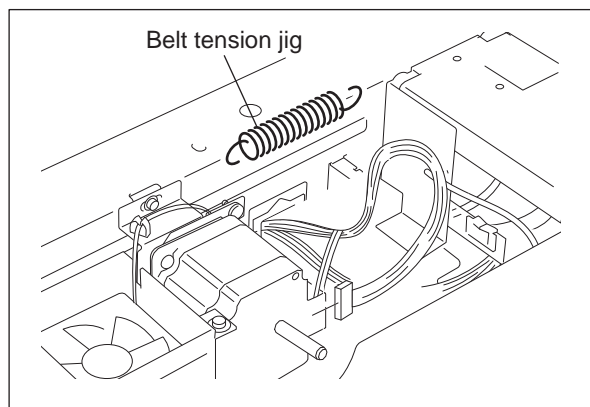


Fig. 3-27

3.8 Adjustment of the Paper Feeding System

3.8.1 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).

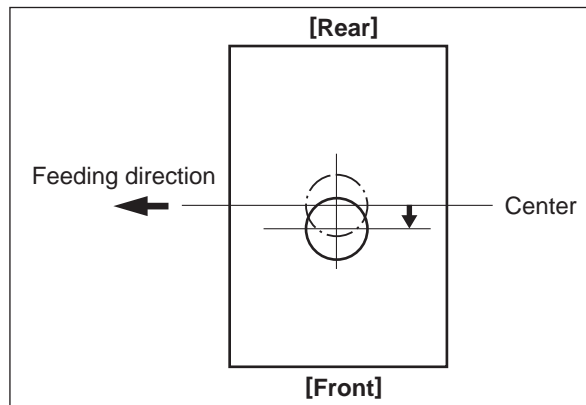


Fig. 3-28

- 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).

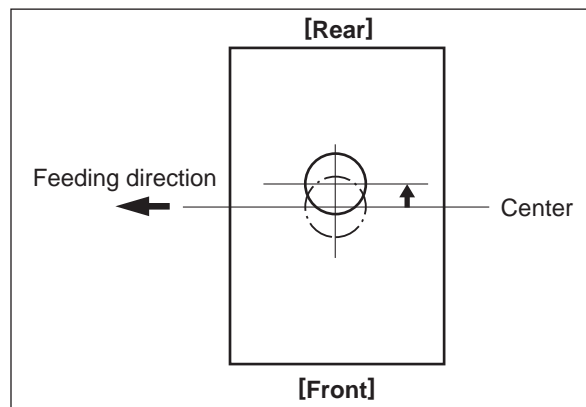


Fig. 3-29

- Bypass feeding

1. Loosen the screen.
2. Move the entire guide to the front or rear side.
3. Tighten the screw.

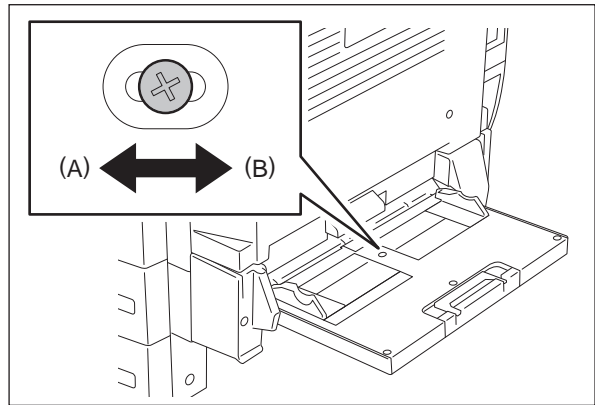


Fig. 3-30

- 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.

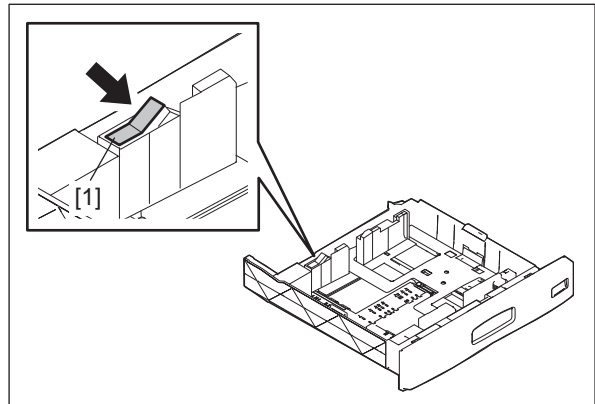


Fig. 3-31

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.)

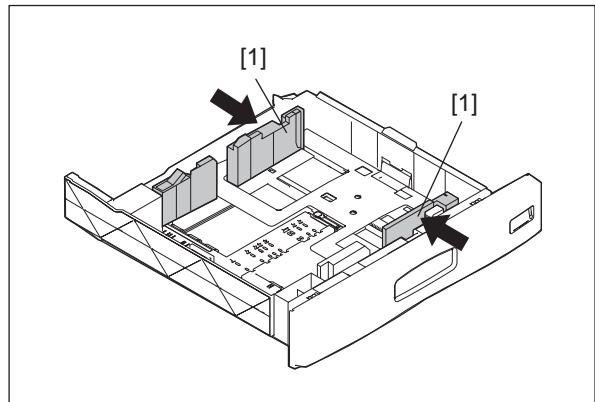


Fig. 3-32

- 3. Rotate 2 screws about half a turn to loosen them.

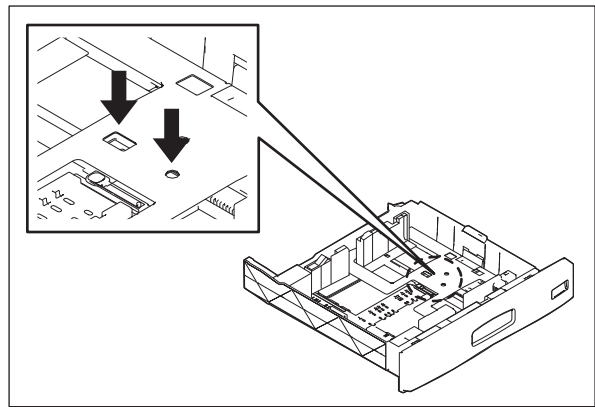


Fig. 3-33

- 4. Pull down the protrusion indicated by the arrow and shift it in the specified direction.

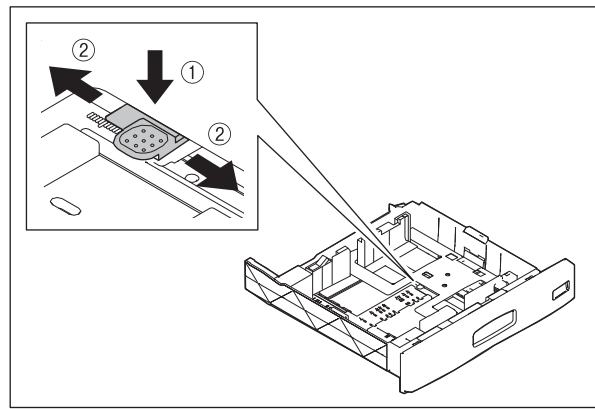


Fig. 3-34

- 5. Tighten 2 screws.

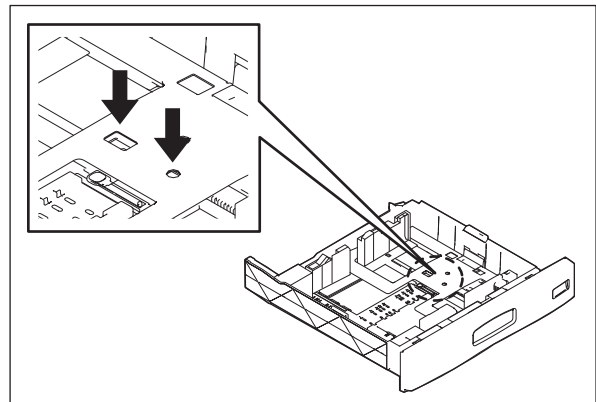


Fig. 3-35

3.9 Adjustment of the developer unit

3.9.1 Adjustment of the Auto-Toner Sensor

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

📖 P.3-2 "3.1.2 Adjustment of the Auto-Toner Sensor"

3.9.2 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.
📖 Service Manual "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.

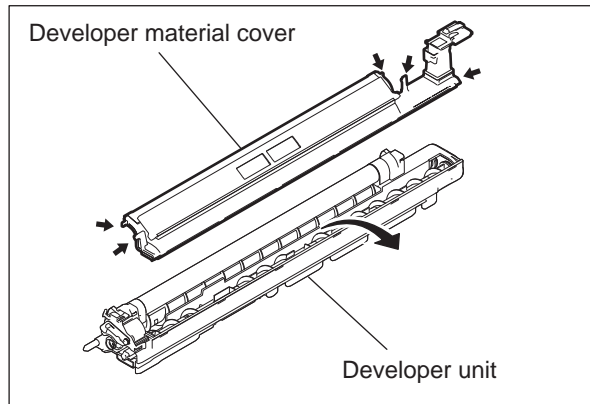


Fig. 3-36

- (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.

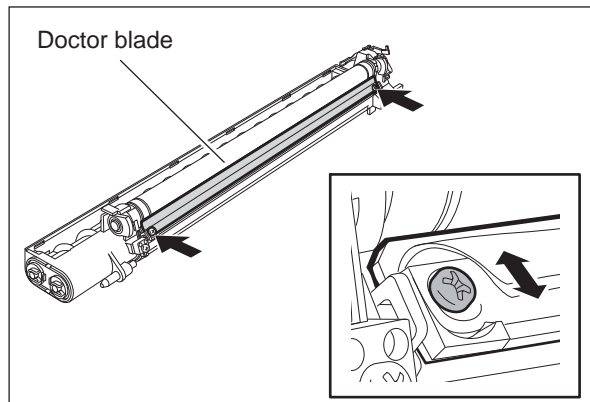


Fig. 3-37

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.

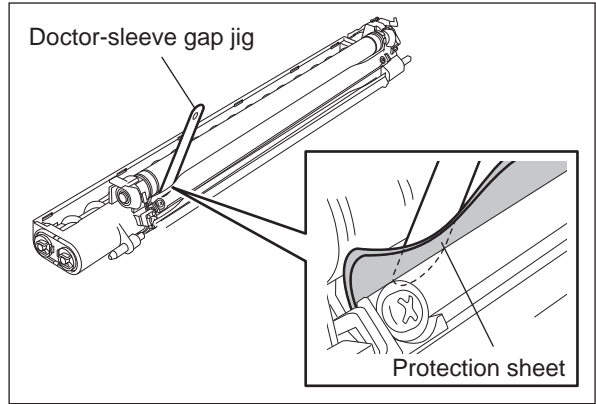


Fig. 3-38

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.

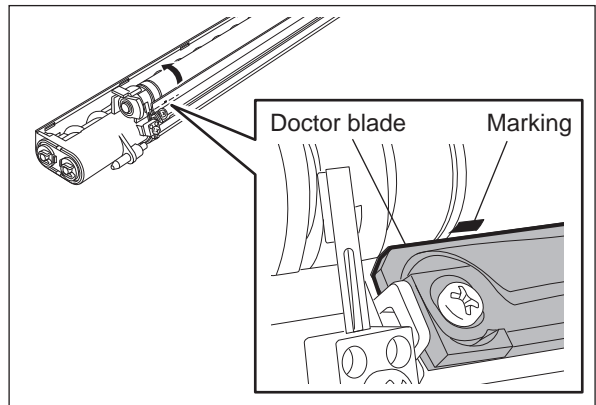


Fig. 3-39

(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.

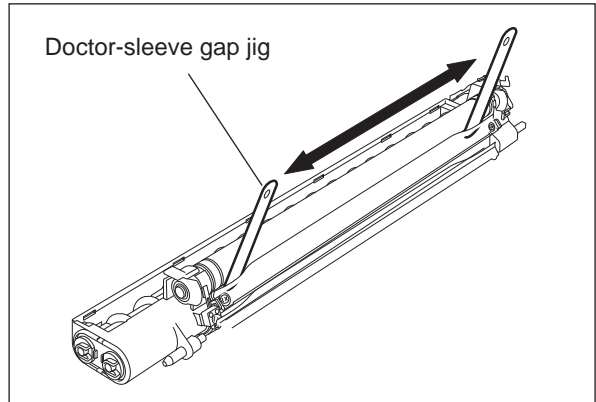


Fig. 3-40

3.10 Adjustment of the Transfer Unit

3.10.1 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.

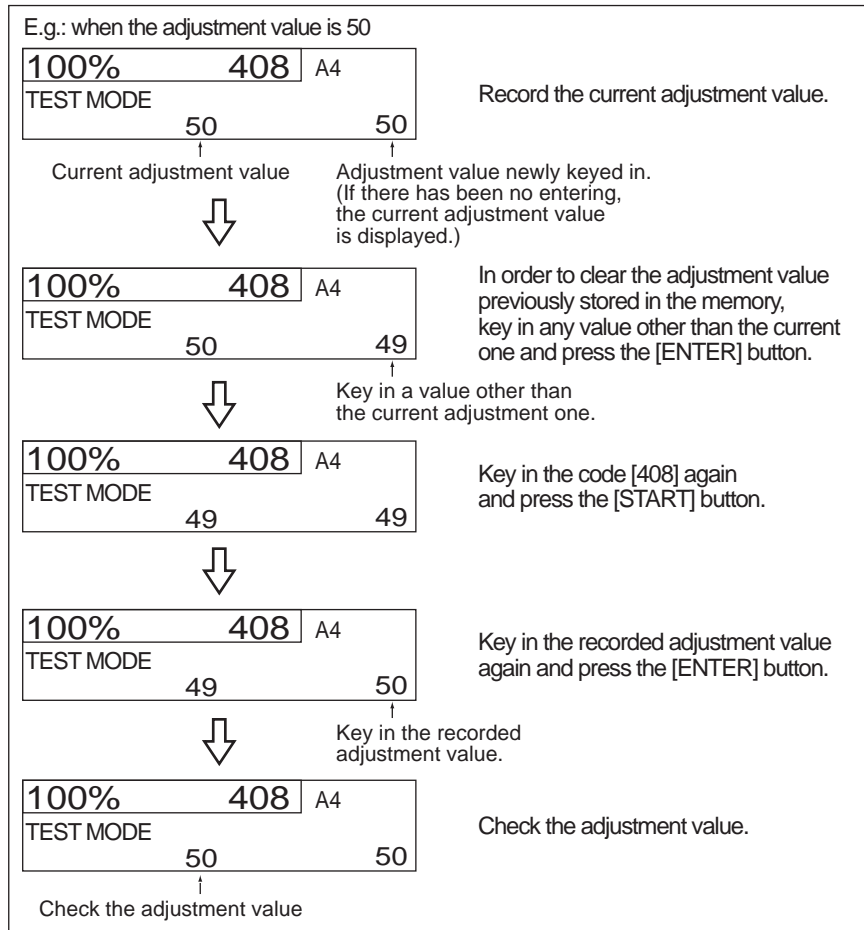


Fig. 3-41

- (12) Turn the power OFF.

3.10.2 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.)

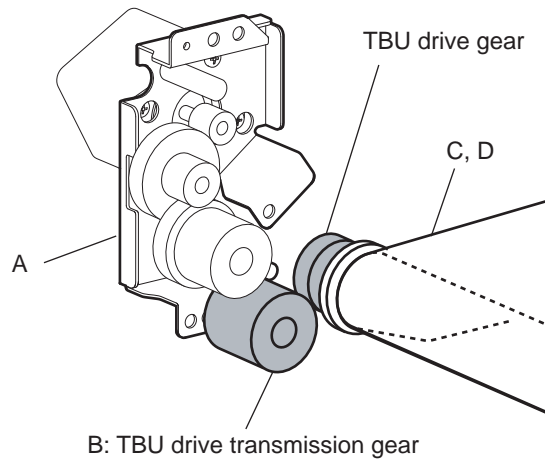


Fig. 3-42

<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.

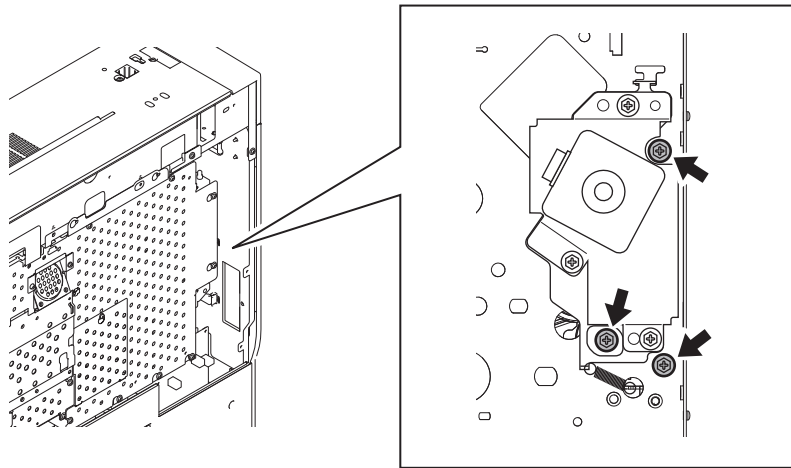


Fig. 3-43

3.11 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

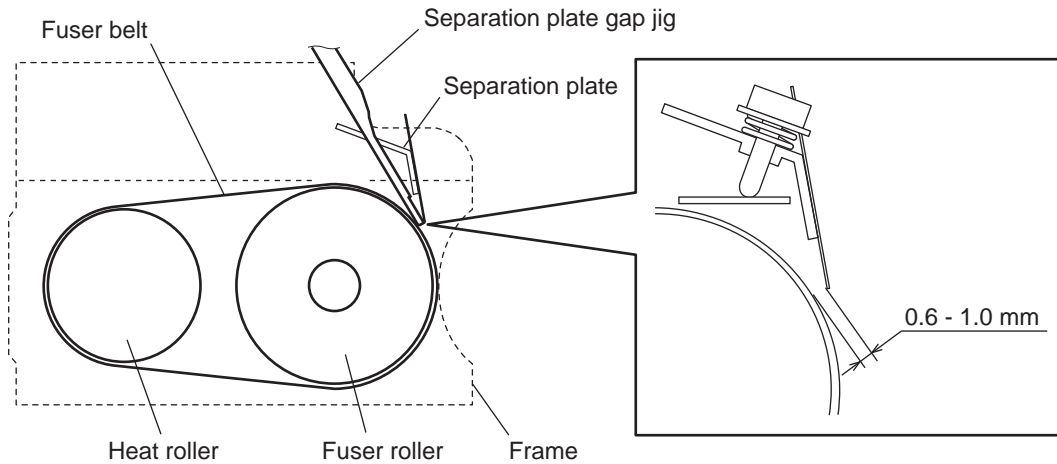


Fig. 3-44

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.
 - 📖 Service Manual "16.6.2 Front side cover"
 - 📖 Service Manual "16.6.4 Heat roller cover"
 - 📖 Service Manual "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.

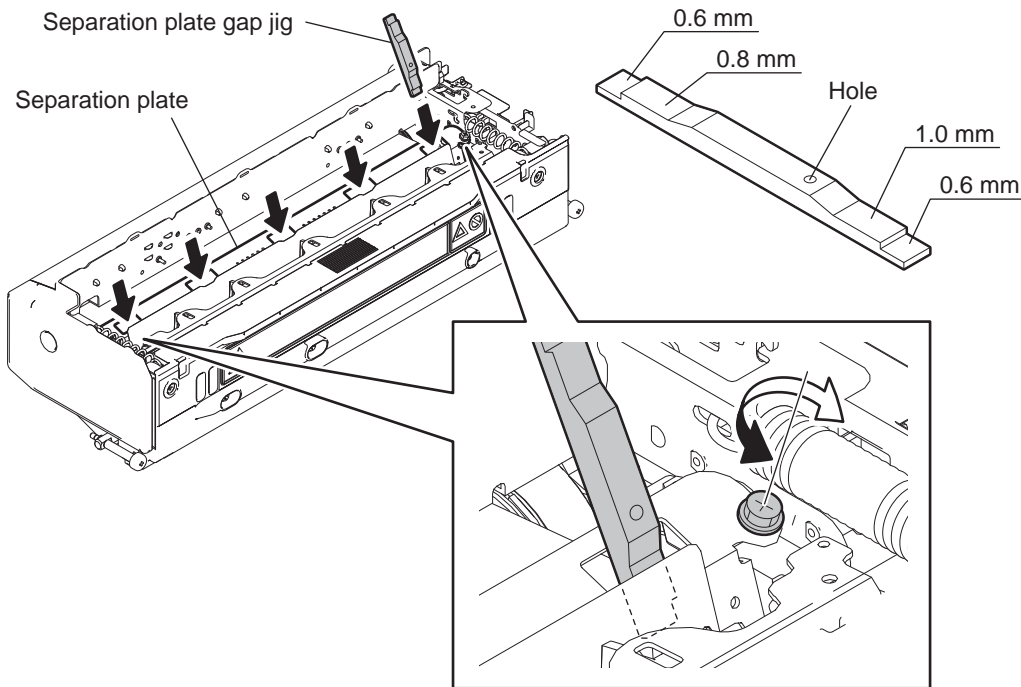


Fig. 3-45

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/m² (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.

4. BACKUP FUNCTION

4.1 Data Cloning

4.1.1 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.

4.1.2 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

4.1.3 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>

Version: VTD05.022
Serial Number: CAK700239
Date: MON MAR 17 18:34:40 2008

Fig. 4-1

- File format (user_data.txt, setting_data.txt, sram_data.txt: all in common)
 - Line 1: Version
 - Line 2: Serial number
 - Line 3: Date

4.1.4 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

4.1.5 Cloning procedure

[A] Backup procedure

- (1) Shut down the equipment.
- (2) Connect the USB media to the USB port on the right upper cover.

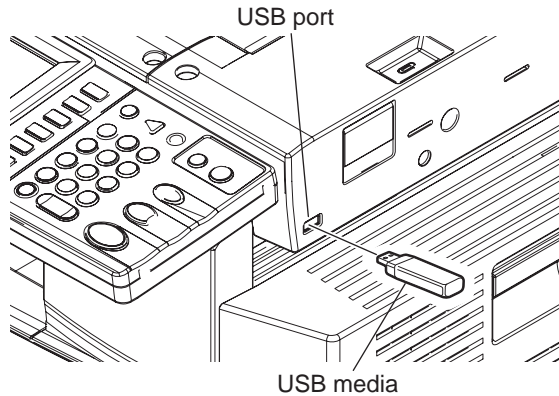


Fig. 4-2

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

Select No.	rootusb	version X.XX
	clone_xx_xxxxx_xxx	version X.XX
1: User Data Back Up		
2: User Data Restore		
3: Setting Back Up		
4: Setting Restore		
5: SRAM Data Back Up		
6: SRAM Data Restore		

Fig. 4-3

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.

User Data Backup
1: Address Book
2: Mail Boxes
3: Template
*4: Combined
*5: Department Code
*6: User Info
*7: Role Info

Fig. 4-4

<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. 4-5

<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. 4-6

- (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.

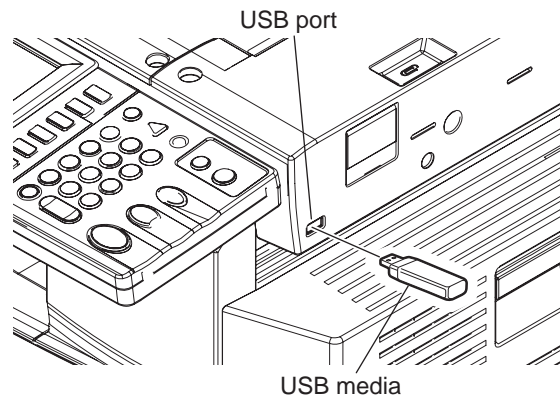


Fig. 4-7

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

Select No.	rootusb	version X.XX
	clone_xx_xxxxx_xxx	version X.XX
1: User Data Back Up		
2: User Data Restore		
3: Setting Back Up		
4: Setting Restore		
5: SRAM Data Back Up		
6: SRAM Data Restore		

Fig. 4-8

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.

<p>User Data Restore</p> <p>1: Address Book</p> <p>2: Mail Boxes</p> <p>3: Template</p> <p>*4: Combined</p> <p>*5: Department Code</p> <p>*6: User Info</p> <p>*7: Role Info</p>
--

Fig. 4-9

<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.

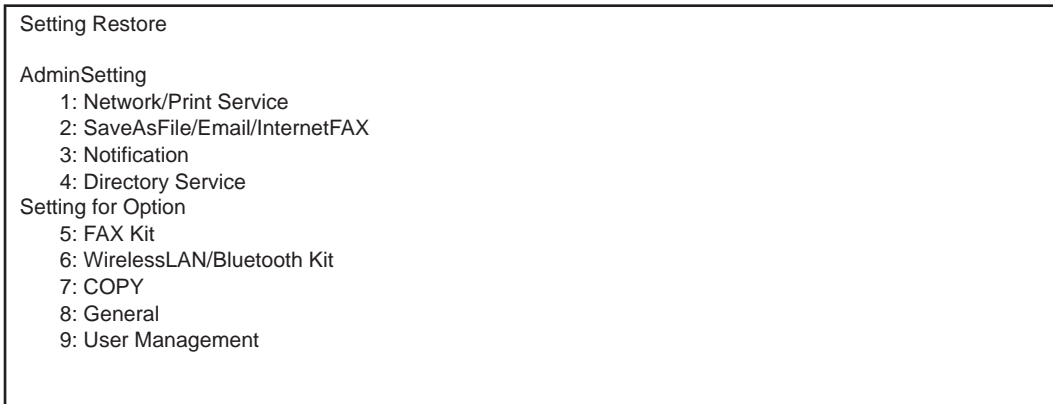


Fig. 4-10

<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. 4-11

- (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?

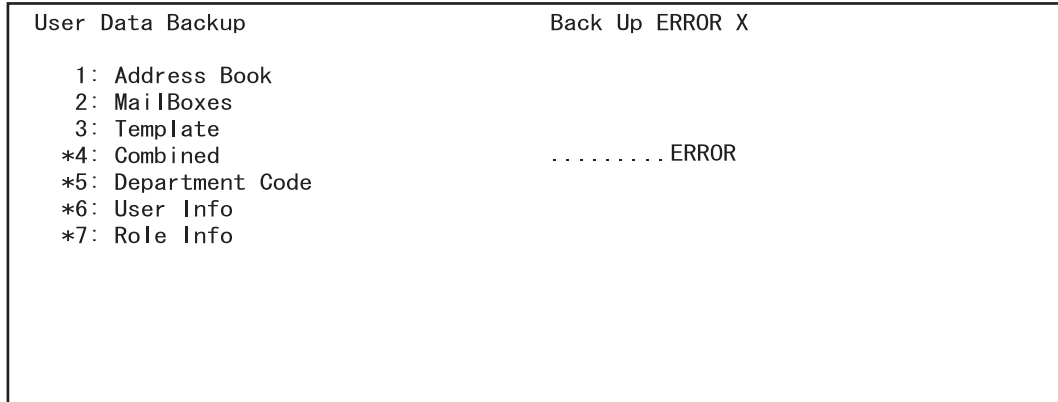


Fig. 4-12

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

4.2 AES Data Encryption Function Setting

4.2.1 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.

4.2.2 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.

4.2.3 Setting procedure

A procedure for setting the data encryption function is shown below.

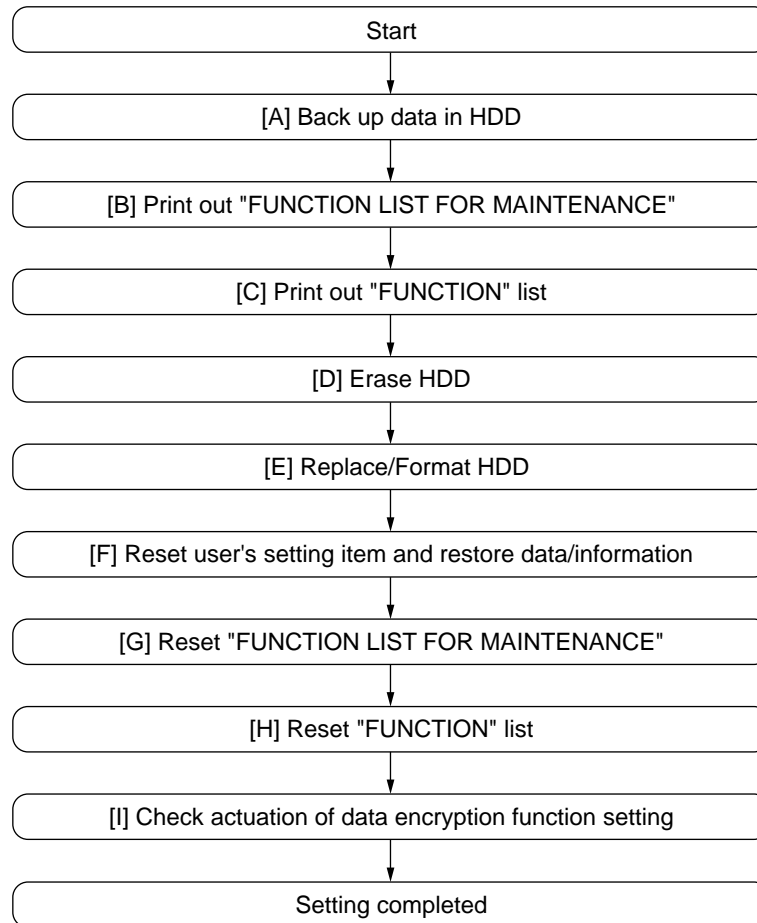


Fig. 4-13

[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.4-16 "[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.4.2.3 [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. 4-14

4.2.4 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.4-17 "[D] Enable data encryption function".

4.2.5 Procedure for discarding HDD when data encryption function is enabled

Set the data encryption function disabled following the procedure shown in P.4-20 "4.2.4 Procedure for disabling data encryption function". Then perform the code 08-1426 (Forcible HDD data clearing) to completely erase the data in the HDD.

4.3 Assist Mode

4.3.1 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 deflection 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.

4.3.2 Operating Procedure of Assist Mode

- (1) Turn ON the power while [3] button and [CLEAR] button are pressed simultaneously.
 - The following screen is displayed.

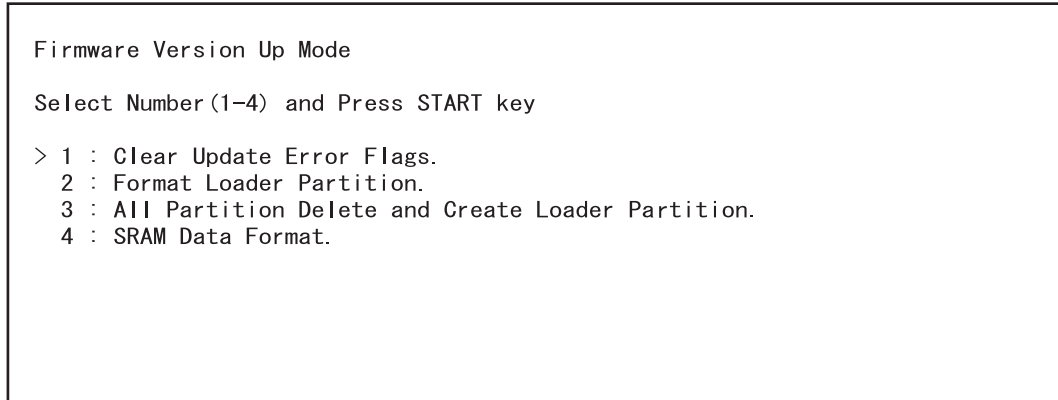


Fig. 4-15

- (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.

5. PREVENTIVE MAINTENANCE (PM)

5.1 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.

5.2 PM Display

5.2.1 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.

5.2.2 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]

5.2.3 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	
	Part (transfer roller)		Developer material		Photoconductive drum	
None	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

5.2.4 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.

5.3 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. 5-1

- 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.

5.4 PM Support Mode

5.4.1 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.

5.4.2 Operational flow

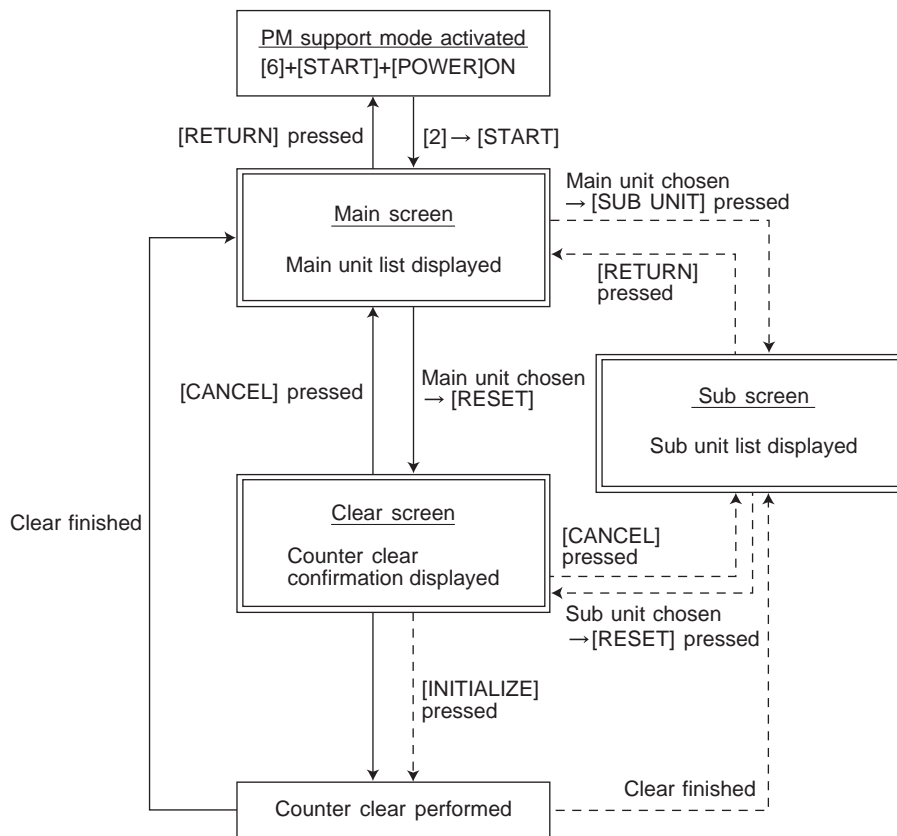


Fig. 5-2

- * 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.

5.4.3 Operational screen

The description of the display (including the function of each button) on the LCD screen is shown below.

1. Main screen

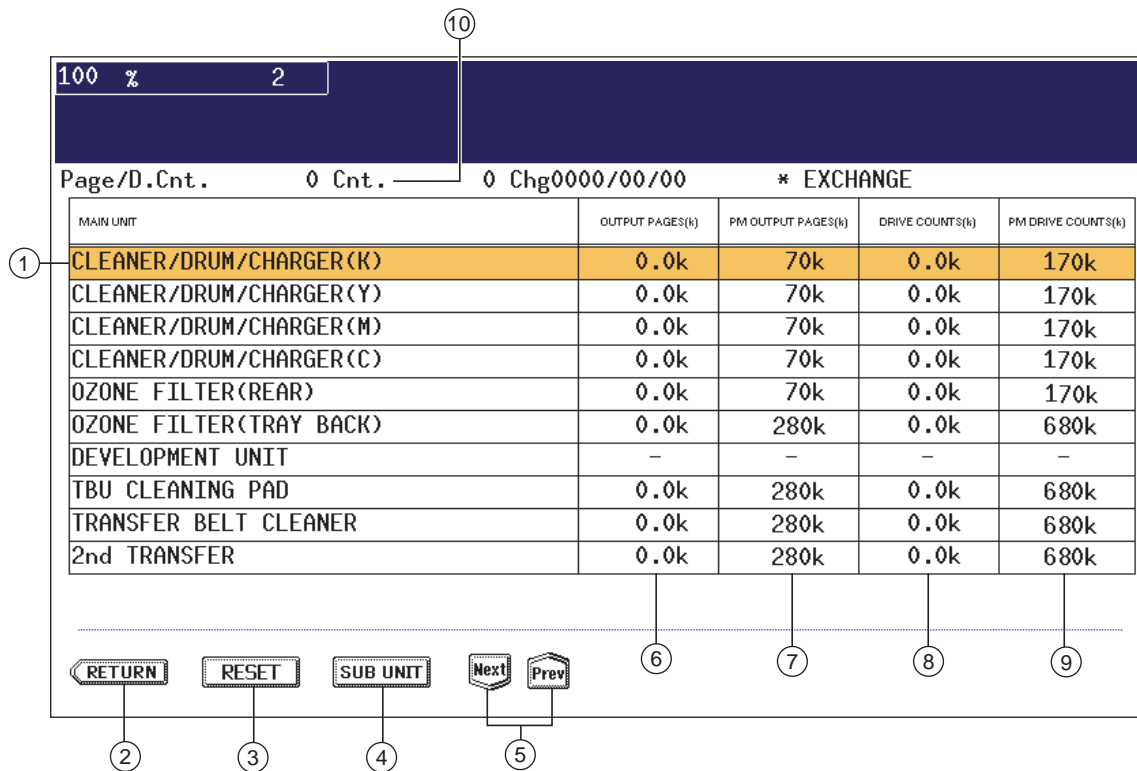


Fig. 5-3

- 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

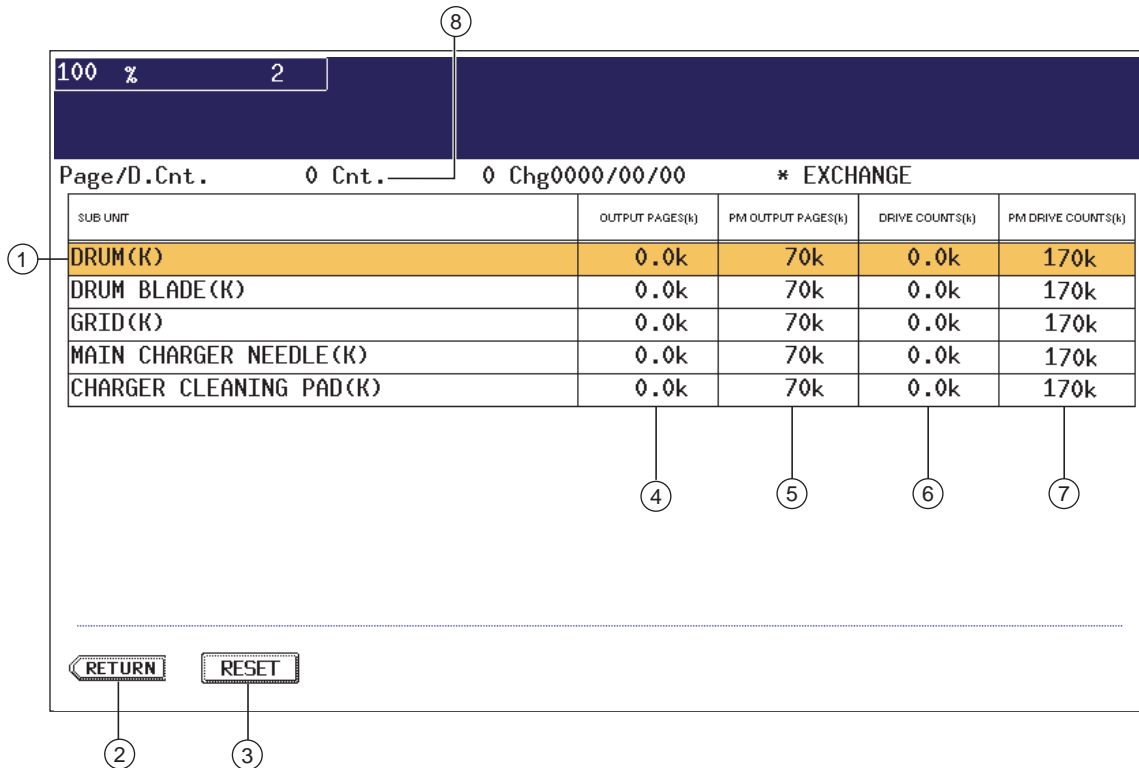


Fig. 5-4

- 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

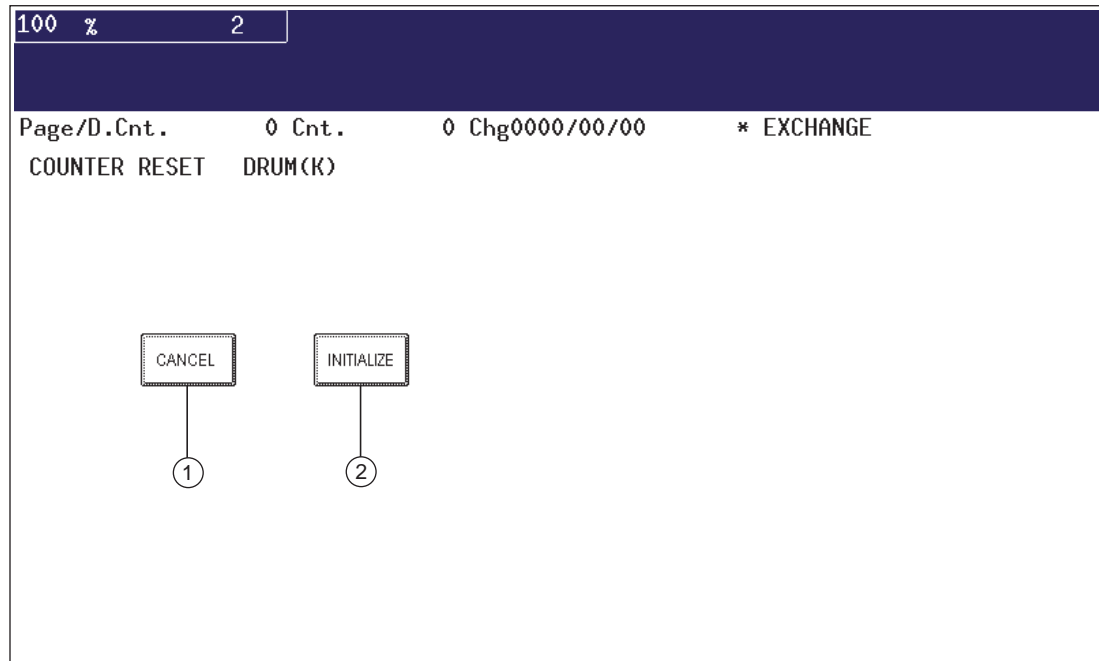


Fig. 5-5

- 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.

5.4.4 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)

5.5 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

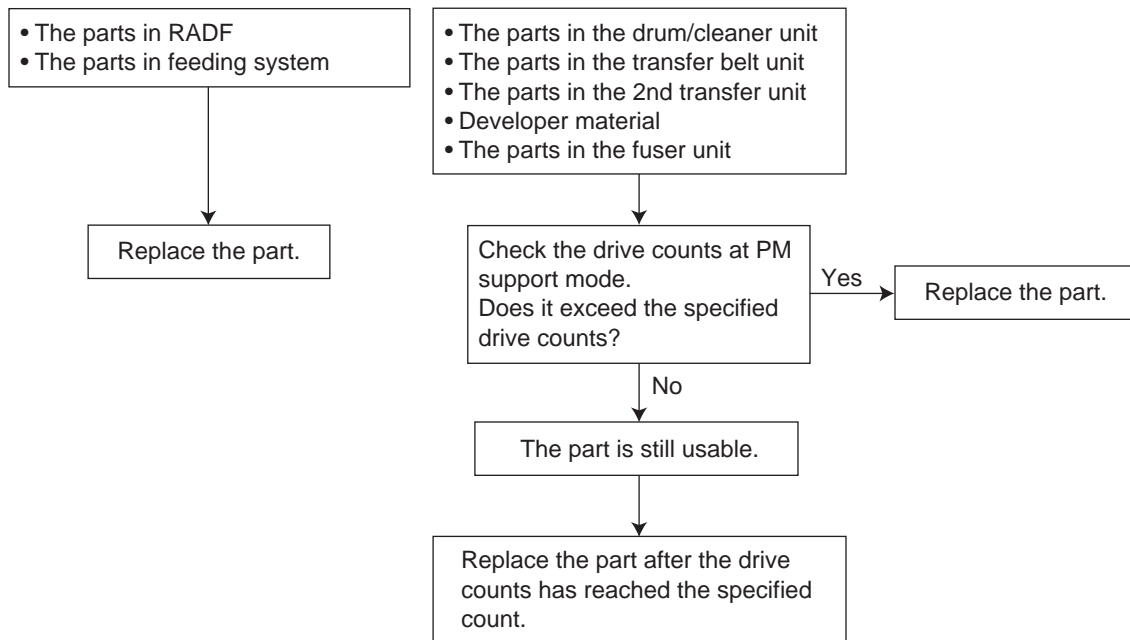


Fig. 5-6

Example 2:

When the image failure occurred before the number of print / develop pages has reached the specified level

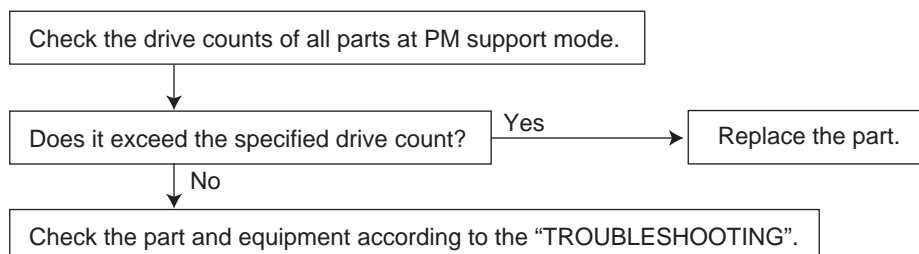


Fig. 5-7

5.6 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-l> represents the page item in "e-STUDIO2020C/2330C/2820C/2830C/3520C/3530C/4520C Service Parts List".

5.6.1 Scanner

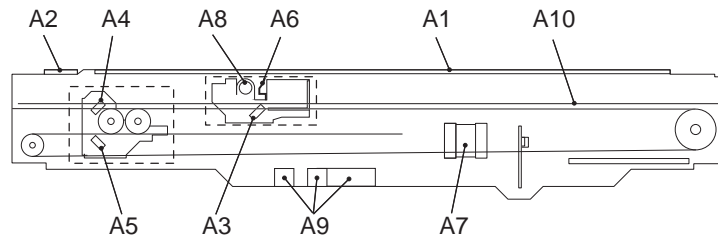


Fig. 5-8

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.

5.6.2 Laser unit

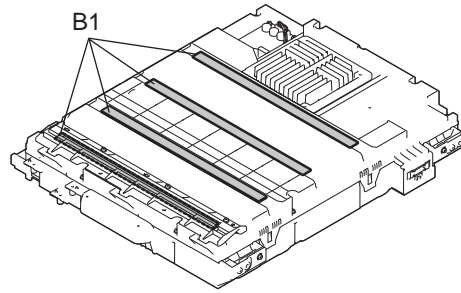


Fig. 5-9

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					

5.6.3 Feed unit

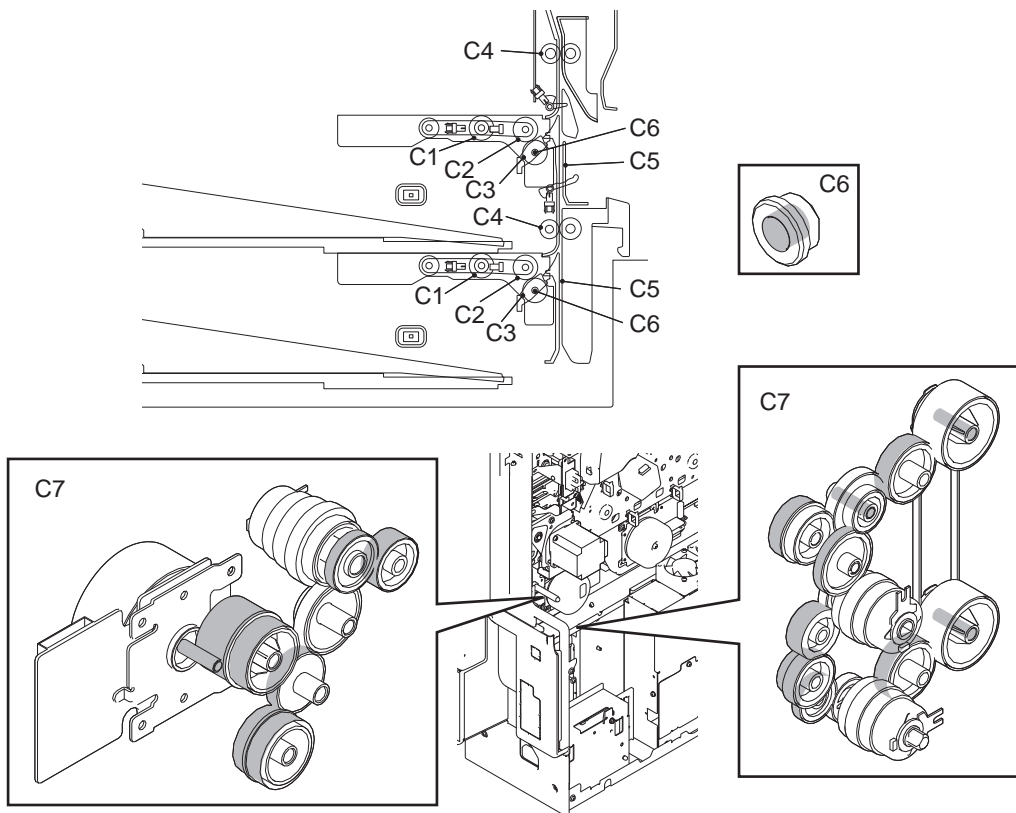


Fig. 5-10

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.

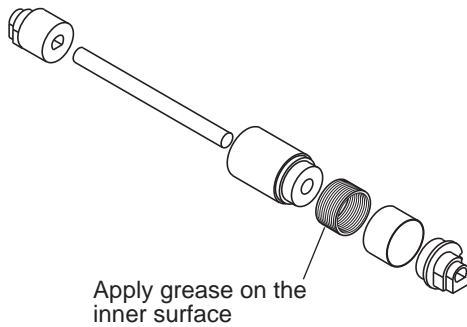


Fig. 5-11

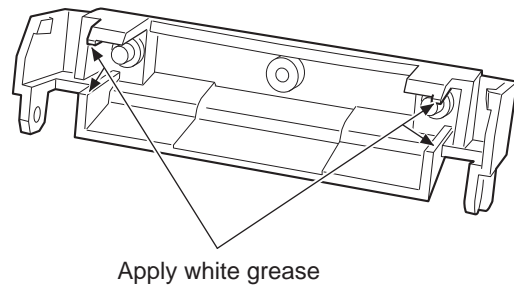


Fig. 5-12

* 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.

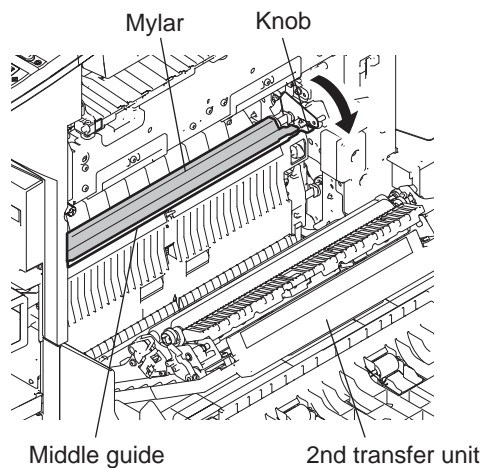


Fig. 5-13

5.6.4 Automatic duplexing unit

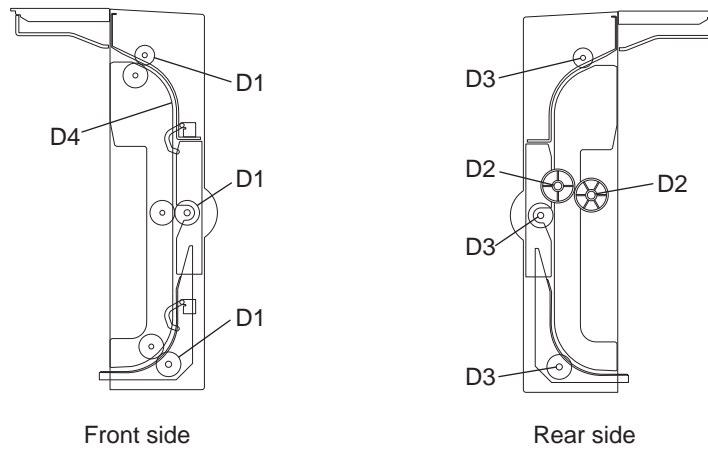


Fig. 5-14

	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

5.6.5 Bypass feed unit

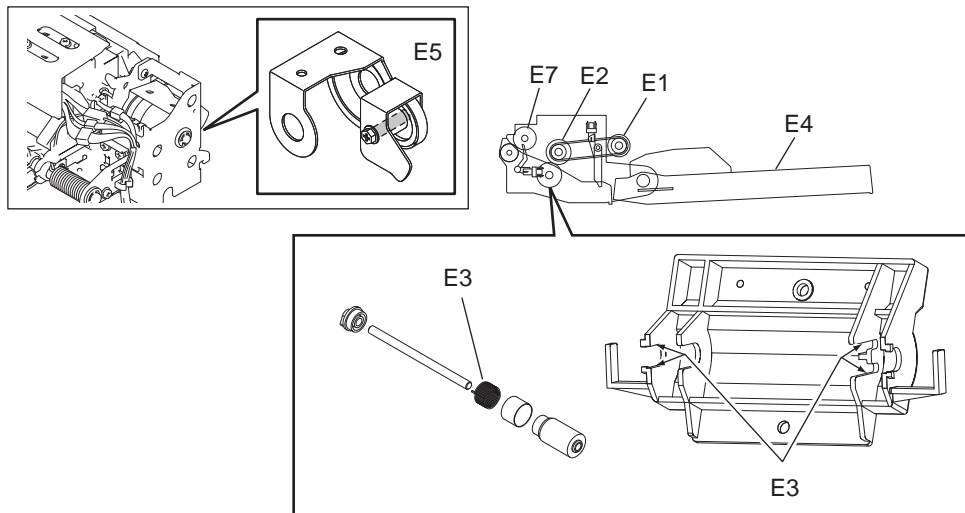


Fig. 5-15

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.

5.6.6 Main charger

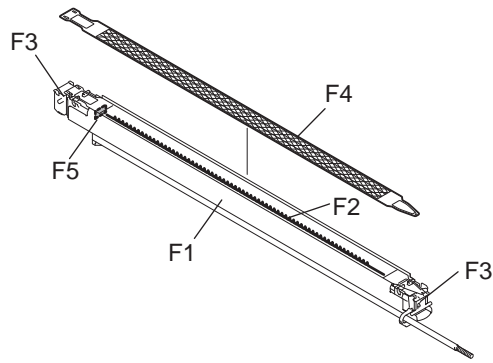


Fig. 5-16

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.

5.6.7 Drum/Cleaner unit, Cleaner related section

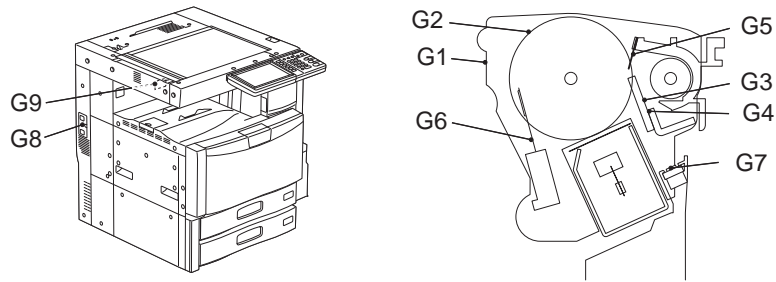


Fig. 5-17

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).

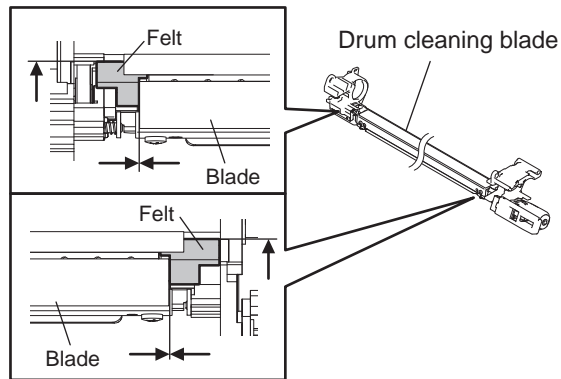


Fig. 5-18

* 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.

5.6.8 Developer unit (K, Y, M, and C)

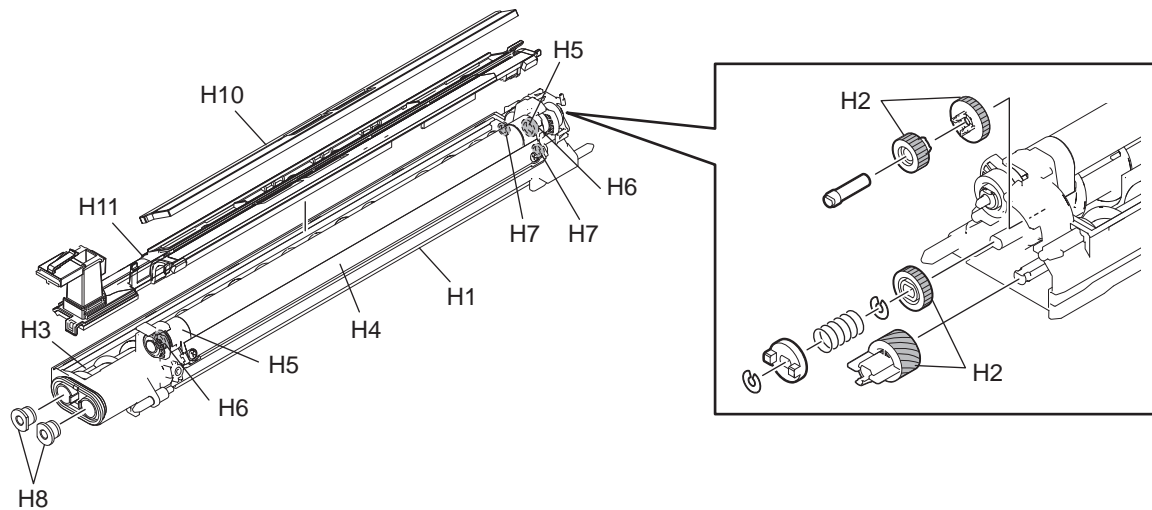


Fig. 5-19

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.

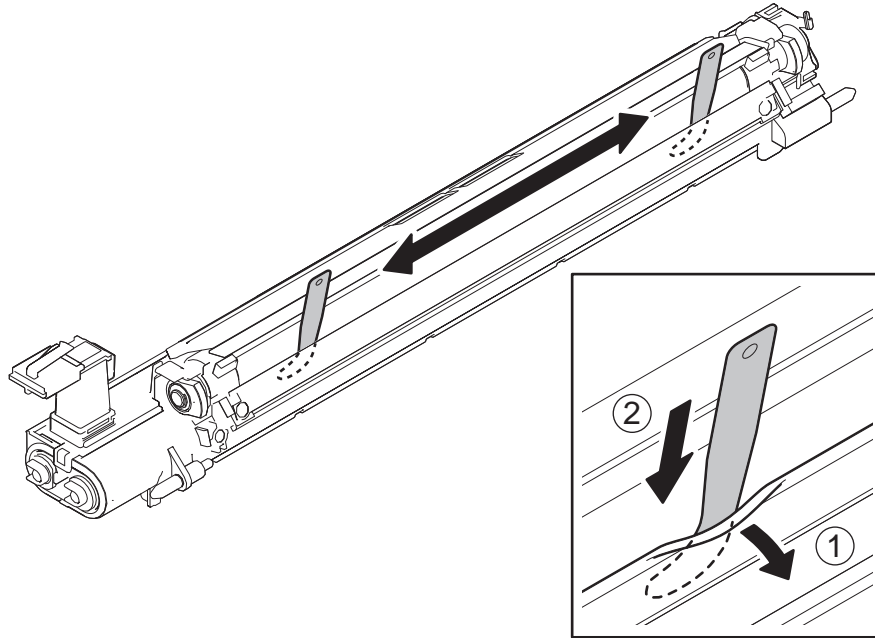


Fig. 5-20

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.

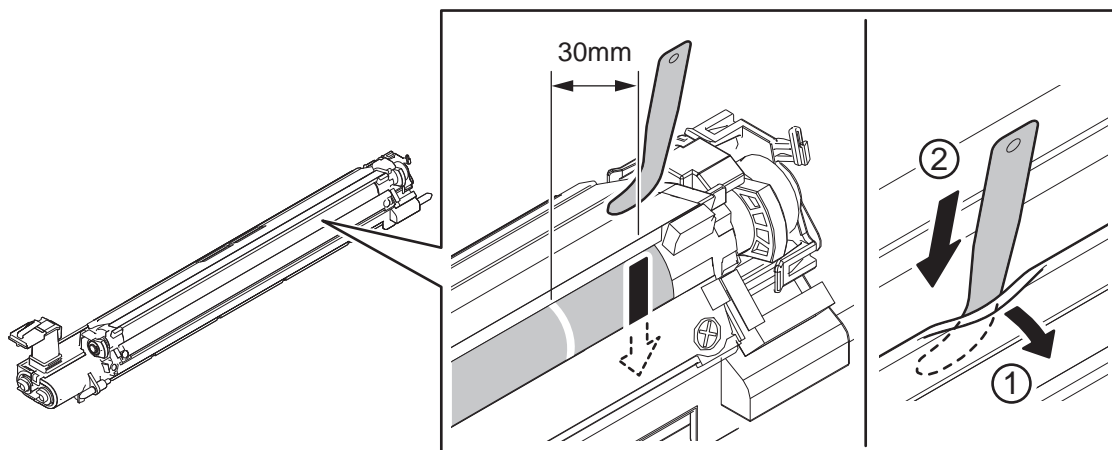


Fig. 5-21

- (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.

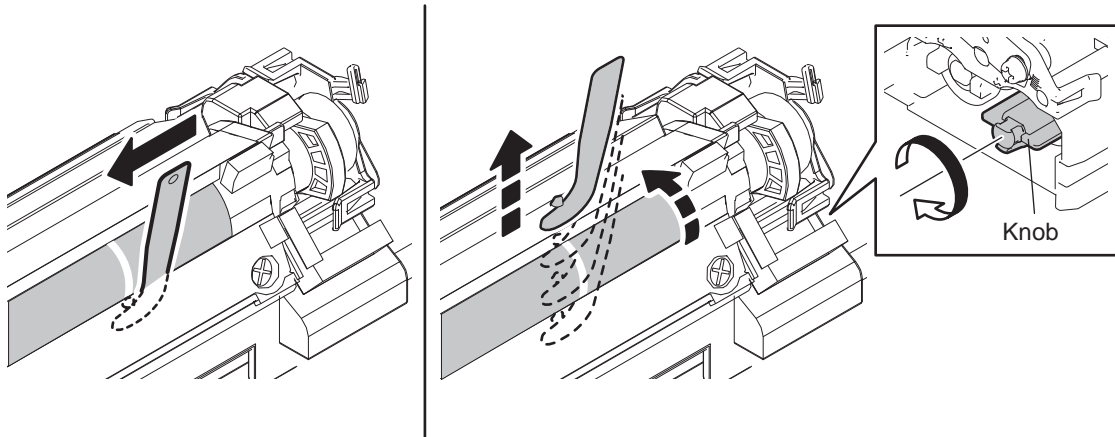


Fig. 5-22

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.

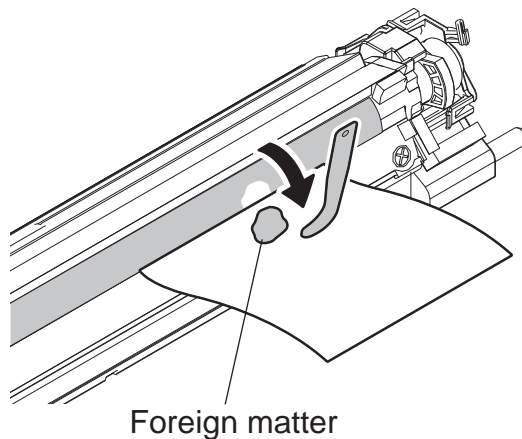


Fig. 5-23

* H3: Developer material

After replacing the developer material, be sure to perform the auto-toner adjustment and then image quality control initialization.

📖 P.3-2 "3.1.2 Adjustment of the Auto-Toner Sensor"

📖 P.3-4 "3.1.3 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.

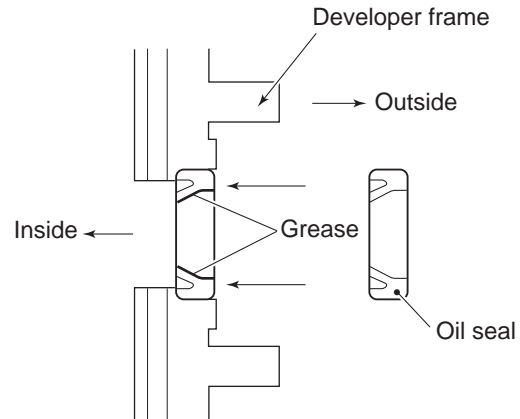


Fig. 5-24

* H9: Auto-toner sensor

Clean the surface of the auto-toner sensor with a cotton swab or soft cloth with sufficient alcohol filled in.

5.6.9 Waste Toner Box

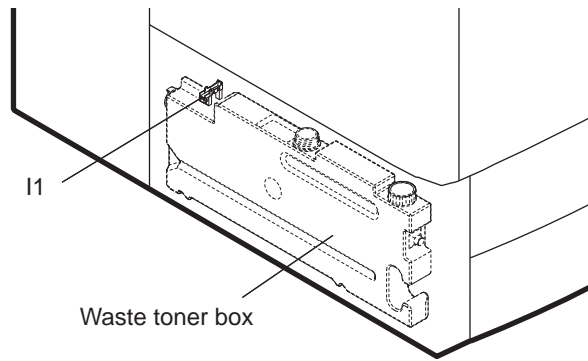


Fig. 5-25

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

5.6.10 Transfer belt unit / Transfer belt cleaning unit

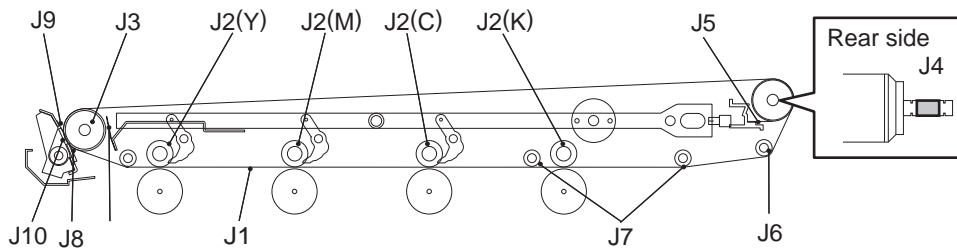


Fig. 5-26

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.

5.6.11 Image quality control unit

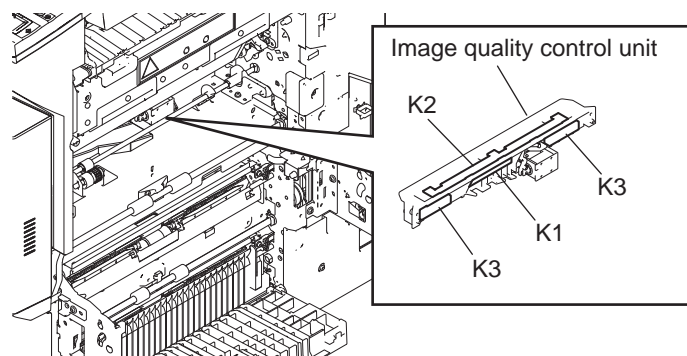


Fig. 5-27

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.

5.6.12 2nd transfer roller unit

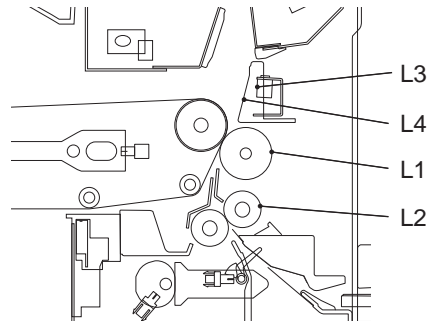


Fig. 5-28

	Items to check	Cleaning	Lubrication/ Coating	Replacement		Operati on 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.

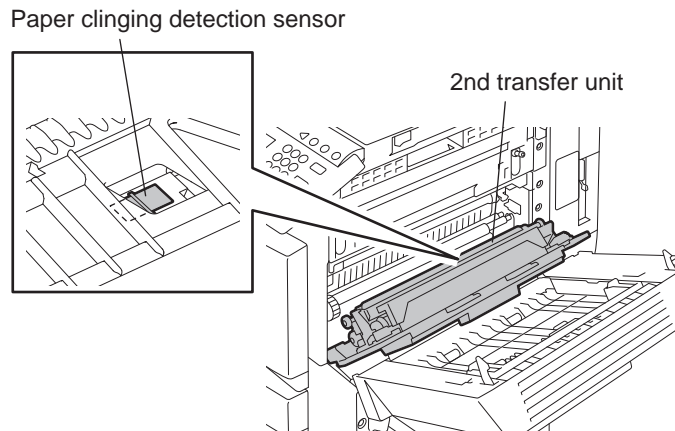


Fig. 5-29

- * 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.

5.6.13 Fuser unit

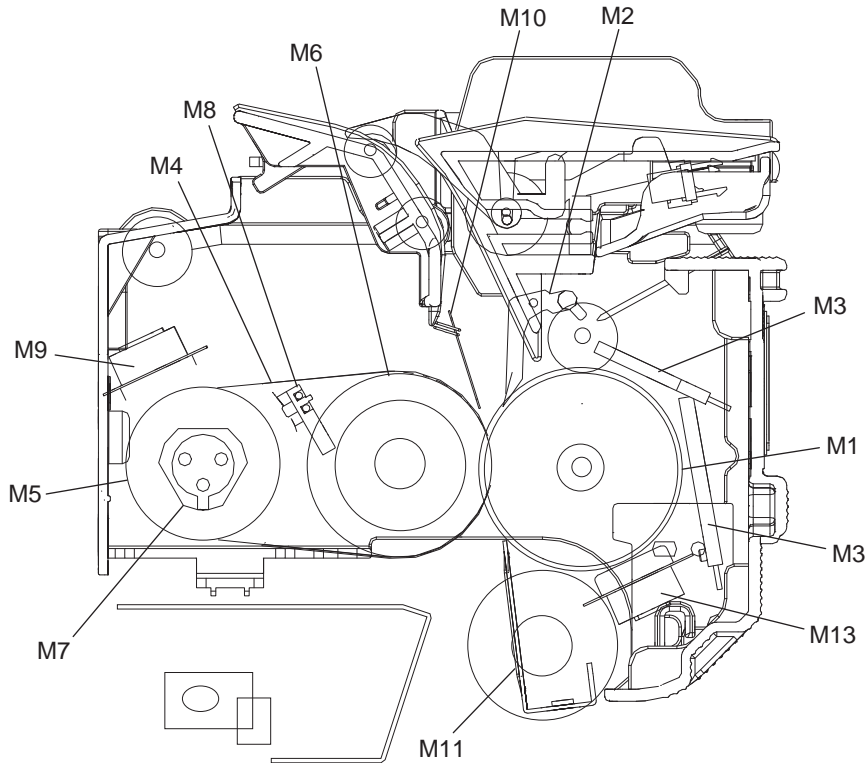


Fig. 5-30

Items to check		Cleaning	Lubrication/ Coating	Replacement		Operati on 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.3-77 "3.11 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

5.6.14 Exit unit

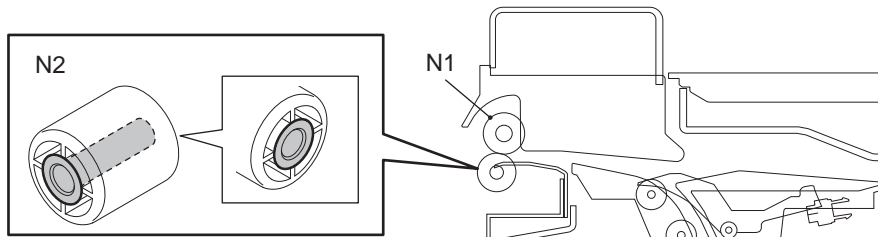


Fig. 5-31

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.

5.6.15 RADF (MR-3018)

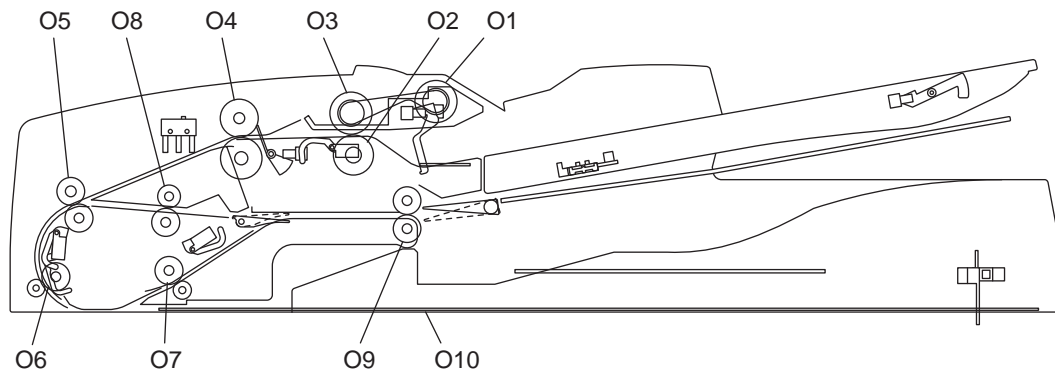


Fig. 5-32

Items to check	Cleaning	Lubrication/ Coating	Replacement		Operati on 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					

5.6.16 PFP (KD-1023)

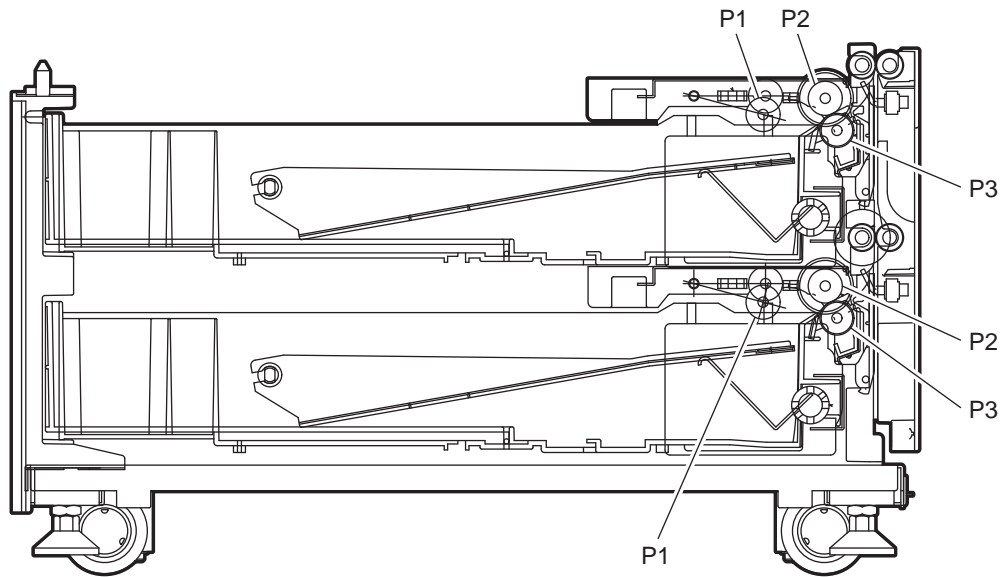


Fig. 5-33

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				

5.6.17 LCF (KD-1024)

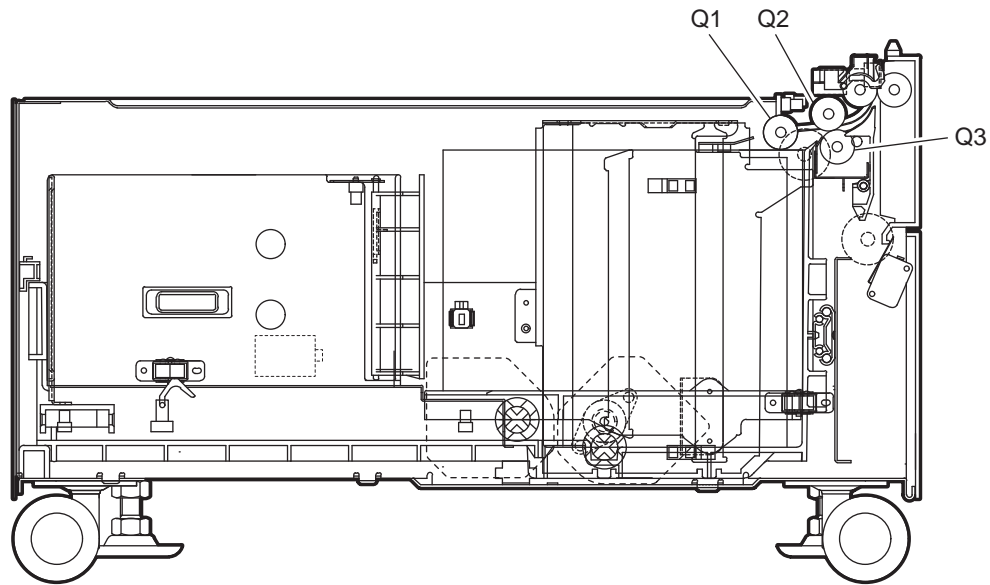


Fig. 5-34

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				

5.7 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.

5.8 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

5.9 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"

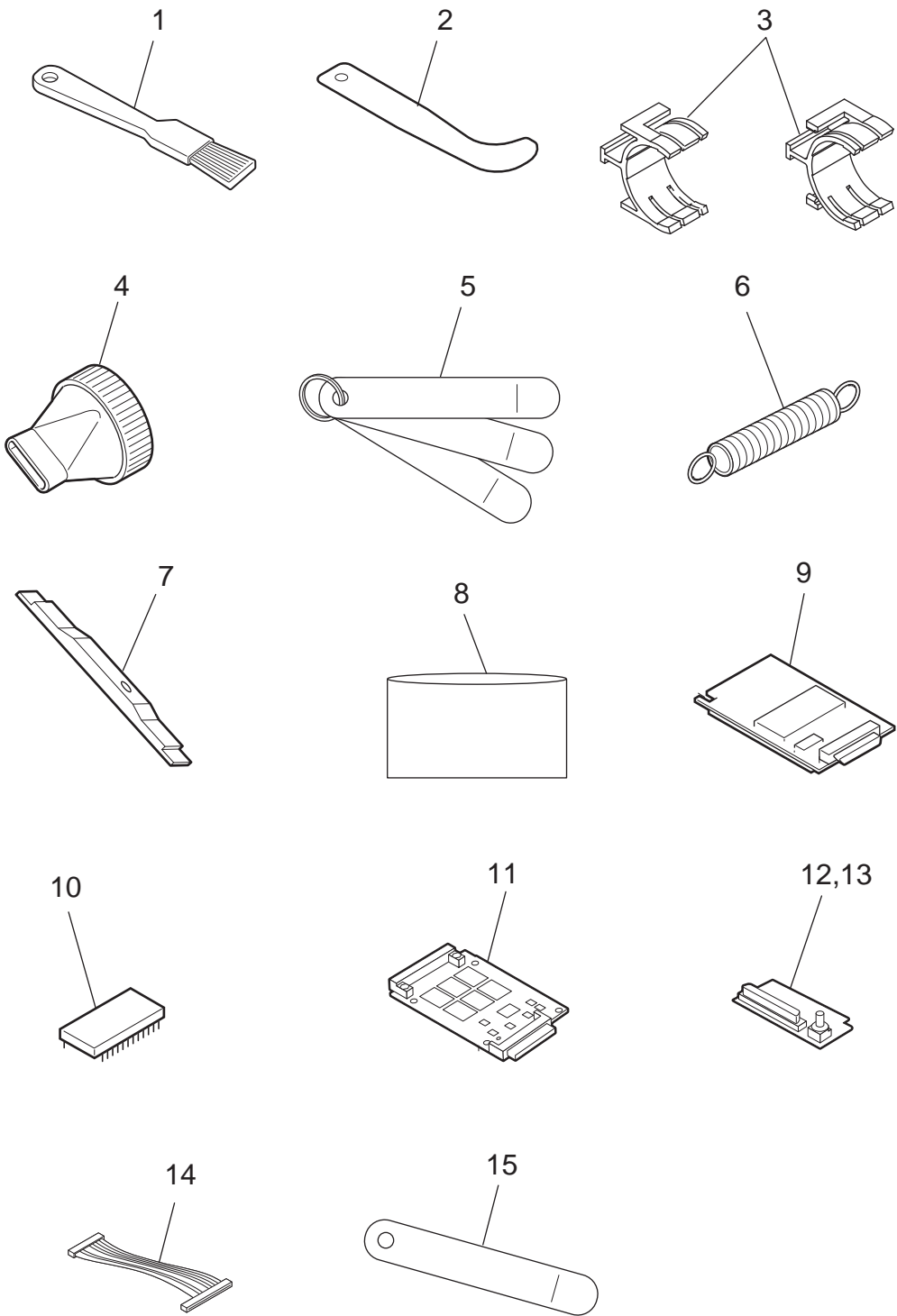


Fig. 5-35

5.10 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”.

5.11 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.

6. ERROR CODE AND TROUBLESHOOTING

6.1 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.

6.1.1 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. 6-24
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. 6-32
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. 6-24
E030	Other paper jam	Power-ON jam: The paper is remaining on the paper transport path when power is turned ON.	P. 6-32
E061		Incorrect paper size setting for 1st drawer: The size of paper in the 1st drawer differs from size setting of the equipment.	P. 6-33
E062		Incorrect paper size setting for 2nd drawer: The size of paper in the 2nd drawer differs from size setting of the equipment.	P. 6-33
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. 6-33
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. 6-33
E065		Incorrect paper size setting for bypass tray: The size of paper in the bypass tray differs from size setting of the equipment.	P. 6-33
E090		Image data delay jam: Image data to be printed cannot be prepared.	P. 6-33
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. 6-33
E0A0		Image transport ready time-out jam: Image data to be printed cannot be sent.	P. 6-33
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.
E120	Bypass misfeeding (Paper not reaching the bypass feed sensor): Paper fed from the bypass tray does not reach the bypass feed sensor.		P. 6-25
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. 6-25
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. 6-25

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. 6-26
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. 6-26
E190		LCF misfeeding (Paper not reaching the LCF feed sensor): The paper fed from the LCF does not reach the LCF feed sensor.	P. 6-27
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. 6-28
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. 6-28
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. 6-28
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. 6-28
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. 6-28
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. 6-28
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. 6-29
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. 6-28
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. 6-28
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. 6-29
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. 6-29

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. 6-28
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. 6-28
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. 6-29
E400	Cover open jam	Jam access cover open jam: The jam access cover has opened during printing.	P. 6-35
E410		Front cover open jam: The front cover has opened during printing.	P. 6-35
E420	Cover open jam	PFP side cover open jam: The PFP side cover has opened during printing.	P. 6-35
E430		ADU open jam: The ADU has opened during printing.	P. 6-35
E440		Side cover open jam: The side cover has opened during printing.	P. 6-35
E450		LCF side cover open jam: The LCF side cover has opened during printing.	P. 6-36
E480		Bridge unit open jam: The bridge unit has opened during printing.	P. 6-36
E4A0		Waste toner cover open jam: The waste toner cover has opened during printing.	P. 6-36
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.
E520	Stop jam in the ADU: The paper does not reach the ADU exit sensor after it has passed the ADU entrance sensor.		P. 6-30
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. 6-34
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. 6-37
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. 6-37
E714		Feed signal reception jam: The feed signal is received even no original exists on the original feeding tray.	P. 6-37
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. 6-37
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. 6-37

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. 6-38
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. 6-38
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. 6-38
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. 6-38
E860		RADF jam access cover open: The RADF jam access cover has opened during RADF operation.	P. 6-38
E870		RADF open jam: RADF has opened during RADF operation.	P. 6-39
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.
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. 6-40
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. 6-40
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. 6-40
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. 6-49
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. 6-41
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. 6-41
EA21		Paper size error jam: Paper does not reach the sensor because the paper is shorter than spec. [MJ-1101]	P. 6-42
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. 6-42

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. 6-42
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. 6-42
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. 6-42
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. 6-42
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. 6-42
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. 6-42
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. 6-42
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. 6-43
EA31		Transport path paper remaining jam: The paper which has passed through the inlet sensor does not reach the transport sensor. [MJ-1101]	P. 6-43
EA32		Exit paper remaining jam: The paper is remaining on the finishing tray when the power is turned ON. [MJ-1101]	P. 6-43
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. 6-44
EA50		Stapling jam: Stapling is not performed properly. [MJ-1030/1031/1101]	P. 6-44
EA60		Early arrival jam: The inlet sensor detects the paper earlier than a specified timing. [MJ-1030/1031/1101]	P. 6-45
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. 6-46

Error code	Classification	Contents	Troubleshooting
EA80	Finisher jam (Saddle stitcher section)	Stapling jam: Stapling is not performed properly. [MJ-1030]	P. 6-47
EA90		Door open jam: The delivery cover or inlet cover has opened during printing [MJ-1030].	P. 6-47
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. 6-47
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. 6-47
EAC0		Transport delay jam: The paper which has reached the inlet sensor does not pass through the inlet sensor. [MJ-1030]	P. 6-48
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. 6-49
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. 6-49
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. 6-49
EB50	Paper transport jam	Paper remaining on the transport path: The multiple feeding of preceding paper caused the misfeeding of upcoming paper.	P. 6-31
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. 6-31
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. 6-50
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. 6-50
ED12		Shutter home position error: The shutter is not at the home position. [MJ-1101]	P. 6-50
ED13		Front alignment plate home position error: The front alignment plate is not at the home position. [MJ-1101]	P. 6-50
ED14		Rear alignment plate home position error: The rear alignment plate is not at the home position. [MJ-1101]	P. 6-50
ED15		Paddle home position error: The paddle is not at the home position. [MJ-1101]	P. 6-51
ED16		Finisher jam (Finisher section)	Buffer tray home position error: The buffer tray is not at the home position. [MJ-1101]

6.1.2 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. 6-52
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. 6-53
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. 6-53
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. 6-54
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. 6-54
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. 6-55
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. 6-56
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. 6-57
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. 6-57
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. 6-58
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. 6-58
C370	Copy process related service call	Transfer belt motor abnormality	P. 6-101
C380		Auto-toner sensor-K abnormality (upper limit)	P. 6-101
C381		Auto-toner sensor-K abnormality (lower limit)	P. 6-101
C390		Auto-toner sensor-C abnormality (upper limit)	P. 6-101
C391		Auto-toner sensor-C abnormality (lower limit)	P. 6-101
C3A0		Auto-toner sensor-M abnormality (upper limit)	P. 6-101
C3A1		Auto-toner sensor-M abnormality (lower limit)	P. 6-101
C3B0		Auto-toner sensor-Y abnormality (upper limit)	P. 6-101
C3B1		Auto-toner sensor-Y abnormality (lower limit)	P. 6-101
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. 6-59

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. 6-59
C443		Heater lamp abnormality after abnormality judgment (not reaching to intermediate temperature)	P. 6-60
C445		Heater lamp abnormality after abnormality judgment (pre-running end temperature abnormality)	P. 6-60
C446		Heater lamp abnormality after abnormality judgment (pre-running end temperature abnormality)	P. 6-60
C447		Heater lamp abnormality after abnormality judgment (temperature abnormality at ready status)	P. 6-60
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. 6-60
C449		Heater lamp abnormality after abnormality judgment (temperature abnormality at high temperature)	P. 6-60
C450		Abnormal temperature difference between the center thermopile and the edge thermistor (Not determined)	P. 6-60
C451		Abnormal temperature difference between the center thermopile and the edge thermistor (Determined)	P. 6-60
C452		Abnormal thermopile temperature difference	P. 6-60
C465		Pressure roller thermistor abnormality after entering ready status (pre-running end temperature abnormality)	P. 6-61
C466		Pressure roller thermistor abnormality after entering ready status (pre-running end temperature abnormality)	P. 6-61
C467		Pressure roller thermistor abnormality after entering ready status (temperature abnormality at ready status)	P. 6-61
C468		Pressure roller thermistor abnormality after entering ready status (overheating)	P. 6-61
C4B0		Fuser unit counter abnormality	P. 6-62
C4B1		Fuser unit destination selection abnormality	P. 6-62
C4D0		Fuser belt thermopile abnormality	P. 6-63
C550	Optional communication related service call	RADF I/F error: Communication error has occurred between the RADF and the scanner.	P. 6-63
C570		Communication error between Engine-CPU and IPC board	P. 6-63
C580		Communication error between IPC board and finisher	P. 6-63
C5A0	Circuit related service call	SRAM board not connected (LGC board)	P. 6-65
C5A1		SRAM board data abnormality (LGC board)	P. 6-65
C900		Connection error between SYS board and LGC board	P. 6-65
C940		Engine-CPU abnormality	P. 6-65
C962		LGC board ID abnormality	P. 6-66
C970	Process related service call	High-voltage transformer abnormality: Leakage of the main charger is detected.	P. 6-101
C9E0	Circuit related service call	Connection error between SLG board and SYS board	P. 6-66

Error code	Classification	Contents	Troubleshooting	
CA00	Image control related service call	color registration abnormality	P. 6-88	
CA10	Laser optical unit related service call	Polygonal motor abnormality: The polygonal motor is not rotating normally.	P. 6-68	
CA20		H-sync detection error: H-sync detection PC board cannot detect laser beams.	P. 6-69	
CB00	Finisher related service call	Finisher not connected: Communication error has occurred between the equipment and finisher. [MJ-1101]	P. 6-71	
CB01		Finisher communication error: Communication error has occurred between the equipment and finisher. [MJ-1101]	P. 6-71	
CB10		Entrance motor abnormality: The entrance motor is not rotating normally. [MJ-1101]	P. 6-71	
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. 6-72	
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. 6-72	
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. 6-72	
CB31		Movable tray paper-full detection error: The actuator of the movable tray paper-full detection sensor does not move smoothly. [MJ-1101]	P. 6-73	
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. 6-73	
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. 6-74	
CB51		Stapler shift home position error: The stapler is not at the home position. [MJ-1101]	P. 6-75	
CB60		Stapler shift motor abnormality: Stapler shift motor is not rotating or staple unit is not moving normally. [MJ-1030/1101]	P. 6-75	
CB70		Finisher related service call	Paper loading amount detection sensor abnormality [MJ-1030]	P. 6-75
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. 6-76
CB81			Flash ROM abnormality: Abnormality of checksum value on finisher controller PC board is detected when the power is turned ON. [MJ-1101]	P. 6-76

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. 6-77
CBA0		Stitch motor (front) abnormality: Stitch motor (front) is not rotating or rotary cam is not moving normally. [MJ-1030]	P. 6-77
CBB0		Stitch motor (rear) abnormality: Stitch motor (rear) is not rotating or rotary cam is not moving normally. [MJ-1030]	P. 6-77
CBC0		Alignment motor abnormality: Alignment motor is not rotating or aligning plate is not moving normally. [MJ-1030]	P. 6-77
CBD0		Guide motor abnormality: Guide motor is not rotating or guide is not moving normally. [MJ-1030]	P. 6-77
CBE0		Paper folding motor abnormality: Paper folding motor or paper folding roller is not rotating normally. [MJ-1030]	P. 6-78
CBF0		Paper positioning plate motor abnormality: Paper positioning plate motor is not rotating or paper positioning plate is not moving normally. [MJ-1030]	P. 6-78
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. 6-78
CC10		Micro switch abnormality: With all covers closed, inlet door switch, delivery door switch or front cover switch is open. [MJ-1030]	P. 6-79
CC20		Communication error between finisher and saddle stitcher: Communication error between finisher controller PC board and saddle stitcher controller board [MJ-1030]	P. 6-79
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. 6-79
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. 6-80
CC40		Swing motor abnormality: Swing motor is not rotating or swing unit is not moving normally. [MJ-1030]	P. 6-80
CC41		Paper holder cam home position abnormality: The paper holder cam is not at the home position. [MJ-1101]	P. 6-80
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. 6-81
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. 6-81
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. 6-82

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. 6-81
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. 6-83
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. 6-83
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. 6-83
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. 6-84
CC90		Tray shift motor abnormality: The tray shift motor is not rotating or the stack tray is not moving normally. [MJ-1031]	P. 6-84
CCB0		Offset motor abnormality: The offset motor is not rotating normally. [MJ-1031]	P. 6-84
CCD0		Stack ejection motor abnormality: Stack ejection motor or stack ejection roller is not rotating normally. [MJ-1030]	P. 6-85
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. 6-85
CCF0		Gear changing motor abnormality: Gear changing motor is not rotating normally. [MJ-1030]	P. 6-85
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. 6-85
CD70		Process related service call	Waste toner box mixing paddle locked: The mixing paddle in the waste toner box does not rotate.
CD71	Waste toner transport motor drive locking error.		P. 6-103
CDE0	Finisher related service call	Paddle motor abnormality: The paddle motor is not rotating or the paddle is not rotating normally. [MJ-1101]	P. 6-86
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. 6-86
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. 6-93
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. 6-94
CE40		Image quality control test pattern abnormality: The test pattern is not formed normally.	P. 6-96

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. 6-98
CE60		Drum thermistor-Y abnormality: The output value of the drum thermistor-Y is out of a specified range.	P. 6-98
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. 6-99
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. 6-100
CE90		Drum thermistor-K abnormality: The output value of the drum thermistor-K is out of a specified range.	P. 6-98
CEC0	Copy process related service call	2nd transfer roller position detection abnormality: The 2nd transfer roller does not contact/release normally.	P. 6-104
CF10	Finisher related service call	Communication module SRAM reading failure. [MJ-1101]	P. 6-87
CF90	Laser optical unit related service call	Laser optical unit shutter abnormality.	P. 6-70
F070	Communication related service call	Communication error between System-CPU and Engine-CPU	P. 6-64
F090	Circuit related service call	SRAM abnormality on the SYS board	P. 6-66
F100	Other service call	HDD format error: HDD cannot be initialized normally.	P. 6-105
F101		HDD unmounted: Connection of HDD cannot be detected.	P. 6-105
F102		HDD start error: HDD cannot become 'Ready' state.	P. 6-105
F103		HDD transfer time-out: Reading/writing cannot be performed in the specified period of time.	P. 6-105
F104		HDD data error: Abnormality is detected in the data of HDD.	P. 6-105
F105		HDD other error	P. 6-105
F106		Point and Print partition damage	P. 6-105
F107		/BOX partition damage	P. 6-105
F108		/SHA partition damage	P. 6-105
F110	Communication related service call	Communication error between System-CPU and Scanner-CPU	P. 6-64
F111		Scanner response abnormality	P. 6-64
F120	Other service call	Database abnormality: Database is not operating normally.	P. 6-105
F130		Invalid MAC address	P. 6-106
F140		Accelerator ASIC format error	P. 6-106
F200		Data Overwrite option (GP-1070) disabled	P. 6-106
F350	Circuit related service call	SLG board abnormality	P. 6-67
F400	Circuit related service call	SYS board cooling fan abnormality	P. 6-106

6.1.3 Error in Internet FAX / Scanning Function

1. Internet FAX related error

Error code	Classification	Troubleshooting
1C10	System access abnormality	P. 6-106
1C11	Insufficient memory	P. 6-106
1C12	Message reception error	P. 6-106
1C13	Message transmission error	P. 6-106
1C14	Invalid parameter	P. 6-107
1C15	Exceeding file capacity	P. 6-107
1C20	System management module access abnormality	P. 6-107
1C21	Job control module access abnormality	P. 6-107
1C22	Job control module access abnormality	P. 6-107
1C30	Directory creation failure	P. 6-107
1C31	File creation failure	P. 6-107
1C32	File deletion failure	P. 6-106
1C33	File access failure	P. 6-107
1C40	Image conversion abnormality	P. 6-107
1C60	HDD full failure during processing	P. 6-107
1C61	Address Book reading failure	P. 6-107
1C62	Memory acquiring failure	P. 6-107
1C63	Terminal IP address unset	P. 6-107
1C64	Terminal mail address unset	P. 6-107
1C65	SMTP address unset	P. 6-108
1C66	Server time time-out error	P. 6-108
1C67	NIC time time-out error	P. 6-108
1C68	NIC access error	P. 6-108
1C69	SMTP server connection error	P. 6-108
1C6A	HOST NAME error	P. 6-108
1C6B	Terminal mail address error	P. 6-108
1C6C	Destination mail address error	P. 6-108
1C6D	System error	P. 6-108
1C70	SMTP client OFF	P. 6-108
1C71	SMTP authentication error	P. 6-108
1C72	POP before SMTP error	P. 6-108
1C80	Internet FAX transmission failure when processing E-mail job received	P. 6-109
1C81	Onramp Gateway transmission failure	P. 6-109
1C82	Internet FAX transmission failure when processing FAX job received	P. 6-109
1CC0	Job canceling	-
1CC1	Power failure	P. 6-109

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. 6-109
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. 6-109
2503	Bad sequence of commands	Destination mail address error (RFC: 503)	P. 6-109
2504	Command parameter not implemented	HOST NAME error (RFC: 504)	P. 6-109
2550	Mailbox unavailable	Destination mail address error (RFC: 550)	P. 6-109
2551	User not local	Destination mail address error (RFC: 551)	P. 6-109
2552	Insufficient system storage	Terminal/Destination mail address error (RFC: 552)	P. 6-109
2553	Mailbox name not allowed	Destination mail address error (RFC: 553)	P. 6-109

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. 6-109
2B11	Job status failed.	JOB status abnormality	P. 6-109
2B20	Failed to access file.	File library function error	P. 6-109
2B30	Insufficient disk space.	Insufficient disk space in /BOX partition	P. 6-109
2B31	Failed to access Electronic Filing.	Status of specified Electronic Filing or folder is undefined or being created/deleted	P. 6-110
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. 6-110
2B50	Failed to process image.	Image library error	P. 6-110
2B51	Failed to process print image.	List library error	P. 6-110
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. 6-110
2BA0	Invalid Box password specified.	Invalid Box password	P. 6-110
2BA1	Incorrect paper size/ color mode	A Paper size or a color mode not supported in the Electronic Filing function is being selected.	P. 6-110
2BB0	Job canceled	Job canceling	-
2BB1	Power failure occurred	Power failure	P. 6-110
2BC0	System fatal error.	Fatal failure occurred	P. 6-109
2BC1	Failed to acquire resource.	System management module resource acquiring failure	P. 6-109
2BD0	Power failure occurred during e-Filing restoring.	Power failure occurred during restoring of Electronic Filing	P. 6-110
2BE0	Failed to get machine parameter.	Machine parameter reading failure	P. 6-111
2BF0	Maximum number of page range is reached.	Exceeding maximum number of pages	P. 6-111
2BF1	Maximum number of document range is reached.	Exceeding maximum number of documents	P. 6-111
2BF2	Maximum number of folder range is reached.	Exceeding maximum number of folders	P. 6-111

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. 6-111
2A40	System fatal error	System error	P. 6-111
2A50	Job canceling	Job canceling	-
2A51	Power failure	Power failure	P. 6-111

5. E-mail related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2C10	Illegal Job status	System access abnormality	P. 6-112
2C11	Not enough memory	Insufficient memory	P. 6-112
2C12	Illegal Job status	Message reception error	P. 6-112
2C13	Illegal Job status	Message transmission error	P. 6-112
2C14	Invalid parameter specified	Invalid parameter	P. 6-112
2C15	Message size exceeded limit or maximum size	Exceeding file capacity	P. 6-112
2C20	Illegal Job status	System management module access abnormality	P. 6-112
2C21	Illegal Job status	Job control module access abnormality	P. 6-112
2C22	Illegal Job status	Job control module access abnormality	P. 6-112
2C30	Failed to create directory	Directory creation failure	P. 6-112
2C31	Failed to create file	File creation failure	P. 6-112
2C32	Failed to delete file	File deletion failure	P. 6-112
2C33	Failed to create file	File access failure	P. 6-112
2C40	Failed to convert image file format	Image conversion abnormality	P. 6-112
2C43	Encryption error. Failed to create file	Encryption error	P. 6-112
2C44	Creating the image file was not permitted.	Encryption PDF enforced mode error	P. 6-113
2C60	Failed to process your Job. Insufficient disk space.	HDD full failure during processing	P. 6-113
2C61	Failed to read AddressBook	Address Book reading failure	P. 6-113
2C62	Not enough memory	Memory acquiring failure	P. 6-112
2C63	Invalid Domain Address	Terminal IP address unset	P. 6-113
2C64	Invalid Domain Address	Terminal mail address unset	P. 6-113
2C65	Failed to connect to SMTP server	SMTP address unset	P. 6-113
2C66	Failed to connect to SMTP server	Server time time-out error	P. 6-113
2C67	Failed to send E-Mail message	NIC time time-out error	P. 6-113
2C68	Failed to send E-Mail message	NIC access error	P. 6-113
2C69	Failed to connect to SMTP server	SMTP server connection error	P. 6-113
2C6A	Failed to send E-Mail message	HOST NAME error (No RFC error)	P. 6-113
2C6B	Invalid address specified in From: field	Terminal mail address error	P. 6-113
2C6C	Invalid address specified in To: field	Destination mail address error (No RFC error)	P. 6-114
2C6D	NIC system error	System error	P. 6-113
2C70	SMTP service is not available	SMTP client OFF	P. 6-114
2C71	Failed SMTP Authentication	SMTP authentication error	P. 6-114
2C72	POP Before SMTP Authentication Failed	POP before SMTP error	P. 6-114
2C80	Failed to process received E-mail job	E-mail transmission failure when processing E-mail job received	P. 6-114
2C81	Failed to process received Fax job	Process failure of FAX job received	P. 6-114
2CC0	Job canceled	Job canceling	-
2CC1	Power failure occurred	Power failure	P. 6-114

6. File sharing related error

Error code	Message displayed in the TopAccess screen	Contents	Troubleshooting
2D10	Illegal Job status	System access abnormality	P. 6-114
2D11	Not enough memory	Insufficient memory	P. 6-114
2D12	Illegal Job status	Message reception error	P. 6-115
2D13	Illegal Job status	Message transmission error	P. 6-115
2D14	Invalid parameter specified	Invalid parameter	P. 6-115
2D15	Document size exceeded limit or maximum size.	Exceeding the maximum size for file sharing	P. 6-115
2D20	Illegal Job status	System management module access abnormality	P. 6-115
2D21	Illegal Job status	Job control module access abnormality	P. 6-115
2D22	Illegal Job status	Job control module access abnormality	P. 6-115
2D30	Failed to create directory	Directory creation failure	P. 6-115
2D31	Failed to create file	File creation failure	P. 6-115
2D32	Failed to delete file	File deletion failure	P. 6-114
2D33	Failed to create file	File access failure	P. 6-115
2D40	Failed to convert image file format	Image conversion abnormality	P. 6-115
2D43	Encryption error. Failed to create file	Encryption error	P. 6-115
2D44	Creating the image file was not permitted.	Encryption PDF enforced mode error	P. 6-115
2D60	Failed to copy file	File library access abnormality	P. 6-115
2D61	Invalid parameter specified	Invalid parameter	P. 6-115
2D62	Failed to connect to network destination. Check destination path	File server connection error	P. 6-115
2D63	Specified network path is invalid. Check destination path	Invalid network path	P. 6-116
2D64	Logon to file server failed. Check username and password	Login failure	P. 6-116
2D65	There are too many documents in the folder. Failed in creating new document.	Exceeding documents in folder: Creating new document is failed.	P. 6-116
2D66	Failed To Process your Job. Insufficient Storage space.	Storage capacity full failure during processing	P. 6-116
2D67	FTP service is not available	FTP service not available	P. 6-116
2D68	File Sharing service is not available	File sharing service not available	P. 6-116
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. 6-114
2DA7	Failed to acquire resource.	Resource acquiring failure	P. 6-114
2DC0	Job canceled	Job canceling	-
2DC1	Power failure occurred	Power failure	P. 6-116

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. 6-117
3A11	MIME Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3A12	MIME Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117
3A20	Analyze Error has been detected in the received mail.	E-mail analysis error	P. 6-117
3A21	Analyze Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3A22	Analyze Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117
3A30	Whole partial mails were not reached by timeout.	Partial mail time-out error	P. 6-117
3A40	Partial Mail Error has been detected in the received mail.	Partial mail related error	P. 6-117
3A50	HDD Full Error has been occurred in this mail.	Insufficient HDD capacity error	P. 6-117
3A51	HDD Full Error has been occurred in this mail. This mail has been transferred to the administrator.		P. 6-117
3A52	HDD Full Error has been occurred in this mail. This mail could not be transferred to the administrator.		P. 6-117
3A60	HDD Full Warning has been occurred in this mail.	Warning of insufficient HDD capacity	P. 6-117
3A61	HDD Full Warning has been occurred in this mail. This mail could not be transferred to the administrator.		P. 6-117
3A62	HDD Full Warning has been occurred in this mail. This mail could not be transferred to the administrator.		P. 6-117
3A70	Receiving partial mail was aborted since the partial mail setting has been changed to Disable.	Warning of partial mail interruption	P. 6-117
3A80	Partial mail was received during the partial mail setting is disabled.	Partial mail reception setting OFF	P. 6-117
3A81	Partial mail was received during the partial mail setting is disabled. This mail has been transferred to the administrator.		P. 6-117
3A82	Partial mail was received during the partial mail setting is disabled. This mail could not be transferred to the administrator.		P. 6-117
3B10	Format Error has been detected in the received mail.	E-mail format error	P. 6-117
3B11	Format Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3B12	Format Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117

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. 6-117
3B21	Content-Type Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3B22	Content-Type Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117
3B30	Charset Error has been detected in the received mail.	Charset error	P. 6-117
3B31	Charset Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3B32	Charset Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117
3B40	Decode Error has been detected in the received mail.	E-mail decode error	P. 6-117
3B41	Decode Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-117
3B42	Decode Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-117
3C10	Tiff Analyze Error has been detected in the received mail.	TIFF analysis error	P. 6-118
3C11	Tiff Analyze Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C12	Tiff Analyze Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118
3C13	Tiff Analyze Error has been detected in the received mail.		P. 6-118
3C20	Tiff Compression Error has been detected in the received mail.	TIFF compression error	P. 6-118
3C21	Tiff Compression Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C22	Tiff Compression Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118
3C30	Tiff Resolution Error has been detected in the received mail.	TIFF resolution error	P. 6-118
3C31	Tiff Resolution Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C32	Tiff Resolution Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118

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. 6-118
3C41	Tiff Paper Size Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C42	Tiff Paper Size Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118
3C50	Offramp Destination Error has been detected in the received mail.	Offramp destination error	P. 6-118
3C51	Offramp Destination Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C52	Offramp Destination Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118
3C60	Offramp Security Error has been detected in the received mail.	Offramp security error	P. 6-118
3C61	Offramp Security Error has been detected in the received mail. This mail has been transferred to the administrator.		P. 6-118
3C62	Offramp Security Error has been detected in the received mail. This mail could not be transferred to the administrator.		P. 6-118
3C70	Power Failure has been occurred in Email receiving.	Power failure error	P. 6-118
3D10	SMTP Destination Error has been detected in the received mail. This mail was deleted.	Destination address error	P. 6-118
3D20	Offramp Destination limitation Error has been detected in the received mail.	Offramp destination limitation error	P. 6-118
3D30	Fax Board Error has been occurred in the received mail.	FAX board error	P. 6-118
3E10	POP3 Connection Error has been occurred in the received mail.	POP3 server connection error	P. 6-119
3E20	POP3 Connection Timeout Error has been occurred in the received mail.	POP3 server connection time-out error	P. 6-119
3E30	POP3 Login Error has been occurred in the received mail.	POP3 login error	P. 6-118
3E40	POP3 Login Error occurred in the received mail.	POP3 login method error	P. 6-119
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. 6-119
3F10			P. 6-119
3F20			P. 6-119
3F30			P. 6-119
3F40			P. 6-119

6.1.4 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. 6-120
4032	Private-print-only error: Jobs other than Private print jobs cannot be performed.	P. 6-120
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. 6-120
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. 6-120
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. 6-120
4036	User authentication error: The user who intended to print a document is not registered as a user.	P. 6-120
4040	Not being authorized to perform JOB	P. 6-120
4050	Problem in LDAP server connection or LDAP server authorization settings	P. 6-120
4300	USB direct printing: Job execution error due to functional restrictions - Printing with the USB direct printing function restricted	P. 6-120
4301	USB direct printing: File conversion error - Printing a file whose format is not supported, or an invalid file	P. 6-120
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. 6-120
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. 6-120
4312	Password mismatching: The entered password is neither matched with a user password nor an owner password.	P. 6-121
A221	Print job cancellation - Print job (copy, list print, network print) is deleted from the print job screen.	P. 6-121
A222	Print job power failure - The power of the equipment is turned OFF during print job (copy, list print, network print).	P. 6-121
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. 6-121
A291	Limit over error (Black): The number of output pages has exceeded the one specified with the user code.	P. 6-121
A292	Limit over error (Black): The number of output pages has exceeded the one specified with the department code.	P. 6-121
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. 6-121
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. 6-121
A2A2	Limit over error (Color): The number of output pages has exceeded the one specified with the department code.	P. 6-121

6.1.5 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. 6-122
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. 6-122
5BD0	Power failure occurred during restore	Power supply is cut off during the restoration of database sent from TopAccess	P. 6-122
5C10	FAX Unit is not attached.	Network FAX is disabled because the FAX Unit is not attached	P. 6-122
5C11	Security error on Address Book.	The network FAX job failed because the specified address is not registered in the Address Book	P. 6-122
5C20	The file has been imported	Displayed when data have been imported from TopAccess (Not an error message)	P. 6-122
5C21	Failed to import the file - Invalid file format	Data import from TopAccess failed due to invalid file format	P. 6-122
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. 6-122

6.1.6 Error history

In the setting mode (08-253), the latest twenty groups of error data will be displayed.

Display example

<u>EA10</u>	<u>99999999</u>	<u>06 04 14 17 57 32</u>	<u>064</u>	<u>064</u>	<u>2362 1000 0000 0</u>
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

6.2 Diagnosis and Prescription for Each Error Code

6.2.1 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.

6.2.2 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.

6.2.3 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 to 15 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.

6.2.4 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. 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]
		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	-

6.2.5 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.

6.2.6 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?

6.2.7 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.

6.2.8 Paper jam in finisher section

[EA10] Paper transport delay jam

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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.

6.2.9 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.

6.2.10 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.

6.2.11 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.

6.2.12 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.

6.2.13 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.

6.2.14 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 $\pm 10\%$ 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, LGC/IF 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.

6.2.15 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.

6.2.16 RADF related service call

No service call for the RADF (MR-3018).

6.2.17 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.

6.2.18 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.

6.2.19 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.

6.2.20 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 statuses 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?

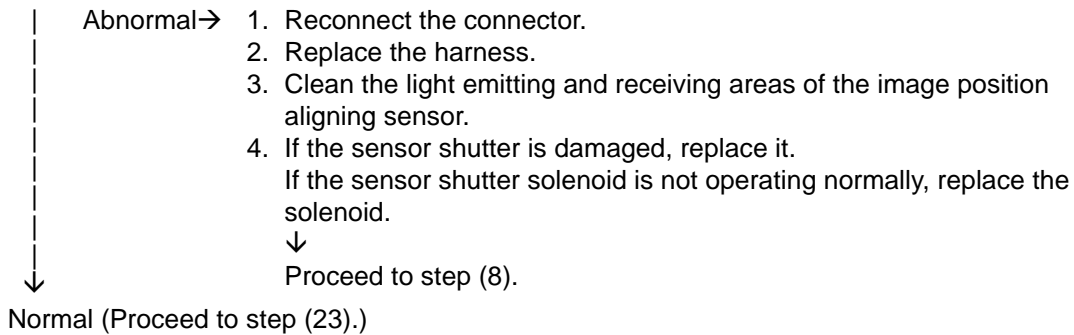
Is the light emitting area of the image position aligning sensor emitting LEDs?

< 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 >

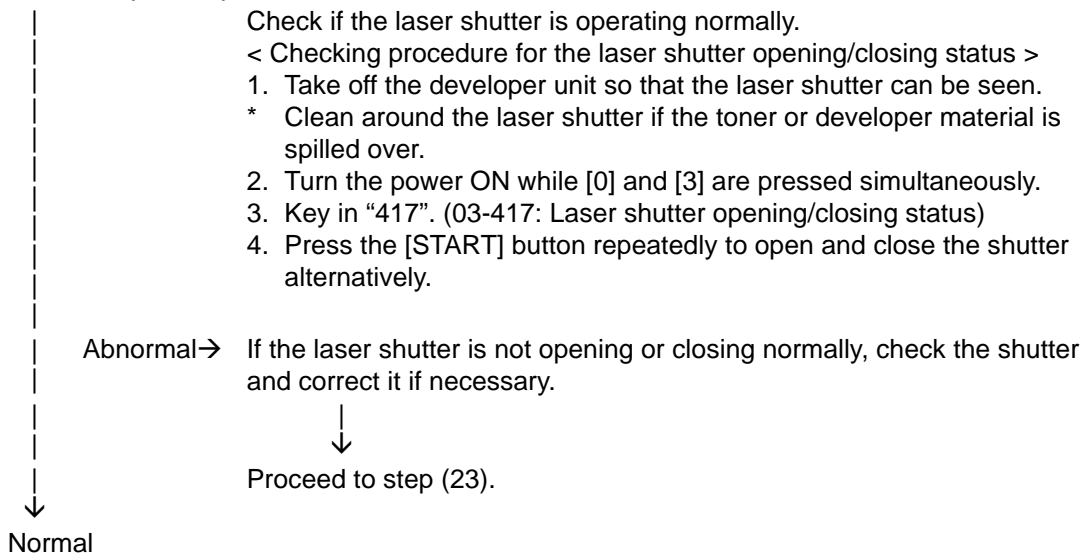
1. Key in "125" to open the sensor shutter.
2. The light emitting area of the sensor should emit LEDs when "126" is keyed in.



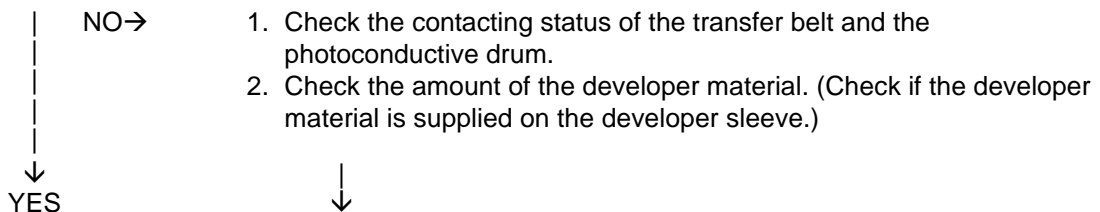
< Checking with test pattern >

- (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.

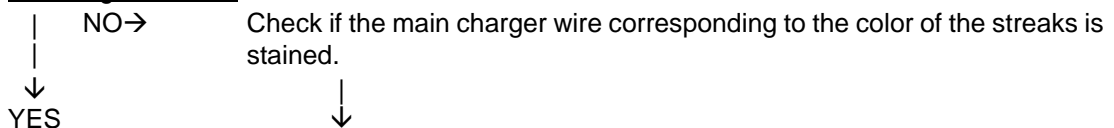
Is the test pattern printed in blank?



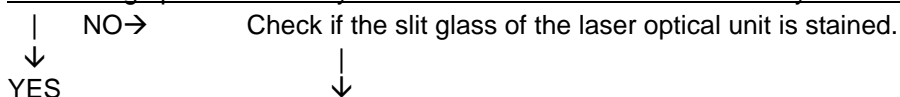
Is the image of the test pattern printed normally without any difference in density on its front and rear sides?



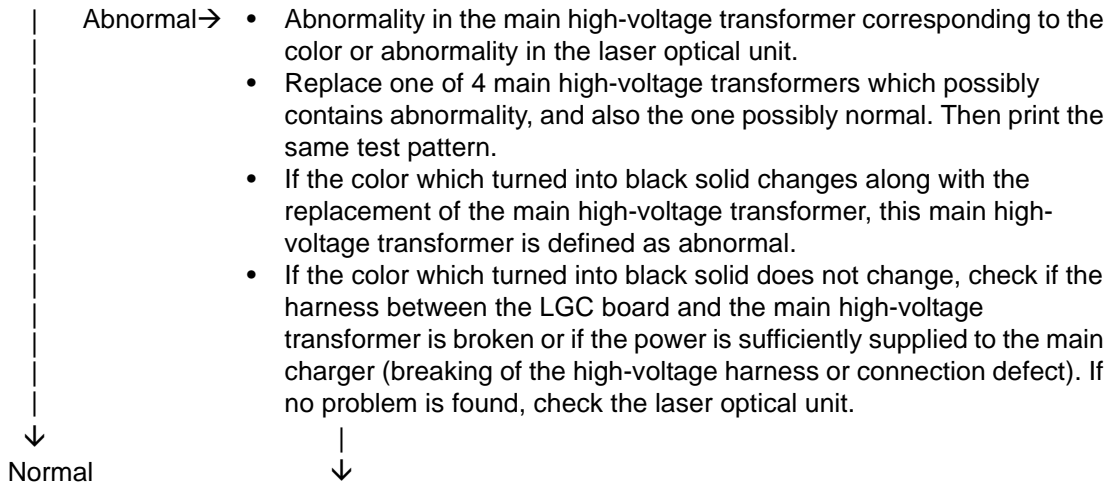
Is the image printed normally without yellow, magenta, cyan or black streaks in the secondary scanning direction?



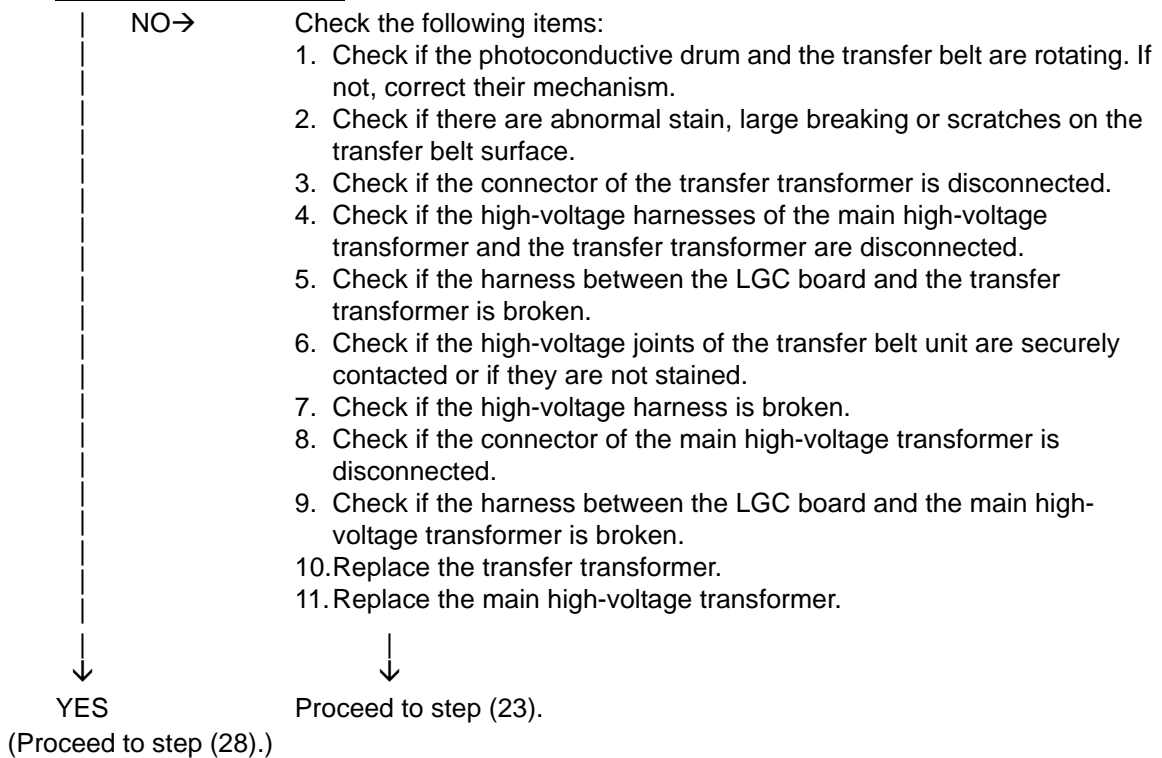
Is the image printed normally without white streaks in the secondary scanning direction?



Is a certain color in the printed image turned to black solid?



If the density level is low on both front and rear sides, is the image printed normally in cases other than noted above?

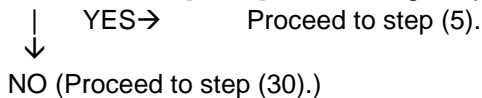


< Checking with the enforced image position adjustment >

(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?



< 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 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".

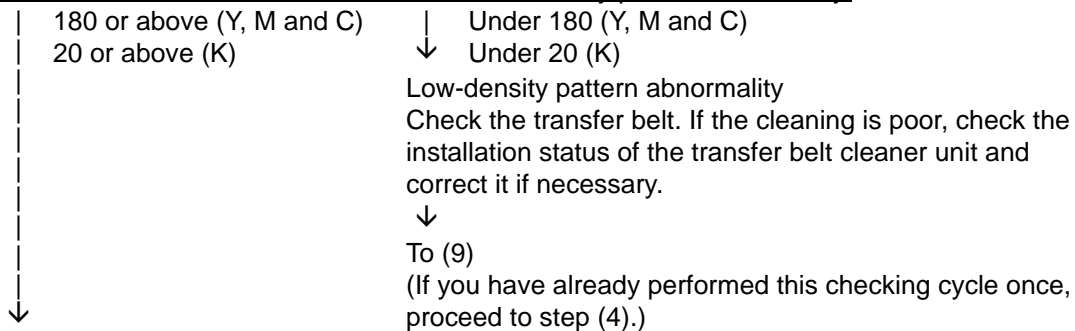
If the color printing ratio is 5% or more, check the following.

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.

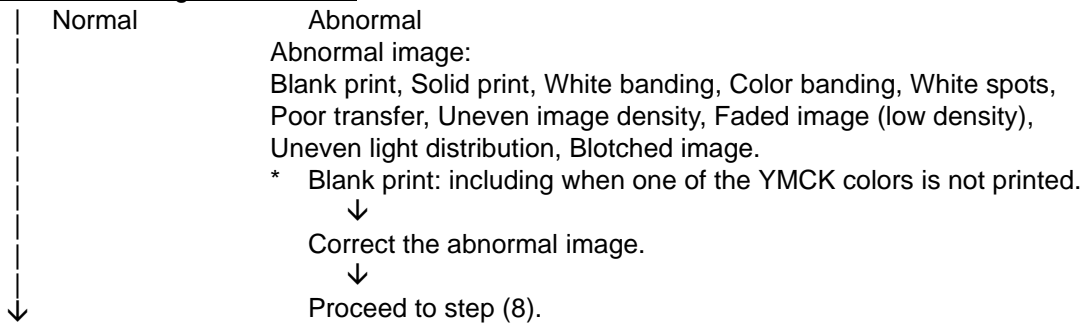
(2) Check "Output value display of image quality sensor / Low-density pattern (05-391-0 to 3)" to check if the low-density pattern abnormality occurs for each color. The values under 180 for Y, M and C, and under 20 for K are defined as low-density pattern abnormality.



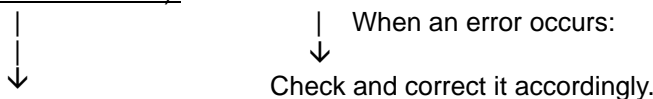
- (3) Check “Output value display of image quality sensor / High-density pattern (05-390-0 to 3)” to check if the high-density pattern abnormality occurs for each color and identify the color which pattern is abnormal. If the value is 628 or above, it is defined as high-density pattern abnormality.
- | | |
|---|---|
| <p>Under 628 (Y, M, C and K)</p> <p>↓</p> | <p>628 or above (Y, M, C and K)</p> <p>↓</p> <p>High-density pattern abnormality</p> <ul style="list-style-type: none"> • Check if the laser shutter is working properly. <p><Procedure></p> <ol style="list-style-type: none"> 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. <ul style="list-style-type: none"> - If the laser shutter does not open/close, check the shutter and correct it if necessary. <ul style="list-style-type: none"> • Check if the developer unit has been installed properly. <ol style="list-style-type: none"> 1. Visually check the installation status of the developer unit, and correct it if there is any abnormality. <p>↓</p> <p>To (9)</p> <p>(If you have already performed this checking cycle once, proceed to step (4).)</p> |
|---|---|

- (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.



- (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).



- (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.

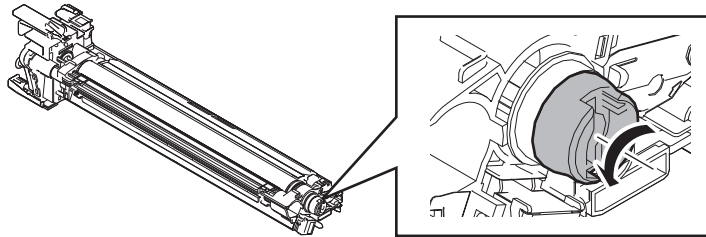


Fig. 6-1

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)

6.2.21 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.

6.2.22 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.

6.2.23 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.7-18 "7.2.3 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:

 Service Manual "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.

6.2.24 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).

6.2.25 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.


7. REPLACEMENT OF PC BOARDS/HDD

7.1 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.7-15 "7.2 Precautions, Procedures and Settings for Replacing PC Boards and HDD".

7.1.1 Hard disk (HDD)

- (1) Take off the rear cover-1.
 Service Manual "3.5.18 Rear cover-1"
- (2) Remove 4 screws.
- (3) Disconnect 2 connectors and take off the HDD case.

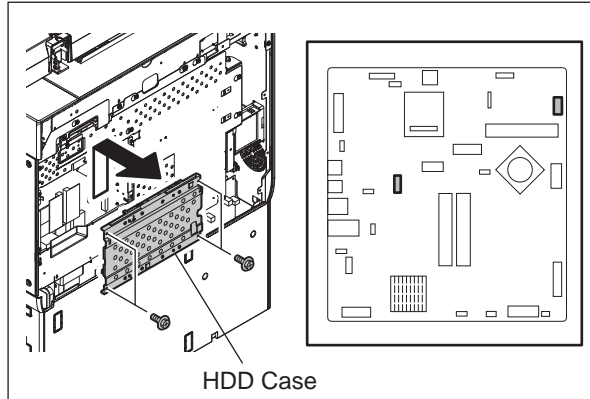


Fig. 7-1

- (4) Remove 6 screws, release 1 clamp and take off the bracket.

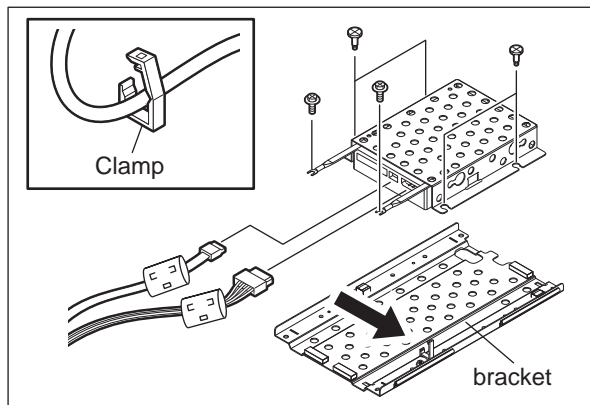


Fig. 7-2

- (5) Remove 4 screws and take off the hard disk.
- (6) Remove 1 screw each and the 2 ground wires.

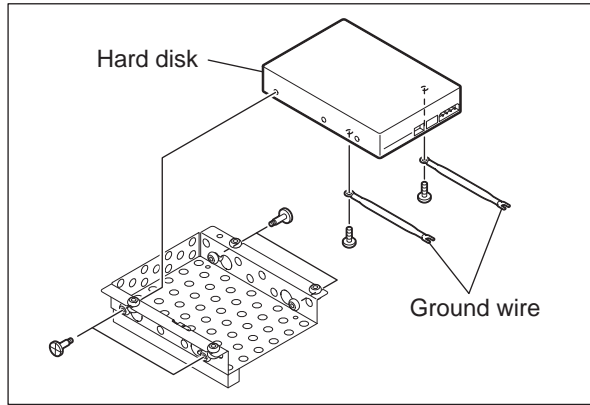



Fig. 7-3

7.1.2 Board cover

- (1) Take off the rear cover-2.
 Service Manual "3-5-19 Rear cover-2"
- (2) Remove 1 screw and loosen 11 screws.

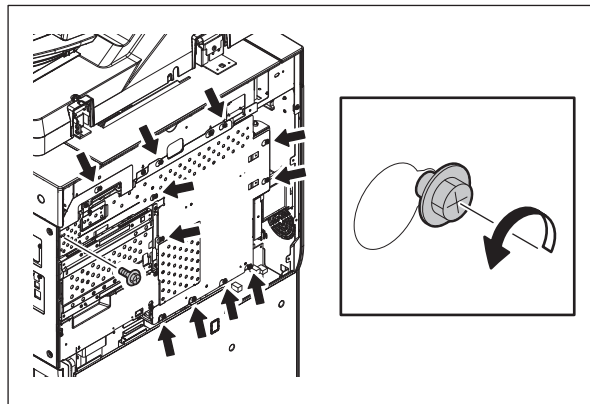


Fig. 7-4

- (3) Slide the board cover to take it off.

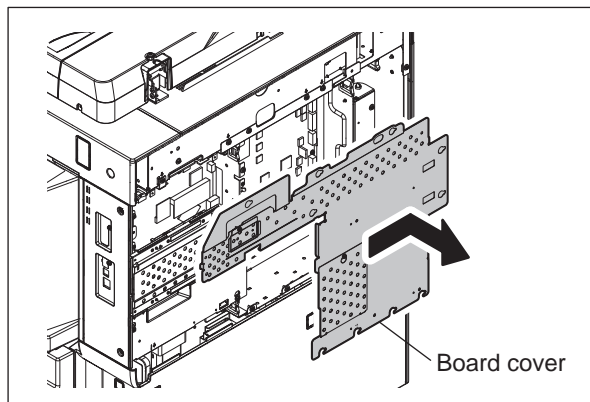


Fig. 7-5

7.1.3 FAX cover

- (1) Take off the rear cover-1.
📖 Service Manual "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.

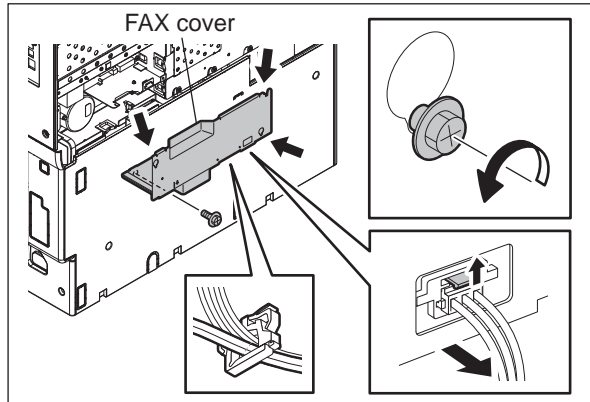


Fig. 7-6

7.1.4 SYS/HDD cooling fan

- (1) Take off the FAX cover.
📖 P.7-3 "7.1.3 FAX cover"
- (2) Remove 2 screws and take off the SYS/HDD cooling fan.

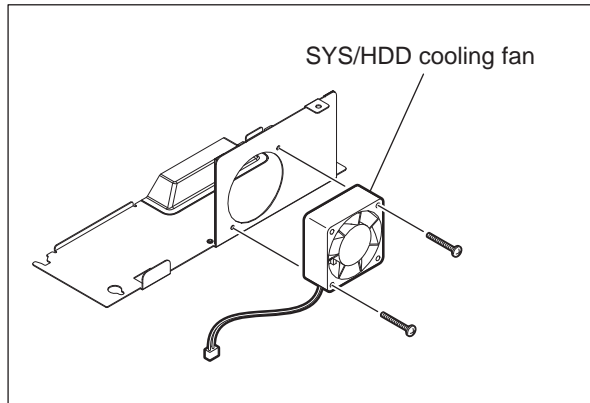


Fig. 7-7

7.1.5 SYS board

- (1) Take off the board cover.
📖 P.7-2 "7.1.2 Board cover"
- (2) Take off the FAX cover.
📖 P.7-3 "7.1.3 FAX cover"
- (3) Take off the hard disk.
📖 P.7-1 "7.1.1 Hard disk (HDD)"
- (4) Remove 2 screws and take off 2 earth plates.

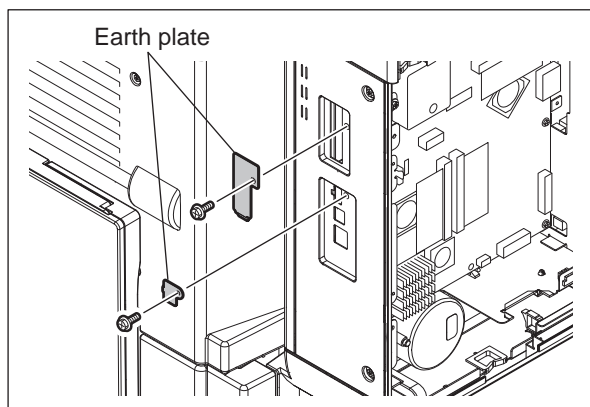


Fig. 7-8

- (5) Disconnect 3 connectors and the USB terminal.

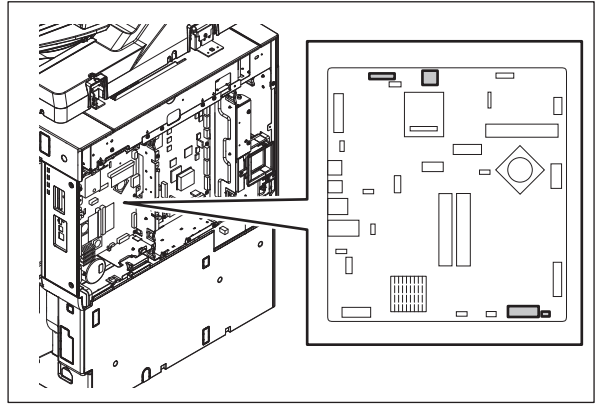


Fig. 7-9

- (6) Remove 7 screws, release 2 locking supports and take off the SYS board.

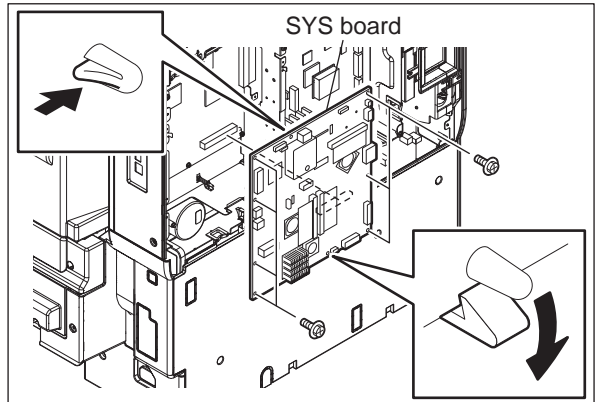


Fig. 7-10

7.1.6 IMG board

- (1) Take off the SYS board.
P.7-3 "7.1.5 SYS board"
- (2) Disconnect 2 connectors.
- (3) Remove 6 screws and slide the IMG board to take it off.

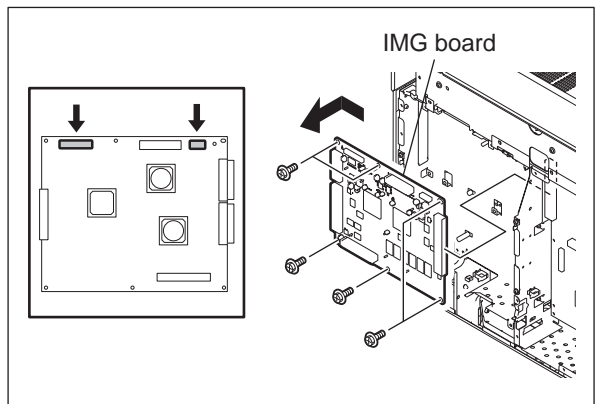


Fig. 7-11

7.1.7 LGC board

- (1) Take off the board cover.
📖 P.7-2 "7.1.2 Board cover"
- (2) Disconnect 19 connectors.
- (3) Remove 8 screws and slide the LGC board to take it off.

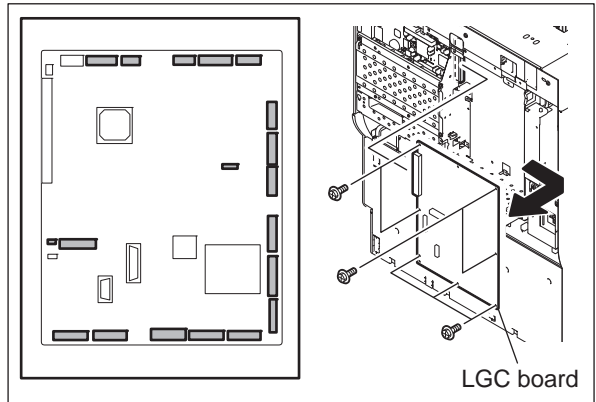


Fig. 7-12

7.1.8 Switching regulator

- (1) Take off the rear cover-3.
📖 Service Manual "3.5.20 Rear cover-3"
- (2) Remove 1 screw and take off the connector cover.
- (3) Disconnect 3 connectors.

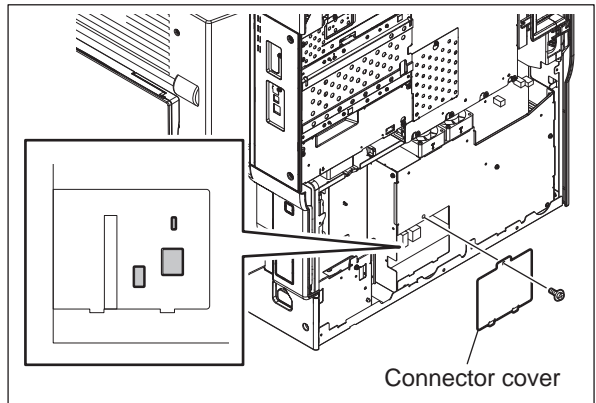


Fig. 7-13

- (4) Disconnect 7 connectors.
- (5) Remove 2 screws.
- (6) Slightly lift up the switching regulator and release the hook.

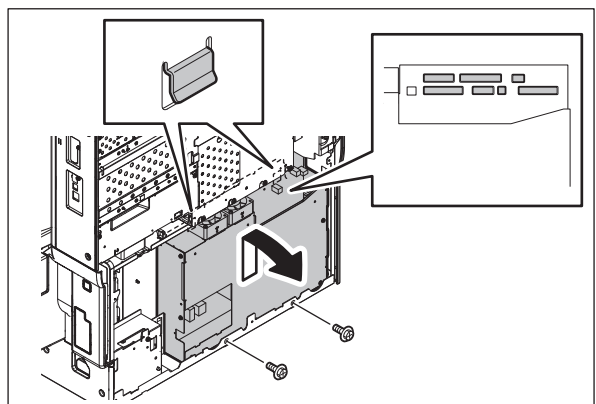


Fig. 7-14

- (7) Tilt the switching regulator to the front side and take it off.

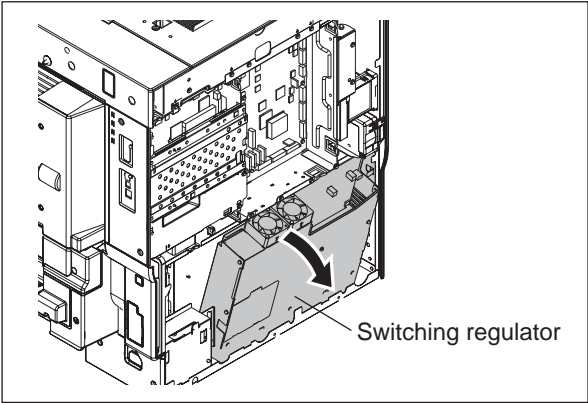


Fig. 7-15

7.1.9 High-voltage transformer (HVT)

- (1) Take off the switching regulator.
📖 P.7-5 "7.1.8 Switching regulator"
- (2) Disconnect 22 connectors.

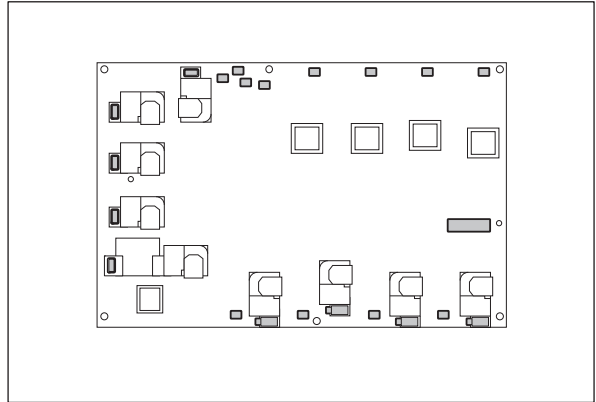


Fig. 7-16

- (3) Remove 7 screws.
- (4) Release 2 locking supports and take off the high-voltage transformer.

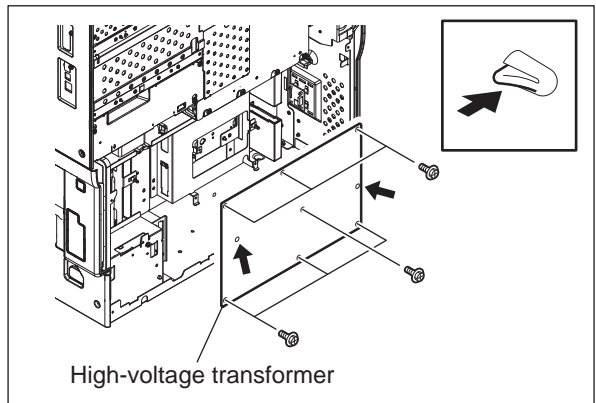




Fig. 7-17

7.1.10 FIL board

- (1) Take off the right lower cover.
 Service Manual "3.5.13 Right lower cover"
- (2) Take off the rear cover-3.
 Service Manual "3.5.20 Rear cover-3"

Note:

Release the optional connector (KD-1023/1024) from the filter bracket if it is connected.

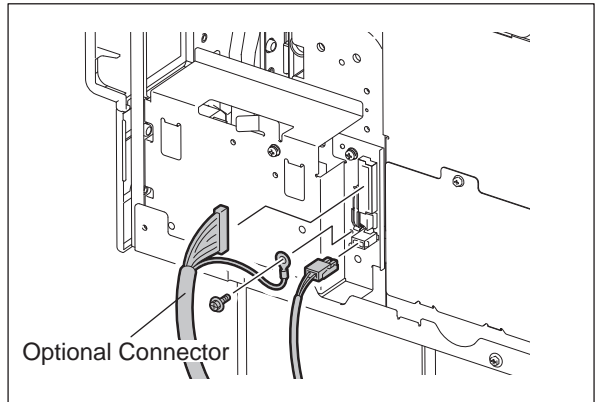


Fig. 7-18

- (3) Disconnect 2 relay connector of the filter bracket.

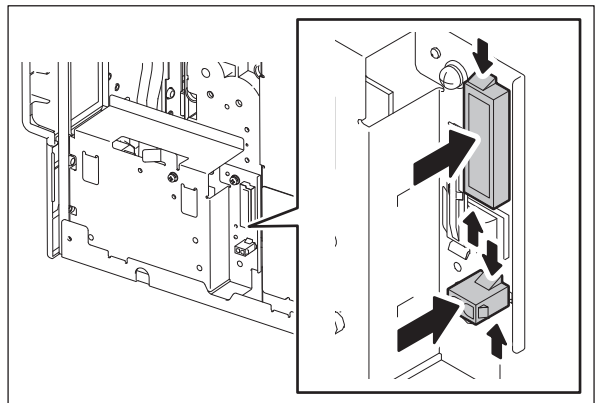


Fig. 7-19

- (4) Release 2 clamps.

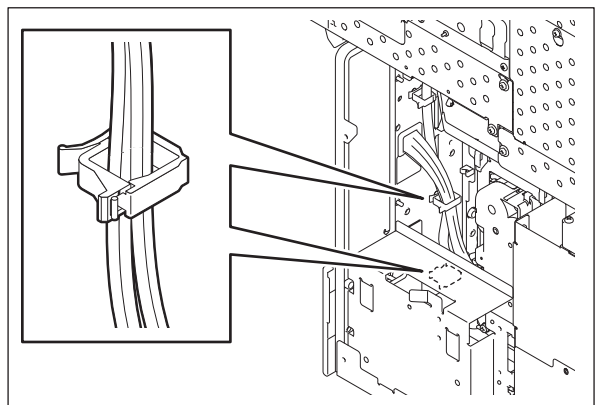


Fig. 7-20

- (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.

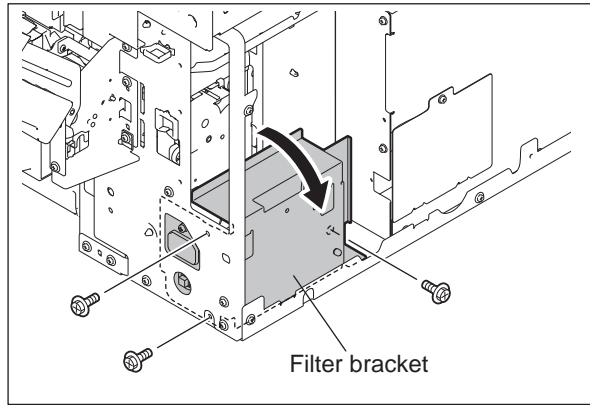


Fig. 7-21

- (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.

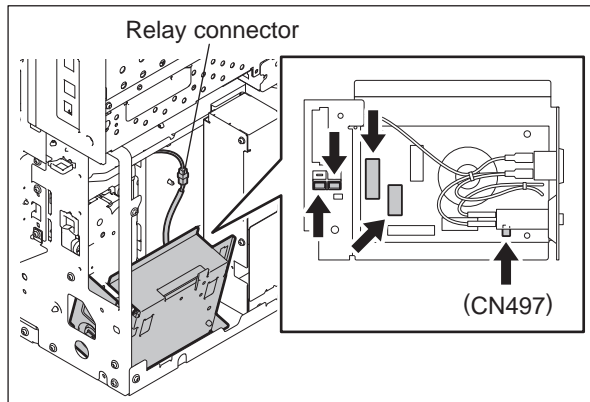


Fig. 7-22

- (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.

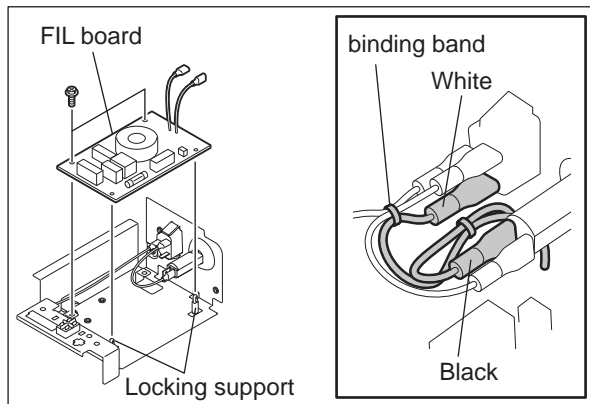



Fig. 7-23

7.1.11 Board case

- (1) Take off the board cover.
 P.7-2 "7.1.2 Board cover"
- (2) Remove 5 screws.

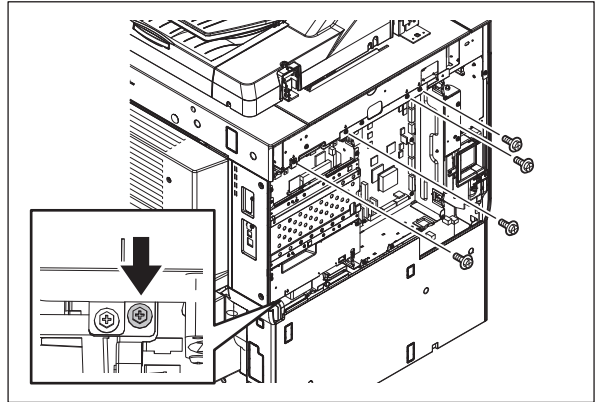


Fig. 7-24

- (3) Disconnect the USB terminal and 1 connector from the SYS board.
- (4) Disconnect the 1 connector from the IMG board.

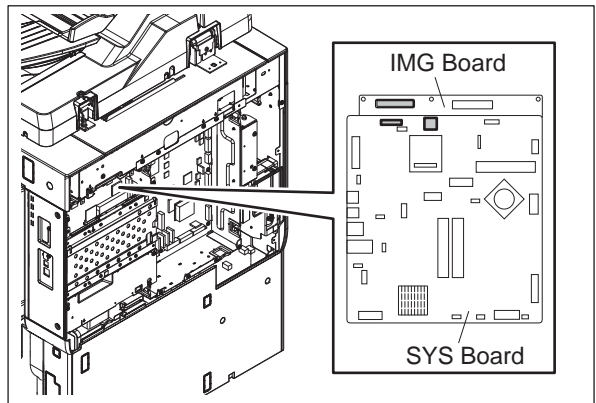


Fig. 7-25

- (5) Disconnect 2 connectors from the LGC board.

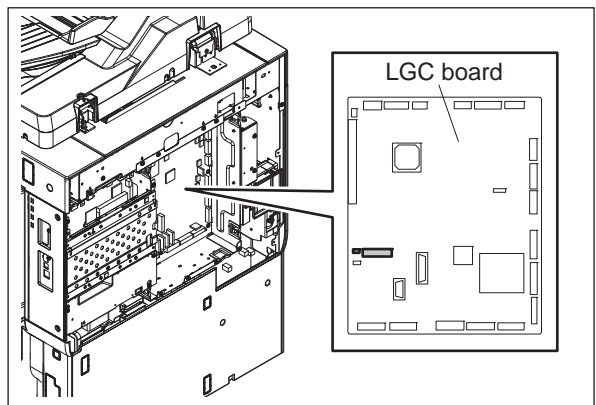


Fig. 7-26

- (6) Release harnesses from 4 clamps.

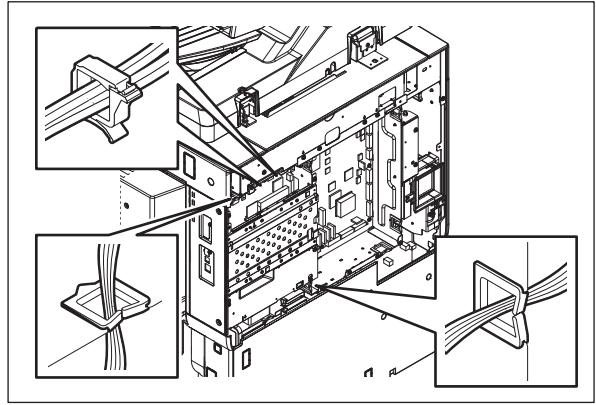


Fig. 7-27

- (7) Open the board case.

Note:

Open the board case gently during maintenance work or similar.

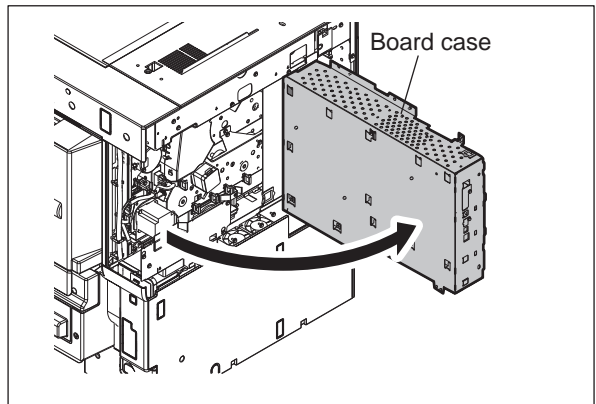



Fig. 7-28

7.1.12 SRAM board <for LGC board>

- (1) Take off the board cover.
 P.7-2 "7.1.2 Board cover"
- (2) Release 2 latches and take off the SRAM board for the LGC board with the case.

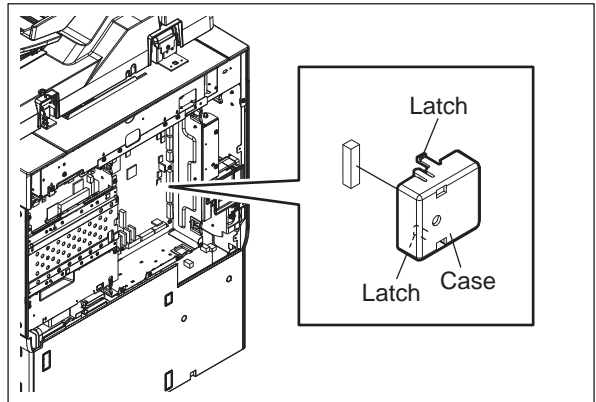


Fig. 7-29

- (3) Release 2 latches and take off the SRAM board for LGC board from the case.

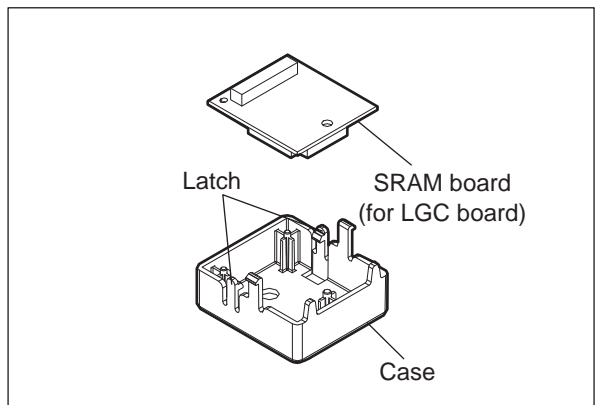


Fig. 7-30

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.

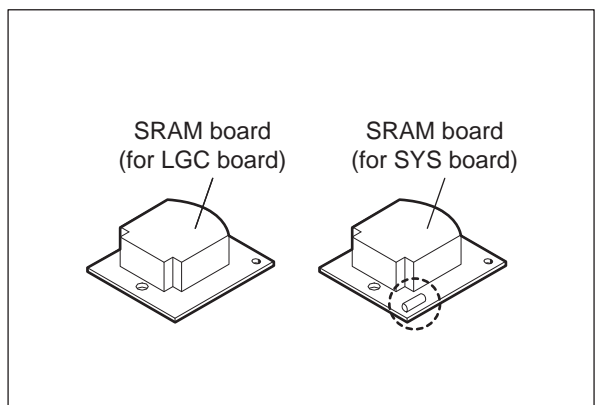



Fig. 7-31

7.1.13 SRAM board <for SYS board>

- (1) Take off the board cover.
 P.7-2 "7.1.2 Board cover"
- (2) Disconnect 2 connectors and take off the HDD.

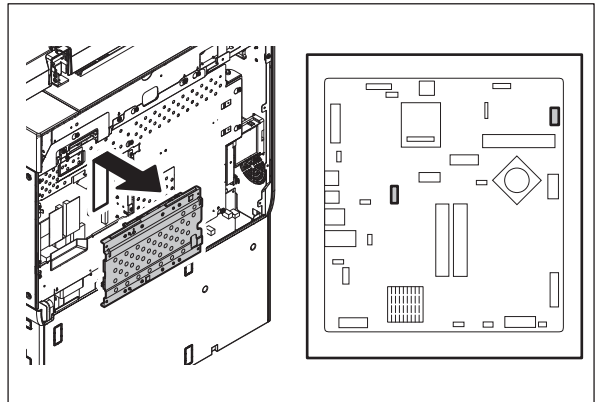


Fig. 7-32

- (3) Release 2 latches and take off the SRAM board for the SYS board with the case.

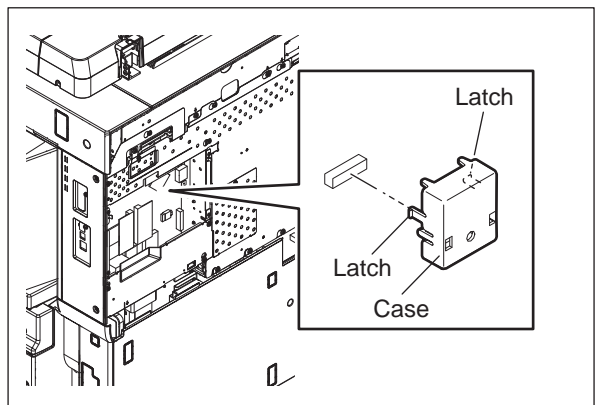


Fig. 7-33

- (4) Release 2 latches and take off the SRAM board for SYS board from the case.

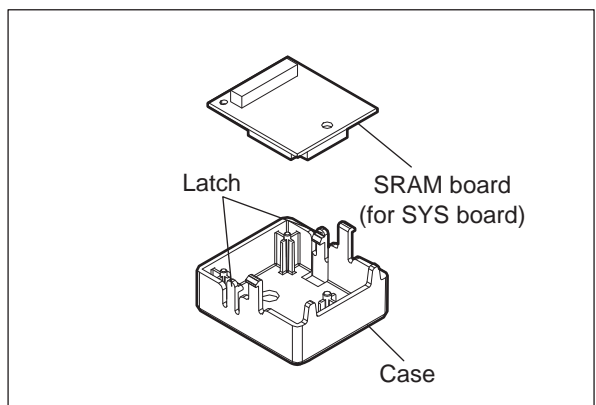


Fig. 7-34

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.

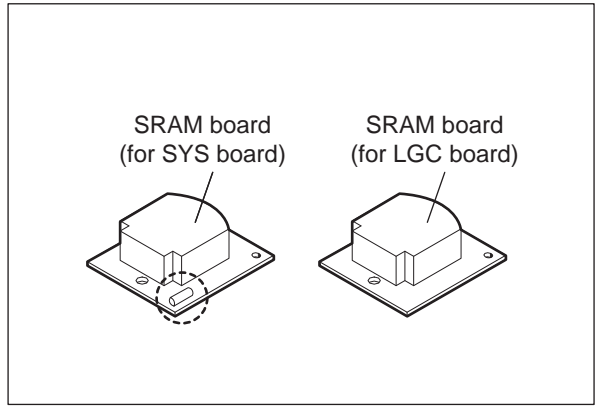


Fig. 7-35

7.2 Precautions, Procedures and Settings for Replacing PC Boards and HDD

7.2.1 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 "7.2.3Precautions and procedures when replacing the HDD".
- When the SYS board requires replacement, see "7.2.4Precautions and Procedures when replacing the SYS board".
- When the SLG board requires replacement, see "7.2.5Procedures and settings when replacing the SLG board".
- When SRAM requires replacement, see "7.2.6Precautions and procedure when replacing the SRAM board (for the SYS board)" / "7.2.7Procedures and settings when replacing SRAM board (for LGC board)".

7.2.2 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.

The screenshot shows a diagnostic screen with the following information:

- Setting code: 100 % 670
- Mode: TEST MODE
- HDD manufacturer: WDC
- Model name: WD800JD-22LSA1
- HDD serial number: WD-WMAM9TT18759

ID	NAME	VALUE	NAV	Worst
01	Read Error Rate	0	200	200
02	Throughput Performance	-----	---	---
03	Spin Up Time	2783	164	163
04	Spin Start/Stop Count	321	100	100
05	Re-allocated Sector Count	0	200	200
06	Read Channel Margin	-----	---	---
07	Seek Error Rate	0	200	200
08	Seek Time Performance	-----	---	---
09	Power-On Hours	136	100	100
0a	Spin Retry Count	0	100	100

Navigation buttons: Prevl, Next, ENTER. Page indicator: 1/3

Fig. 7-36

- 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.

7.2.3 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.

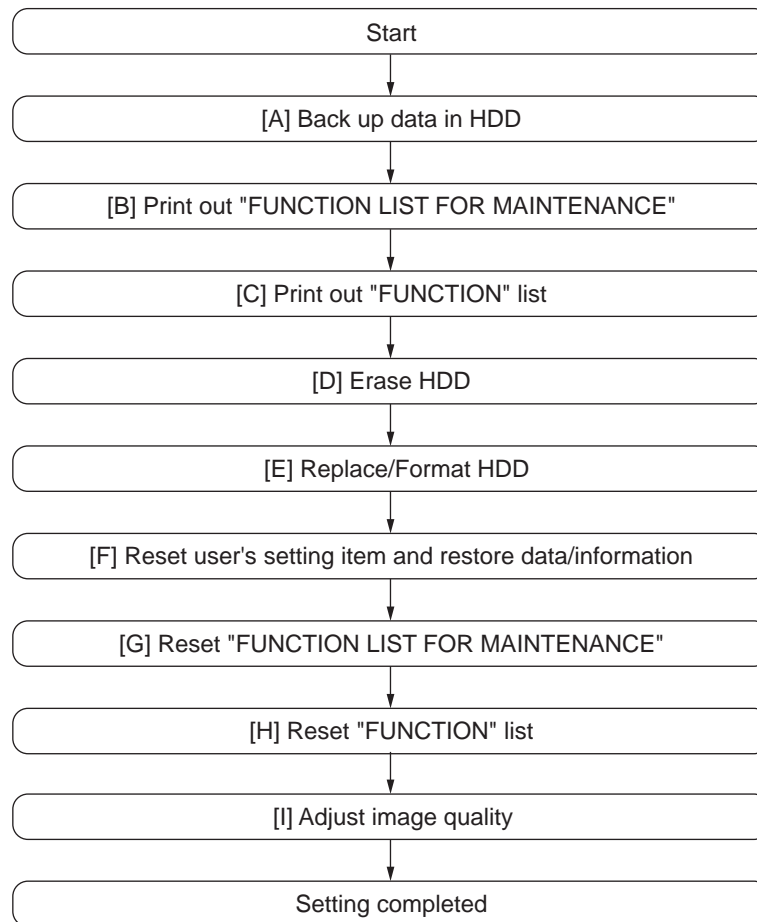


Fig. 7-37

[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.7-33 "7.3.1 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.7-1 "7.1.1 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 "8.1 Firmware 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.7-20 "[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.

[I] Adjust image quality

- (1) Start up with the Adjustment mode (05).
- (2) Perform "Automatic gamma adjustment" <PPC> (05-580).
 P.3-29 "3.2.1 Automatic gamma adjustment"
- (3) Turn the power OFF.

7.2.4 Precautions and Procedures when replacing the SYS board

A procedure for SYS board replacement is shown below.

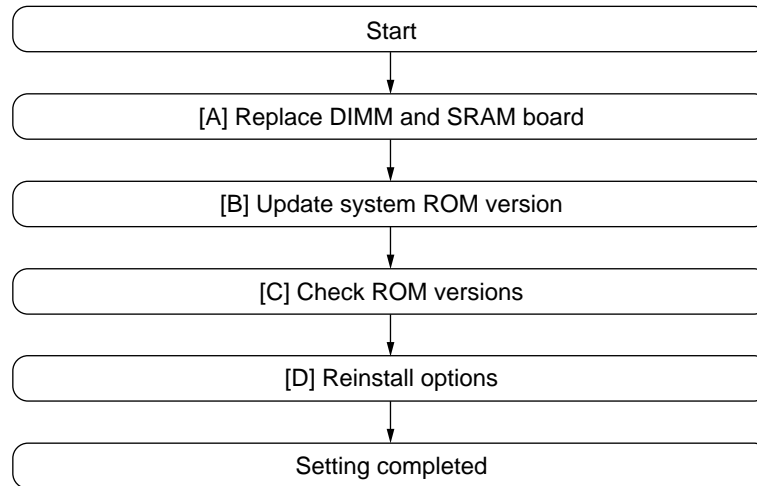


Fig. 7-38

[A] Replace DIMM and SRAM boards

Note:

Before replacing the SYS board, perform the following procedure.

P.7-15 "7.2.1 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 "8.1 Firmware 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.

7.2.5 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.
 Service Manual "7.6.12 SLG board (SLG)"
- (3) Update the scanner ROM using the USB Media.
 P.8-5 "8.1 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.

7.2.6 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.7-33 "7.3.3 Precautions when disposing of the SRAM board".

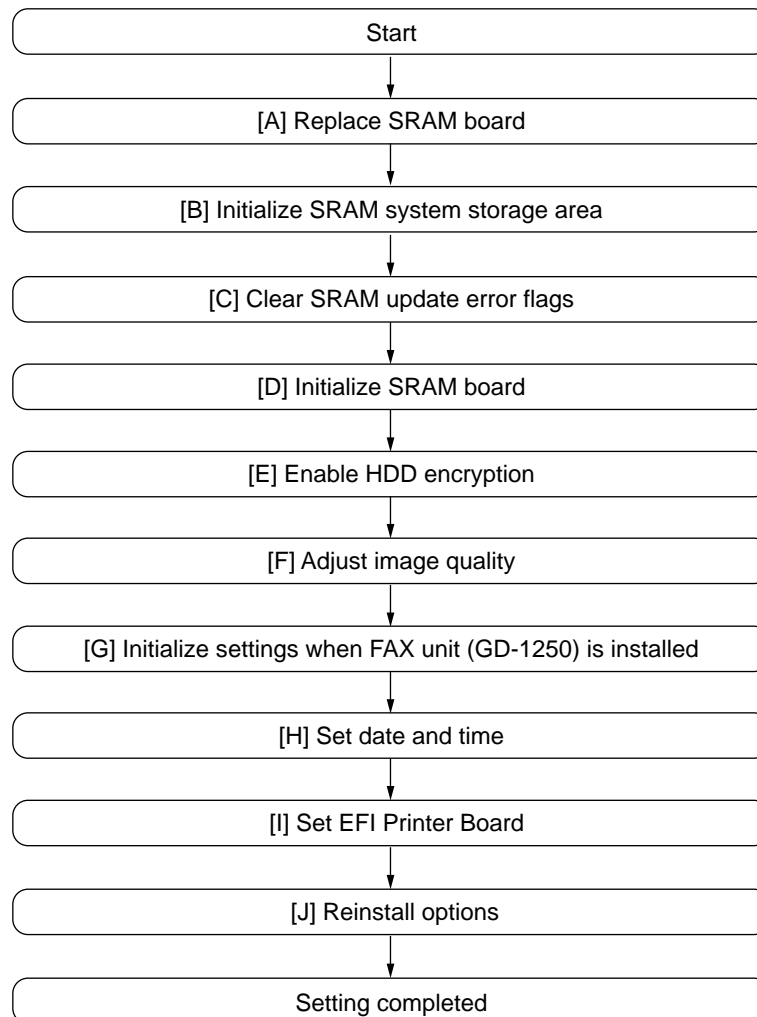



Fig. 7-39

[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.7-13 "7.1.13 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.3-29 "3.2.1 Automatic gamma adjustment"
- (4) Perform "Automatic gamma adjustment" <PRT> (05-1008).
 P.3-44 "3.3.1 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.

7.2.7 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.7-33 "7.3.3 Precautions when disposing of the SRAM board"

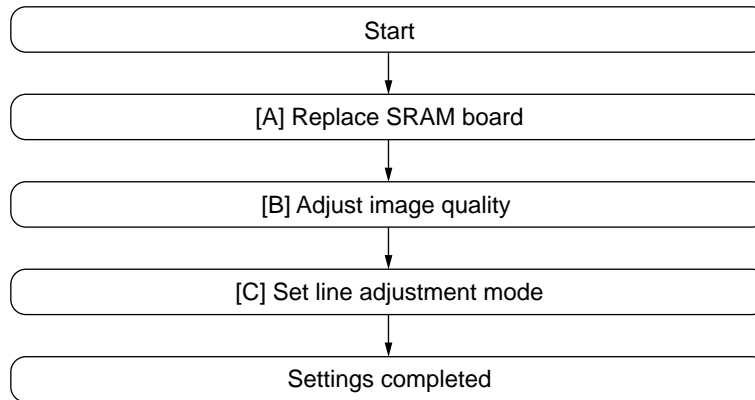



Fig. 7-40

[A] Replace SRAM board

- (1) Confirm that the power is turned OFF.
- (2) Replace the SRAM board (for the LGC board).
 P.7-12 "7.1.12 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.3-15 "3.1.8 Image dimensional adjustment at the printing section"
 -  P.3-20 "3.1.9 Image dimensional adjustment at the scanning section"
- (9) Perform "Automatic gamma adjustment" <PPC> (05-1642).
 -  P.3-29 "3.2.1 Automatic gamma adjustment"
- (10) Perform "Automatic gamma adjustment" <PRT> (05-1008).
 -  P.3-44 "3.3.1 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.

7.2.8 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

7.2.9 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.7-23 "7.2.4 Precautions and Procedures when replacing the SYS board"
 - 📖 P.7-25 "7.2.6 Precautions and procedure when replacing the SRAM board (for the SYS board)"
- (2) Reinstall the options referring to the following procedures.
 - 📖 P.7-23 "[D] Reinstall options"
 - 📖 P.7-28 "[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.

7.3 Precautions for Installation of GP-1070 and Disposal of HDD/ Board

7.3.1 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.2-69 "2.5.6 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.

7.3.2 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.

7.3.3 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.

8. 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.

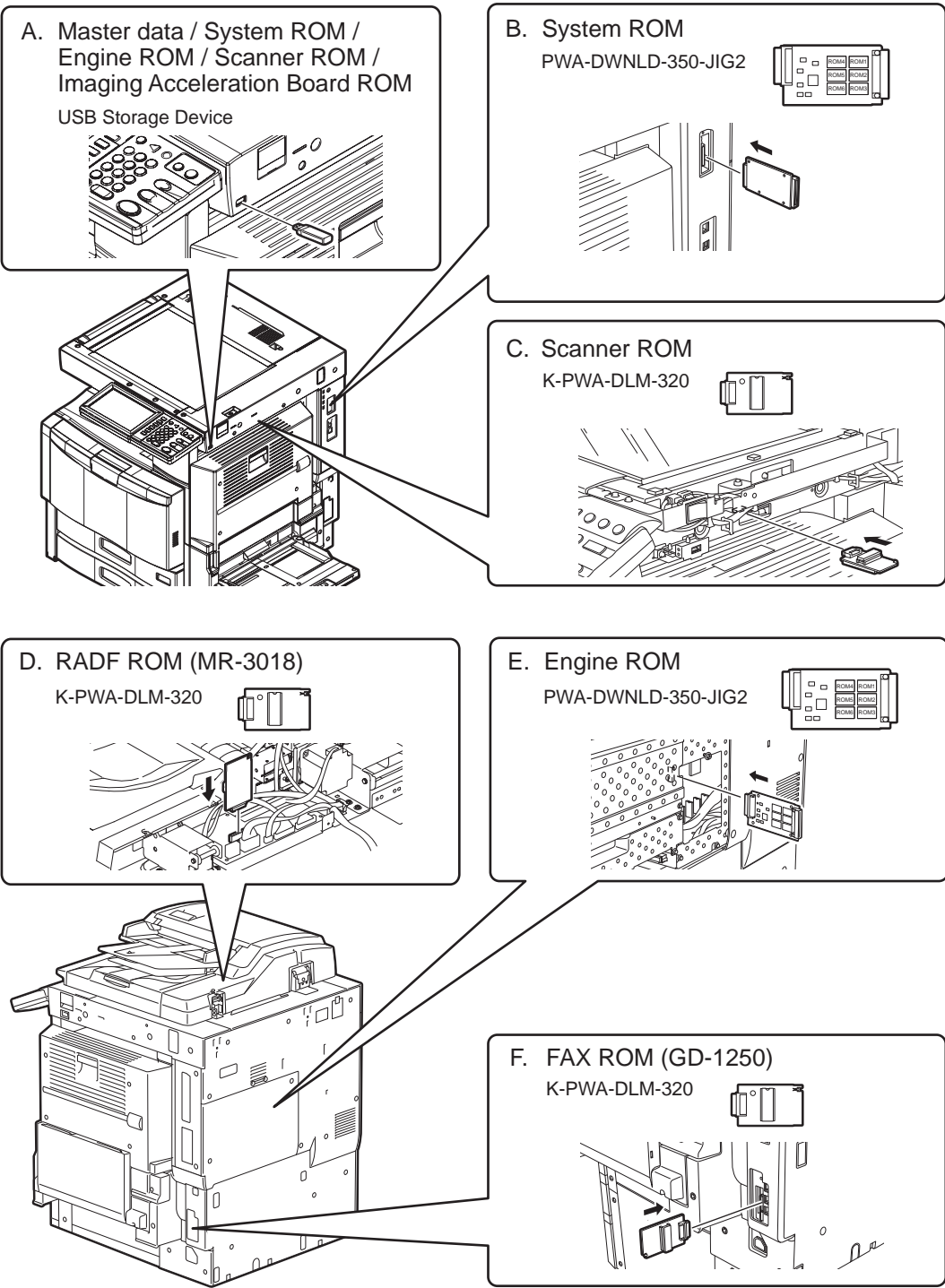
Equipment

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)

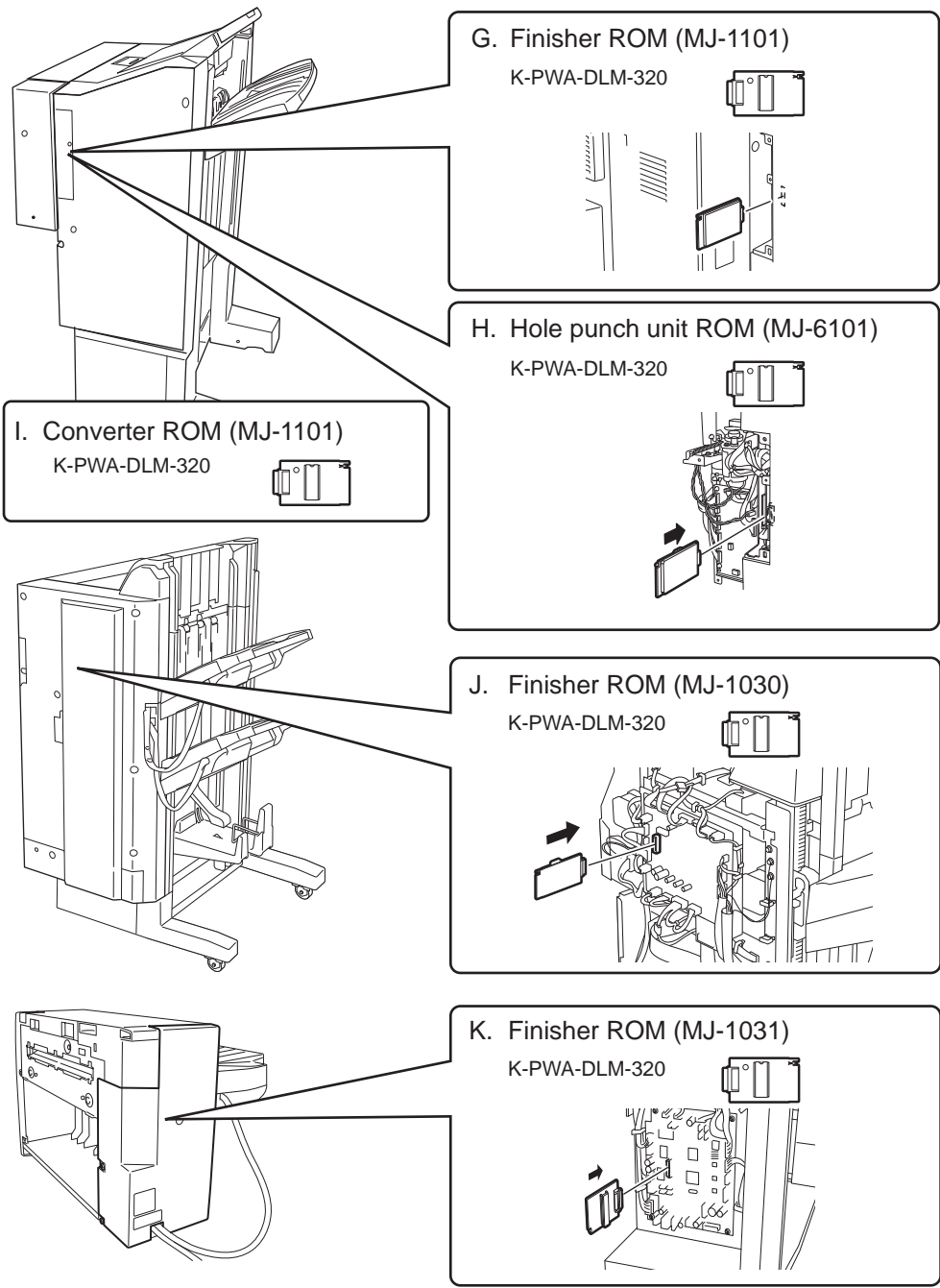
Options

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. 8-7
	Imaging Acceleration Board ROM	P. 8-17
B	System ROM, Engine ROM, Scanner ROM	P. 8-27
C	Scanner ROM	P. 8-33
D	RADF ROM (MR-3018)	P. 8-35
E	Engine ROM	P. 8-29
F	FAX ROM (GD-1250)	P. 8-54



G	Finisher ROM (MJ-1101)	P. 8-37
H	Hole punch unit ROM (MJ-6101)	P. 8-43
I	Converter ROM(MJ-1101)	P. 8-39
J	Finisher ROM (MJ-1030)	P. 8-47
K	Finisher ROM (MJ-1031)	P. 8-51

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.

8.1 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	dIFirmWare_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 (dIFirmWare_2820C_3530C) and the data file for updating in the model specific folder.

Model specific folder name	2820C_3530C
----------------------------	-------------

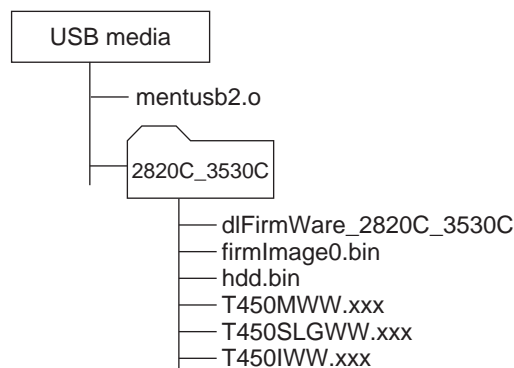



Fig. 8-1

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.2-4 "2.1 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.

8.1.1 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.

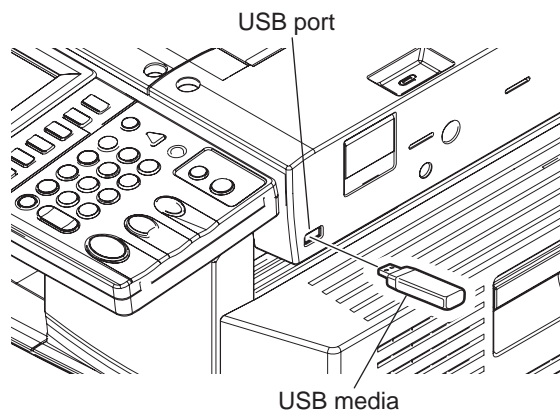


Fig. 8-2

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.

Download Strage Firmware Update Mode		dIFirmWare Version x.xx
		mentusb2 Version x.xx
Select Update Item		
* 1. OS Update		
* 2. HDD SYS Update	SYS Version ...	Installed Version Updater Version
	(Vxxx.xxx x)	(Vxxx.xxx x)
* 3. Engine Main Firmware Update	ENG Version ...	xxxxx-xx
* 4. Scanner Firmware Update	SCN Version ...	xxxxx-xx
* 5. MEP Firmware Update	MEP Version ...	I-xx.x.x

Fig. 8-3

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.8-17 "8.1.2 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 dIFirmWare_2820C_3530C in the storage device.	Model specific update program (dIFirmWare_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 Vxxx.xxx x * The version name comes at "xxx.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 UpdateFlash Update	Scanner Firm UpdateCompleted

- (7) “Update Completed.” is displayed at the bottom of the LCD screen after the updating is completed properly.

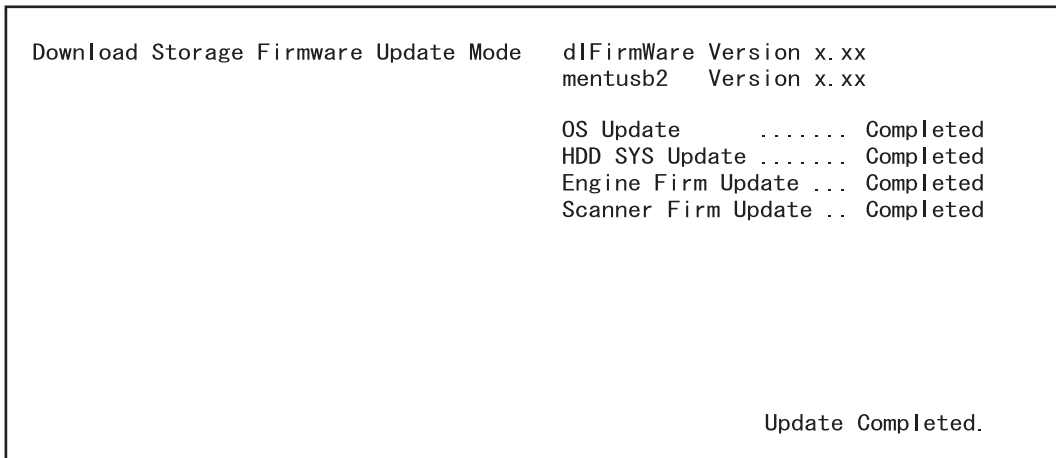


Fig. 8-4

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.8-56 "8.4 Confirmation of the updated data"

[C] Adjustment

Perform the adjustment of the equipment.

- Performing Image Quality Control (05-396):
 P.3-4 "3.1.3 Performing Image Quality Control (ICQ)"
- Adjustment of Color Registration Control (05-4719):
 P.3-6 "3.1.4 Adjustment of Color Registration Control"
- Automatic gamma adjustment <PPC> (05-1642) (using [4][FAX] test pattern):
 P.3-29 "3.2.1 Automatic gamma adjustment"
- Automatic gamma adjustment <PRT > (05-1008) (using [70][FAX] test pattern):
 P.3-44 "3.3.1 Automatic gamma adjustment"

[D] Display during the update

Update is performed in parallel as shown in the transition diagram below.

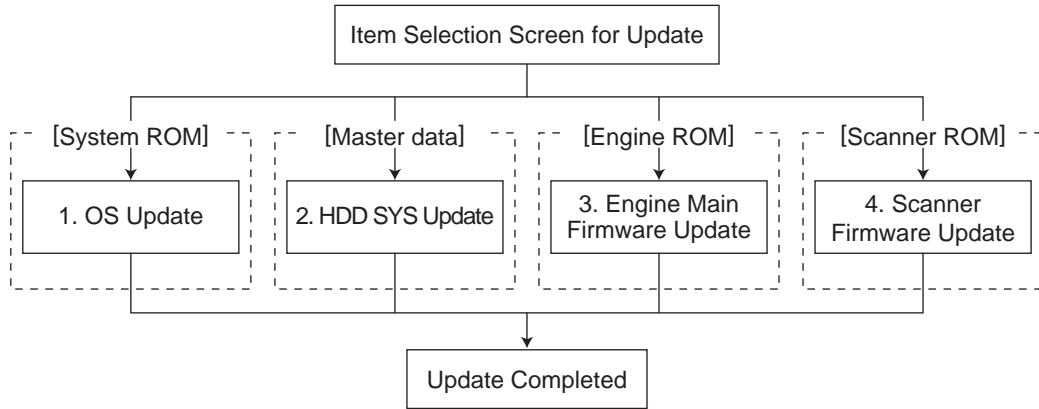


Fig. 8-5

Below is an example of the changes of the LCD screen during update.

System ROM

```

Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

Download Storage -> FROM Update Start  OS Update ..... FROM write
Check Devices   - Completed            HDD SYS Update ..... Copy file
Update Status   - Installing           Engine Firm Update ... Flash Update
Data Check      -                      Scanner Firm Update .. Flash Update

Download Storage -> HDD copying
                   xxx / xxx (xx%)
Engine Update Status
                   xxx / xxx byte (xx%)
Scanner Update Status
                   xxx / xxx byte (xx%)
  
```



```

Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

                                         OS Update ..... Completed
                                         HDD SYS Update ..... Copy file
                                         Engine Firm Update ... Flash Update
                                         Scanner Firm Update .. Flash Update

Download Storage -> HDD copying
                   xxx / xxx (xx%)
Engine Update Status
                   xxx / xxx byte (xx%)
Scanner Update Status
                   xxx / xxx byte (xx%)
  
```

Fig. 8-6

Master data

```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

                                         OS Update ..... Completed
                                         HDD SYS Update ..... Copy file
                                         Engine Firm Update ... Flash Update
                                         Scanner Firm Update .. Flash Update

Download Storage -> HDD copying
xxx / xxx (xx%)
Engine Update Status
xxx / xxx byte (xx%)
Scanner Update Status
xxx / xxx byte (xx%)
```



```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

                                         OS Update ..... Completed
                                         HDD SYS Update ..... Completed
                                         Engine Firm Update ... Flash Update
                                         Scanner Firm Update .. Flash Update

Engine Update Status
xxx / xxx byte (xx%)
Scanner Update Status
xxx / xxx byte (xx%)
```

Fig. 8-7

Engine ROM

```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx  
                                         mentusb2  Version x.xx  
  
                                         OS Update      ..... Completed  
                                         HDD SYS Update ..... Completed  
                                         Engine Firm Update ... Flash Update  
                                         Scanner Firm Update .. Flash Update  
  
Engine Update Status  
    xxx / xxx byte (xx%)  
Scanner Update Status  
    xxx / xxx byte (xx%)
```



```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx  
                                         mentusb2  Version x.xx  
  
                                         OS Update      ..... Completed  
                                         HDD SYS Update ..... Completed  
                                         Engine Firm Update ... Completed  
                                         Scanner Firm Update .. Flash Update  
  
Scanner Update Status  
    xxx / xxx byte (xx%)
```

Fig. 8-8

Scanner ROM

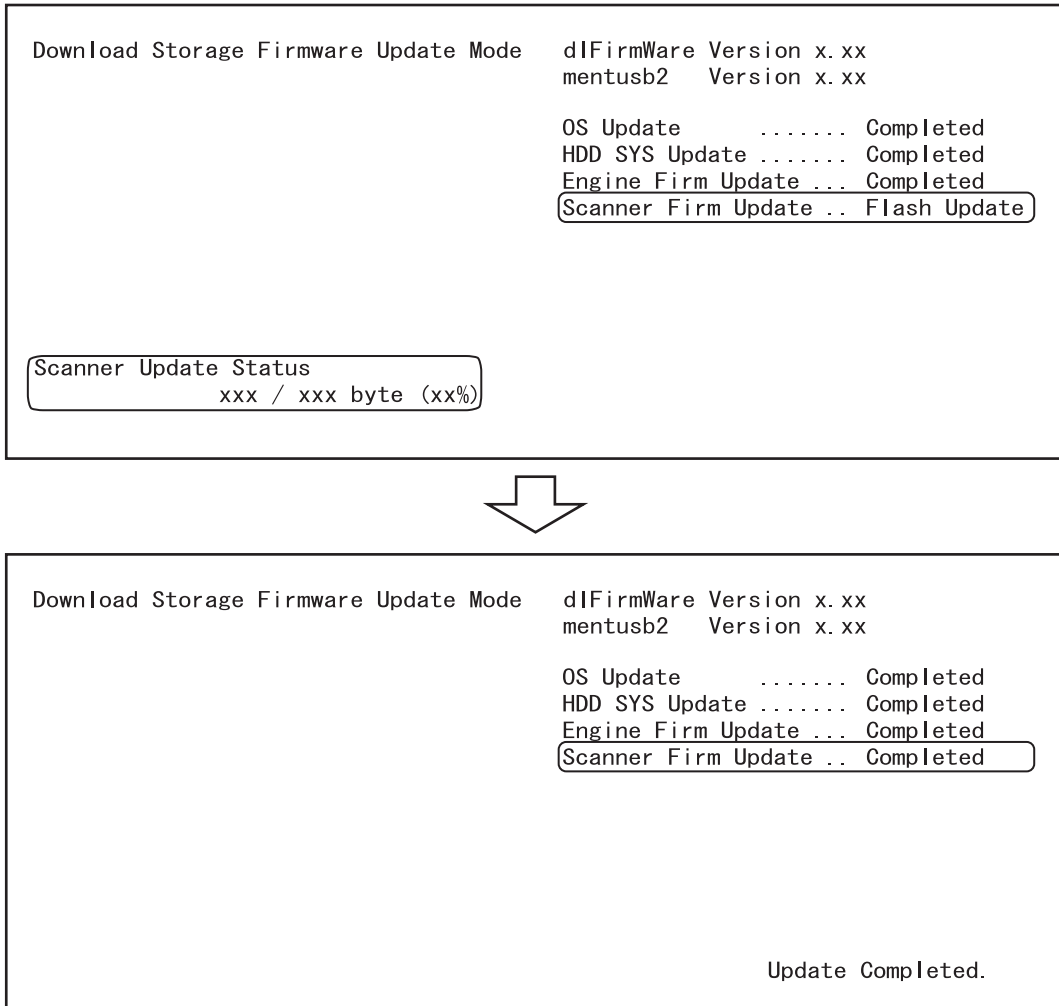


Fig. 8-9

8.1.2 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.

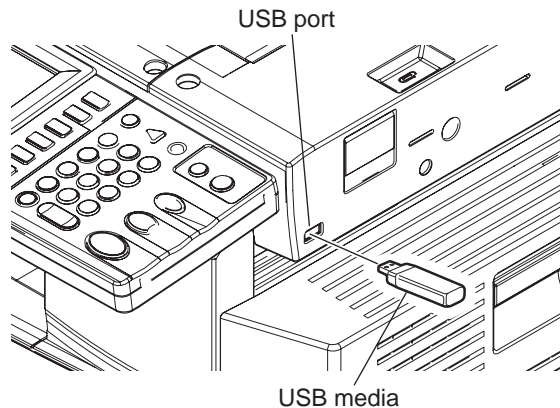


Fig. 8-10

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.

Download Strage Firmware Update Mode		dIFirmWare Version x.xx
		mentusb2 Version x.xx
Select Update Item		
* 1. OS Update		
* 2. HDD SYS Update	SYS Version ...	Installed Version Updater Version xxxxxxxxxx xxxxxxxxxxxx (Vxxx.xxx x) (Vxxx.xxx x)
* 3. Engine Main Firmware Update	ENG Version ...	xxxxx-xx xxxxx-xx
* 4. Scanner Firmware Update	SCN Version ...	xxxxx-xx xxxxx-xx
* 5. MEP Firmware Update	MEP Version ...	l-xx.x.x l-xx.x.x

Fig. 8-11

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.8-7 "8.1.1 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	<ul style="list-style-type: none"> 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 dIFirmWare_2820C_3530C in the storage device.	Model specific update program (dIFirmWare_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 Vxxx.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.

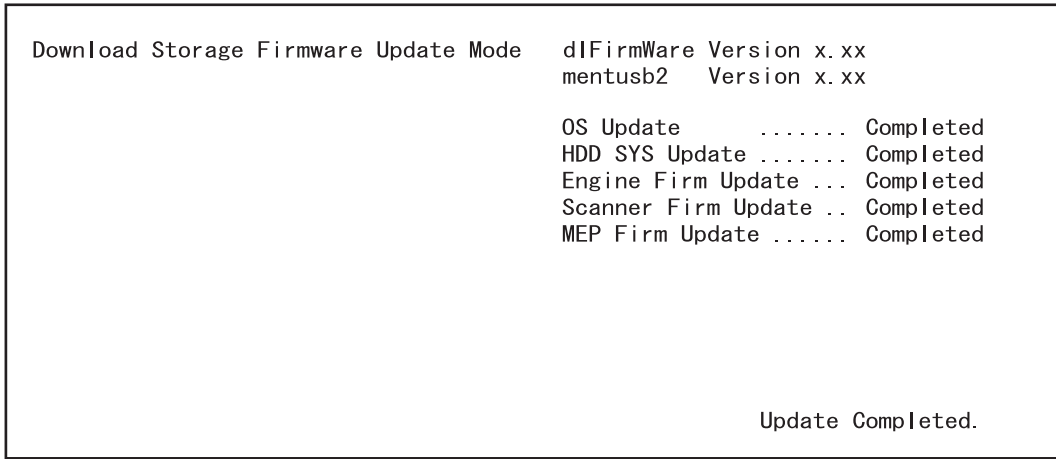


Fig. 8-12

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.

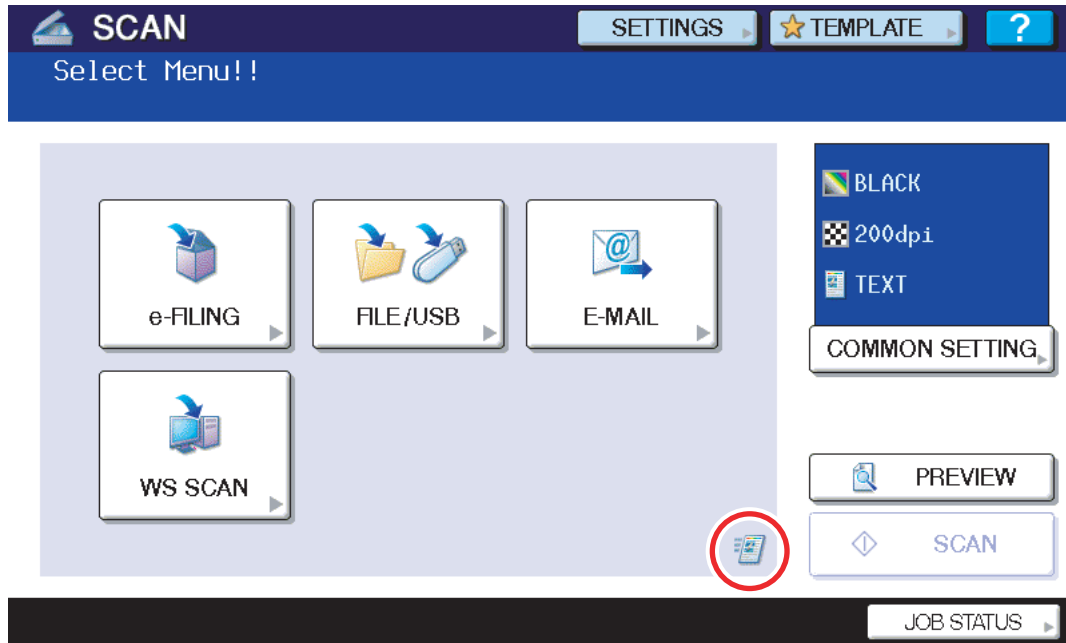
[B] Confirmation of the updated data

After the updating is completed, check each data version in the Setting Mode (08) to confirm that the data were overwritten properly.

📖 P.8-56 "8.4 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

```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

Download Storage -> FROM Update Start  OS Update      ..... FROM write
Check Devices   - Completed            HDD SYS Update ..... Copy file
Update Status   - Installing           Engine Firm Update ... Flash Update
Data Check      -                      Scanner Firm Update .. Flash Update
                                         MEP Firm Update ..... SROM Update

Download Storage -> HDD copying
                   xxx / xxx (xx%)
Engine Update Status
                   xxx / xxx byte (xx%)
Scanner Update Status
                   xxx / xxx byte (xx%)
MEP Update Status
                   writing .... xxx%
```



```
Download Storage Firmware Update Mode  dIFirmWare Version x.xx
                                         mentusb2  Version x.xx

Download Storage -> FROM Update Start  OS Update      ..... FROM write
Check Devices   - Completed            HDD SYS Update ..... Copy file
Update Status   - Installing           Engine Firm Update ... Flash Update
Data Check      -                      Scanner Firm Update .. Flash Update
                                         MEP Firm Update ..... Completed

Download Storage -> HDD copying
                   xxx / xxx (xx%)
Engine Update Status
                   xxx / xxx byte (xx%)
Scanner Update Status
                   xxx / xxx byte (xx%)
```

Fig. 8-13

8.2 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)

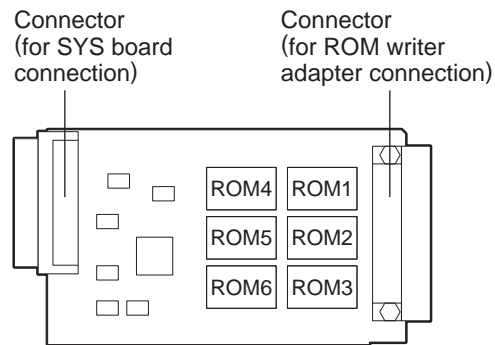


Fig. 8-14

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.

8.2.1 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.

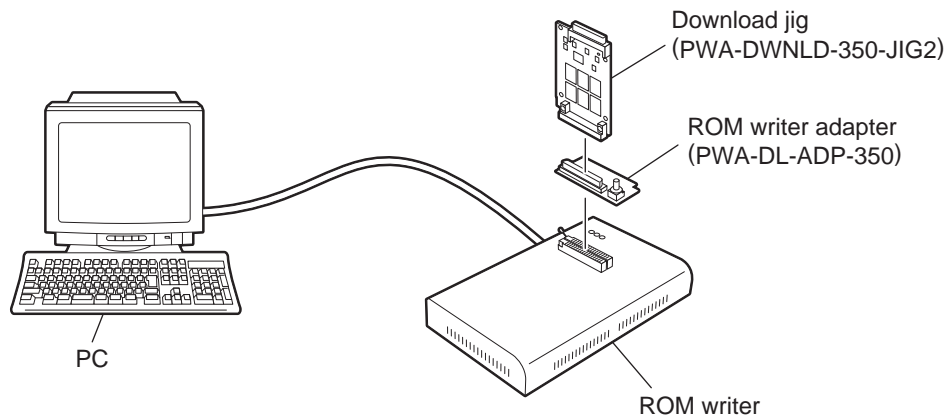
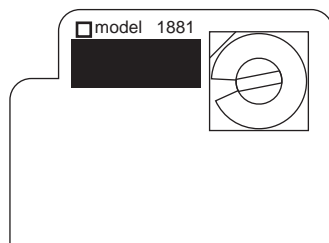


Fig. 8-15

Note:

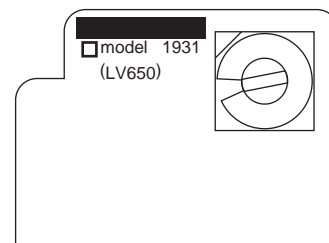
There are two types of the ROM writer adapter. Use the proper one according to the ROM writer to be used. Applicable type of the adapter for the ROM writer can be confirmed by the model name indicated on the board. Confirm that the adapter is available for the ROM writer to be used before connecting 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. 8-16



[PWA-DL-ADP-350-1931]

Fig. 8-17

[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 3FFFFFF. 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 3FFFFFF. 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

8.2.2 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.

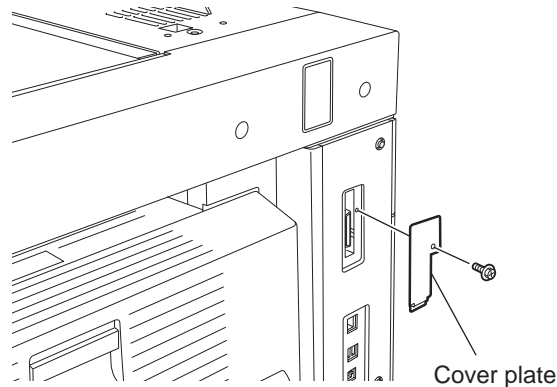


Fig. 8-18

- (4) Connect the download jig with the jig connector (CN101) on the SYS board.

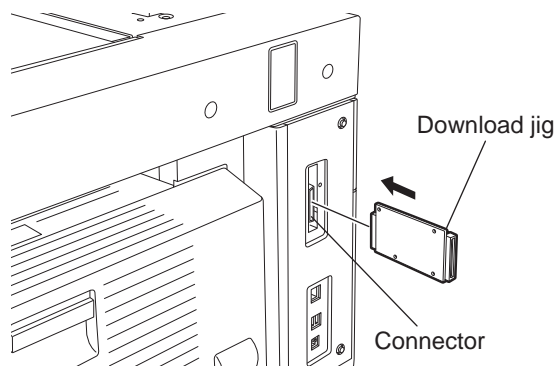


Fig. 8-19

- (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.8-56 "8.4 Confirmation of the updated data"

8.2.3 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.

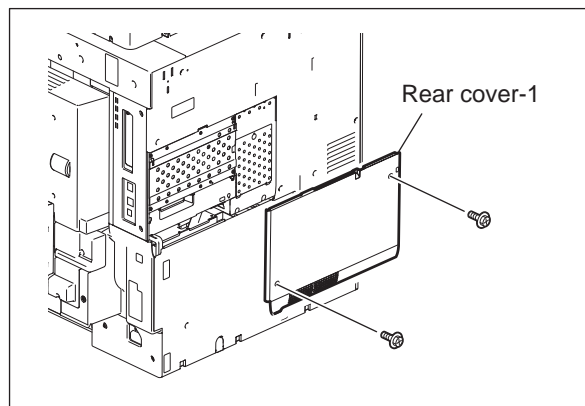


Fig. 8-20

- (5) Remove the cover plate.

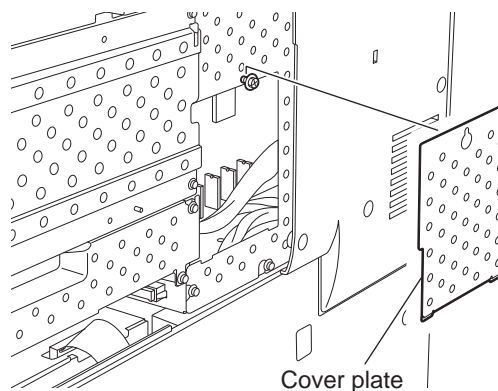


Fig. 8-21

- (6) Connect the download jig with the jig connector (CN352) on the logic PC board (LGC board).

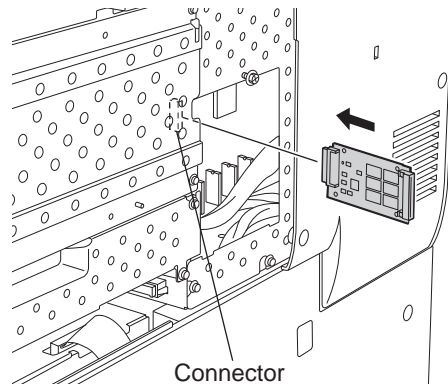


Fig. 8-22

- (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.8-56 "8.4 Confirmation of the updated data"

[C] Adjustment

Perform the adjustment of the equipment.

- Performing Image Quality Control (05-396):
📖 P.3-4 "3.1.3 Performing Image Quality Control (ICQ)"
- Adjustment of Color Registration Control (05-4719):
📖 P.3-6 "3.1.4 Adjustment of Color Registration Control"
- Automatic gamma adjustment <PPC> (05-1642) (using [4][FAX] test pattern):
📖 P.3-29 "3.2.1 Automatic gamma adjustment"
- Automatic gamma adjustment < PRT > (05-1008) (using [70][FAX] test pattern):
📖 P.3-44 "3.3.1 Automatic gamma adjustment"

8.3 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

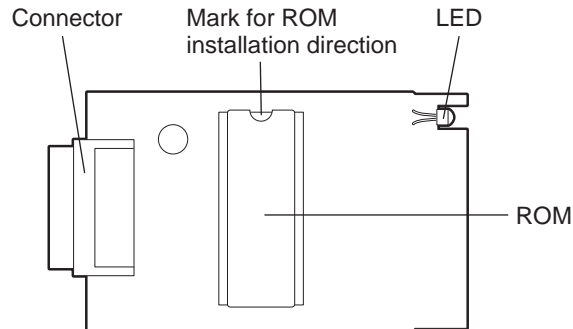


Fig. 8-23

Important:

Pay attention to the direction of the ROM.

8.3.1 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.

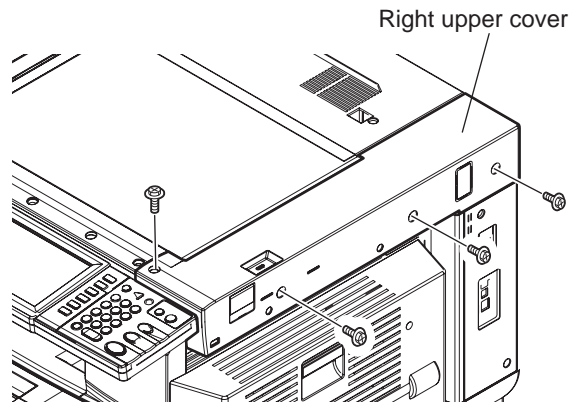


Fig. 8-24

- (4) Remove the cover plate.

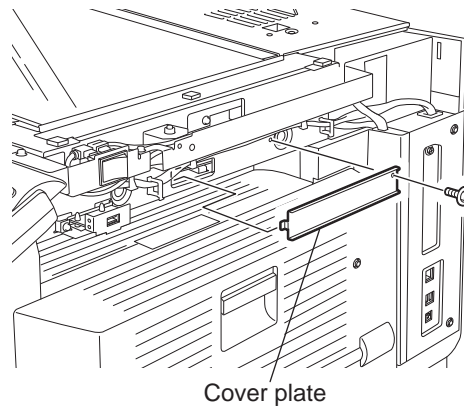


Fig. 8-25

- (5) Connect the download jig with the jig connector (CN16) on the scanning section control PC board (SLG board).

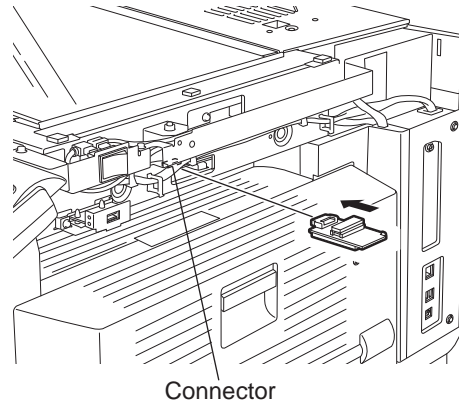


Fig. 8-26

- (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.8-56 "8.4 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.

8.3.2 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.

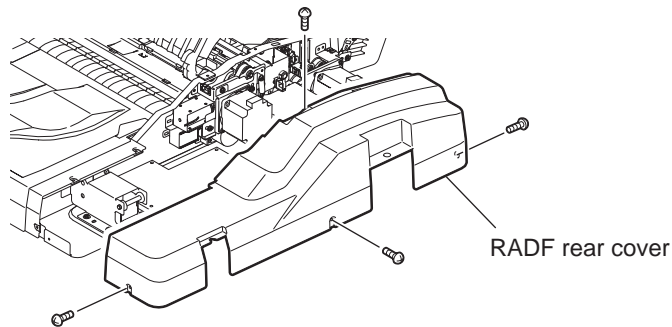


Fig. 8-27

- (4) Connect the download jig with the jig connector (CN81) on the RADF control PC board.

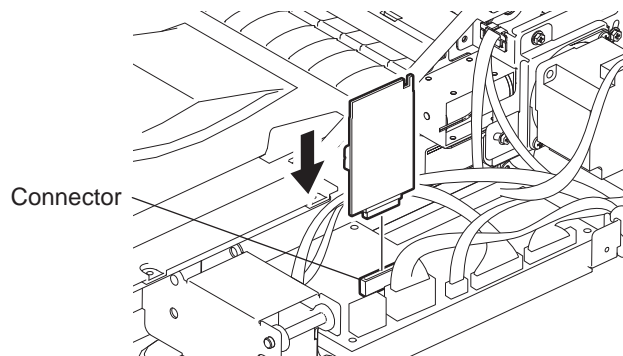



Fig. 8-28

- (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.8-56 "8.4 Confirmation of the updated data"

8.3.3 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.

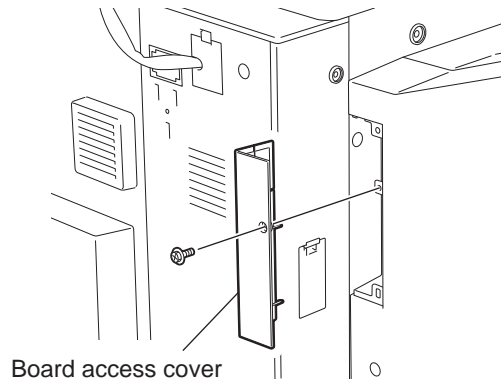


Fig. 8-29

- (4) Connect the download jig with the jig connector (CN9) on the Finisher control board.

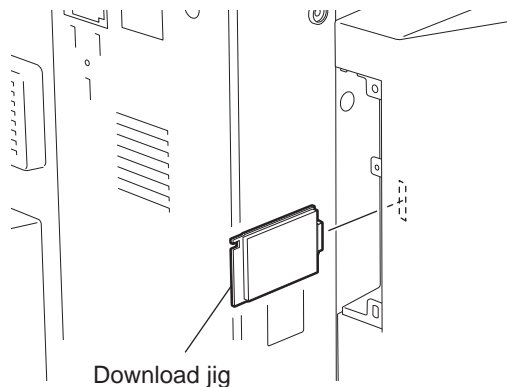



Fig. 8-30

- (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.8-56 "8.4 Confirmation of the updated data"

8.3.4 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.

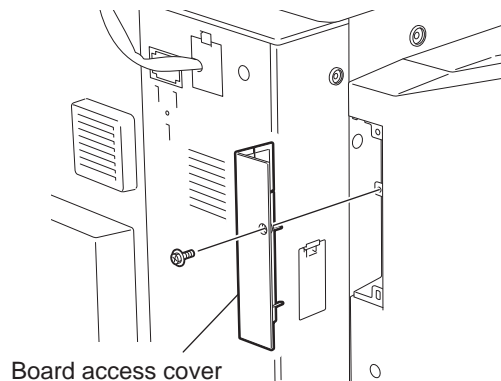


Fig. 8-31

- (4) Take off the rear cover-1 of the equipment.

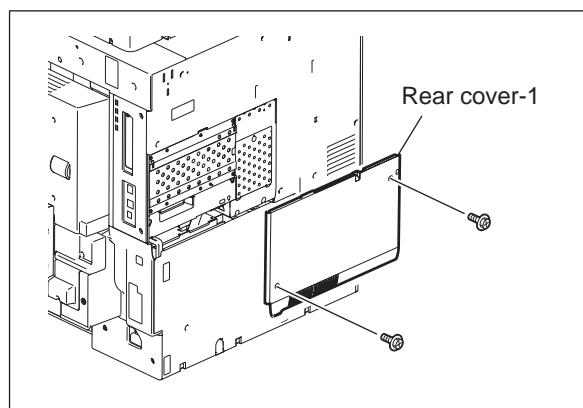


Fig. 8-32

- (5) Remove the cover plate.

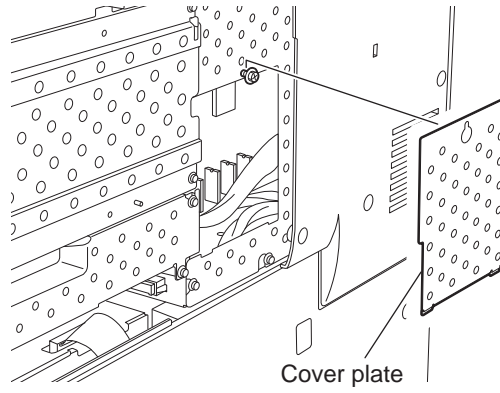


Fig. 8-33

- (6) Take off the converter PC board from the logic PC board (LGC board).

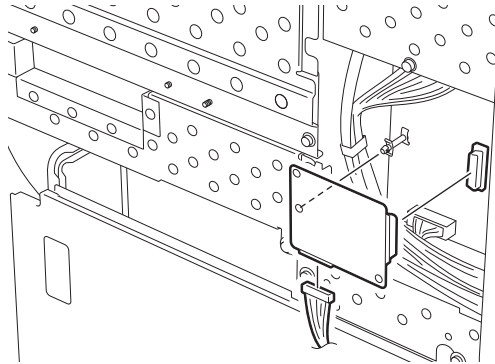


Fig. 8-34

- (7) Connect the 10-pin side of the harness jig for board connection to the connector (CN2) of the converter PC board.

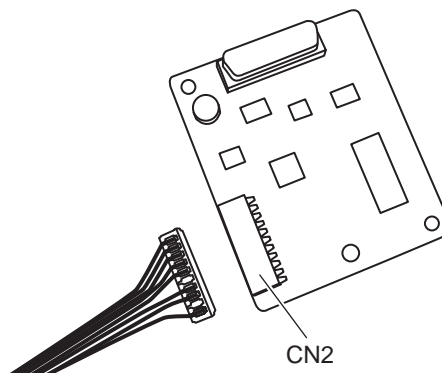


Fig. 8-35

- (8) Connect the 15-pin side of the harness jig for board connection to the connector (CN15) of the finisher control PC board.

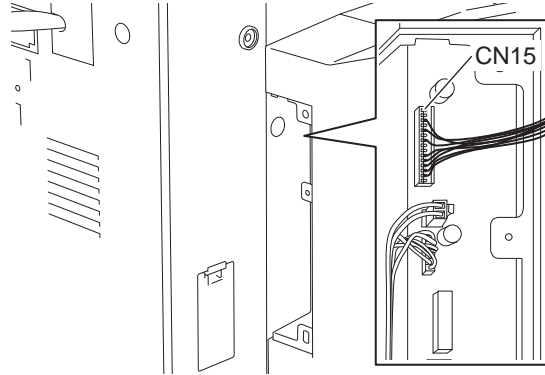


Fig. 8-36

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.

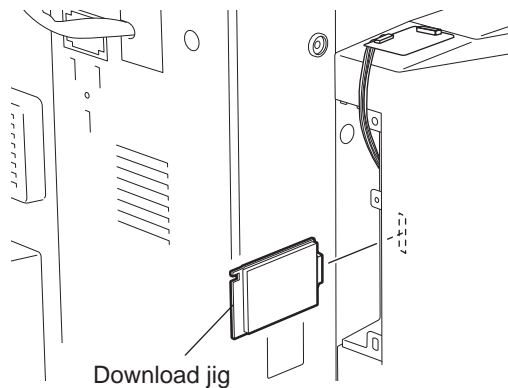


Fig. 8-37

- (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.8-56 "8.4 Confirmation of the updated data"

8.3.5 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.

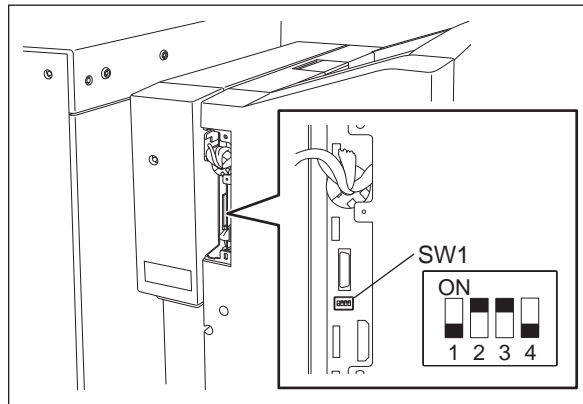


Fig. 8-38

- (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.

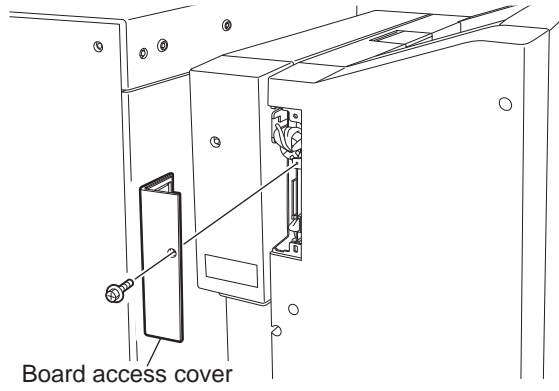


Fig. 8-39

- (4) Release the latches and take off the rear lower cover of the hole punch unit.

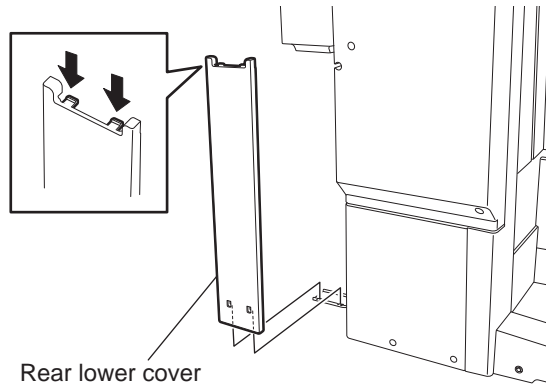


Fig. 8-40

- (5) Remove 3 screws and take off the rear cover of the hole punch unit.

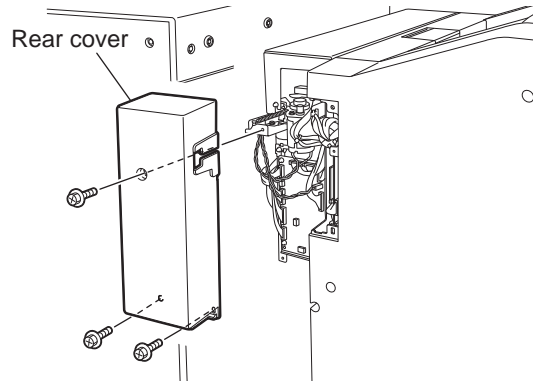


Fig. 8-41

- (6) Connect the download jig with the jig connector (CN9) on the finisher control PC board.

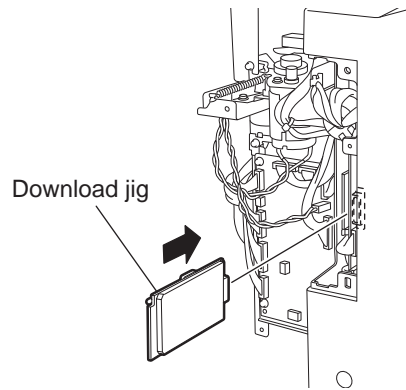


Fig. 8-42

- (7) Set the DIP-SW4 on the hole punch control PC board to ON.

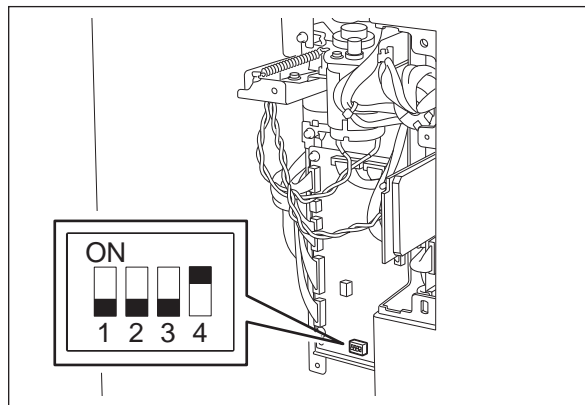


Fig. 8-43

- (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.

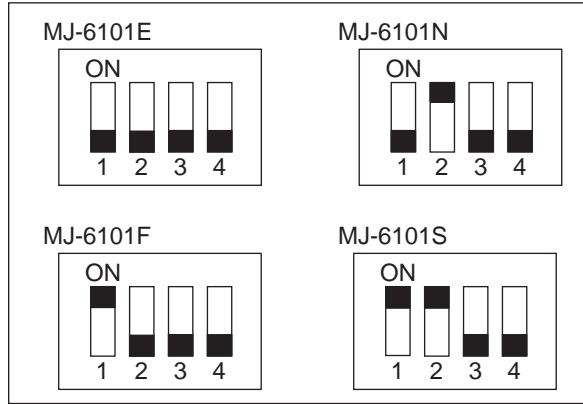


Fig. 8-44

(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.8-56 "8.4 Confirmation of the updated data"

8.3.6 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.

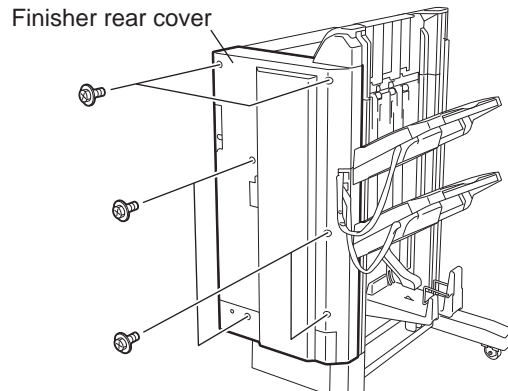


Fig. 8-45

* 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.

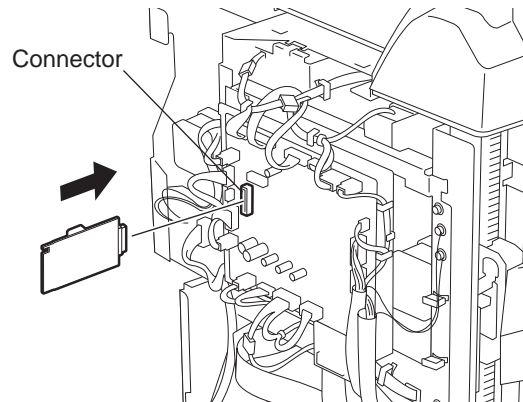


Fig. 8-46

- (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.

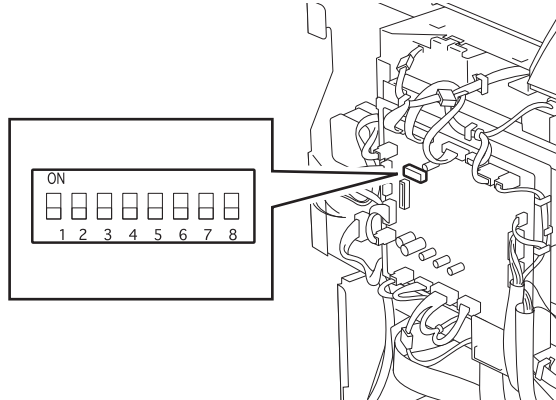


Fig. 8-47

DIP switch	Updating Finisher Firmware	Updating Saddle Sticher 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.

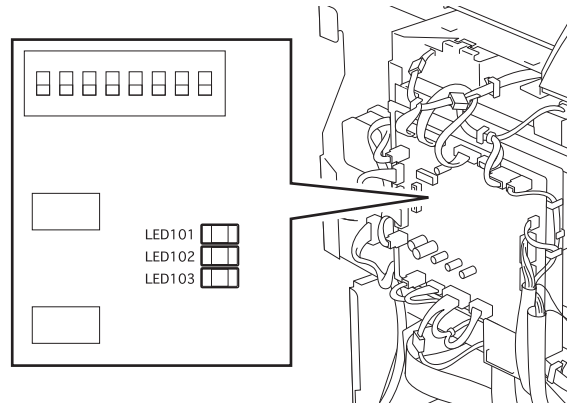



Fig. 8-48

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.8-56 "8.4 Confirmation of the updated data"

8.3.7 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.

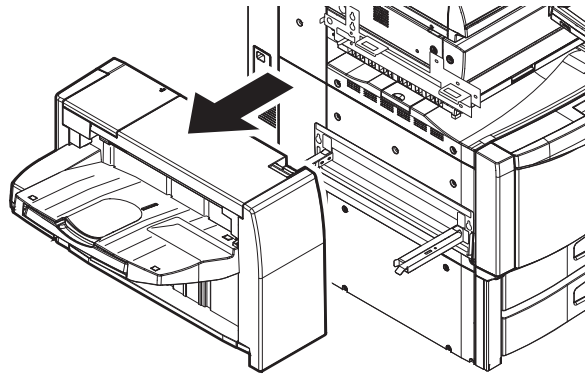


Fig. 8-49

- (4) Take off the rear cover.

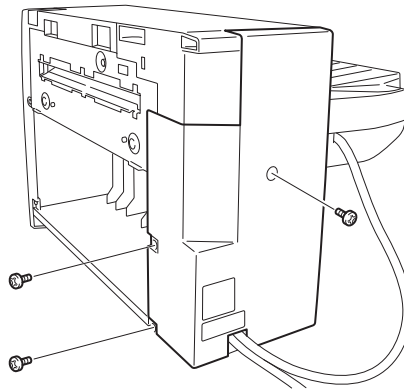


Fig. 8-50

- (5) Install the hanging finisher in the equipment.

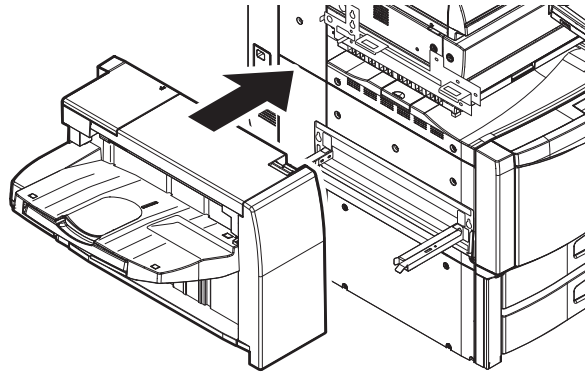


Fig. 8-51

- (6) Connect the download jig with the jig connector on the Finisher control board.

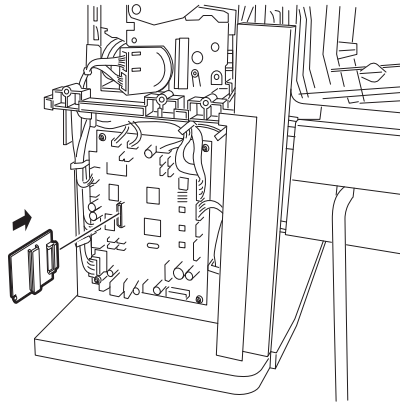



Fig. 8-52

- (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.8-56 "8.4 Confirmation of the updated data"

8.3.8 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.

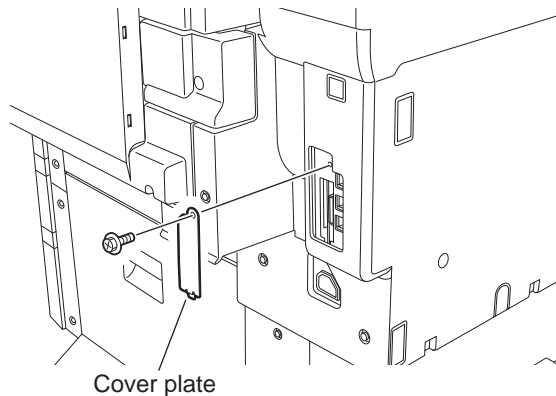


Fig. 8-53

- (4) Connect the download jig with the jig connector on the FAX board.

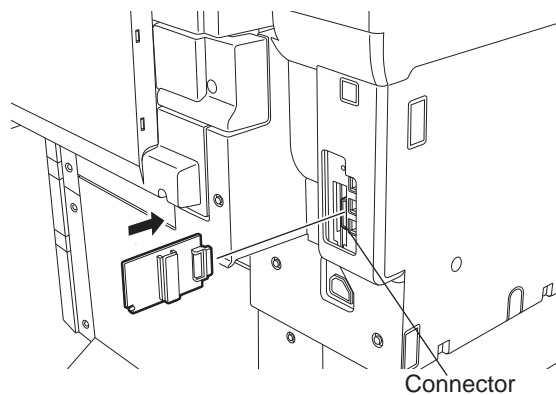


Fig. 8-54

- (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.8-56 "8.4 Confirmation of the updated data"

8.4 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

8.5 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.

8.5.1 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.8-27 "8.2.2 System ROM"
- (2) Update "Master Data", "Engine ROM" and "Scanner ROM" using the USB media.
See the updating procedure below for details.
 P.8-5 "8.1 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.

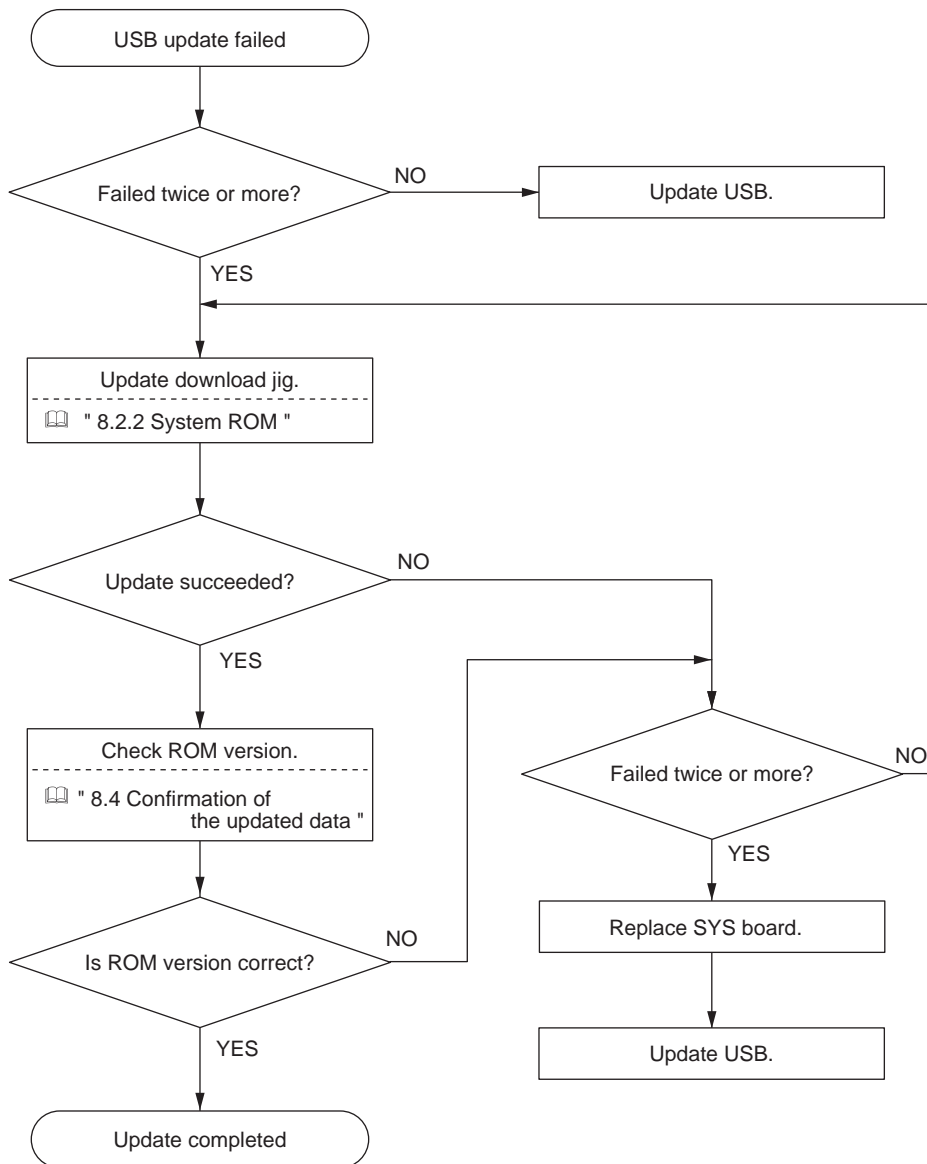
Firmware	Storage location	Download jig
Engine ROM	Logic PC board (LGC board)	PWA-DWNLD-350-JIG2  P.8-29 "8.2.3 Engine ROM"
Scanner ROM	Scanning section control PC board (SLG board)	K-PWA-DLM-320  P.8-33 "8.3.1 Scanner ROM"

Important:

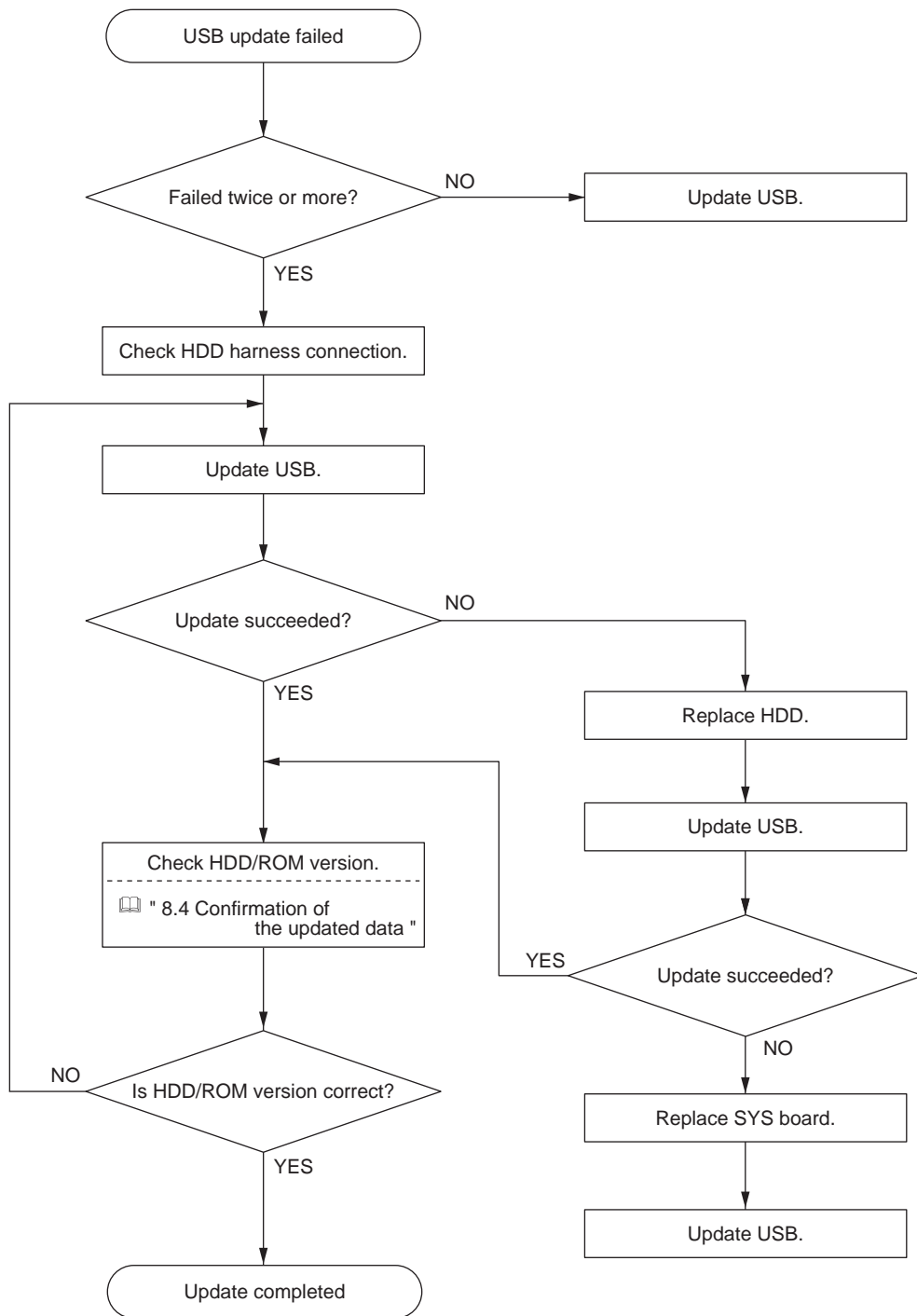
If the equipment cannot be started even when the above update has been performed, check that there is no damage to the "SYS board", "LGC board" or "SLG board". Replace them if necessary.

8.5.2 Flow chart for correcting USB update failure

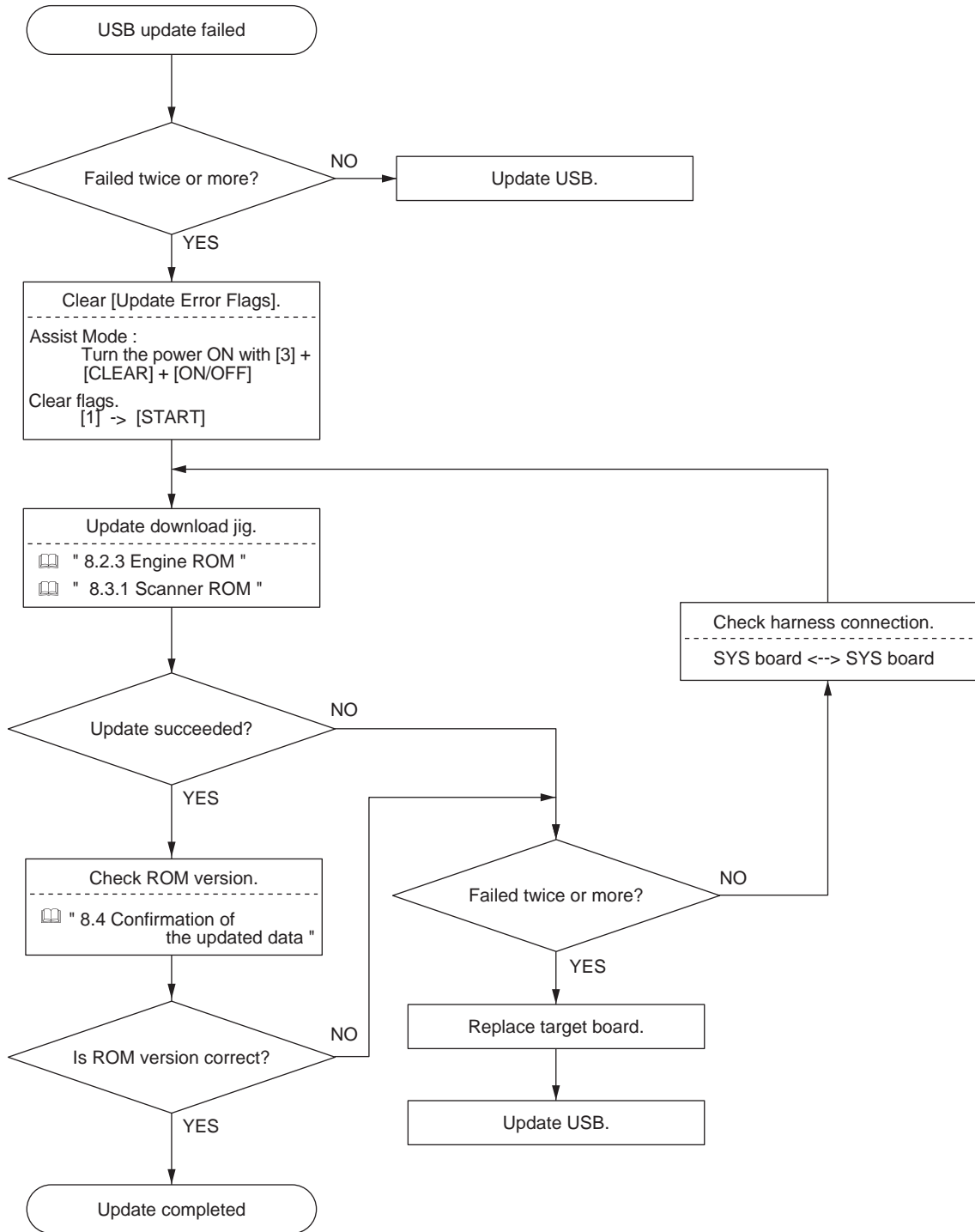
[A] When the update of the System ROM (OS data) failed



[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



9. POWER SUPPLY UNIT

9.1 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.

9.2 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.

9.3 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.

9.4 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

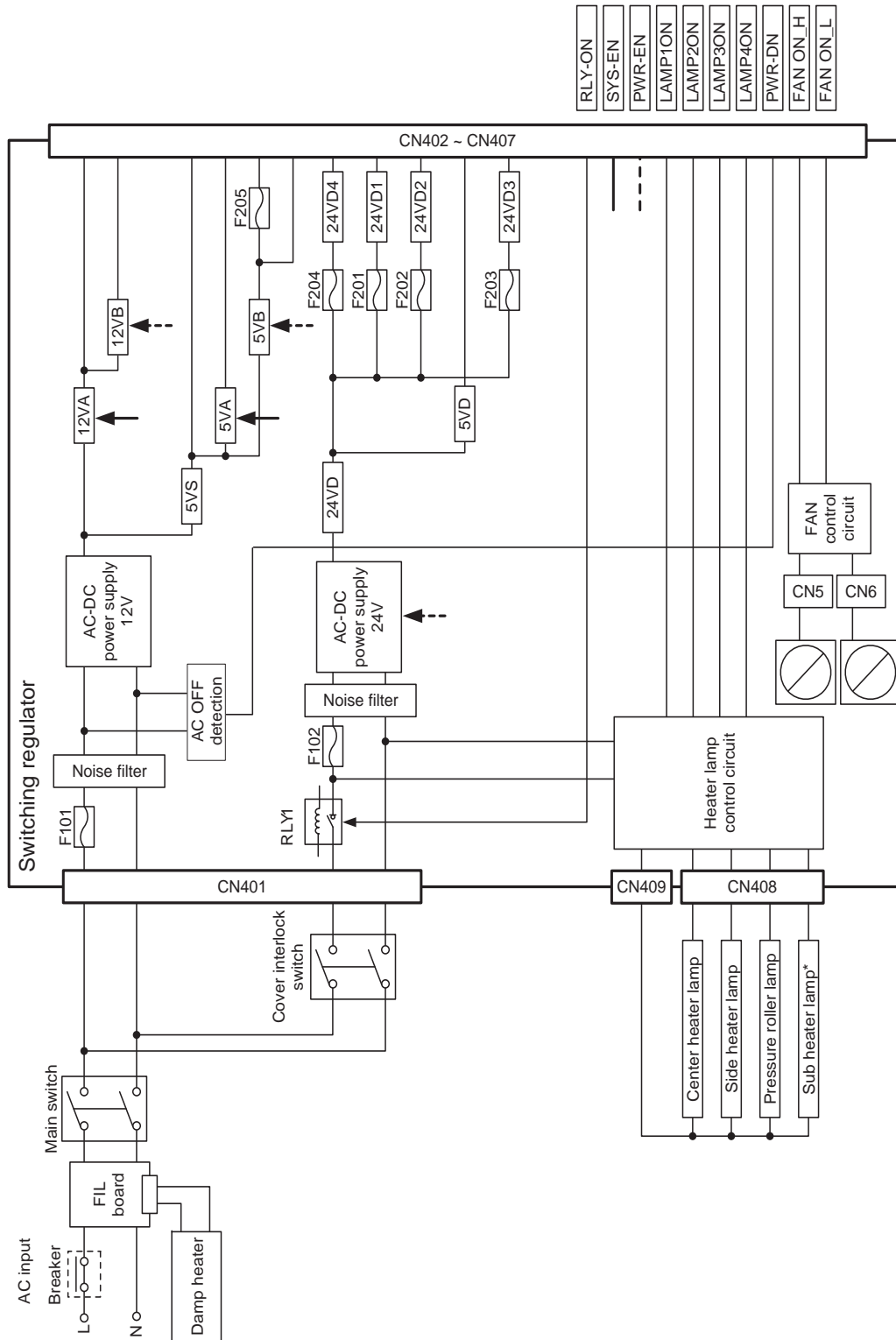
Connector	Destination	Voltage
CN405	For the LGC board, PFP/LCF (via LGC board, high-voltage transformer (via LGC board)	+5.1 VD, +24 VD1, +24 VD2, +24 VD3
CN406	For the finisher	+24 VD4
CN407	For the SLG board, RADF	+24 VD

9.5 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				
	PPF/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)			
		PPF/LCF (via LGC board)					

9.6 Configuration of Power Supply Unit



*:e-STUDIO4520C only

Fig. 9-1

9.7 Sequence of Power Supply

- Power ON, Power failure, Power OFF

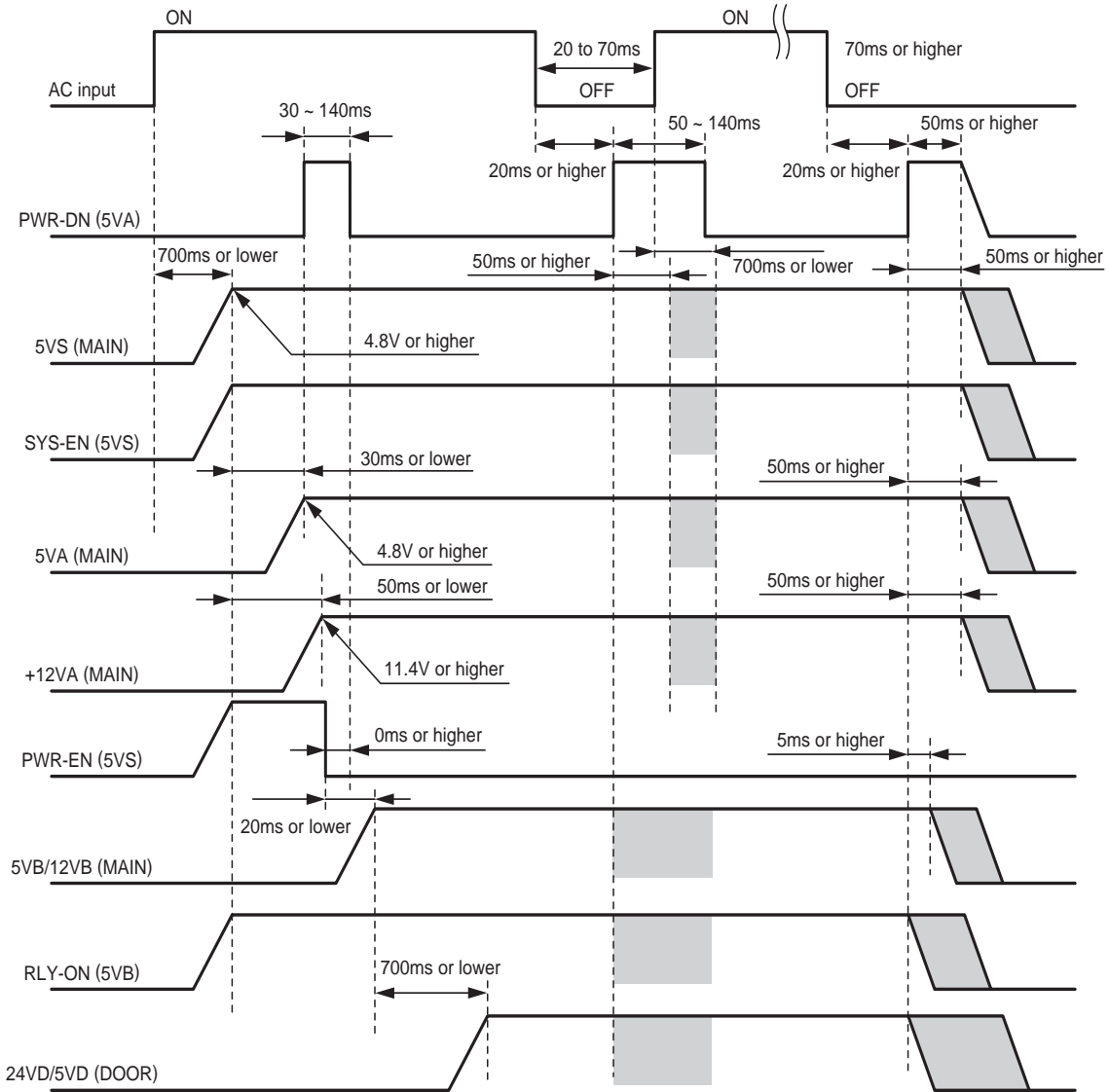


Fig. 9-2

- Sleep mode, OFF mode

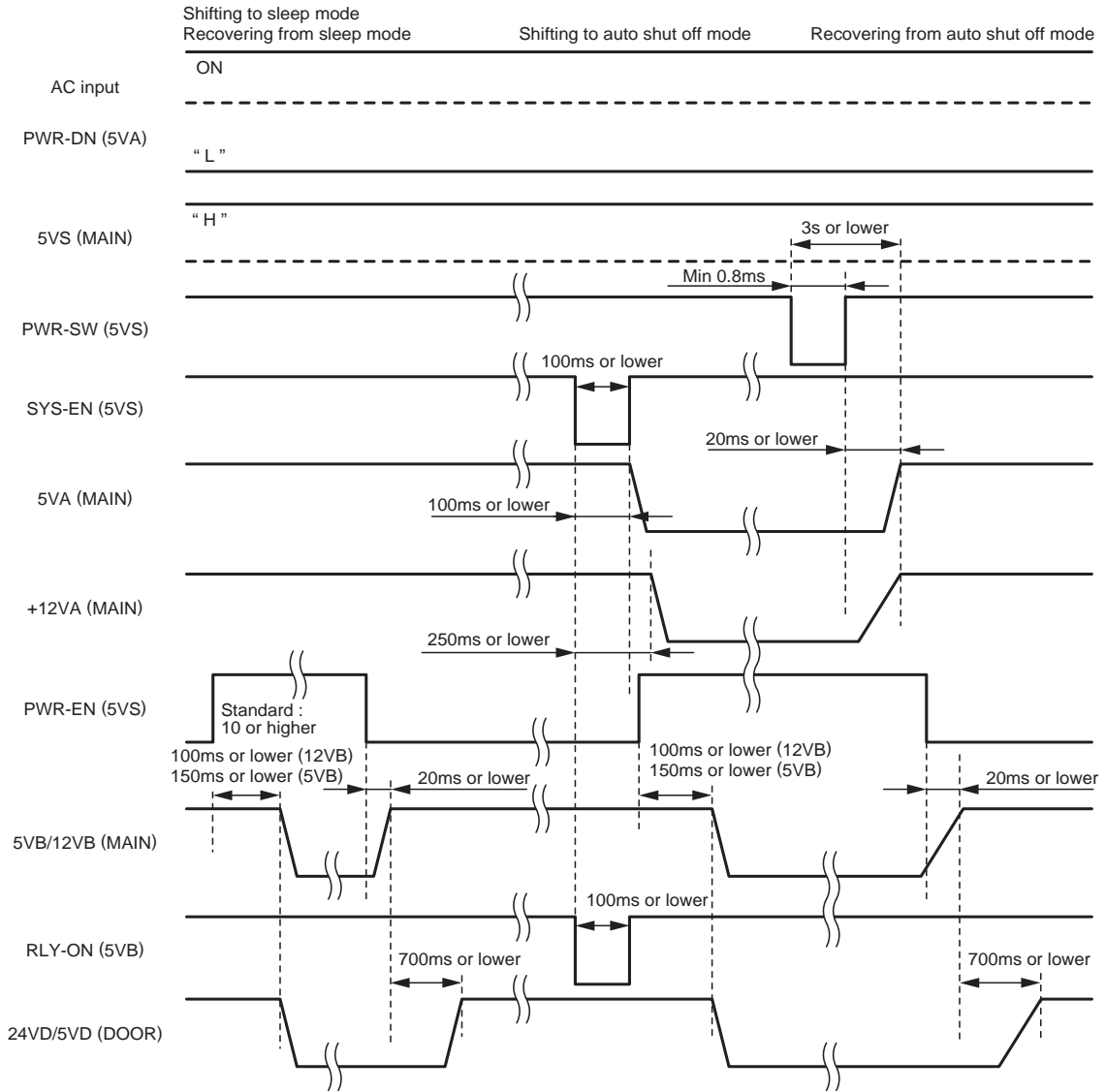


Fig. 9-3

9.8 AC Wire Harness

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

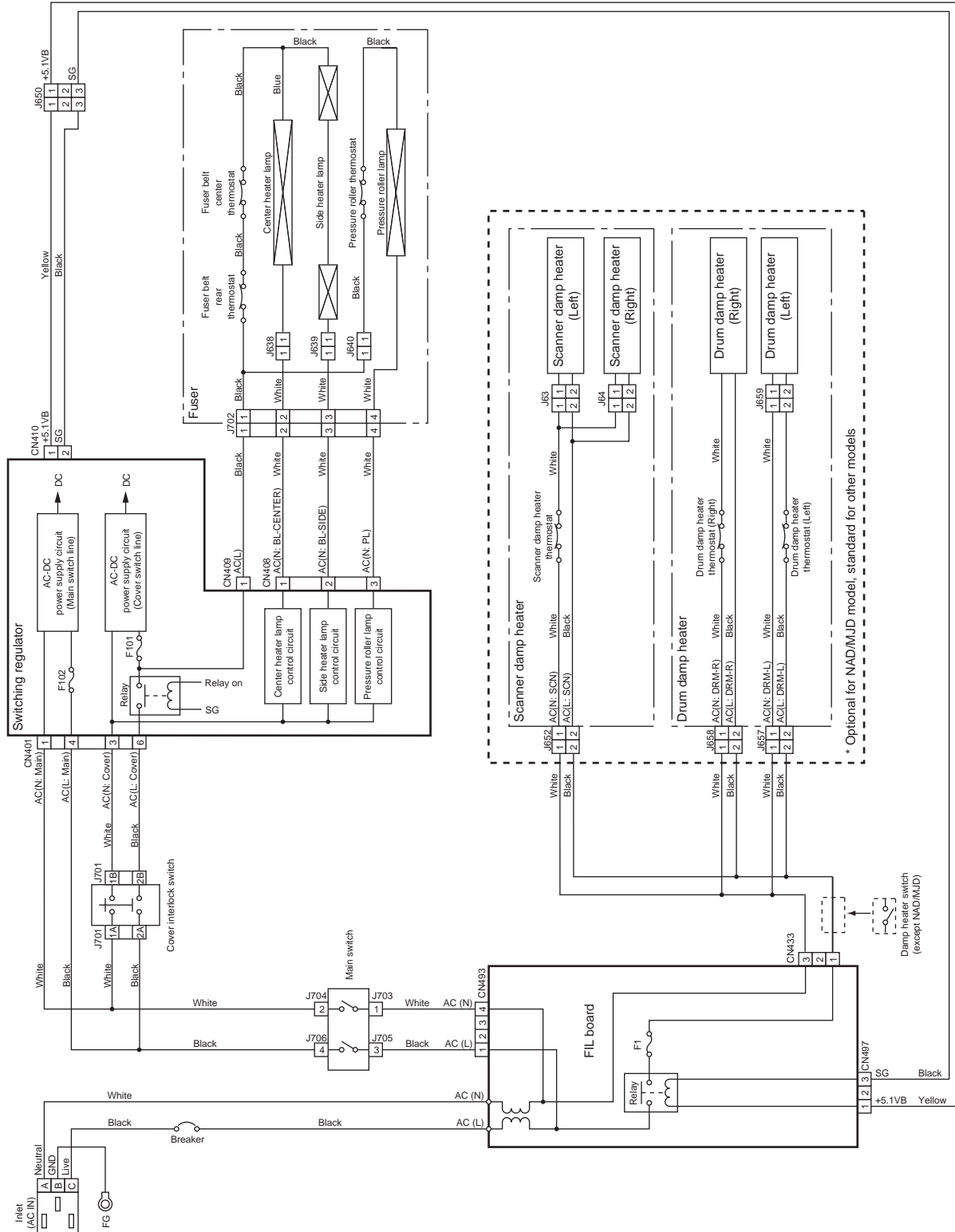


Fig. 9-4

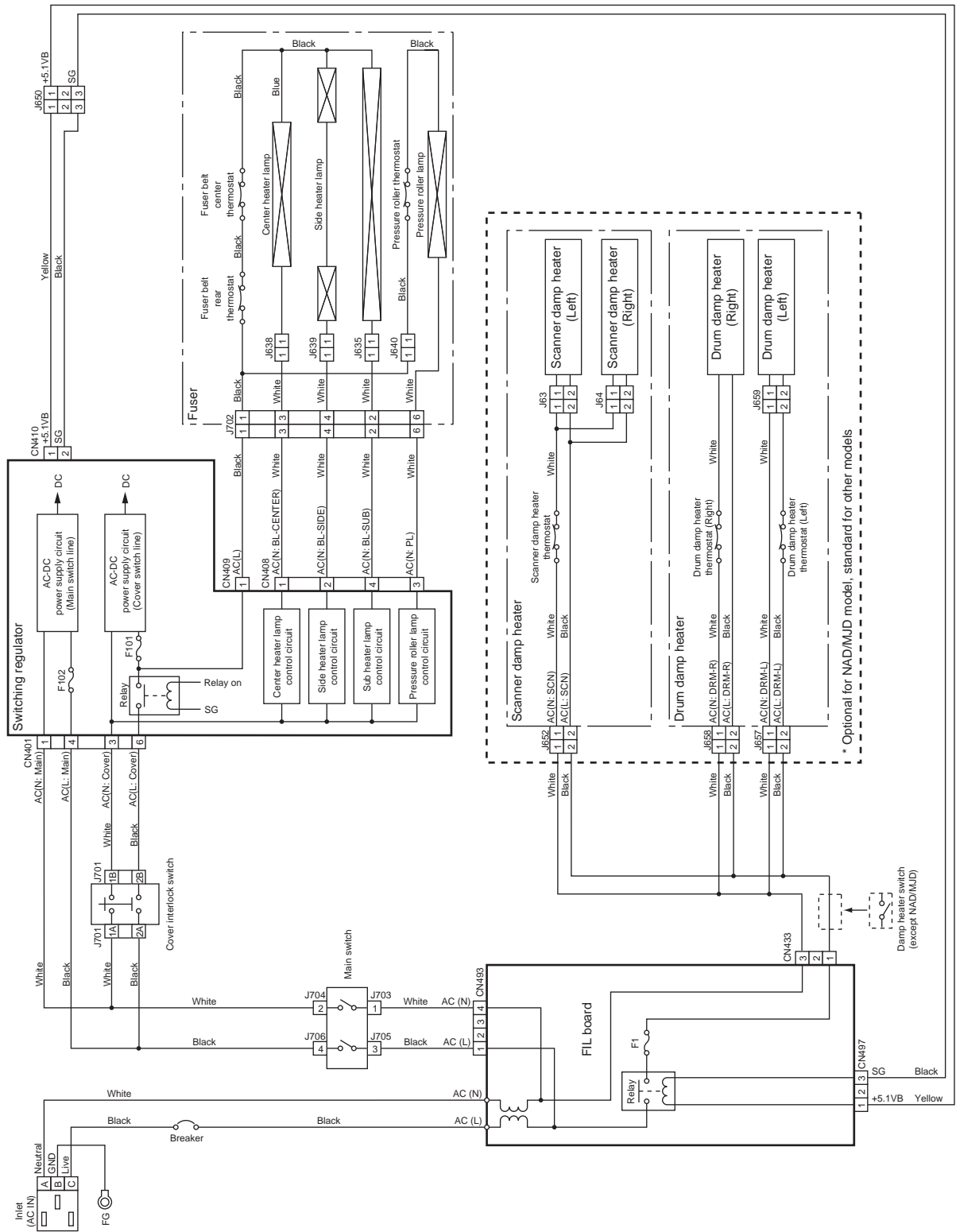
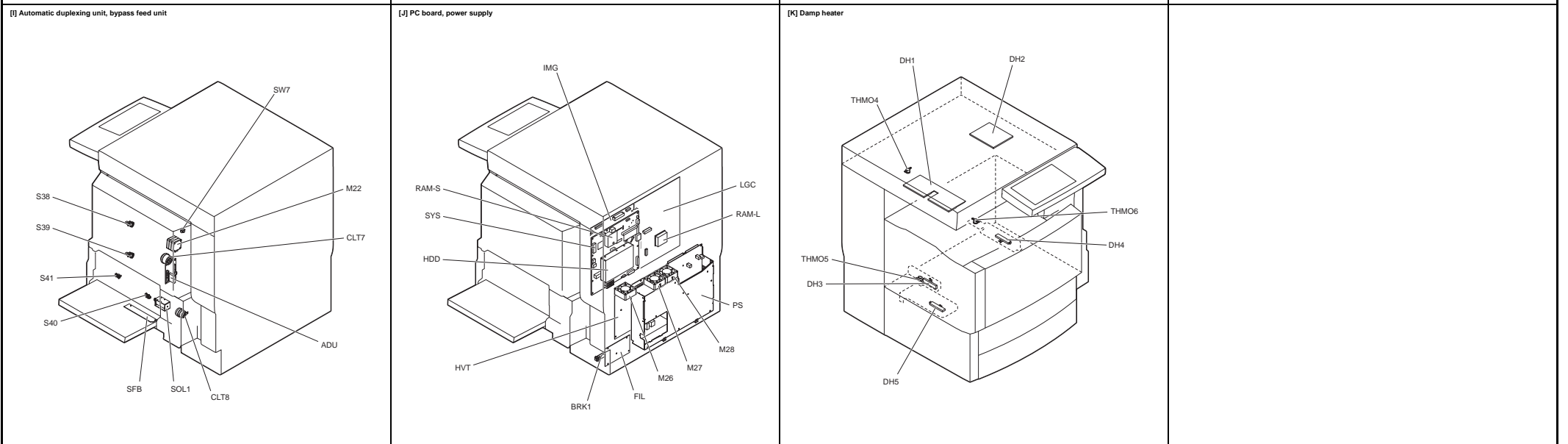
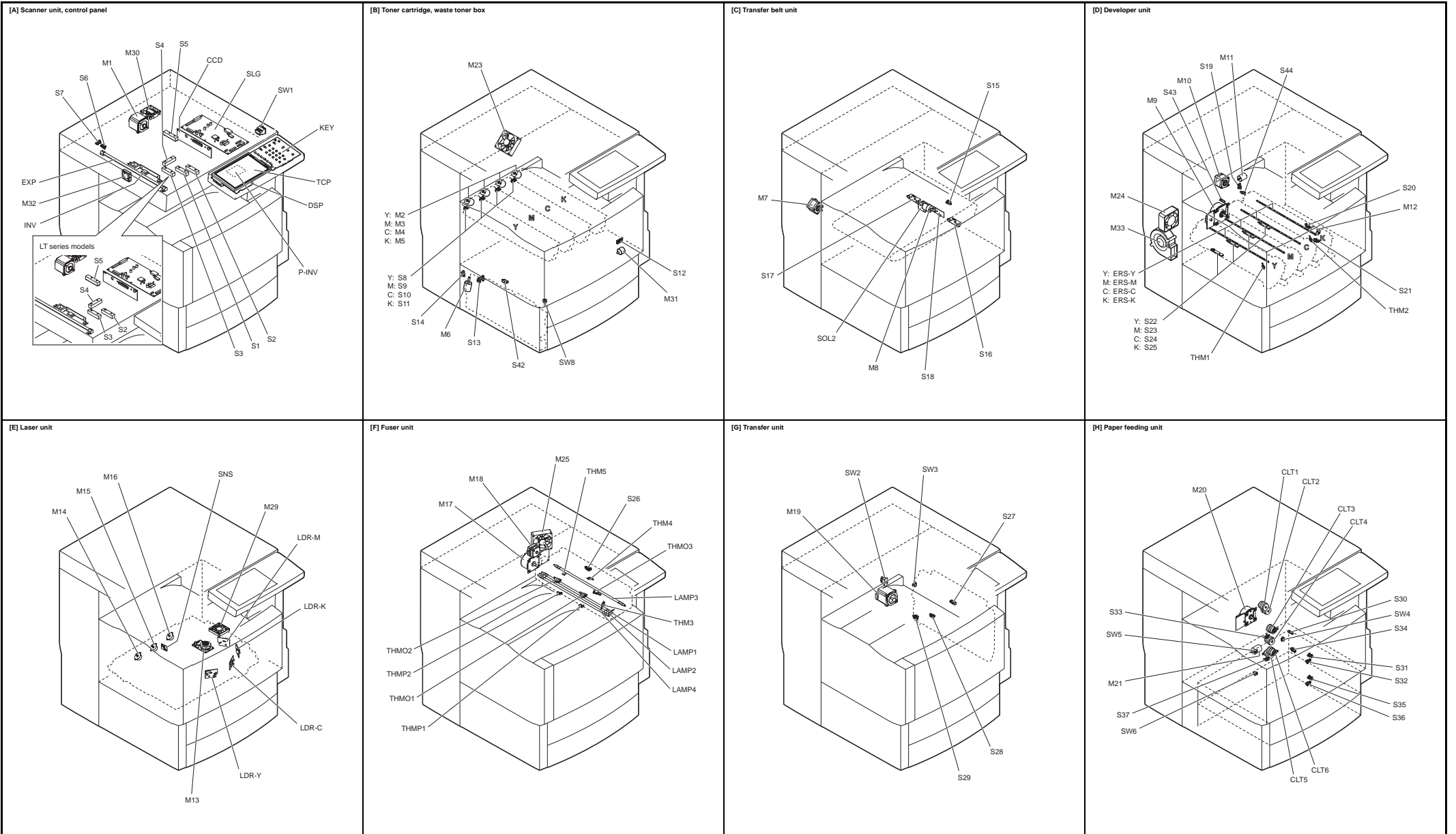


Fig. 9-5

10.2 Electric Parts Layout



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	UTC-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

Symbol	Name	Figure	Wire harness location
S1-5	AP51-3, AP5-C, AP5-R Automatic original detection sensor	[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/HUM-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 cling 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-D
S33	CST1-NEP-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-NEP-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

Symbol	Name	Figure	Wire harness location
S41	SFB-FEED-SNR Bypass feed sensor	[I]	8-C
S42	TRTRK Auger lock detection sensor	[B]	6-D
S43	DRM-SNR K 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-INTLK-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

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

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

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
LOG	PWA-F-LOG Logic PC board (LOG 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

Symbol	Name	Figure	Wire harness location
EXP	LP-EXP 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-DHL Scanner damp heater (Left)	[K]	AC Wire Harness
DH2	SCN-DHR Scanner damp heater (Right)	[K]	AC Wire Harness
DH3	DRM-DHL Drum damp heater (Left)	[K]	AC Wire Harness
DH4	DRM-DHR Drum damp heater (Right)	[K]	AC Wire Harness
DH5	CST-DHR Drawer damp heater * Only for PD models	[K]	AC Wire Harness

Symbol	Name	Figure	Wire harness location
THM1	THMS-DRM-Y Drum thermostat-Y	[D]	7-F
THM2	THMS-DRM-K Drum thermostat-K	[D]	7-F
THM3	THMS-FBLT-F Fuser belt front thermostat	[F]	6-F / 6-H / 7-H AC Wire harness
THM4	THMS-PR-C Pressure roller center thermostat	[F]	6-F / 6-G / 7-G AC Wire harness
THM5	THMS-PR-R Pressure roller rear thermostat	[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-DHL Drum damp heater thermostat (Left)	[K]	AC Wire harness
THMO6	THERMO-DRM-DHR Drum damp heater thermostat (Right)	[K]	AC Wire harness

Symbol	Name	Figure	Wire harness location
HVT	PS-HVT High-voltage transformer	[J]	8-G

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.12

Ver.12 <2011.11.25>	
Page	Contents
2	Trademarks have been changed.
2	Copyright description has been changed.
2-29	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.
2-48	Items of 7025 have been changed.
2-56	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 have been added.
2-57	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 have been added.
2-62	8150-0 to 2 has been added.
2-63	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.
2-77	8624, 8625, 8626 have been added.
2-82	3631 has been added.
2-87	8628 has been added.
2-88	8629 has been added.
3-68 to 69	Step 1 to 3 has been changed to Step 1 to 5.
4-4	08-620, 621, 622, 623, 624, 629, 1472 have been added.
4-4	08-3631, 8624, 8625, 8626, 8628, 8629 have been added.
4-4	08-3506, 3507, 8608, 8609, 8610, 9015, 9103, 9193, 9700 have been added.
4-21	"and scrambler board" has been deleted.
8-43	Fig. 8-38 has been changed.
8-45	Fig. 8-43 has been changed.
10-1	"10.1 DC Wire Harness" has been added.
10-2	"10.2 Electric Parts Layout" has been added.

Ver.11

Ver.11 <2011.4.25>	
Page	Contents
1-10	Description has been changed.
3-22	Description has been changed.
7-29	Description has been changed.
4-1	Added in 4.1.2 Precautions.
4-2	Added in 4.1.2 Precautions. Added in 2.Setting data file.
4-4	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.
4-5	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.
4-8	Added in <When "3: Setting Back Up" is selected>.
4-9	Fig. 4-5 has been changed.
4-11	Added in <When "4: Setting Restore" is selected>.
4-12	Fig. 4-10 has been changed.
4-13	ERROR 12 has been added.
2-29	7380-0 to 2 has been added.
2-75	08-8612 has been added.
2-79	08-8590-0 to 4 has been added.
2-80	08-8608, 8609, 8610, 8623 have been added.
2-82	08-8616, 8617, 8618, 8619, 8620 have been added.
2-83	08-8613 has been added.
2-84	08-1776-0 to 15, 3521, 3522, 3523, 3524 have been added.
2-85	08-3870, 3626, 8622, 9984-0 to 4,3520, 8611, 8615 have been added.
2-86	Procedure 3 has been changed.
2-94	08-1426 has been changed.
-	2.6.10 has been deleted.

Ver.10

Ver.10 <2010.11.16>	
Page	Contents
2-2	(9S-)111, 211, 213 and 214 have been added.
2-3	(9S-)211, 213 and 214 have been added.
2-12	(03-)114 and 164 have been added.
2-16	(9S-)211, 213 and 214 have been added.
2-19	"Note" has been added to "2.4 List Printing".
2-26	A description of the error logs has been added.
2-27	A description of the total counter list has been added.
2-74	08-9985 and 9986 have been added.
2-75	08-8598, 8591 and 9987 have been added.
2-79	08-3789, 8584, 8585, 8586, 8587, 8588, 8590, 8605, 8606 and 9791 have been added.
2-80	08-8589 has been added.
2-81	08-8594 has been added.
2-84	08-3625, 8595, 8597 and 8601 have been added.
2-85	08-8596, 8599, 8600, 8602, 8603, 8604, 8823 and 9984 have been added.
3-4	"3.1.3 Performing Image Quality Control" has been changed.
4-1	"4.1.2 Precautions" has been changed.
4-3	"4.1.4 List of codes available for cloning" has been added.
4-5	The note of "4.1.5 Cloning procedure" has been changed.
4-8	The note of "4.1.5 Cloning procedure" has been changed.
4-12	"4.2.2 Precautions" has been changed.
5-8	A note has been added to "5.4.3 Operational screen".
5-44	"FLOIL" has been added to "5.10 Grease List".
6-12	"F140" has been added to "6.1.2 Service call".
6-23	"<<Error history>>" described in the chapter 6.1.4 has been moved to the chapter 6.1.6. (Configuration change of the contents.)
6-106	"F140" has been added to "6.2.22 Other service call".
7-17	"Note" has been added to "7.2.2 HDD fault diagnosis".
8-4	"Note" has been added to "8. FIRMWARE UPDATING".
9-5	"9.5 Fuse" has been changed.

Ver.09

Ver.09 <2010.05.17>	
Page	Contents
1-3	The values for Black / Color copy in the "Eliminated portion" have been corrected.
1-9	The values for Black / Color print in the "Eliminated portion" have been corrected.
2-22	The illustration in the error history list has been corrected.
2-36	The classification of 05-206 has been corrected.
2-62	The default values of 08-8361, 8362, 8363 and 8365 have been corrected.
2-73	"Potential on printing white text" has been corrected to "Potential on white background".
2-85	The content of 08-400 has been corrected.
2-88	"PM counter" has been changed to "PM sheet counter". "PM time counter" has been changed to "PM driving counter".
5-1	"PM counter" has been changed to "PM sheet counter". "PM time counter" has been changed to "PM driving counter".
5-2	"PM counter" has been changed to "PM sheet counter". "PM time counter" has been changed to "PM driving counter".
5-4	"PM counter" has been changed to "PM sheet counter". "PM time counter" has been changed to "PM driving counter".
6-63	Step (1) for C580 has been added.
6-65	The procedure of [C5A0] / [C5A1] has been exchanged with that of [C900].
6-73	The contents of [CB31] have been corrected.
7-32	"7.2.9 Re-registration of the Electronic License Key with one-time dongle" has been added.
8-5	"Note" has been added to "8.1 Firmware Updating with USB Media".

Ver.08 <2009.12.21>	
Page	Contents
Precautions	The model name has been added.
1-2	The model name has been added.
1-4	The model name has been added. Copy speed for e-STUDIO2020C has been added. The paper size for e-STUDIO2330C has been added.
1-7	The model name has been added.
1-8	System copy speed for e-STUDIO2020C has been added.
1-9	Supported Page Description Language, Supported Client OS, and Interface have been changed.
2-29	05-206 has been added.
2-36	05-206 has been added.
2-73	08-8546, 9982, 3635, 8540 have been added.
2-74	08-2548-0 to 3, 2549-0 to 3, 2554, and 8548 have been added.
2-75	08-2370, 2381, 2382, 2383, and 2384 have been added.
2-76	08-9933 has been added.
2-77	08-3871 has been added.
2-78	08-8549 has been added.
2-81	08-3508 has been added.
2-82	08-3623, 3624, and 8514 have been added.
2-88	08-343 has been changed.
2-105	08-1150 and 1152 have been changed.
2-106	08-1154, 1156, 1158, 1160, 1162, and 1164 have been changed.
2-107	08-1174, 1176, 1178, 1180, 1182, and 1184 have been changed.
2-108	08-1186, 1188, 1190, 1192, 1194, and 1196 have been changed.
2-109	08-1198, 1200, 1202, 1204, and 1206 have been changed. 08-1214 has been added.
2-110	08-1216, 1218, 1220, and 1228 have been added. 08-1232 and 1240 have been changed.
2-111	08-1250, 1270, 1272, 1274, 1276, 1282, and 1284 have been changed.
2-112	08-1286, 1290, 1292, 1294, 1298, 1300, 1302, 1306, 1308, and 1310 have been changed.
2-113	08-1312, 1314, 1316, 1320, 1322, 1324, 1328, 1330, and 1332 have been changed.
2-114	08-1340, 1342, 5600, 5602, 5604, and 5606 have been changed.
3-1	05-205 has been deleted. 05-206 has been added.
3-2	05-206 has been added.
4-1	The file name has been changed.
4-2	Item has been added, and the file name has been changed.
4-3	Notes have been added.
4-4	Backup items have been added.
4-6	Notes have been added.
4-7	The step and restore items have been changed.
5-13	The model name has been added.
5-20	The replacement timing for e-STUDIO2020C has been added.
5-21	The replacement timing for e-STUDIO2020C has been added.
5-24	The replacement timing for e-STUDIO2020C has been added.
5-29	The replacement timing for e-STUDIO2020C has been added.
5-32	The replacement timing for e-STUDIO2020C has been added.
5-33	The replacement timing for e-STUDIO2020C has been added.

Ver.08 <2009.12.21>	
Page	Contents
5-35	The replacement timing for e-STUDIO2020C has been added.
5-42	The model name has been added.
5-44	The model name has been added. The overhauling timing for e-STUDIO2020C has been added.
6-23	5110, 5212, 5BD0, 5C10, 5C11, 5C20, 5C21, and 5C22 have been added.
6-68	The model name has been added.
6-122	5110, 5212, 5BD0, 5C10, 5C11, 5C20, 5C21, and 5C22 have been added.
9-9	The model name has been added.

Ver.07

Ver.07 <2009.9.18>	
Page	Contents
2-28	(05) 7489 has been added.
2-29	The code has been changed from "(05) 467-0 to 1" to "(05) 467-0 to 4".
2-74	(08)4621 and 4622 have been added.
2-76	(08)9981 has been added.
3-69	The adjustment procedure for the doctor sleeve gap has been changed.
3-70	The adjustment procedure for the doctor sleeve gap has been changed.
5-3	An explanation of PM display has been added.
5-41	The maintenance part list has been changed.
5-42	An illustration (item No. 15) has been added.
6-8	C450, C451 and C452 have been added.
6-60	C450, C451 and C452 have been added.
7-24	Procedures have been added to "7.2.5 Procedures and settings when replacing the SLG board".
7-28	The procedure of "[J] Reinstall options" has been changed.
8-4	The note for the firmware updating has been corrected.

Ver.06

Ver.06 <2006.6.22>	
Page	Contents
5-22	Fig.5-19 has been changed. The items to check for the developer unit in preventive maintenance have been changed.
5-23	An item concerning the cleaning of the developer unit has been added. How to remove foreign matter inside the developer unit has been added.
5-25	The description of the area to be cleaned for the oil seal has been deleted.
5-39	An error in the PM KIT has been corrected.
6-104	The contents of the error code [F200] have been changed.
7-18	Fig.7-37 has been changed.
7-22	"[!] Adjustment image quality" has been added.
7-23	The procedure in "7.2.4 Precaution and Procedures when replacing the SYS board" has been changed.
7-24	The procedure in "7.2.5 Procedures and settings when replacing the SLG board" has been changed.

Ver.05

Ver.05 <2009.1.27>	
Page	Contents
2-16	A version list has been added to the table in "2.4 List Printing".
2-25	A version list has been added.
4-3	The procedure has been corrected. The contents of Note have been changed.
4-6	The procedure has been corrected. The contents of Note have been changed.
5-19	"Pad" for G4 has been corrected to "Felt".
5-21	"G5: Recovery blade" has been corrected to "G4: Felt". "G6: Drum thermistor" has been corrected to "G5: Recovery blade".
6-32	E090 troubleshooting has been changed. (An item for the page memory has been added.)
7-18	A note has been added to "7.2.3 Precautions and procedures when replacing the HDD".
7-24	A note has been added to "7.2.6 Precautions and procedure when replacing the SRAM board (for the SYS board)".
7-28	The description of 05 code for HVT label has been changed.
7-30	"7.2.8 Firmware confirmation after the PC board/HDD replacement" has been added.
7-31	"7.3 Precautions for Disposal of the HDD and PC boards" has been changed to "7.3 Precautions for Installation of GP-1070 and Disposal of HDD/Board".
8-6	A note regarding updating with the USB media has been added.
8-10	The contents of Notes have been changed.
8-19	The contents of Notes have been changed.

Ver.04

Ver.04 <2008.10.31>	
Page	Contents
2-27	(05) 8066 has been added.
2-28	(08) 8187, 8188, 8190 and 8191 have been added.
2-43	The default value of (05) 1688 has been changed.
2-52	The default value of (05) 7767 has been changed.
2-58	(05) 8066 has been added.
2-60	(05) 8187 has been added.
2-61	(05) 8188 has been added.
2-74	(08) 9051 and 3846 have been added.
2-78	(08) 8535, 8536, 9957, 9958, 9959 and 9980 have been added. (08) 3506 and 3507 have been deleted.
2-79	(08) 1021 and 9749 have been added.
2-80	(08) 9746 and 9798 have been added.
2-81	(08) 9965 has been added.
2-82	(08) 3630 has been added.
2-83	(08) 3797, 8513-0, 9966, 8534, 8537 and 9799 have been added.
2-93	The content of (08) 9379 has been changed. (08) 9965 has been added.
5-1	The contents of PM display have been added.
5-2	The contents of PM display have been added.
5-3	The contents of PM display have been added.
6-12	CC90 has been added.
6-76	CB80 (MJ-1031) has been added.
6-85	CC90 has been added.
6-118	Imaging Acceleration Board (GE-1170) has been added.
8-1	"8. FIRMWARE UPDATING" The item of "Imaging Acceleration Board (GE-1170)" has been added.
8-2	"8. FIRMWARE UPDATING" The item of "Imaging Acceleration Board (GE-1170)" has been added.
8-5	"8.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
8-6	"8.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
8-8	"8.1 Firmware Updating with USB Media" The item of "Imaging Acceleration Board (GE-1170)" has been added.
8-17 to 8-21	"8.1.2 Imaging Acceleration Board ROM (GE-1170)" The update procedure has been added.
8-56	"8.4 Confirmation of the updated data" The item of "Imaging Acceleration Board (GE-1170)" has been added.

Ver.03 <2008.09.30>	
Page	Contents
2-2	207 has been deleted. 300 has been added.
2-3	207 has been deleted.
2-17	207 has been deleted. "All CSV files" has been added.
2-27	8240 has been added.
2-42	The contents of 1070,1071 and 1072 have been corrected.
2-50	The content of 7475 has been corrected. The content of 7478 has been corrected.
2-61	8240 has been added.
2-74	The code name of 2692 and 2693 has been corrected.
2-81	The code name of 8508, 8509 and 8510 has been corrected.
2-82	Procedure 5 has been deleted.
2-113	The code names of 8508, 8509 and 8510 have been corrected.
3-2	Fig.3-1 has been changed.
3-9	"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".
3-15	"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.
3-23	"10 mm" has been corrected to "5 mm". "10±0.5 mm" has been corrected to "5±0.5 mm".
3-25	"[F] Top margin" "Printer" has been deleted.
3-26	"[G] Right margin" "Printer" has been deleted.
3-27	"[H] Bottom margin" "Printer" has been deleted.
3-28	"10±0.5 mm" has been corrected to "5±0.5 mm".
3-31	The codes in the list have been corrected.
3-36	"Remarks" in "3.2.5 Background adjustment" has been corrected.
3-38	"3.2.9 Setting range correction (Adjustment of background peak)" has been deleted.
3-48	"[Fax]" has been corrected to "[FAX]".
3-49	"3.3.3 Color balance adjustment (Color Mode)" has been corrected to "3.3.3 Color balance adjustment". "[Fax]" has been corrected to "[FAX]".
3-54	"3.3.15 Thin line width lower limit adjustment" has been added.
3-57	"Remarks" in "3.4.3 Background adjustment (Color Mode)" has been corrected.
3-60	"3.4.7 Setting range correction (Adjustment of background peak)" has been deleted.
3-64	"Notes" has been added to "3.5.2 Beam level conversion setting".
4-1	4.1.2 Precautions "Program file name" has been corrected. The capacity of USB memory has been corrected.
4-12	Fig.4-13 has been corrected.
4-14	"[C] Print out "function list" has been corrected to "[C] Print out "FUNCTION" list". Step (4) has been corrected.
4-16	"[H] Reset "function list" has been corrected to "[H] Reset "FUNCTION" list".

Ver.03 <2008.09.30>	
Page	Contents
5-13	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.
5-15	The description for "E3:Separation roller" has been changed.
5-21	"H4:Front shield (unified with the doctor blade)" has been added.
5-37	"5.8 Maintenance Part List" The parts list of Harness jig has been corrected.
5-38	The illustration for "5.8 Maintenance Part List" has been changed.
6-89	<Color toner low density> has been added.
6-97	<Color toner low density> has been added.
6-103	<Color toner low density> has been added.
7-4	"7.1.5 SYS board" Step (6) has been corrected.
7-5	"7.1.7 LGC board" Fig.7-12 has been corrected.
7-18	Fig.7-37 has been corrected.
7-20	"[C] Print out "function list" has been corrected to "[C] Print out "FUNCTION" list".
7-21	"[H] Reset "function list" has been corrected to "[H] Reset "FUNCTION" list".
7-22	The content of "[D] Reinstall options" has been corrected.
7-24	Fig.7-39 has been corrected.
7-27	"GA-1010" has been corrected to "GS-1010". "GA-1020" has been corrected to "GS-1020".
8-11	"[C] Adjustment" has been added.
8-24	"[C] Adjustment" has been added.

Ver.02 <2008.06.26>	
Page	Contents
-	GENERAL PRECAUTIONS The model name "e-STUDIO2330C" has been added.
1-2	1.1.1 General The model name "e-STUDIO2330C" has been added.
1-4	1.1.2 Copy The model name "e-STUDIO2330C" has been added.
1-4	1.1.2 Copy - [3] Copy speed (Copies/min.) The copy speed of the e-STUDIO2330C has been added.
1-7	1.1.2 Copy - [4] System copy speed The system copy speed of the e-STUDIO2330C has been added.
2-17	A new clause 2.4 has been added.
2-26	The content of the Classification List in 2.5.1 has been changed.
2-34	Descriptions for the codes 98 and 99 have been corrected.
2-54	New codes 7808 and 7809 have been added.
2-73	The content of the Classification List in 2.6.1 has been changed.
2-105	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1150 and 1152.
2-106	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1154, 1156, 1158, 1160, 1162, 1164 and 1174.
2-107	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1176, 1178, 1180, 1182, 1184, 1186 and 1188.
2-108	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1190, 1192, 1194, 1196, 1198, 1200 and 1202.
2-109	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1204, 1206, 1228, 1232, 1240, 1250, 1270 and 1272.
2-109	The codes 1214, 1216, 1218, 1220 and 1228 have been deleted.
2-110	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.
2-111	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.
2-112	The default values for the codes 5600-x have been changed.
2-112	The model name "e-STUDIO2330C" has been added in the "Remarks" fields for the codes 1322, 1324, 1328, 1330, 1332, 1340, 1342 and 5600.
2-113	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.
2-114	The codes 08-482, 1482 and 1496 have been deleted.
3-13	"PFP upper drawer" has been changed to "3rd drawer". "PFP lower drawer" has been changed to "4th drawer".
3-17	"[C] Reproduction ratio of secondary scanning direction (Fine adjustment of transfer belt motor rotation speed)" has been corrected.
3-18	"PFP upper drawer" has been changed to "3rd drawer". "PFP lower drawer" has been changed to "4th drawer".
3-19	"PFP upper drawer" has been changed to "3rd drawer". "PFP lower drawer" has been changed to "4th drawer".
3-29	"SRAM board(LGC board)" has been changed to "SRAM board(LGC board, SYS board)".
3-31	The description of the note in "3.2.2 Density adjustment" has been changed.
3-34	"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".
3-35	The content of the "Remarks" field in the table in "3.2.5 Background adjustment" has been changed.

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3-36	The codes 7808 and 7809 have been added in the table in "3.2.7 Sharpness adjustment".
3-37	The content of the "Remarks" field in the table in "3.2.8 Setting range correction" has been changed.
3-43	The note in "3.2.17 Black header density level adjustment" has been deleted. Descriptions for the codes in "3.2.19 Judgment threshold adjustment for blank originals" have been corrected.
3-45	"SRAM board(LGC board)" has been changed to "SRAM board(LGC board, SYS board)".
3-50	"3.3.4 Adjustment of smudged/faint text" has been changed to "3.3.4 Adjustment of faint text". Descriptions for the codes in "3.3.4 Adjustment of faint text" have been changed.
3-54	Descriptions for the codes in "3.3.14 Sharpness adjustment" have been corrected. The default value has been added in the "Remarks" field in the table in "3.3.15 Offsetting adjustment for background processing". An operational procedure has been added in "3.3.15 Offsetting adjustment for background".
3-56	The content of the "Remarks" field in the table in "3.4.2 Density adjustment" has been corrected.
3-59	Descriptions for "3.4.6 Setting range correction" have been corrected. The content of the "Remarks" field in the table in "3.4.6 Setting range correction" has been corrected.
3-76	Descriptions in the adjustment procedure (1) have been changed.
5-9	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.
5-16	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table.
5-17	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table.
5-20	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table.
5-21	The amount of grease to be applied has been changed.
5-23	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table..
5-26	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table..
5-27	The number of sheets for replacement for the e-STUDIO2330C has been added in the "x 1,000 sheets" field in the table..
5-28	"Fuser belt thermopile (center/rear)" has been added in the table as "M14".
5-29	Descriptions for cleaning the fuser belt thermopiles have been added.
5-35	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.
5-36	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.
5-37	The illustration of a harness jig for the converter board has been added.
5-38	The model name "e-STUDIO2330C" has been added to the name of the service parts list under the table "5.9 Grease List". Descriptions for the e-STUDIO2330C have been added in "5.10 Operational Items in Overhauling".
6-68	The model name "e-STUDIO2330C" has been added in the troubleshooting procedure for [CA10].
7-1	The illustration in Fig. 7-1 has been corrected.

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7-4	The illustration in Fig. 7-9 has been corrected.
7-5	The illustration in Fig. 7-12 has been corrected.
7-10	Step (3) in the content of the disassembling procedure in "7.1.11 Board Case" has been divided to steps (3) and (4). The illustration in Fig. 7-25 has been corrected. The illustration in Fig. 7-26 has been corrected.
7-12	The content of "Fig. 7-28" in "7.1.12 SRAM board<for LGC board>" has been divided to "Fig. 7-29" and "Fig. 7-30". A note and an illustration Fig. 7-31 have been added.
7-13	The illustration in Fig. 7-32 has been corrected. The content of "Fig. 7-30" in "7.1.13 SRAM board<for SYS board>" has been divided to "Fig. 7-33" and "Fig. 7-34".
7-14	A note and an illustration Fig. 7-35 have been added.
7-18	The illustration in Fig. 7-37 has been corrected.
7-20	A new procedure has been added in step (1) in "[E] Replace / Format HDD".
7-22	Descriptions in "7.2.4 Procedures and precautions when replacing the SYS board" has been corrected.
7-23	A new procedure has been added in step (1) in "7.2.5 Procedures and settings when replacing the SLG board".
7-24	The title "7.2.6 Procedures and settings when replacing SRAM (SYS board)" has been corrected to "7.2.6 Procedures and settings when replacing SRAM board (for SYS board)".
7-28	The title "7.2.7 Procedures and settings when replacing SRAM (LGC board)" has been corrected to "7.2.7 Procedures and settings when replacing SRAM board (for LGC board)".
7-28	A new note has been added in "7.2.7 Procedures and settings when replacing SRAM board (for LGC board)".
7-28	The introductory part of "7.2.7 Procedures and settings when replacing SRAM board (for LGC board)" has been corrected.
7-28	The illustration of Fig.7-40 has been corrected.
7-28	The procedure in "[A] Replace SRAM board" has been corrected.
7-30	Descriptions in "7.3 Precautions for Disposal of the HDD and PC Boards" have been corrected.
8-1	8. FIRMWARE UPDATING Descriptions about the necessity of a harness jig for the converter firmware update have been added.
8-2	E. Engine ROM The illustration of the download jig has been corrected.
8-18	8.2.1 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.
8-18	8.2.1 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.
8-19	8.2.1 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.
8-21	8.2.2 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.
8-22	8.2.3 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)."

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8-23	8.2.3 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.
8-26	8.3.1 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.
8-28	8.3.2 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.
8-30	8.3.3 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.
8-34	8.3.4 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.
8-35	8.3.5 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).
8-37	8.3.5 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.
8-41	8.3.6 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.
8-44	8.3.7 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.
8-47	8.3.8 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.

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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.)".
1-2	1.1.1 General The version name of the equipment has been added to "Machine version". 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)".
1-12	1.3 Options The model name of the EFI Printer Board has been corrected from "GA-1300" to "GA-1211".
1-14	1.5 System List The model name of the EFI Printer Board has been corrected from "GA-1300" to "GA-1211".
2-40	Description of the contents of 05-7322 has been added.
2-67	The code 08-8822 has been deleted from [IPsec].
2-70	The classification of the codes 08-9883 and -9884 has been corrected to "Hardcopy security printing".
2-97	The default values of 08-1214, -1216, -1218, -1220 and -1228 have been corrected.
2-101	The default values of 08-5600, -5602, -5604 and -5606 have been corrected.
3-4	3.1.2 Adjustment of the Auto-Toner Sensor. The illustration of the procedure in step (5) has been changed.
5-12	The contents of C6 and C7 in the table in "5.5.3 Feed unit" have been corrected.
5-20	"H9: Developer unit upper cover" has been added to the figure and the table in "5.5.8 Developer unit (K, Y, M, and C)".
5-22	The content of "Handling precautions" in "*J1: Transfer belt" has been corrected.
5-23	"Handling precautions" and "Cleaning procedure" of "*J8: Transfer belt cleaning blade" have been added.
5-25	"M12" in the figure of "5.5.13 Fuser unit" has been corrected to "M2".
5-32	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".
6-100	New items to check have been added to "CE71 Drum phase adjustment abnormality".
7-10	A disassembling procedure in "7.1.11 Board case" has been changed from step (2) to (2), (3), (4) and (5), and from step (3) to (6).
7-23	The model name of the EFI printer board in "[K] Set EFI Printer Board" has been corrected from "GA-1300" to "GA-1211".
7-26	The model name of the EFI printer board in "[K] Set EFI Printer Board" has been corrected from "GA-1300" to "GA-1211". "[G] Reinstall options" has been added.
7-29	A procedure in "7.3.1 Precautions when disposing of the HDD" has been changed.
8-5	The data file name "mentusb2.o" of update program loader in the table "Program necessary for updating" has been corrected to "mentusb2.o".
8-7	Precautions for options (GP-1070/1080, GS-1010/1020) have been added to "Important". The data file name "mentusb2.o" of update program loader in the table "Program necessary for updating" has been corrected to "mentusb2.o".
8-18	A data writing error handling procedure has been added to "[A] Precautions when writing the data".
8-21	A note for update procedure has been added. A procedure for unplugging and re-plugging the power cable has been added.
8-22	A procedure for unplugging and re-plugging the power cable has been added.
9-6	"Noise filter" has been added to the diagram in "9.6 Configuration of Power Supply Unit".
-	"10.1 DC Wire Harness" error corrected

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