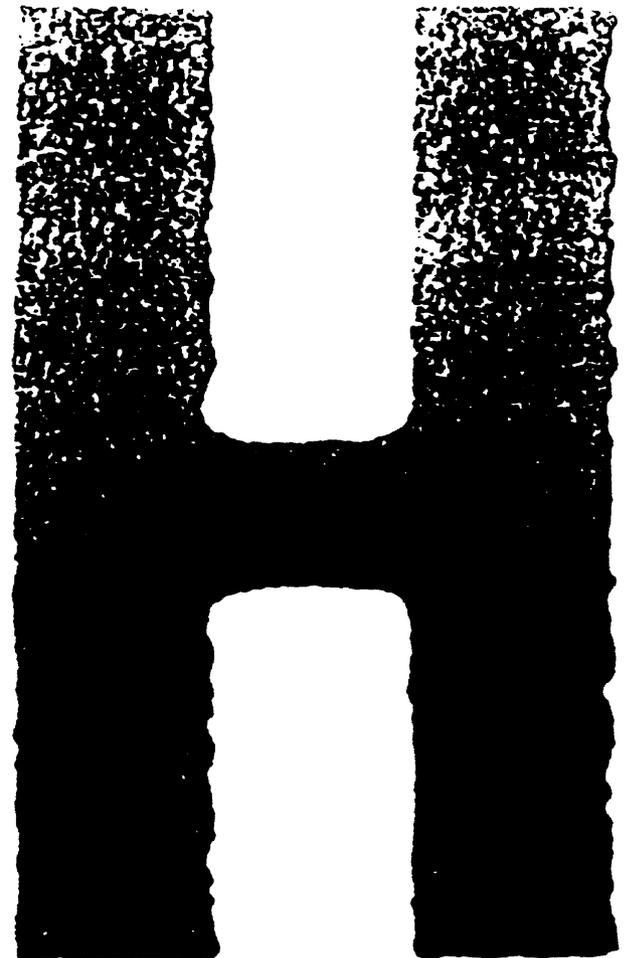


**TOSHIBA**  
Leading Innovation >>>

# SERVICE HANDBOOK

MULTIFUNCTIONAL DIGITAL SYSTEMS  
**e-STUDIO165/167/205/207/237**



Model: DP-1650, DP-1670, DP-2040, DP-2070, DP-2370  
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## Trademarks

- The official name of Windows 95 is Microsoft Windows 95 Operating System.
- The official name of Windows 98 is Microsoft Windows 98 Operating System.
- The official name of Windows Me is Microsoft Windows Millennium Edition Operating System.
- The official name of Windows 2000 is Microsoft Windows 2000 Operating System.
- The official name of Windows XP is Microsoft Windows XP Operating System.
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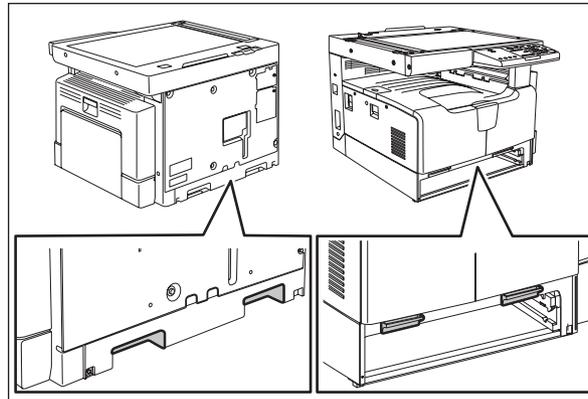
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# GENERAL PRECAUTIONS REGARDING THE SERVICE FOR e-STUDIO165/167/205/207/237

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

## 1) Transportation/Installation

- When transporting/installing the equipment, remove the drawer, employ two persons and be sure to hold the positions as shown in the figure.  
The equipment is quite heavy and weighs approximately 32.5 kg (71.65 lb), therefore pay full attention when handling it.



- Be sure not to hold the movable parts or units 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 or 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 easily accessible.
- Be sure to fix and plug in the power cable securely after the installation so that no one trips over it.

## 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, developer, high-voltage transformer 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.

### 3) Important Service Parts for Safety

- The breaker, door switch, fuse, thermostat, thermofuse, thermistor, batteries, 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.

**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.

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- 2. ERROR CODE AND SELF-DIAGNOSTIC  
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- 6. FIRMWARE UPDATING**
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- 8. REMOTE SERVICE**
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# 1. SPECIFICATIONS / ACCESSORIES / OPTIONS / SUPPLIES

## 1.1 Specifications

When the value is different among e-STUDIO165/167, 205/207 and 237, the value for e-STUDIO205/207 is shown by [ ] and the value for e-STUDIO237 is shown by { }.

- Copy process Indirect electrophotographic process (dry)
- Type Desktop type
- Original table Fixed type (the left rear corner used as guide to place originals)
- Accepted originals Sheet, book and 3-dimensional object. The automatic document feeder (ADF) and reversing automatic document feeder (RADF), only accepts paper which are not pasted or stapled. (Single-sided originals: 50 to 127 g/m<sup>2</sup>/13 to 34 lb. Bond) Carbon paper are not acceptable either.  
Maximum size: A3/LD

- Copy speed (Copies/min.)  
e-STUDIO165/167

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	16	16	11	16	16	16
A5-R, ST-R	-	16	11	-	16	16
A4-R, B5-R, LT-R	15.5	15.5	11	15.5	15.5	15.5
B4, LG, FOLIO, COMPUTER	13	13	11	13	13	13
A3, LD	11	11	11	11	11	11

### e-STUDIO205/207

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	20	20	11	20	20	20
A5-R, ST-R	-	20	11	-	20	20
A4-R, B5-R, LT-R	15.5	15.5	11	15.5	15.5	15.5
B4, LG, FOLIO, COMPUTER	13	13	11	13	13	13
A3, LD	11	11	11	11	11	11

### e-STUDIO237

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	23	23	12.5	23	23	23
A5-R, ST-R	-	23	12.5	-	23	23
A4-R, B5-R, LT-R	17.5	17.5	12.5	17.5	17.5	17.5
B4, LG, FOLIO, COMPUTER	15	15	12.5	15	15	15
A3, LD	12.5	12.5	12.5	12.5	12.5	12.5

- \* “–” means “Not acceptable”.
- \* The copy speed in the above table are available when originals are manually placed for single side, multiple copying.
- \* When the ADF and RADF are used, the copy speed of 16[20] {23} sheets per minute is only available under the following conditions:
  - Original/Mode: Single side original/A4/LT size. APS/automatic density are not selected.
  - Number of sheets: 16[20] {23} or more.
  - Reproduction ratio: 100%

Copy speed for thick paper (Copies/min.)  
e-STUDIO165/167/205/207/237

Thick 1 (81 g/m<sup>2</sup> to 105 g/m<sup>2</sup>, 21.3 lb. Bond to 28 lb. Bond): Bypass feed on a sheet by sheet basis only

Thick 2 (106 g/m<sup>2</sup> to 163 g/m<sup>2</sup>, 28 lb. Bond to 90 lb. Index): Bypass feed on a sheet by sheet basis only

• Copy paper

	Drawer	PFU	PFP	ADU	Bypass copy	Remarks
Size	A3, A4, A4-R, B4, B5, B5-R, A5-R(Only for PFP), LD, LG, LT, LT-R, ST-R(Only for PFP), FOLIO, COMPUTER, 13"LG, 8K, 16K, 16K-R				A3 to A5-R, LD to ST-R, FOLIO, COMPUTER, 13"LG, 8.5" x 8.5", 8K, 16K, 16K-R (Non-standard or user-specified sizes can be set.)	
Weight	64 to 80 g/m <sup>2</sup> , 17 lb. Bond to 21.3 lb. Bond				50 to 163 g/m <sup>2</sup> (Single paper feeding) 64 to 80 g/m <sup>2</sup> (Continuous feeding)	
Special paper	–				Tracing paper, labels, OHP film (thickness: 80 µm or thicker),	These special papers recommended by Toshiba Tec

- First copy time ..... e-STUDIO165/167/205/207  
 Approx. 7.6 sec. (A4, 100%, original placed manually)  
 Approx. 7.7 sec. (LT, 100%, original placed manually)  
 e-STUDIO237  
 Approx. 7.5 sec. (A4/LT, 100%, original placed manually)
- Warming-up time..... Approx. 25 sec. (temperature: 20°C)
- Multiple copying ..... Up to 999 copies; Key in set numbers
- Reproduction ratio ..... Actual ratio: 100±0.5%  
 Zooming: 25 to 200% in increments of 1%
- Resolution/Gradation ..... Scanning: 600 dpi x 600 dpi  
 Printing: Equivalent to 2400 dpi x 600 dpi  
 Gradation: 256 steps
- Eliminated portion ..... Leading edges: 3.0±2.0 mm, Side/trailing edges: 2.0±2.0 mm (copy)  
 Leading / trailing edges: 5.0±2.0 mm, Side edges: 5.0±2.0 mm (print)

- Paper feeding ..... Standard drawer:
  - 1 drawer (stack height 28 mm, equivalent to 250 sheets; 64 to 80 g/m<sup>2</sup> (17 to 22 lb. Bond))
- ..... Bypass feeding:
  - Stack height 11.8 mm: equivalent to 100 sheets; 64 to 80 g/m<sup>2</sup> (17 to 22 lb. Bond)
- ..... Paper Feed Unit (PFU):
  - Option (One drawer: stack height 28 mm, equivalent to 250 sheets; 64 to 80 g/m<sup>2</sup> (17 to 22 lb. Bond))
- ..... Paper Feed Pedestal (PFP):
  - Option (One drawer or two: stack height 60.5 mm, equivalent to 550 sheets; 64 to 80 g/m<sup>2</sup> (17 to 22 lb. Bond))
- Capacity of originals in the ADF/RADF (Option)
  - ..... A3 to A5-R, LD to ST-R:
    - 100 sheets / 80 g/m<sup>2</sup> (Stack height 16 mm or less)
- Automatic duplexing unit (ADU: Option)
  - ..... Stackless, Switchback type
- Toner supply ..... Automatic toner density detection/supply
  - Toner cartridge replacing method (There is a recovered toner supply mechanism.)
- Density control ..... Automatic density mode and manual density mode selectable in 7 steps
- Weight..... Approximately 32.5 kg (71.65 lb.) (excluding the developer material and toner)
- Power requirements..... AC 110 V / 13.2 A, 115 V or 127 V / 12 A  
220-240 V or 240 V / 8 A (50/60 Hz)
  - \* The acceptable value of each voltage is ±10%.
- Power consumption ..... 1.5 kW or less (100 V series)  
1.6 kW or less (200 V series)
  - \* The electric power is supplied to the ADF/RADF, PFU, PFP and ADU through the equipment.
- Total counter ..... Electronical counter

- Dimensions of the equipment ..... W 600 x D 658.6 x H 462.5 (mm): See the figure below

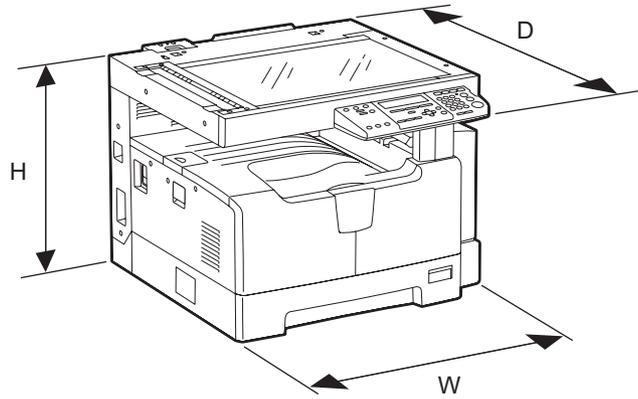


Fig. 1-1

## 1.2 Accessories

### 1.2.1 e-STUDIO165/205

Unpacking/setup instruction	1 set
Operator's manual	1 pc.
Operator's manual pocket	1 pc.
Power cable	1 pc.
CD-ROM	2 pcs.
Rubber plug	6 pcs.
Transfer charger wire cleaner (installed inside of the transfer cover)	1 pc.
Drum (installed inside of the equipment)	1 pc.
Developer material	1 pc.
Nozzle	1 pc.
Toner cartridge	1 pc.
Warranty sheet	1 pc. (for NAD and CND)
Setup report	1 set (for NAD, MJD and CND)
Customer satisfaction card	1 pc. (for MJD)
Packing list	1 pc. (for CND)
Customer survey sheet	1 pc. (for CND)
Certificate of conformance	1 pc. (for CND)

\* Machine version

NAD:	North America
ASD:	Hong Kong / Latin America
AUD:	Australia
MJD:	Europe
ASU:	Asia / Saudi Arabia
SAD:	Saudi Arabia
ARD:	Latin America
CND:	China
TWD:	Taiwan
KRD:	Korea
JPD:	Japan

## 1.2.2 e-STUDIO167/207/237

Unpacking/setup instruction	1 set
Operator's manual	1 pc.
Operator's manual pocket	1 pc. (for NAD)
Power cable	1 pc.
CD-ROM	2 pcs.
Rubber cap	6 pcs. (for MJD, ASD, ASU and SAD) 2 pcs. (for NAD, CND, AUD, TWD, KRD and ARD)
Transfer charger wire cleaner (installed inside of the transfer cover)	1 pc.
Drum (installed inside of the equipment)	1 pc.
Developer material	1 pc.
Nozzle	1 pc. (for NAD)
Toner cartridge	1 pc.
Warranty sheet	1 pc. (for NAD and CND)
Setup report	1 set (for NAD, MJD and CND)
Customer satisfaction card	1 pc. (for MJD)
Packing list	1 pc. (for CND)
Customer survey sheet	1 pc. (for CND)
Certificate of conformance	1 pc. (for CND)

\* Machine version

NAD:	North America
ASD:	Hong Kong / Latin America
AUD:	Australia
MJD:	Europe
ASU:	Asia / Saudi Arabia
SAD:	Saudi Arabia
ARD:	Latin America
CND:	China
TWD:	Taiwan
KRD:	Korea
JPD:	Japan

## 1.3 Options

### 1.3.1 e-STUDIO165/205

Platen Cover	KA-1640PC
Automatic Document Feeder (ADF)	MR-2017
Reversing Automatic Document Feeder (RADF)	MR-3019
Paper Feed Unit (PFU)	MY-1027
Paper Feed Pedestal (PFP)	KD-1013
Paper Feed Controller (PFC)	GH-1050
Drawer Module	MY-1028
Automatic Duplexing Unit (ADU)	MD-0103
Fax Kit	GD-1220NA/EU/AU/TW
External Keyboard	GJ-1040
Network Printer Kit	GA-1190/C
Scanner Upgrade Kit	GA-1200/C
Expansion Memory	GC-1240
Damp Heater	MF-1640U/E
Harness Kit	GQ-1130
Desk	MH-1640

**Notes:**

- When the paper feed pedestal (KD-1013) or automatic duplexing unit (MD-0103) is installed, the paper feed controller (GH-1050) is also required to be installed.
- The external keyboard (GJ-1040) is necessary for the installation of the fax kit (GD-1220) and the scanner upgrade kit (GA-1200).

### 1.3.2 e-STUDIO167/207/237

Platen Cover	KA-1640PC/C
Automatic Document Feeder (ADF)	MR-2017/C
Reversing Automatic Document Feeder (RADF)	MR-3019/C
Paper Feed Unit (PFU)	MY-1027/C
Paper Feed Pedestal (PFP)	KD-1022/C
Paper Feed Controller (PFC)	GH-1060/C
Drawer Module	MY-1028/C
Automatic Duplexing Unit (ADU)	MD-0103/C
Fax Kit	GD-1220NA/EU/AU/TW/CN/KR GD-1221NA/EU/AU/TW/CN/KR
External Keyboard	GJ-1040/C/EU/KR/TW
Network Printer Kit	GA-1190/C/KR/TW
Scanner Upgrade Kit	GA-1200/C/KR/TW
Operator's manual pocket	KK-1660/C (except for NAD)
Damp Heater	MF-1640U/E
Harness Kit	GQ-1130
Desk	MH-1640

**Notes:**

- When the paper feed pedestal (KD-1022) or automatic duplexing unit (MD-0103) is installed, the paper feed controller (GH-1060) is also required to be installed.
- The external keyboard (GJ-1040) is necessary for the installation of the fax kit (GD-1220/1221) and the scanner upgrade kit (GA-1200).

## 1.4 Supplies

Drum	OD-1600 (except for China) OD-2320 (for China)
Toner cartridge	PS-ZT1640 (4) (for North America) PS-ZT1640D (4) (for Asia, Central and South America) PS-ZT1640D5K (4) (for Asia, Central and South America) PS-ZT1640C (4) (for China) PS-ZT1640C5K (4) (for China) PS-ZT1640T (4) (for Taiwan) PS-ZT1640T5K (4) (for Taiwan) PS-ZT1640E (1) (for Europe) PS-ZT1640E5K (1) (for Europe)
Developer material	D-2320 (except for China) D-2320C (for China)

# 1.5 System List

## 1.5.1 e-STUDIO165/205

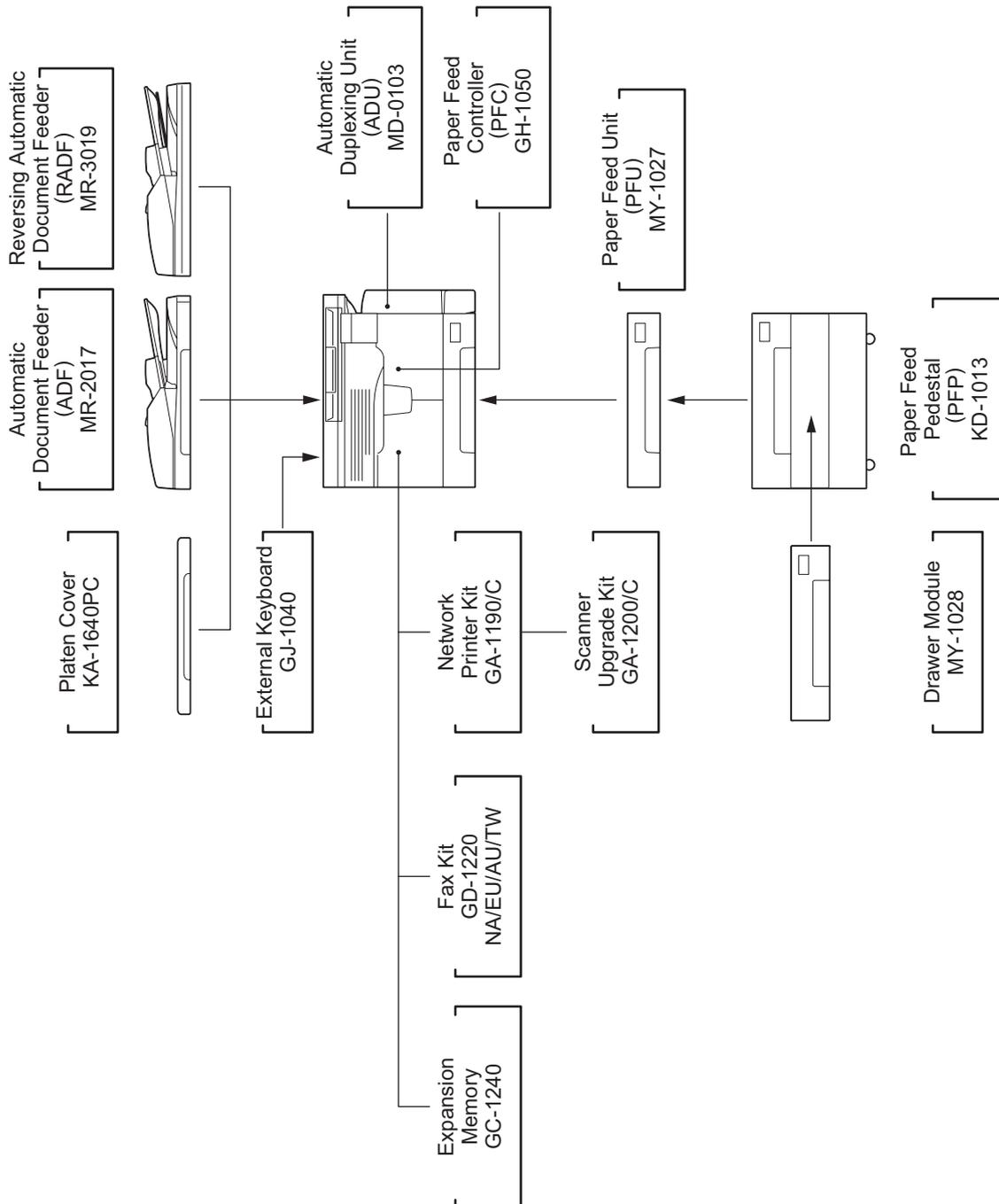


Fig. 1-2

## 1.5.2 e-STUDIO167/207/237

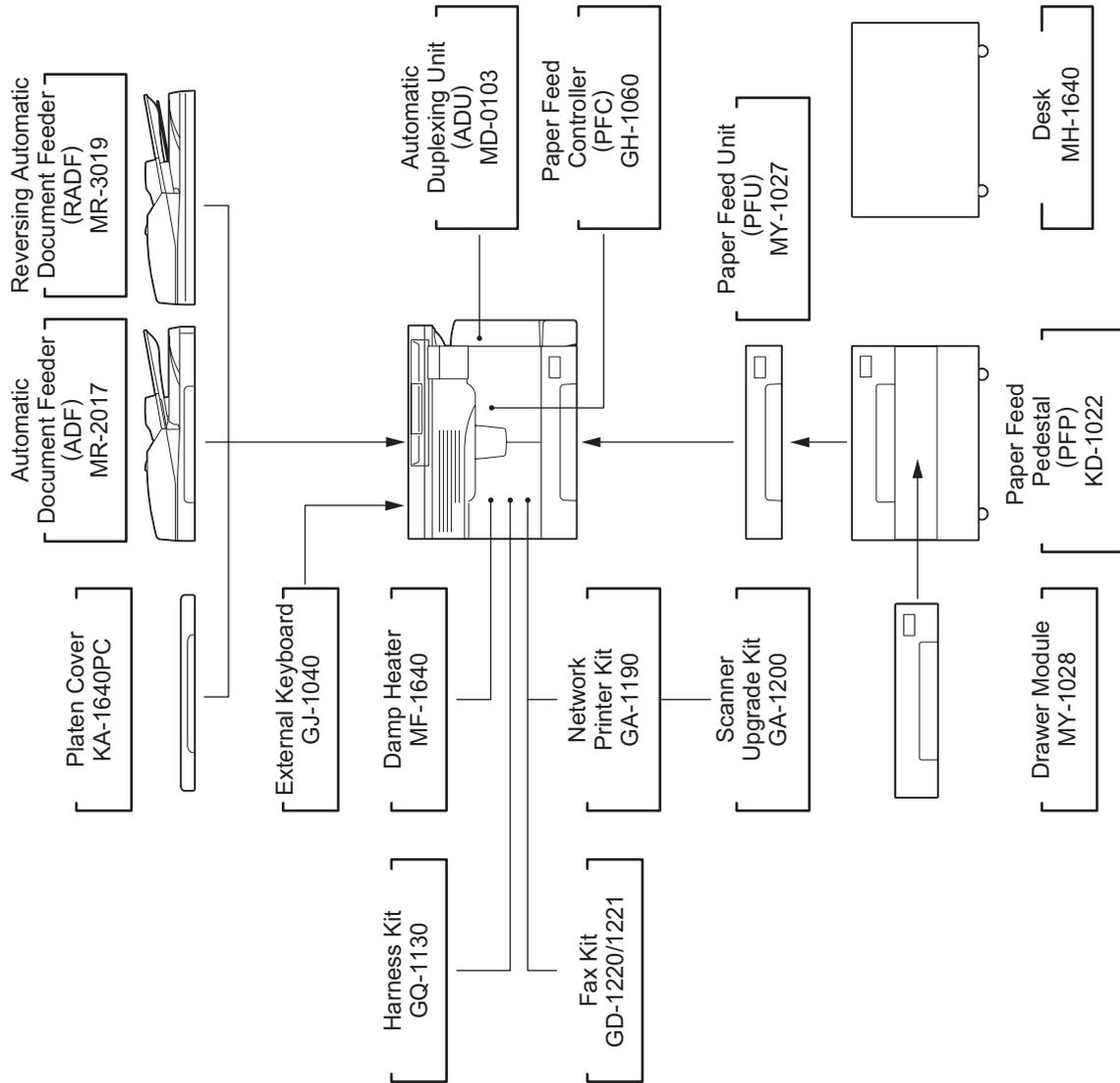


Fig. 1-3



## 2. ERROR CODE AND SELF-DIAGNOSTIC MODE

### 2.1 Error Code List

#### 2.1.1 Jam

Error code	Classification	Contents	Troubleshooting
E01	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. 5-1
E02		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. 5-1
E03	Other paper jam	Power-ON jam: The paper is remaining on the paper transport path when power is turned ON.	P. 5-2
E09		Jam at the registration area due to registration time-out error	-
E11	Paper misfeeding	ADU misfeeding (Paper not reaching the registration sensor): The paper which has passed through ADU does not reach the registration sensor during duplex printing.	P. 5-7
E12		Bypass misfeeding (Paper not reaching the registration sensor): The paper fed from the bypass tray does not reach the registration sensor.	P. 5-7
E13		Drawer misfeeding (Paper not reaching the registration sensor): The paper fed from the drawer does not reach the registration sensor.	P. 5-8
E14		PFU drawer misfeeding (Paper not reaching the PFU feed sensor): The paper fed from the PFU drawer does not reach the PFU feed sensor.	P. 5-9
E15		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. 5-10
E16		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. 5-11
E21	Paper transport jam	PFU drawer transport jam (Paper not reaching the registration sensor): The paper does not reach the registration sensor after it has passed the PFU feed sensor.	P. 5-3
E30		PFP upper drawer transport jam (Paper not reaching the registration sensor): The paper fed from the PFP upper drawer does not reach the registration sensor after it has passed the PFP upper drawer feed sensor.	P. 5-3

Error code	Classification	Contents	Troubleshooting
E32	Paper transport jam	PFP upper drawer transport jam (Paper not reaching the PFU feed sensor): The paper fed from the PFP upper drawer does not reach the PFU feed sensor after it has passed the PFP upper drawer feed sensor.	P. 5-4
E33		PFP lower drawer transport jam (Paper not reaching the registration sensor): The paper fed from the PFP lower drawer does not reach the registration sensor after it has passed the PFP lower drawer feed sensor.	P. 5-3
E35		PFP lower drawer transport jam (Paper not reaching the PFU feed sensor): The paper fed from the PFP lower drawer does not reach the PFU feed sensor after it has passed the PFP lower drawer feed sensor.	P. 5-4
E36		PFP lower drawer transport jam (Paper not reaching the PFP upper drawer feed sensor): The paper fed from the PFP lower drawer does not reach the PFP upper drawer feed sensor after it has passed the PFP lower drawer feed sensor.	P. 5-5
E40	Cover open jam	Transfer cover open jam: The transfer cover has opened during printing.	P. 5-12
E41		Front cover open jam: The front cover has opened during printing.	P. 5-12
E42		PFP cover open jam: The PFP cover has opened during printing.	P. 5-13
E44		PFU cover open jam: The PFU cover has opened during printing.	P. 5-13
E51	Paper transport jam (ADU section)	Jam not reaching the ADU sensor: The paper does not reach the ADU sensor after it is switchbacked in the exit section.	P. 5-6
E71	ADF jam	Jam not reaching the original registration sensor: The original fed from the original feeding tray does not reach the original registration sensor.	P. 5-14
E72		Jam not reaching the read sensor: The original does not reach the read sensor after it has passed the registration sensor.	P. 5-14
E73		Stop jam at the exit sensor: The trailing edge of the original does not pass the exit sensor after its leading edge has reached this sensor.	P. 5-15
E74		Stop jam at the reverse sensor: The trailing edge of the original does not pass the reversal sensor after its leading edge has reached this sensor. (RADF)	P. 5-15
E86		ADF jam access cover open: The ADF jam access cover has opened during ADF operation.	P. 5-16
E87		ADF open jam: ADF has opened during ADF operation.	P. 5-16

## 2.1.2 Service call

Error code	Classification	Contents	Troubleshooting
C01	Drive system related service call	Main motor abnormality: The main motor is not rotating normally.	P. 5-17
C04	Paper feeding system related service call	PFP motor abnormality: The PFP motor is not rotating normally.	P. 5-19
C07	Drive system related service call	Exit motor IC overcurrent detection error (Error which occurs only when the GH-1050 has been installed.)	P. 5-17
C08		ADU motor IC overcurrent detection error	P. 5-17
C15	Paper feeding system related service call	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.	P. 5-20
C16		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.	P. 5-20
C21	Scanning system related service call	CIS unit initialization error	P. 5-21
C26		Peak detection error: Lighting of the exposure lamp (white reference) is not detected when power is turned ON.	P. 5-21
C41	Fuser unit related service call	Thermistor or heater abnormality at power-ON: Abnormality of service call 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. 5-22
C43		Thermistor abnormality during warming up or in ready status after abnormality judgment	P. 5-23
C44		Heater abnormality after abnormality judgment: The temperature of the fuser roller has exceeded the range of control (in this case, the main switch turns OFF automatically) or does not even reach the range.	P. 5-24
C45		Thermistor abnormality during printing: Abnormality of the thermistor is detected during printing.	P. 5-24
C55 F11	Optional communication related service call	ADF I/F error: Communication error has occurred between the ADF and the scanner	P. 5-27
C56		PFC board I/F error: Communication error has occurred between the PFC board and the equipment.	P. 5-27
C94	Other service call	Firmware update error: An error message appears when firmware for e-STUDIO167/207/237 is updated on e-STUDIO165/205 by mistake, and the power is turned OFF and then back ON after the update.	P. 5-26
C97	Process related service call	High-voltage transformer abnormality: Leakage of the main charger is detected.	P. 5-26
C99	Other service call	PFC microcomputer abnormality	P. 5-26
CA1	Laser optical unit related service call	Polygonal motor abnormality: The polygonal motor is not rotating normally.	P. 5-25
CA2		H-Sync detection error: H-Sync detection PC board cannot detect laser beams.	P. 5-25
F14	Other service call	Invalid backup counter: The value of the total counter is inconsistent with that of the backup counter.	P. 5-26

## 2.2 Self-diagnosis Modes

### Self-diagnosis Modes

Mode	For start	Contents	For exit
Adjustment mode	[0]+[5]+ [POWER]	Adjusts various items.	[POWER] OFF/ON
Setting mode	[0]+[8]+ [POWER]	Sets various items.	[POWER] OFF/ON
Function setting mode	[1]+[3]+ [POWER]	Conducts OPE. PANEL TEST, PRINT TEST, SENSOR TEST, OUTPUT TEST.	[POWER] OFF/ON
RAM clear mode	[Specified keys]+ [POWER]	RAM clear.	[POWER] OFF/ON
Country/Region mode	[0]+[2]+ [POWER]	Country/Region code.	-

### Test Modes

Mode	For start	Contents	For exit
AUTO TEST	Press the [USER FUNCTIONS] button while READY is indicated, and then press the [*], [#], [*], [*] keys.	Use this mode to diagnose the equipment by automatically performing a series of tests.	READY: Press the [USER FUNCTIONS] button.  Test Mode Menu: Press the [*], [#], [*], [*] keys.
INDIVIDUAL TEST		Use this mode to perform a test dialogically and locate a failure from the test result.	
TEST RESULT LIST		Use this mode to print the results of "AUTO TEST" and "INDIVIDUAL TEST".	
FUNCTION TEST		Use this mode to check each function of the equipment.	
MAINTENANCE		Use this mode to perform setups for Memory Clear, Fax, etc.	
SERVICE LIST		Use this mode to Print PROTOCOL TRACE, TOTAL ERROR, etc.	
FUNCTION		Use this mode to Print FUNCTION LIST.	

#### Note:

To enter the desired mode, turn ON the power while two digital keys designated to each mode (e.g. [0] and [5]) are pressed simultaneously.

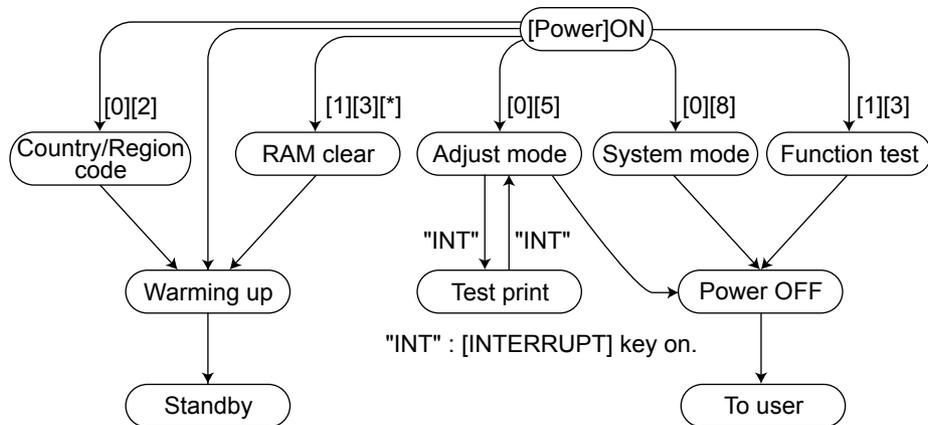


Fig. 2-1

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

## Menu map

The menu below can be selected by pressing the USER FUNCTIONS key. (However, the menu in the broken-dotted box are displayed only when the copier enters the SERVICE MODE.)

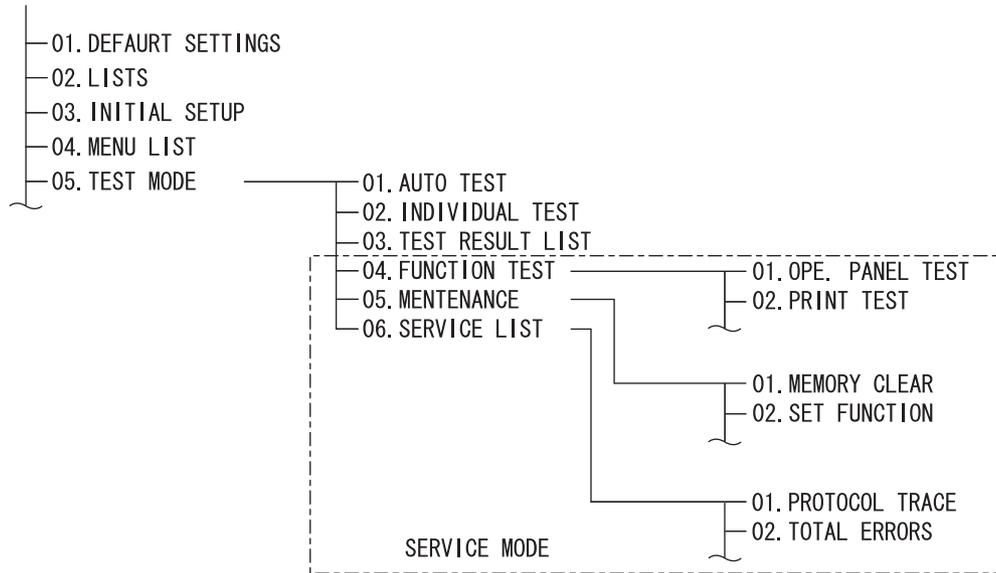


Fig. 2-2

### <Operation procedure>

- Adjustment mode (05): Refer to P. 2-6 "2.2.1 Adjustment mode (05)".
- Setting mode (08): Refer to P. 2-26 "2.2.2 Setting mode (08)".
- FUNCTION TEST (13): Refer to P. 2-83 "2.2.3 Function test"
- AUTO TEST: Refer to P. 2-100 "2.2.4 AUTO TEST"
- INDIVIDUAL TEST: Refer to P. 2-101 "2.2.5 INDIVIDUAL TEST"
- TEST RESULT LIST: Refer to P. 2-102 "2.2.6 TEST RESULT LIST"
- MAINTENANCE: Refer to P. 2-105 "2.2.8 MAINTENANCE"
- SERVICE LIST: Refer to P. 2-108 "2.2.9 SERVICE LIST"
- FUNCTION: Refer to P. 2-111 "2.2.10 FUNCTION (Jam counter ROM ver.)"
- RAM clear: Refer to P. 2-113 "2.2.11 RAM clear"
- Country/Region code: Refer to P. 2-115 "2.2.12 Country/Region code"

## 2.2.1 Adjustment mode (05)

Items in the adjustment mode list in the following pages can be corrected or changed in the adjustment mode (05). Turn ON the power with pressing the digital keys [0] and [5] simultaneously in order to enter this mode.

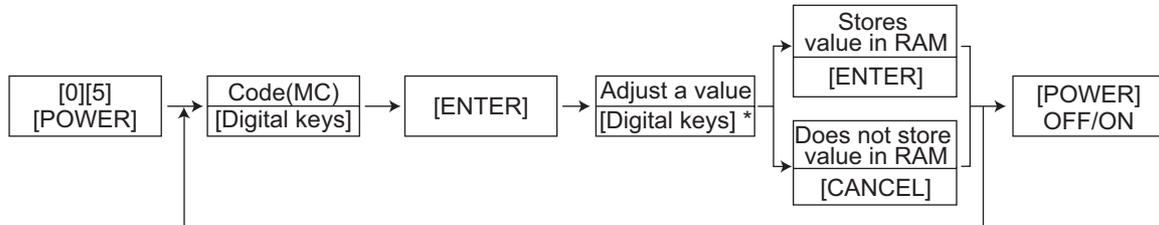
Classification List of Adjustment Mode (05)

Classification		Adjustment Mode (05)
ADF/RADF	[Aligning amount]	354, 355
	[Transporting]	357, 358, 365, 366
Image	[Binarizing]	700, 701, 702
	[Printer density]	667-0 to 4, 672-0 to 4, 676-0 to 4, 678-0 to 4
	[Image density]	501, 503, 504, 505, 506, 507, 508, 509, 510, 512, 514, 515, 710, 714, 715, 719, 720, 724, 725, 729, 845, 846, 847, 850, 851, 852, 855, 856, 857, 860, 861, 862
	[Gamma table]	609
	[Gamma balance]	596-0 to 2, 597-0 to 2, 598-0 to 2, 599-0 to 2
	[Gamma slope]	593, 594, 595
	[Background adjustment]	600, 601, 602, 869, 870, 871
	[Sharpness]	620, 621, 622, 623, 865-0 to 2, 866-0 to 2, 867-0 to 2
	[Smudged/Faint text]	648, 654, 655
	[Tonersaving]	664, 665
	[Margin]	430, 431, 432, 433, 434-0 to 1, 435, 436, 437, 438
	[Range correction]	532, 533, 534, 535, 536, 537, 570, 571, 572, 693, 694, 695, 820, 821, 822, 825, 826, 827, 830, 831, 832, 835, 836, 837
Paper feeding	[Paper pushing amount]	466-0 to 7
	[Aligning amount]	448-0 to 2, 449-0 to 2, 450-0 to 2, 451-0 to 2, 455-0 to 2, 458-0 to 2, 460-0 to 2, 461-0 to 2, 462-0 to 3, 463-0 to 2, 464-0 to 2, 474-0 to 2
Drive	[Exit motor]	424, 425
	[Main motor]	421, 422
Development	[Auto-toner]	200, 201
	[Developer bias]	205
	[Temperature]	270
	[Relative humidity]	247
	[Drum temperature]	248
Scanner	[LED]	311, 312, 313
	[Position]	305, 306
	[Carriage position]	359
	[Shading position]	350, 351
	[Reproduction ratio]	340
	[Peak]	310
	[Image shift]	341
Charger	[Main charger bias]	210
Transfer	[Transfer bias]	220, 221, 222
Separation	[Separation bias]	233, 234, 235
Process	[Toner recycle]	280
Laser	[Write starting]	410, 411, 440, 441, 442, 443, 444, 445, 498-0 to 1
	[Polygonal motor]	401, 405, 1300-0 to 1
	[Laser power]	286
	[Sideways deviation]	497-0 to 5

**Note:**

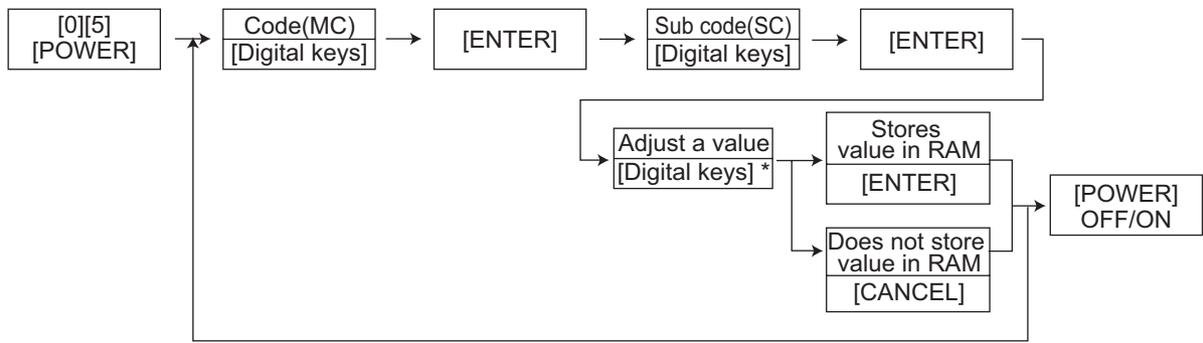
The density LED blinks while performing adjustment for the items which take time.  
Be sure not to turn the power OFF nor perform any other operations while the density LED is blinking.

## Procedure 1



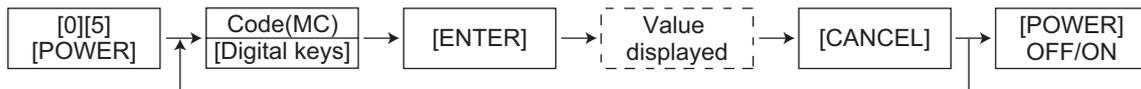
\* Press [#] to enter minus (-).

## Procedure 2

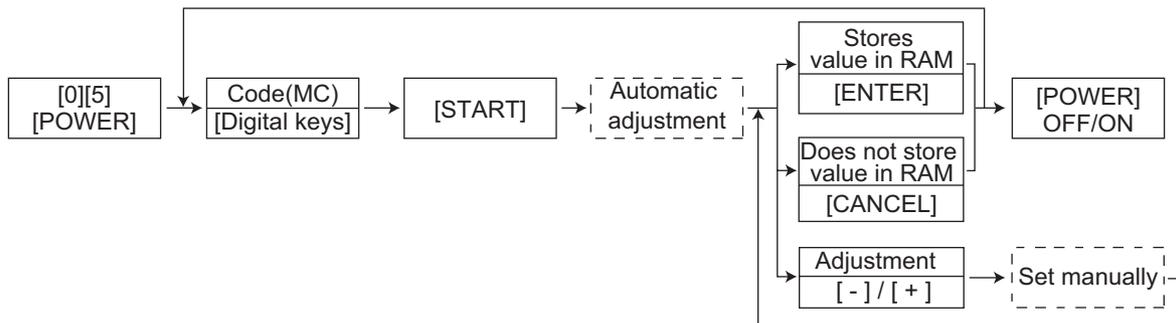


\* Press [#] to enter minus (-).

## Procedure 3

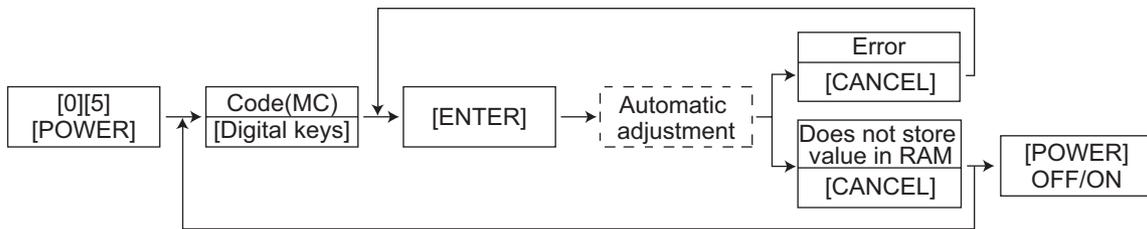


## Procedure 5

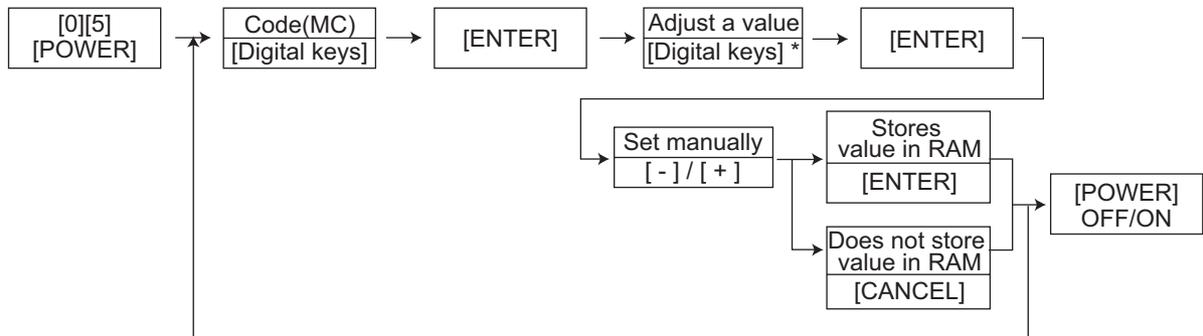
**Note:**

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.

### Procedure 6



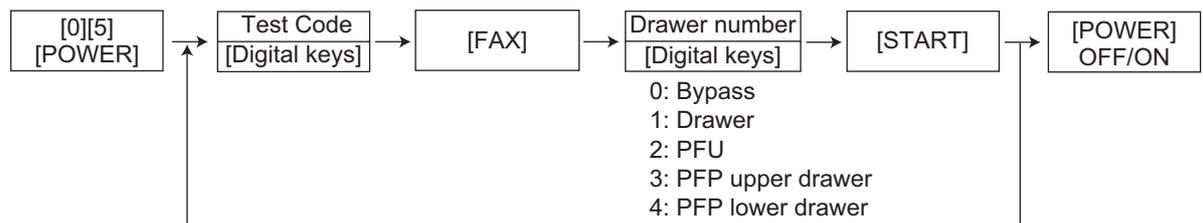
### Procedure 7



\* Press [#] to enter minus (-).

### Test print pattern in Adjustment Mode (05)

#### Procedure



Test code	Types of test pattern	Remarks
1	Grid pattern	Pattern width: 2 dots, Pitch: 10mm
4	Solid black pattern (whole area)	A3/LD

**Notes:**

- 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” and “SYS” stands for the MAIN board.

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
200	Developer	Automatic adjustment of auto-toner sensor (Fuser heater ON)	ALL	-	-	As the value increases, the sensor output increases correspondingly. The value starts changing approx. 2 minutes after this adjustment was started and is automatically set in the range of 2.35 to 2.45 V. * Selection is disable when developer unit is not installed. (Chap. 3.1)	5	
201	Developer	Correction of auto-toner sensor (Fuser heater ON)	ALL	141 <0-255>	M	Corrects the control value of the auto-toner sensor setup in 05-200. * Selection is disable when developer unit is not installed.	7	
205	Developer	Developer bias DC output adjustment	ALL	135 <0-255>	M	As the value increases, the transformer output increases correspondingly. Remove the developer unit and install the adjustment jig to make adjustment. (Chap. 3.6)	7	
210	Charger	Main charger grid bias output adjustment	ALL	16 cpm / 20 cpm: 75 23 cpm: 77 <0-255>	M		7	
220	Transfer	Transfer transformer DC output adjustment (H)	ALL	117 <0-255>	M		7	
221	Transfer	Transfer transformer DC output adjustment (C)	ALL	128 <0-255>	M		7	
222	Transfer	Transfer transformer DC output adjustment (L)	ALL	101 <0-255>	M		7	
233	Separation	Separation transformer DC output adjustment (H)	ALL	65 <0-255>	M		7	
234	Separation	Separation transformer DC output adjustment (C)	ALL	65 <0-255>	M		7	
235	Separation	Separation transformer DC output adjustment (L)	ALL	47 <0-255>	M		7	
247	Developer	Relative humidity latest value	ALL	50 <0-100>	M		Displaying of the relative humidity latest value.	3
248	Developer	Drum temperature latest value	ALL	25 <0-100>	M		Displaying of the drum temperature latest value.	3
270	Developer	Temperature latest value	ALL	25 <0-50>	M	Displaying of the temperature latest value.	3	

Adjustment mode (05)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
280	Process	Forced performing of idling for toner recycle	ALL	-	M	Perform this adjustment before the replacement of the developer material. (The toner is forcibly removed from the cleaner.) During performing this adjustment, the density LED blinks.	3
286	Laser	Laser power adjustment	ALL	16 cpm / 20 cpm: 60 23 cpm: 70 <0-255>	M	When the value increases, the laser output increases correspondingly.	7
305	Scanner	Image location adjustment of secondary scanning direction (scanner section)	ALL	105 <51-206>	SYS	When the value increases by "1", the image shifts by approx. 0.0640 mm toward the trailing edge of the paper. During this adjustment, the density LED blinks.	1
306	Scanner	Image location adjustment of primary scanning direction (scanner section)	ALL	127 <121-136>	SYS	When the value increases by "1", the image shifts by approx. 0.169 mm toward the front side of the paper. During this adjustment, the density LED blinks.	1
310	Scanner	Forced performing of peak detection	ALL	-	-	Activates the light intensity adjustment control. During this adjustment, the density LED blinks.	6
311	Scanner	LED (R) current effective value setting	ALL	76 <0-255>	SYS	Displays total of the initial value and light intensity correction value.	1
312	Scanner	LED (B) current effective value setting	ALL	62 <0-255>	SYS	Displays total of the initial value and light intensity correction value.	1
313	Scanner	LED (YG) current effective value setting	ALL	160 <0-255>	SYS	Displays total of the initial value and light intensity correction value.	1
340	Scanner	Reproduction ratio adjustment of secondary scanning direction (scanner section)	ALL	134 <76-181>	SYS	When the value increases by "1", the reproduction ratio in the secondary scanning direction (vertical to paper feeding direction) increases by approx. 0.0947%. During this adjustment, the density LED blinks.	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
341	Scanner	Solid line erasing in image shift (right margin)		PPC	0 <0-60>	SYS	If copies are made using the ADF with the image shift (right margin) function enabled, black streak lines may appear on the trailing edge of the copies. To erase this line, use this code to adjust the scanning range. When the value increases by "1", the image scanning range decreases by 0.1 mm.	1
350	Scanner	Shading position adjustment	Original glass	ALL	128 <118-138>	SYS	0.064 mm/step During this adjustment, the density LED blinks.	1
351			RADF	ALL	128 <118-138>	SYS		1
354	ADF/RADF	Adjustment of ADF/RADF paper alignment	for single sided original	ALL	10 <0-20>	SYS	When the value increases by "1", the aligning amount increases by approx. 0.4 mm.	1
355	RADF		for double sided original	ALL	10 <0-20>	SYS		1
357	ADF/RADF	Fine adjustment of ADF/RADF transport speed		ALL	50 <0-100>	SYS	When the value increases by "1", the reproduction ratio of the secondary scanning direction when using the ADF/RADF increases by approx. 0.1%. During this adjustment, the density LED blinks.	1
358	ADF/RADF	ADF/RADF sideways deviation adjustment		ALL	128 <121-136>	SYS	When the value increases by "1", the image of original fed from the ADF/RADF shifts toward the rear side of paper by approx. 0.169 mm. During this adjustment, the density LED blinks.	1
359	Scanner	Carriage position adjustment during scanning from ADF/RADF		ALL	128 <0-255>	SYS	When the value increases by "1", the carriage position when using the ADF/RADF shifts by approx. 0.1 mm toward the original feeding side. During this adjustment, the density LED blinks.	1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
365	ADF/ RADF	ADF/RADF leading edge position adjustment	for single sided orig- inal	ALL	50 <0-100>	SYS	When the value increases by "1", the copied image of original fed from the ADF/RADF shifts toward the trailing edge of paper by approx. 0.2 mm. During this adjustment, the density LED blinks.	1
366	RADF		for double sided orig- inal	ALL	50 <0-100>	SYS		1
401	Laser	Fine adjustment of polygo- nal motor rotation speed (adjustment of primary scanning direction repro- duction ratio)		PRT	134 <0-255>	M	When the value increases by "1", the reproduction ratio of pri- mary scanning direction increases by approx. 0.07%. (approx. 0.1 mm/ step)	1
405				PPC	131 <0-255>	M		1
410	Laser	Adjustment of primary scanning laser writing start position.		PPC	88 <0-255>	M	When the value increases by "1", the writ- ing start position shifts to the front side by approx. 0.0423 mm. When "1" is set at 08- 203, the adjustment value set at 05-411 will also be reflected to 05- 410.	1
411				PRT	88 <0-255>	M		1
421	Drive	Adjustment of secondary scanning direction repro- duction ratio (fine adjustment of main motor speed)		PPC/ PRT	128 <0-255>	M	When the value increases by "1", the reproduction ratio of sec- ondary scanning direc- tion increases by approx. 0.04%.	1
422				FAX	128 <0-255>	M		1
424	Drive	Fine adjustment of exit motor speed		PPC/ PRT	128 <0-255>	M	When the value increases by "1", the rotation becomes faster by approx. 0.05%.	1
425				FAX	128 <0-255>	M		1
430	Image	Top margin adjustment (blank area at the leading edge of the paper)		PPC	9 <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	110 <0-255>	M		1
433	Image	Bottom margin adjustment (blank area at the trailing edge of the paper)		PPC	153 <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	ALL	29 <0-255>	M	When the value increases by "1", the blank area becomes wider by approx. 0.0423 mm.	2	
434-1		Right margin adjustment (blank area at the right of the paper along the paper feeding direction)/Reverse side at duplexing	ALL	29 <0-255>	M		2	
435	Image	Top margin adjustment (blank area at the leading edge of the paper)	PRT	24 <0-255>	M		1	
436	Image	Left margin adjustment (blank area at the left of the paper along the paper feeding direction)	PRT	0 <0-255>	M		1	
437	Image	Right margin adjustment (blank area at the right of the paper along the paper feeding direction)	PRT	0 <0-255>	M		1	
438	Image	Bottom margin adjustment (blank area at the trailing edge of the paper)	PRT	0 <0-255>	M		When the value increases by "1", the blank area becomes wider by approx. 0.0423 mm.	1
440	Laser	Adjustment of secondary scanning laser writing start position	Drawer	ALL	14 <0-40>	M	When the value increases by "1", the image shifts toward the leading edge of the paper by approx. 0.2 mm.	1
441			PFU	ALL	21 <0-40>	M		1
442			Bypass feeding	ALL	8 <0-15>	M		1
443			LCF	ALL	8 <0-15>	M		1
444			PFP	ALL	8 <0-15>	M		1
445			Duplex feeding	ALL	8 <0-15>	M		1
448-0			Paper feeding	Paper aligning amount adjustment at the registration section (PFP upper drawer/Plain paper)	Long size	ALL		16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>
448-1	Middle size	ALL			16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M	2	
448-2	Short size	ALL			16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M	2	

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
449-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFP lower drawer/Plain paper)	Long size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 0.9 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
449-1			Middle size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M		2
449-2			Short size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M		2
450-0	Paper feeding	Paper aligning amount adjustment at the registration section (Drawer/Plain paper)	Long size	ALL	16 cpm / 20 cpm: 22 23 cpm: 19 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 0.9 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
450-1			Middle size	ALL	16 cpm / 20 cpm: 22 23 cpm: 19 <0-63>	M		2
450-2			Short size	ALL	16 cpm / 20 cpm: 22 23 cpm: 19 <0-63>	M		2
451-0	Paper feeding	Paper aligning amount adjustment at the registration section (PFU/Plain paper)	Long size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M		2
451-1			Middle size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M		2
451-2			Short size	ALL	16 cpm / 20 cpm: 14 23 cpm: 12 <0-63>	M		2

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
455-0	Paper feeding	Paper aligning amount adjustment at the registration section (Upper drawer/Plain paper)	Long size	ALL	Refer to contents <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 0.9 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter <Default value> e-STUDIO165/205: 38 e-STUDIO167/207/237: 20  <b>Note:</b> Be sure to change the value to "38" when GH-1050 is installed in e-STUDIO167/207.	2
455-1			Middle size	ALL	Refer to contents <0-63>	M		2
455-2			Short size	ALL	Refer to contents <0-63>	M		2
458-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding/Plain paper)	Long size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 1.4 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
458-1			Middle size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
458-2			Short size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
460-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding/Thick paper 1)	Long size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
460-1			Middle size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
460-2			Short size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
461-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding/Thick paper 2)	Long size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 1.4 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
461-1			Middle size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
461-2			Short size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
462-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding/Thick paper 3)	Long size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 1.4 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
462-1			Middle size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
462-2			Short size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
462-3			Postcard	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
463-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding/OHP film)	Long size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 1.4 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
463-1			Middle size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
463-2			Short size	ALL	16 cpm / 20 cpm: 10 23 cpm: 9 <0-63>	M		2
464-0	Paper feeding	Paper aligning amount adjustment at the registration section (Bypass feeding /Envelope)	Long size	ALL	10 <0-63>	M		2
464-1			Middle size	ALL	10 <0-63>	M		2
464-2			Short size	ALL	10 <0-63>	M		2
466-0	Paper feeding	Adjustment of paper pushing amount/ Bypass feeding	Plain paper	ALL	0 <0-255>	M	When the value increases by "1", the driving speed of bypass feed roller increases by approx. 0.2 ms when the paper transport is started from the registration section. * Postcard is supported only for JPN model.	2
466-1			Postcard	ALL	0 <0-255>	M		2
466-3			Envelope	ALL	0 <0-255>	M		2
466-4			Thick paper 1	ALL	0 <0-255>	M		2
466-5			Thick paper 2	ALL	0 <0-255>	M		2
466-6			Thick paper 3	ALL	0 <0-255>	M		2
466-7			OHP film	ALL	0 <0-255>	M		2

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
474-0	Paper feeding	Paper aligning amount adjustment at the registration section (Duplex feeding/ Thick paper 1)	Long size	ALL	24 <0-63>	M	When the value increases by "1", the aligning amount increases by approx. 0.8 mm. <Paper length> Long size: 330 mm or longer Middle size: 220 mm to 329 mm Short size: 219 mm or shorter	2
474-1			Middle size	ALL	24 <0-63>	M		2
474-2			Short size	ALL	33 <0-63>	M		2
497-0	Laser	Adjustment of drawer side-ways deviation	Drawer	ALL	128 <0-255>	M	When the value increases by "1", the image shifts toward the front side by 0.0423 mm.	2
497-1			PFU	ALL	128 <0-255>	M		2
497-2			PFP upper drawer	ALL	128 <0-255>	M		2
497-3			PFP lower drawer	ALL	128 <0-255>	M		2
497-5			Bypass feeding	ALL	128 <0-255>	M		2
498-0	Laser	Adjustment of primary scanning laser writing start position at duplex feeding	Long size	ALL	128 <0-255>	M		2
498-1			Short size (A4/LT or smaller)	ALL	128 <0-255>	M		2
501	Image	Density adjustment Fine adjustment of "manual density"/ Center value	Photo	PPC	128 <0-255>	SYS	When the value increases, the image at the center step becomes darker.	1
503			Text/Photo	PPC	128 <0-255>	SYS		1
504			Text	PPC	128 <0-255>	SYS		1
505	Image	Density adjustment Fine adjustment of "manual density"/ Light step value	Text/Photo	PPC	33 <0-255>	SYS	When the value increases, the image of the "light" steps becomes lighter.	1
506			Photo	PPC	33 <0-255>	SYS		1
507			Text	PPC	33 <0-255>	SYS		1
508	Image	Density adjustment Fine adjustment of "manual density"/ Dark step value	Text/Photo	PPC	33 <0-255>	SYS	When the value increases, the image of the "dark" steps becomes darker.	1
509			Photo	PPC	33 <0-255>	SYS		1
510			Text	PPC	33 <0-255>	SYS		1
512	Image	Density adjustment Fine adjustment of "automatic density"	Photo	PPC	128 <0-255>	SYS	When the value increases, the image becomes darker.	1
514			Text/Photo	PPC	128 <0-255>	SYS		1
515			Text	PPC	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
532	Image	Range correction/Background peak adjustment	Text/Photo	PPC	32 <0-255>	SYS	When the value increases, the background becomes more brightened.	1
533			Photo	PPC	22 <0-255>	SYS		1
534			Text	PPC	46 <0-255>	SYS		1
535	Image	Range correction/Text peak adjustment	Text/Photo	PPC	246 <0-255>	SYS	When the value decreases, the text becomes darker.	1
536			Text	PPC	254 <0-255>	SYS		1
537			Photo	PPC	236 <0-255>	SYS		1
570	Image	Range correction on original manually set on the original glass	Text/Photo	PPC	EUR:12 UC:12 JPN:22 <11-14, 21-24, 31-34, 41-44>	SYS	Sets whether the values of the background peak and text peak are fixed or not. One's place is an adjustment for "automatic density" and ten's place is for "manual density". Once they are fixed, the range correction is performed with standard values. The values of the background peak and text peak affect the reproduction of the background density and text density respectively. 1: fixed/fixed 2: varied/fixed 3: fixed/varied 4: varied/varied * Background peak/ Text peak	1
571			Photo	PPC	12 <11-14, 21-24, 31-34, 41-44>	SYS		1
572			Text	PPC	22 <11-14, 21-24, 31-34, 41-44>	SYS		1
593	Image	Gamma data slope adjustment	Text/Photo	PPC	5 <1-9>	SYS	Select the slope of Gamma curve (The larger the value is, the larger the slope becomes.)	1
594	Image		Photo	PPC	5 <1-9>	SYS		1
595	Image		Text	PPC	5 <1-9>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
596-0	Image	Gamma balance adjustment (PS/Photo)	Low density	PRT	128 <0-255>	SYS	When the value increases, the density in the target area becomes higher. During this adjustment, the density LED blinks.	2
596-1			Medium density	PRT	128 <0-255>	SYS		2
596-2			High density	PRT	128 <0-255>	SYS		2
597-0	Image	Gamma balance adjustment (PS/Text)	Low density	PRT	128 <0-255>	SYS		2
597-1			Medium density	PRT	128 <0-255>	SYS		2
597-2			High density	PRT	128 <0-255>	SYS		2
598-0	Image	Gamma balance adjustment (PCL/Photo)	Low density	PRT	128 <0-255>	SYS		2
598-1			Medium density	PRT	128 <0-255>	SYS		2
598-2			High density	PRT	128 <0-255>	SYS		2
599-0	Image	Gamma balance adjustment (PCL/Text)	Low density	PRT	128 <0-255>	SYS	2	
599-1			Medium density	PRT	128 <0-255>	SYS	2	
599-2			High density	PRT	128 <0-255>	SYS	2	
600	Image	Background adjustment	Text/Photo	PPC	3 <1-9>	SYS	When the value decreases, the background becomes darker. When the value increases, the background becomes lighter.	1
601			Photo	PPC	3 <1-9>	SYS		1
602			Text	PPC	3 <1-9>	SYS		1
609	Image	Switching of the scanner Gamma correction table when paper is fed from the RADF/ADF		ALL	0 <0-4>	SYS	The larger the value is, the lighter the density of the highlight areas becomes.	1
620	Image	Sharpness adjustment	Text/Photo	PPC	EUR: 1 UC: 1 JPN: 0 <0-96>	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. One's place: Selecting a filter shape (0 to 6) Ten's place: Adjustable from 0 to 9 regarding the default value as the standard (The larger the value is, the sharper the image becomes.) * When entering "0" on the ten's place, this value is not displayed on the entry screen.	1
621			Photo (Error diffusion)	PPC	0 <0-96>	SYS		1
622			Text	PPC	0 <0-96>	SYS		1
623			Photo (Dither)	PPC	0 <0-96>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
648	Image	Adjustment of smudged/ faint text		PPC	3 <0-4>	SYS	Adjustment of the smudged/faint text With decreasing the value, the faint text is suppressed, and with increasing it, the smudged text is sup- pressed.	1
654	Image	Adjustment of smudged/faint text	PS	PRT	5 <0-9>	M	Adjustment of the smudged/faint text With decreasing the value, the faint text is suppressed, and with increasing it, the smudged text is sup- pressed.	1
655			PCL	PRT	5 <0-9>	M		1
664	Image	Upper limit value in toner- saving period	PS	PRT	136 <0-255>	M	When the value decreases, the density of the printed text becomes lower.	1
665			PCL	PRT	136 <0-255>	M		1
667-0	Image	Adjustment of copied image density		PPC	0 <0-63>	M	Adjustment of the image density When the value decreases, the text becomes lighter. (Chap. 3.3.8)	2
667-1				PPC	19 <0-63>	M		2
667-2				PPC	25 <0-63>	M		2
667-3				PPC	31 <0-63>	M		2
667-4				PPC	44 <0-63>	M		2
672-0	Image	Adjustment of printer image density	GDI	PRT	0 <0-63>	M	Adjustment of the image density When the value decreases, the text becomes lighter (Chap. 3.4.2)	2
672-1				PRT	19 <0-63>	M		2
672-2				PRT	25 <0-63>	M		2
672-3				PRT	31 <0-63>	M		2
672-4				PRT	56 <0-63>	M		2
676-0			PS/PCL	PRT	0 <0-63>	M		2
676-1				PRT	19 <0-63>	M		2
676-2				PRT	25 <0-63>	M		2
676-3				PRT	31 <0-63>	M		2
676-4				PRT	44 <0-63>	M		2

Adjustment mode (05)										
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure			
678-0	Image	Received FAX printing/List printing Adjustment of image density	PRT	0 <0-63>	M	Adjustment of the image density When the value decreases, the text becomes lighter (Chap. 3.4.2)	2			
678-1			PRT	19 <0-63>	M		2			
678-2			PRT	25 <0-63>	M		2			
678-3			PRT	31 <0-63>	M		2			
678-4			PRT	44 <0-63>	M		2			
693	Image	Range correction on original set on the ADF/RADF	Text/Photo	PPC	EUR:12 UC:12 JPN:22 <11-14, 21-24, 31-34, 41-44>	SYS	Sets whether the values of the background peak and text peak are fixed or not. One's place is an adjustment for "automatic density" and ten's place is for "manual density". Once they are fixed, the range correction is performed with standard values. The values of the background peak and text peak affect the reproduction of the background density and text density respectively. 1: fixed/fixed 2: varied/fixed 3: fixed/varied 4: varied/varied * Background peak/ Text peak	1		
694			Photo	PPC	12 <11-14, 21-24, 31-34, 41-44>			SYS	1	
695			Text	PPC	22 <11-14, 21-24, 31-34, 41-44>			SYS	1	
700	Image	Adjustment of binarized threshold (Text)	Center value	FAX	120 <0-255>	SYS	When the value increases, the image at the center step becomes lighter.	1		
701			Light step value	FAX	33 <0-255>			SYS	When the value increases, the image of "light" side becomes lighter.	1
702			Dark step value	FAX	33 <0-255>			SYS	When the value increases, the image of "dark" side becomes darker.	1
710	Image	Density adjustment Fine adjustment of "manual density"/ Center value	Photo	FAX	128 <0-255>	SYS	When the value increases, the image at the center step becomes darker.	1		
714			Text/Photo	FAX	128 <0-255>			SYS	1	
715	Image	Density adjustment Fine adjustment of "manual density"/ Light step value	Photo	FAX	33 <0-255>	SYS	When the value increases, the image of the "light" steps becomes lighter.	1		
719			Text/Photo	FAX	33 <0-255>			SYS	1	

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
720	Image	Density adjustment Fine adjustment of "manual density"/ Dark step value	Photo	FAX	33 <0-255>	SYS	When the value increases, the image of the "dark" steps becomes darker.	1
724			Text/Photo	FAX	33 <0-255>	SYS		1
725	Image	Density adjustment Fine adjustment of "automatic density"	Photo	FAX	128 <0-255>	SYS	When the value increases, the image becomes darker.	1
729			Text/Photo	FAX	128 <0-255>	SYS		1
820	Image	Range correction/Text peak adjustment	Text/Photo	SCN	246 <0-255>	SYS	When the value decreases, the text becomes darker.	1
821			Text	SCN	236 <0-255>	SYS		1
822			Photo	SCN	254 <0-255>	SYS		1
825	Image	Range correction on original manually set on the original glass	Text/Photo	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS	Sets whether the values of the background peak and text peak are fixed or not. One's place is an adjustment for "automatic density" and ten's place is for "manual density". Once they are fixed, the range correction is performed with standard values. The values of the background peak and text peak affect the reproduction of the background density and text density respectively. 1: fixed/fixed 2: varied/fixed 3: fixed/varied 4: varied/varied * Background peak/ Text peak	1
826			Text	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS		1
827			Photo	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS		1

Adjustment mode (05)								
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure	
830	Image	Range correction on original set on the ADF/RADF	Text/Photo	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS	Sets whether the value of the background peak and text peak are fixed or not. One's place is an adjustment for "automatic density" and ten's place is for "manual density". Once they are fixed, the range correction is performed with standard values. The values of the background peak and text peak affect the reproduction of the background density and text density respectively. 1: fixed/fixed 2: varied/fixed 3: fixed/varied 4: varied/varied * Background peak/ Text peak	1
831			Text	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS		1
832			Photo	SCN	12 <11-14, 21-24, 31-34, 41-44>	SYS		1
835	Image	Range correction/Background peak adjustment	Text/Photo	SCN	32 <0-255>	SYS	When the value increases, the background becomes more brightened.	1
836			Text	SCN	46 <0-255>	SYS		1
837			Photo	SCN	16 <0-255>	SYS		1
845	Image	Density adjustment Fine adjustment of "manual density"/ Center value	Text/Photo	SCN	128 <0-255>	SYS	When the value increases, the image at the center step becomes darker.	1
846			Text	SCN	128 <0-255>	SYS		1
847			Photo	SCN	128 <0-255>	SYS		1
850	Image	Density adjustment Fine adjustment of "manual density"/ Light step value	Text/Photo	SCN	33 <0-255>	SYS	When the value increases, the image of the "light" steps becomes lighter.	1
851			Text	SCN	33 <0-255>	SYS		1
852			Photo	SCN	33 <0-255>	SYS		1
855	Image	Density adjustment Fine adjustment of "manual density"/ Dark step value	Text/Photo	SCN	33 <0-255>	SYS	When the value increases, the image of the "dark" steps becomes darker.	1
856			Text	SCN	33 <0-255>	SYS		1
857			Photo	SCN	33 <0-255>	SYS		1
860	Image	Density adjustment Fine adjustment of "automatic density"	Text/Photo	SCN	128 <0-255>	SYS	When the value increases, the image becomes darker.	1
861			Text	SCN	128 <0-255>	SYS		1
862			Photo	SCN	128 <0-255>	SYS		1

Adjustment mode (05)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
865-0	Image	Sharpness adjustment (Text/Photo)	Reproduction ratio 40% or smaller	SCN	0 <0-99>	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.  One's place: Selecting a filter shape Ten's place: Sharpness intensity (0: Use default value, 1-9: Filter intensity)	2
865-1			Reproduction ratio 41-80%	SCN	0 <0-99>	SYS		2
865-2			Reproduction ratio 81% or larger	SCN	0 <0-99>	SYS		2
866-0	Image	Sharpness adjustment (Text)	Reproduction ratio 40% or smaller	SCN	0 <0-99>	SYS		2
866-1			Reproduction ratio 41-80%	SCN	0 <0-99>	SYS		2
866-2			Reproduction ratio 81% or larger	SCN	0 <0-99>	SYS		2
867-0	Image	Sharpness adjustment (Photo)	Reproduction ratio 40% or smaller	SCN	0 <0-99>	SYS		2
867-1			Reproduction ratio 41-80%	SCN	0 <0-99>	SYS		2
867-2			Reproduction ratio 81% or larger	SCN	0 <0-99>	SYS		2
869	Image	Background adjustment	Text/Photo	SCN	4 <1-9>	SYS	When the value decreases, the background becomes darker. When the value increases, the background becomes lighter.	1
870			Photo	SCN	6 <1-9>	SYS		1
871			Text	SCN	4 <1-9>	SYS		1
1300-0	Laser	Fine adjustment of polygonal motor rotation speed	16 x 15.4	FAX	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)	2
1300-1			15.4 x 16	FAX	128 <0-255>	M		2

## 2.2.2 Setting mode (08)

The items in the setting code list can be set or changed in this setting mode (08).

Classification List of Setting Mode (08)

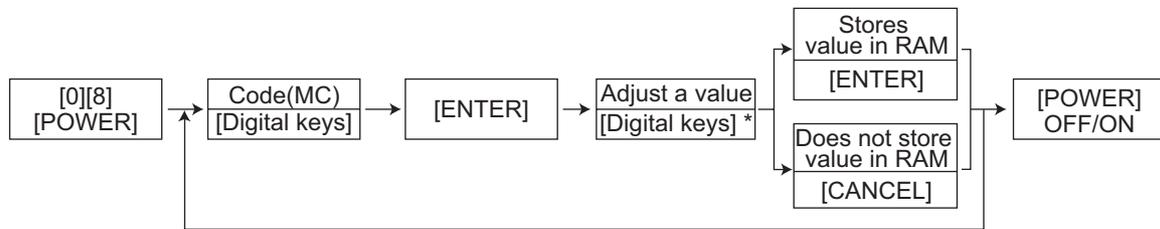
Classification		Setting Mode (08)
RADF	[Duplex copying]	685, 905
Counter	[Scanning pages in copier]	312-0 to 16, 327-0 to 2
	[Scanning pages in scanning]	313-0 to 16, 329-0 to 2
	[Double count]	345, 346, 347, 348, 349, 352, 353
	[Total Counter copy]	388, 389
	[Total number of pages]	335-0 to 2
	[Toner cartridge]	1410
	[Scanning pages in FAX]	314-0 to 16, 328-0 to 2
	[Transmitted/Received pages in FAX]	315-0 to 16, 316-0 to 16, 330-0 to 2, 332-0 to 2
	[Number of output pages]	305-0 to 16, 306-0 to 16, 307-0 to 16, 308-0 to 16, 320-0 to 2, 321-0 to 2, 322-0 to 2, 323-0 to 2
	[External counter]	381
	[Paper source]	356, 357, 358, 360, 370, 372, 374
	[Fuser unit]	1372,1378,1380,1382
	[Media type]	1385,1386,1388,1411
Scanner	[Control status]	463
	[Transmitting Email]	273
	[Memory full]	1144
Data clear	[SRAM]	1428
Network	[AppleTalk]	1014, 1015
	[Bindery]	1026
	[Community]	1065, 1066
	[DDNS]	1020
	[Directory]	1028, 1029
	[DNS]	1017, 1018, 1019
	[E-mail]	1097, 1098, 1155, 1156
	[Enable server's]	1989, 1990, 1991, 1993, 1994, 1996
	[FTP]	1055
	[HTTP]	1030, 1031, 1032
	[IP Conflict]	1440
	[IP Filter]	1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979
	[IP address]	1006, 1007, 1008, 1009, 1010
	[IPP]	1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1447, 1448, 1449, 1450, 1451
[IPX]	1011, 1099	
[LPD]	1075, 1076, 1077	

	Classification	Setting Mode (08)
Network	[MAC address]	1141
	[MIB]	1063
	[NCP]	1013
	[NDS]	1027
	[NIC]	1002, 1003
	[Novell]	1093, 1094
	[NT Domain]	1123
	[PCL]	973
	[POP Before]	1111
	[POP3]	1046, 1047, 1048, 1049, 1050, 1051, 1052
	[Raw/TCP]	1073, 1074
	[Raw Port]	945
	[Raw printing]	290, 291, 292, 293, 296, 297, 298, 299, 978, 979
	[Rendezvous]	1103
	[Search Root]	1095
	[SMTP]	1037, 1038, 1039, 1040, 1041, 1042, 1100, 1101, 1102
	[TRAP]	1069, 1070
	[Web data]	260
	[WINS]	1024, 1025
	[Internet FAX]	274, 1114, 1154
	[Off ramp]	1043, 1044, 1045
	[Service name]	1105
	[Security type]	950, 951
	[Direct SMTP]	1152, 1153
	[Print queue]	1096
	[Frame type]	1012
[Host name]	1112	
[Link local host name]	1104	
[Workgroup name]	1124	
[Maximum data capacity]	265, 266	
[Automatic transfer]	660, 661	
Version	[FROM]	921, 1951
	[PFC]	906
	[Controller ROM]	1952, 1954
	[System]	900
	[Scanner ROM]	1953, 1955
	[Function data]	922
	[Language data]	923
FAX	[Automatic transfer]	510
	[Paper source]	689
	[Reception display]	692
Image processing	[LED]	1913
	[Auto-toner]	455
	[Toner recycle]	838
	[Drum life correction]	1628-0 to 1
	[Temperature/Humidity]	839

Classification		Setting Mode (08)
Maintenance	[FSMS]	258
	[HTTP]	726, 727, 728, 729, 730
	[PM counter]	251, 252
	[Error history]	253
	[Telephone number]	250
	[Service notification]	702, 703, 707, 715, 716, 717, 718, 719, 720, 721, 723, 767, 769, 770, 771, 772, 773, 774, 775, 776, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 796
	[Equipment number]	995
	[Emergency Mode]	710, 711
User interface	[X in 1]	650
	[Custom Mode]	631
	[Copy volume]	300
	[Jobs clear]	246
	[Energy saving mode]	970
	[Sorting]	641, 649
	[Timer]	204, 205, 206
	[Template]	691
	[File]	209, 219
	[Book type]	611
	[External counter]	202
	[Administrator]	263
	[Default setting]	276, 281, 283, 284, 285, 286, 603, 604, 618, 642
	[Department management]	617
	[Paper size]	261
Laser	[Polygonal motor]	483, 486
	[Power correction]	872, 873, 875, 876, 877, 883, 884
Image	[Error diffusion / Dither]	502
	[Default setting]	538, 550
	[Wide A4 mode]	1119
Paper feeding	[Change of paper source]	481
	[Paper setting]	632
	[Retry]	482
	[Paper feeding]	254, 255
	[Default setting]	480
	[Paper exit]	698, 699
	[Paper size]	224, 225, 226, 227, 228
[Paper dimension]	229-0 to 1, 230-0 to 1, 231-0 to 1, 232-0 to 1, 233-0 to 1, 234-0 to 1, 235-0 to 1, 236-0 to 1, 237-0 to 1, 238-0 to 1, 239-0 to 1, 240-0 to 1, 241-0 to 1, 242-0 to 1, 244-0 to 1, 245-0 to 1, 337-0 to 1, 338-0 to 1, 339-0 to 1, 340-0 to 1, 341-0 to 1, 471-0 to 1	
Development	[Auto-toner]	414
	[Developer bias]	833, 834, 835, 836, 837, 857, 858, 859, 860, 861, 862, 863

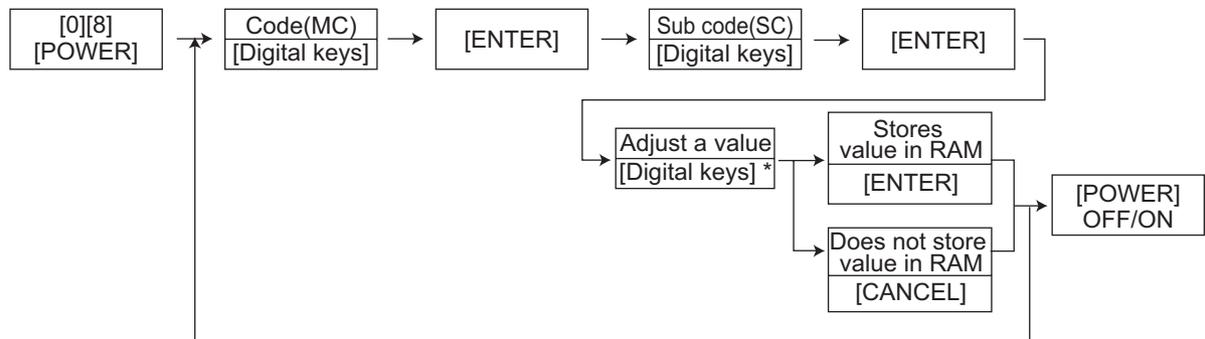
Classification		Setting Mode (08)
General	[Enhanced bold]	1149
	[Error report]	1143
	[All clear]	669
	[Copy/FAX screen shift]	986
	[Reset]	655
	[Database]	684, 686
	[Toner cartridge check]	695
	[Nearly empty]	971
	[Partition]	666
	[Mode setting]	949
	[Memory]	615
	[Line]	203
	[Initialization]	690, 693, 947, 1882
	[Time differences]	638
	[Restriction to 250 sheets exiting]	712, 713, 714
[Department management]	672	
Main charger bias	[Main charger bias]	805, 806, 807, 808, 809, 814, 818, 819, 826, 864, 865, 866, 867
Fuser	[Pre-running]	439, 440, 441, 523, 526
	[Temperature]	404-0 to 3, 405-0 to 3, 407, 409, 410, 411, 413, 424-0 to 3, 425-0 to 3, 433-0 to 1, 437, 438, 448, 450, 451, 452, 453, 476-0 to 3, 515, 516, 520, 521, 525-0 to 3, 527-0 to 3, 535-0 to 1, 536-0 to 3, 537-0 to 3, 539-0 to 3, 540-0 to 3, 541-0 to 3, 800-0 to 1, 801-0 to 1, 802-0 to 1, 804-0 to 1, 886, 896-0 to 1
	[Status counter]	400
Transfer bias	[Transfer bias]	830, 868, 869
Separation bias	[Separation bias]	831, 870, 871

### Procedure 1



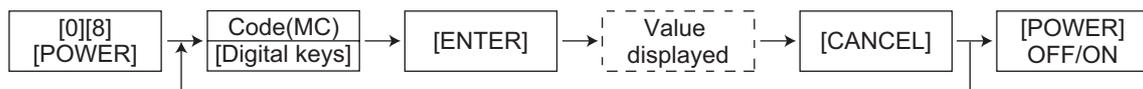
\* Press [#] to enter minus (-).

### Procedure 2

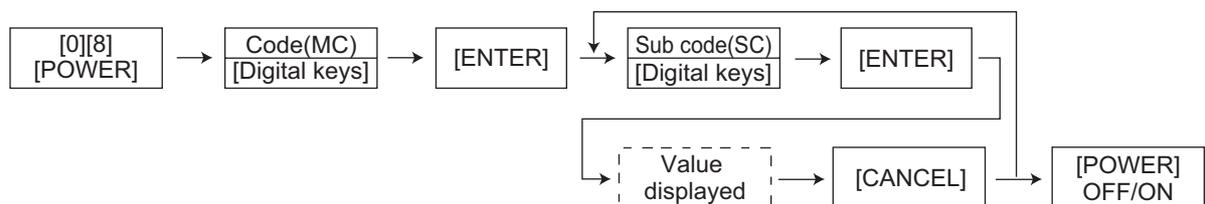


\* Press [#] to enter minus (-).

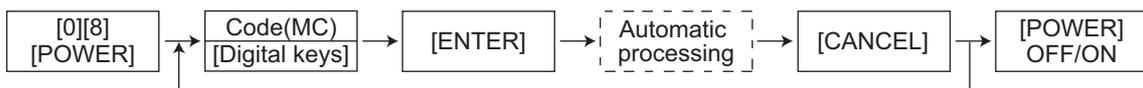
### Procedure 3



### Procedure 4



### Procedure 5



\* Key in letters according to the letter conversion list below.

### Letter Conversion List

Letter	Key-code	Letter	Key-code	Letter	Key-code	Letter	Key-code
0	0	a	*01	A	*31	!	*61
1	1	b	*02	B	*32	#	*62
2	2	c	*03	C	*33	\$	*63
3	3	d	*04	D	*34	%	*64
4	4	e	*05	E	*35	&	*65
5	5	f	*06	F	*36	'	*66
6	6	g	*07	G	*37	(	*67
7	7	h	*08	H	*38	)	*68
8	8	i	*09	I	*39	*	*69
9	9	j	*10	J	*40	+	*70
		k	*11	K	*41	,	*71
		l	*12	L	*42	-	*72
		m	*13	M	*43	.	*73
		n	*14	N	*44	/	*74
		o	*15	O	*45	:	*75
		p	*16	P	*46	;	*76
		q	*17	Q	*47	=	*77
		r	*18	R	*48	?	*78
		s	*19	S	*49	@	*79
		t	*20	T	*50	_	*80
		u	*21	U	*51	^	*81
		v	*22	V	*52		
		w	*23	W	*53		
		x	*24	X	*54		
		y	*25	Y	*55		
		z	*26	Z	*56		

Fig. 2-3

**Notes:**

- 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” and “SYS” stands for the MAIN board, “CTL” stands for the GA-1190 control PC board.

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
202	User interface	Counter installed externally	ALL	0 <0-3>	M	0: No external counter 1: Coin controller 2: Copy key card 3: Key copy counter	1
203	General	Line adjustment mode	ALL	0 <0-1>	M	0: For factory shipment 1: For line * Field: “0” must be selected	1
204	User interface	Auto-clear timer setting	ALL	3 <0-15>	SYS	0: Invalid 1: 15 sec. 2: 30 sec. 3: 45 sec. 4: 60sec. 5: 75 sec. 6: 90 sec. 7: 105 sec. 8: 120 sec.9: 135 sec. 10: 150 sec. 11: 180 sec. 12: 210 sec. 13: 240 sec. 14: 270 sec. 15: 300 sec.	1
205	User interface	Auto power save mode timer setting	ALL	1 <0-1>	SYS	0: Invalid 1: Valid (Time is set on panel: SYSFUNC8)	1
206	User interface	Auto Shut Off Mode timer setting (Auto Sleep Mode)	ALL	1 <0-1>	M	0: Invalid 1: Valid (Time is set on panel: FUNC30)	1
209	User interface	Default setting of filing format when E-mailing	ALL	1 <0-1>	CTL	0: TIFF (Multi) 1: PDF	1
219	User interface	Default setting of filing format when storing files	SCN	0 <0-3>	CTL	0: TIFF (Multi) 1: PDF 2: Not used 3: TIFF(Single)	1
224	Paper feeding	Paper size (Bypass)	ALL	14 <0-15>	SYS	Paper size (Bypass) 0:A3 1:A4 2:A4-R 3:A5-R 4:B4 5:B5 6:B5R 7:LETTER 8:LETTER-R 9:LEDGER 10:LEGAL 11:STATEMENT-R 12:COMPUTER 13:FOLIO 14:NON-STANDARD 15:POST CARD	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
225	Paper feeding	Paper size (Drawer)	ALL	UC:7 Other:1 <0-13>	M	Paper size (Drawer) 0:A3 1:A4 2:A4-R 3:A5-R 4:B4 5:B5 6:B5R 7:LETTER 8:LETTER-R 9:LEDGER 10:LEGAL 11:STATEMENT-R 12:COMPUTER 13:FOLIO	1
226	Paper feeding	Paper size (PFU)	ALL	UC: 7 Other: 1 <0-13>	M	Paper size (PFU) 0:A3 1:A4 2:A4-R 3:A5-R 4:B4 5:B5 6:B5R 7:LETTER 8:LETTER-R 9:LEDGER 10:LEGAL 11:STATEMENT-R 12:COMPUTER 13:FOLIO	1
227	Paper feeding	Paper size (PFP upper drawer)	ALL	UC:7 Other:1 <0-13>	M	Paper size (Drawer) 0:A3 1:A4 2:A4-R 3:A5-R 4:B4 5:B5 6:B5R 7:LETTER 8:LETTER-R 9:LEDGER 10:LEGAL 11:STATEMENT-R 12:COMPUTER 13:FOLIO	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
228	Paper feeding	Paper size (PFP lower drawer)		ALL	UC: 7 Other: 1 <0-13>	M	Paper size (PFP lower drawer) 0:A3 1:A4 2:A4-R 3:A5-R 4:B4 5:B5 6:B5R 7:LETTER 8:LETTER-R 9:LEDGER 10:LEGAL 11:STATEMENT-R 12:COMPUTER 13:FOLIO	1
229-0	Paper feeding	Paper size (A3)	feeding direction	ALL	420 <140-432>	M		2
229-1			widthwise direction	ALL	297 <140-432>	M		2
230-0	Paper feeding	Paper size (A4-R)	feeding direction	ALL	297 <140-432>	M		2
230-1			widthwise direction	ALL	210 <140-432>	M		2
231-0	Paper feeding	Paper size (A5-R)	feeding direction	ALL	210 <140-432>	M		2
231-1			widthwise direction	ALL	148 <140-432>	M		2
232-0	Paper feeding	Paper size (B4)	feeding direction	ALL	364 <140-432>	M		2
232-1			widthwise direction	ALL	257 <140-432>	M		2
233-0	Paper feeding	Paper size (B5-R)	feeding direction	ALL	257 <140-432>	M		2
233-1			widthwise direction	ALL	182 <140-432>	M		2
234-0	Paper feeding	Paper size (LT-R)	feeding direction	ALL	279 <140-432>	M		2
234-1			widthwise direction	ALL	216 <140-432>	M		2

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
235-0	Paper feeding	Paper size (LD)	feeding direction	ALL	432 <140-432>	M		2
235-1			widthwise direction	ALL	279 <140-432>	M		2
236-0	Paper feeding	Paper size (LG)	feeding direction	ALL	356 <140-432>	M		2
236-1			widthwise direction	ALL	216 <140-432>	M		2
237-0	Paper feeding	Paper size (ST-R)	feeding direction	ALL	216 <140-432>	M		2
237-1			widthwise direction	ALL	140 <140-432>	M		2
238-0	Paper feeding	Paper size (COM-PUTER)	feeding direction	ALL	356 <140-432>	M		2
238-1			widthwise direction	ALL	257 <140-432>	M		2
239-0	Paper feeding	Paper size (FOLIO)	feeding direction	ALL	330 <140-432>	M		2
239-1			widthwise direction	ALL	210 <140-432>	M		2
240-0	Paper feeding	Paper size (13"LG)	feeding direction	ALL	330 <140-432>	M		2
240-1			widthwise direction	ALL	216 <140-432>	M		2
241-0	Paper feeding	Paper size (8.5"X8.5")	feeding direction	ALL	216 <140-432>	M		2
241-1			widthwise direction	ALL	216 <140-432>	M		2
242-0	Paper feeding	Paper size (Non-standard)	feeding direction	ALL	432 <105-432>	SYS		2
242-1			widthwise direction	ALL	279 <105-432>	SYS		2
244-0	Paper feeding	Paper size (8K)	feeding direction	ALL	390 <140-432>	M		2
244-1			widthwise direction	ALL	270 <140-432>	M		2

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
245-0	Paper feeding	Paper size (16K-R)	feeding direction	ALL	270 <140-432>	M		2
245-1			widthwise direction	ALL	195 <140-432>	M		2
246	User interface	Clearing copy jobs at auto clear		ALL	0 <0-1>	M	0: No clearing 1: Clearing	1
250	Maintenance	Service technician telephone number		ALL	0 <20 digits>	SYS	A telephone number can be entered up to 20 digits.	3
251	Maintenance	Setting value of PM counter		ALL	Refer to content <8 digits>	M	<Default> e-STUDIO165/167 UC, EUR: 72,000 JPN: 0 e-STUDIO205/207/237 UC, EUR: 90,000 JPN: 0	1
252	Maintenance	Current value of PM counter Display/0 clearing		ALL	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
253	Maintenance	Error history display		ALL	-	SYS	Displaying of the latest 8 errors code	3
254	Paper feeding	LT <-> A4/LD <-> A3		PRT	0 <0-1>	CTL	Sets whether the data is printed on the different but similar size paper or not when the paper of corresponding size is not available. 0: Valid (The data is printed on A4/A3 when LT/LD is selected or vice versa.) 1: Invalid (The message to use the selected paper size is displayed.)	1
255	Paper feeding	PFP installation		ALL	0 <0-4>	M	0: Automatic 1: PFP single-drawer type installed 2: PFP dual-drawer type installed 3: - 4: Not installed Even when "1" is set, if the PFP dual-drawer has been installed at power-ON, it will be automatically changed to "2".	1
258	Maintenance	FSMS acceptance		ALL	0 <0-2>	CTL	Sets whether the FSMS connection is accepted or not. 0: Prohibited 1: Single mode (print) 2: Dual mode (print/service)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
260	Network	Web data retention period	SCN	10 <3 digits>	CTL	When a certain period of time has passed without operation after accessing TopAccess, the data being registered is automatically reset. This period is set at this code. (Unit: Minute)	1
261	User interface	Fixes the paper size setting for the bypass tray	ALL	0 <0-1>	M	Sets whether the bypass feed paper size is fixed or not 0: Size not fixed (The paper size is returned to the non-standard size by removing paper.) 1: Size fixed (The paper size is returned to the one set in 08-244 by removing paper.)	1
263	User interface	Administrator's password (Maximum 10 digits)	ALL	123456 <10 digits>	CTL	The password can be entered in alphabets and figures (A-Z, a-z, 0-9) within 10 digits.	1
265	Network	Maximum data capacity at E-mailing	SCN	30 <2-30>	CTL	2 to 30 M bytes	1
266	Network	Maximum data capacity at Internet FAX	ALL	30 <2-30>	CTL	2 to 30 M bytes	1
273	Scanning	Default setting of partial size when transmitting E-mail	ALL	0 <0-6>	CTL	Sets the default value for the partial size of E-mail to be transmitted when creating a template. 0: Not divided 1: 64      2: 128 3: 256    4: 512 5: 1024 6: 2048 (Unit: KB)	1
274	FAX	Default setting of page by page when transmitting Internet FAX	FAX	0 <0-4>	CTL	Sets the default value for the page by page of Internet FAX to be transmitted when creating a template. 0: Not divide    1: 256 2: 512            3: 1024 4: 2048 (Unit: KB)	1
276	User interface	Default setting for density adjustment	SCN	0 <0-9>	CTL	0: Automatic density 3: Step -3 4: Step -2 5: Step -1 6: Step 0 (center) 7: Step +1 8: Step +2 9: Step +3 (3 to 9: Manual density)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
281	User interface	Default setting of resolution	SCN	1 <0-4>	CTL	0: 150 dpi 1: 200 dpi 2: 300 dpi 3: 400dpi 4: 600 dpi	1
283	User interface	Default setting of original mode	SCN	0 <0-2>	CTL	0: Text 1: Text/Photo 2: Photo	1
284	User interface	Default setting of scanning mode	SCN	0 <0-2>	CTL	0: Single 1: Book 2: Tablet	1
285	User interface	Default setting of rotation angle of original	SCN	0 <0-1>	CTL	0: 0 degree 1: 90 degrees	1
286	User interface	Default setting of original paper size	SCN	0 <0,19>	CTL	0: Automatic 19: Size mixed	1
290	Network	Raw printing job (Duplex)	PRT	1 <0-1>	CTL	0: Valid 1: Invalid	1
291	Network	Raw printing job (Paper size)	PRT	6 <0 -12>	CTL	0: LD 1: LG 2: LT 3: COMP 4: ST 5: A3 6: A4 7: A5 8: - 9: B4 10: B5 11: FOLIO 12: 13"LG	1
292	Network	Raw printing job (Paper type)	PRT	0 <0-4>	CTL	0: Plain paper 1: Thick paper 1 2: Thick paper 2 3: - 4: OHP film	1
293	Network	Raw printing job (Paper direction)	PRT	0 <0-1>	CTL	0: Portrait 1: Landscape	1
296	Network	Raw printing job (Number of form lines)	PRT	1200 <500-12800>	CTL	Sets the number of form lines from 5 to 128. (A hundredfold of the number of form lines is defined as the setting value.)	1
297	Network	Raw printing job (PCL font pitch)	PRT	1000 <44-9999>	CTL	Sets the font pitch from 0.44 to 99.99. (A hundredfold of the font pitch is defined as the setting value.)	1
298	Network	Raw printing job (PCL font size)	PRT	1200 <400-99975>	CTL	Sets the font size from 4 to 999.75. (A hundredfold of the font size is defined as the setting value.)	1
299	Network	Raw printing job (PCL font number)	PRT	0 <0-79>	CTL	Sets the PCL font number.	1
300	User interface	Maximum number of copy volume (MAX9)	PPC	0 <0-2>	SYS	0: 999 1: 99 2: 9	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
305-0	Counter	Number of output pages in copier func- tion	A3	PPC	0 <8 digits>	SYS	Counts the output pages in the copier function for each paper size according to the setting for the count set- ting of large-sized paper (08-352) and the defini- tion setting of large- sized paper (08-353).	2
305-1			A4					
305-2			A5					
305-3			A6					
305-4			B4					
305-5			B5					
305-6			FOLIO					
305-7			LD					
305-8			LG					
305-9			LT					
305-10			ST					
305-11			COMP					
305-12			13"LG					
305-13			8.5" x 8.5"					
305-14			16K					
305-15			8K					
305-16			Others					
306-0	Counter	Number of output pages in printer func- tion	A3	PRT	0 <8 digits>	SYS	Counts the output pages in the printer function for each paper size according to the setting for the count set- ting of large-sized paper (08-352) and the defini- tion setting of large- sized paper (08-353).	2
306-1			A4					
306-2			A5					
306-3			A6					
306-4			B4					
306-5			B5					
306-6			FOLIO					
306-7			LD					
306-8			LG					
306-9			LT					
306-10			ST					
306-11			COMP					
306-12			13"LG					
306-13			8.5" x 8.5"					
306-14			16K					
306-15			8K					
306-16			Others					

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
307-0	Counter	Number of output pages at list print mode	A3	PRT	0 <8 digits>	SYS	Counts the output pages at the list print mode for each paper size according to the setting for the count set- ting of large-sized paper (08-352) and the defini- tion setting of large- sized paper (08-353).	2
307-1			A4					
307-2			A5					
307-3			A6					
307-4			B4					
307-5			B5					
307-6			FOLIO					
307-7			LD					
307-8			LG					
307-9			LT					
307-10			ST					
307-11			COMP					
307-12			13"LG					
307-13			8.5" x 8.5"					
307-14			16K					
307-15			8K					
307-16			Others					
308-0	Counter	Number of output pages in FAX func- tion	A3	FAX	0 <8 digits>	SYS	Counts the output pages in the FAX func- tion for each paper size according to the setting for the count setting of large-sized paper (08- 352) and the definition setting of large-sized paper (08-353).	2
308-1			A4					
308-2			A5					
308-3			A6					
308-4			B4					
308-5			B5					
308-6			FOLIO					
308-7			LD					
308-8			LG					
308-9			LT					
308-10			ST					
308-11			COMP					
308-12			13"LG					
308-13			8.5" x 8.5"					
308-14			16K					
308-15			8K					
308-16			Others					

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
312-0	Counter	Number of scanning pages in copier function	A3	PPC	0 <8 digits>	SYS	Counts the scanning pages in the copier function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353).	2
312-1			A4					
312-2			A5					
312-3			A6					
312-4			B4					
312-5			B5					
312-6			FOLIO					
312-7			LD					
312-8			LG					
312-9			LT					
312-10			ST					
312-11			COMP					
312-12			13"LG					
312-13			8.5" x 8.5"					
312-14			16K					
312-15			8K					
312-16			Others					
313-0	Counter	Number of scanning pages in scanning function	A3	SCN	0 <8 digits>	SYS	Counts the scanning pages in the scanning function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353).	2
313-1			A4					
313-2			A5					
313-3			A6					
313-4			B4					
313-5			B5					
313-6			FOLIO					
313-7			LD					
313-8			LG					
313-9			LT					
313-10			ST					
313-11			COMP					
313-12			13"LG					
313-13			8.5" x 8.5"					
313-14			16K					
313-15			8K					
313-16			Others					

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
314-0	Counter	Number of scanning pages in FAX function	A3	FAX	0 <8 digits>	SYS	Counts the scanning pages in the FAX function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353).	2
314-1			A4					
314-2			A5					
314-3			A6					
314-4			B4					
314-5			B5					
314-6			FOLIO					
314-7			LD					
314-8			LG					
314-9			LT					
314-10			ST					
314-11			COMP					
314-12			13"LG					
314-13			8.5" x 8.5"					
314-14			16K					
314-15			8K					
314-16			Others					
315-0	Counter	Number of transmitted pages in FAX function	A3	FAX	0 <8 digits>	SYS	Counts the transmitted pages in the FAX function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353).	2
315-1			A4					
315-2			A5					
315-3			A6					
315-4			B4					
315-5			B5					
315-6			FOLIO					
315-7			LD					
315-8			LG					
315-9			LT					
315-10			ST					
315-11			COMP					
315-12			13"LG					
315-13			8.5" x 8.5"					
315-14			16K					
315-15			8K					
315-16			Others					

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
316-0	Counter	Number of received pages in FAX function	A3	FAX	0 <8 digits>	SYS	Counts the received pages in the FAX function for each paper size according to the setting for the count setting of large-sized paper (08-352) and the definition setting of large-sized paper (08-353).	2
316-1								
316-2								
316-3								
316-4								
316-5								
316-6								
316-7								
316-8								
316-9								
316-10								
316-11								
316-12								
316-13								
316-14								
316-15								
316-16								
320-0	Counter	Display of number of output pages in copier function	Large	PPC	0 <8 digits>	SYS	Counts the number of output pages in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
320-1	Counter		Small	PPC	0 <8 digits>	SYS		4
320-2	Counter		Total	PPC	0 <8 digits>	SYS		4
321-0	Counter	Display of number of output pages in printer function	Large	PRT	0 <8 digits>	SYS	Counts the number of output pages in the Printer Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
321-1	Counter		Small	PRT	0 <8 digits>	SYS		4
321-2	Counter		Total	PRT	0 <8 digits>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
322-0	Counter	Display of number of output pages at list print mode	Large	PRT	0 <8 digits>	SYS	Counts the number of output pages at the List Print Mode Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
322-1	Counter		Small	PRT	0 <8 digits>	SYS		4
322-2	Counter		Total	PRT	0 <8 digits>	SYS		4
323-0	Counter	Display of number of output pages in FAX function	Large	FAX	0 <8 digits>	SYS	Counts the number of output pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
323-1	Counter		Small	FAX	0 <8 digits>	SYS		4
323-2	Counter		Total	FAX	0 <8 digits>	SYS		4
327-0	Counter	Display of number of scanning pages in copier function	Large	PPC	0 <8 digits>	SYS	Counts the number of scanning pages in the Copier Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
327-1	Counter		Small	PPC	0 <8 digits>	SYS		4
327-2	Counter		Total	PPC	0 <8 digits>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
328-0	Counter	Display of number of scanning pages in FAX function	Large	FAX	0 <8 digits>	SYS	Counts the number of scanning pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
328-1	Counter		Small	FAX	0 <8 digits>	SYS		4
328-2	Counter		Total	FAX	0 <8 digits>	SYS		4
329-0	Counter	Display of number of scanning pages in scanning function	Large	SCN	0 <8 digits>	SYS	Counts the number of scanning pages in the Scanning Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
329-1	Counter		Small	SCN	0 <8 digits>	SYS		4
329-2	Counter		Total	SCN	0 <8 digits>	SYS		4
330-0	Counter	Display of number of transmitted pages in FAX function	Large	FAX	0 <8 digits>	SYS	Counts the number of transmitted pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
330-1	Counter		Small	FAX	0 <8 digits>	SYS		4
330-2	Counter		Total	FAX	0 <8 digits>	SYS		4

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
332-0	Counter	Display of number of received pages in FAX function	Large	FAX	0 <8 digits>	SYS	Counts the number of received pages in the FAX Function according to its size (large/small). Large: Number of output pages of large-sized paper defined at 08-353 Small: Number of output pages other than set as large-sized paper Total: Total number output pages of all paper sizes.	4
332-1	Counter		Small	FAX	0 <8 digits>	SYS		4
332-2	Counter		Total	FAX	0 <8 digits>	SYS		4
335-0	Counter	Display of total number of pages	Large	ALL	0 <8 digits>	SYS	Displays the total number of pages.	4
335-1	Counter		Small	ALL	0 <8 digits>	SYS		4
335-2	Counter		Total	ALL	0 <8 digits>	SYS		4
337-0	Paper feeding	Paper size (#10-R)	feeding direction	ALL	241 <105-432>	M		2
337-1			widthwise direction	ALL	105 <105-432>	M		2
338-0	Paper feeding	Paper size (DL-R)	feeding direction	ALL	220 <105-432>	M		2
338-1			widthwise direction	ALL	110 <105-432>	M		2
339-0	Paper feeding	Paper size (Envelope: Monerch-R)	feeding direction	ALL	191 <98-432>	M		2
339-1			widthwise direction	ALL	98 <98-432>	M		2
340-0	Paper feeding	Paper size (Envelope: CHO-3-R)	feeding direction	ALL	235 <105-432>	M		2
340-1			widthwise direction	ALL	120 <105-432>	M		2
341-0	Paper feeding	Paper size (Envelope: YOU-4-R)	feeding direction	ALL	235 <105-432>	M		2
341-1			widthwise direction	ALL	105 <105-432>	M		2
345	Counter	Count setting of envelope (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

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
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 <0-1>	M	0: Counted as 1 1: Counted as 2	1
353	Counter	Definition setting of large-sized paper (Fee charging system counter)	ALL	0 <0-1>	M	0: A3/LD 1: A3/LD/B4/LG/ FOLIO/COMP/8K	1
356	Counter	Counter for Drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from Drawer	3
357	Counter	Counter for PFU feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from PFU	3
358	Counter	Counter for bypass feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from bypass feed	3
360	Counter	Counter for PFP upper drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from PFP upper drawer	3
370	Counter	Counter for PFP lower drawer feeding	ALL	0 <8 digits>	M	Counts the number of sheets fed from PFP lower drawer	3
372	Counter	Counter for ADU	ALL	0 <8 digits>	M	Counts the number of output pages of duplex printing.	3
374	Counter	Counter for ADF/RADF	ALL	0 <8 digits>	SYS	Counts the number of originals fed from ADF/RADF	3
381	Counter	Setting for counter installed externally	ALL	1 <0-7>	M	Selects the job to count up for the external counter. 0: Not selected 1: Copier 2: FAX 3: Copier/FAX 4: Printer 5: Copier/Printer 6: Printer/FAX 7: Copier/Printer/FAX	1
388	Counter	Copying total counter / MAIN board → SRAM board	ALL	-	-	Copies the total counter value of the MAIN board to the SRAM board.	5
389	Counter	Copying total counter / SRAM board → MAIN board	ALL	-	-	Copies the total counter value of the SRAM board to the MAIN board.	5

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
400	Fuser	Fuser unit error status counter		ALL	0 <0-19>	M	0: No error 1: C41 (Once) 2: C41 (consecutively occurred) 3: C46 4: C43 5: C44 6: C45 7: C44 8: C45 9: C44 10: C47 11: C47 12: C48 13: C49 14: C47 15: C48 16: C49 17: C47 18: C48 19: C49	1
404-0	Fuser	Temperature drop setting in ready status (Center thermistor)	The first drop	ALL	1 <0-10>	M	This code is valid only when "20" is set to 08-886. Setting value x -5°C: from 0°C to -50°C	2
404-1			The second drop	ALL	1 <0-10>	M		2
404-2			The third drop	ALL	1 <0-10>	M		2
404-3			The fourth drop	ALL	1 <0-10>	M		2
405-0	Fuser	Temperature drop setting in ready status (Side thermistor)	The first drop	ALL	3 <0-10>	M		2
405-1			The second drop	ALL	3 <0-10>	M		2
405-2			The third drop	ALL	3 <0-10>	M		2
405-3			The fourth drop	ALL	3 <0-10>	M		2
407	Fuser	Fuser roller temperature in ready status (Side thermistor)		ALL	6 <0-12>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C	1
409	Fuser	Fuser roller temperature at energy saver mode (Center thermistor)		ALL	EUR : 7 Other : 0 <0-13>	M	0: OFF 1: 40°C 2: 50°C 3: 60°C 4: 70°C 5: 80°C 6: 90°C 7: 100°C 8: 110°C 9: 120°C 10: 130°C 11: 140°C 12: 150°C 13: 160°C	1
410	Fuser	Fuser roller temperature during printing (Center thermistor/Plain paper)		ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
411	Fuser	Fuser roller temperature on standby (Center thermistor)		ALL	6 <0-12>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C	1
413	Fuser	Fuser roller temperature during printing (Center thermistor/Thick paper 1)		ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
414	Developer	Toner density life correction switching		ALL	0 <0-7>	M	0: Unchanged (Default) 1: Approx. 0.1 wt% lower 2: Approx. 0.2 wt% higher 3: Approx. 0.5 wt% higher 4: Approx. 0.6 wt% lower 5: Approx. 0.8 wt% lower 6: Approx. 1.0 wt% lower 7: Approx. 1.3 wt% lower	1
424-0	Fuser	Temperature drop switching time setting in ready status (Center thermistor)	The first drop	ALL	15 <2-60>	M	This code is valid only when "20" is set to 08-886. Setting value x 1 min.: from 2 to 60 min. later	2
424-1			The second drop	ALL	15 <2-60>	M		2
424-2			The third drop	ALL	15 <2-60>	M		2
424-3			The fourth drop	ALL	15 <2-60>	M		2
425-0	Fuser	Temperature drop switching time setting in ready status (Side thermistor)	The first drop	ALL	15 <2-60>	M		2
425-1			The second drop	ALL	15 <2-60>	M		2
425-2			The third drop	ALL	15 <2-60>	M		2
425-3			The fourth drop	ALL	15 <2-60>	M		2

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
433-0	Fuser	Temperature control lower limit (Plain paper/ at ordinary temperature)	Center thermistor	ALL	16 cpm / 20 cpm: 5 23 cpm: 6 <0-12>	M	0: 130°C 1: 135°C 2: 140°C 3: 145°C 4: 150°C 5: 155°C 6: 160°C 7: 165°C 8: 170°C 9: 175°C 10: 180°C 11: 185°C 12: 120°C	2
433-1			Side ther- mistor	ALL	16 cpm / 20 cpm: 3 23 cpm: 4 <0-12>	M		2
437	Fuser	Fuser roller temperature during printing (Center thermistor /Thick paper 2)		ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
438	Fuser	Fuser roller temperature during printing (Center thermistor/OHP film)		ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
439	Fuser	Pre-running time for first printing (Thick paper 2)		ALL	10 <0-15>	M	0: Invalid 1: 1 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 9 sec. 10: 10 sec. 11: 12 sec. 12: 14 sec. 13: 16 sec. 14: 18 sec. 15: 20 sec.	1
440	Fuser	Pre-running time for first printing (Plain paper)		ALL	0 <0-15>	M	0: Invalid 1: 1 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 9 sec. 10: 10 sec. 11: 12 sec. 12: 14 sec. 13: 16 sec. 14: 18 sec. 15: 20 sec.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
441	Fuser	Pre-running time for first printing (Thick paper 1)	ALL	10 <0-15>	M	0: Invalid 1: 1 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 9 sec. 10: 10 sec. 11: 12 sec. 12: 14 sec. 13: 16 sec. 14: 18 sec. 15: 20 sec.	1
448	Fuser	Fuser roller temperature in Energy Saving Mode (Side thermistor)	ALL	EUR : 7 Other : 0 <0-13>	M	0: OFF 1: 40°C 2: 50°C 3: 60°C 4: 70°C 5: 80°C 6: 90°C 7: 100°C 8: 110°C 9: 120°C 10: 130°C 11: 140°C 12: 150°C 13: 160°C	1
450	Fuser	Fuser roller temperature during printing (Side thermistor/Plain paper)	ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
451	Fuser	Fuser roller temperature during printing (Side thermistor/Thick paper 1)	ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
452	Fuser	Fuser roller temperature during printing (Side thermistor/Thick paper 2)	ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
453	Fuser	Fuser roller temperature during printing (Side thermistor/OHP film)		ALL	6 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
455	Image processing	Toner supply amount correction/Toner motor control		ALL	0 <0-5>	M	Corrects the supply amount of the fresh toner (driving period of the toner motor) into the developer unit. 0: x1.0 1: x0.75 2: x0.5 3: x0.3 4: x2.0 5: x1.5	1
463	Scanner	Control status		ALL	0 <0-7>	SYS	0 : Normal end 1 : White level abnormality (G) 2 : Peak detection abnormality (G) 3 : Adjustment impossible (R) 4 : Adjustment impossible (B) 5 : Adjustment impossible (YG) 6 : White level abnormality 7 : Black level abnormality	1
471-0	Paper feeding	Paper size (Postcard)	feeding direction	ALL	148 <100-432>	M	* Postcard is supported only for JPN model.	10
471-1			widthwise direction	ALL	100 <100-432>	M		10
476-0	Fuser	Temperature drop setting during printing (Center thermistor/ Thick paper)	The first drop	ALL	1 <0-10>	M	This code is valid only when "20" is set to 08-535. Setting value x -5°C: from 0°C to -50°C Thick paper: Thick Paper1/Thick Paper2/OHP/Envelope	2
476-1			The second drop	ALL	1 <0-10>	M		2
476-2			The third drop	ALL	1 <0-10>	M		2
476-3			The fourth drop	ALL	1 <0-10>	M		2
480	Paper feeding	Default setting of paper source		PPC	0 <0-4>	SYS	0: A4/LT 1: Drawer 2: LCF 3: PFP upper drawer 4: PFP lower drawer	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
481	Paper feeding	Automatic change of paper source	PPC	1 <0-1>	SYS	Sets whether or not changing the drawer automatically to the other drawer with the paper of the same size when paper in the selected drawer has run out. 0: OFF 1: ON	1
482	Paper feeding	Feeding retry setting	ALL	0 <0-1>	M	0: ON 1: OFF	1
483	Laser	Pre-running rotation of polygonal motor	ALL	0 <0-2>	SYS	Sets whether or not switching the polygonal motor from the standby rotation to the normal rotation when the original is set on the ADF/RADF or the platen cover is opened. 0: Valid (when using ADF/RADF and the original is set manually) 1: Invalid 2: Valid (when using ADF/RADF only)	1
486	Laser	Timing of auto-clearing of polygonal motor pre-running rotation	ALL	0 <0-2>	SYS	Switches the polygonal motor to the standby rotation when a certain period of time has passed from the pre-running. At this code, the period to switch the status to the standby rotation is set. 0: 15 sec. 1: 30 sec. 2: 45 sec. * This setting is effective when "0" or "2" is set at 08-483.	1
502	Image	Error diffusion and dither setting at photo mode	PPC	1 <0-1>	SYS	Sets the image reproduction method at photo mode. 0: Error diffusion 1: Dither	1
510	FAX	FAX automatic transmission	FAX	1 <0-1>		0: Automatic transmission 1: Do not automatic transmission	1
511	FAX	Setting for restriction on registration to Address Book	FAX	0 <0-1>	SYS	e-STUDIO167/207/237 only 0: Disabled 1: Enabled	1
513	FAX	Reset administrator password	FAX	-	SYS	e-STUDIO167/207/237 only	5

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
515	Fuser	Temperature setting of warming-up (Center thermistor)	ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
516	Fuser	Temperature setting of warming-up (Side thermistor)	ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
520	Fuser	Fuser roller temperature during printing (Center thermistor/Envelope)	ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
521	Fuser	Fuser roller temperature during printing (Side thermistor/Envelope)	ALL	9 <0-14>	M	0: 140°C 1: 145°C 2: 150°C 3: 155°C 4: 160°C 5: 165°C 6: 170°C 7: 175°C 8: 180°C 9: 185°C 10: 190°C 11: 195°C 12: 200°C 13: 205°C 14: 210°C	1
523	Fuser	Pre-running time for first printing (Envelope)	ALL	10 <0-15>	M	0: Invalid 1: 1 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 9 sec. 10: 10 sec. 11: 12 sec. 12: 14 sec. 13: 16 sec. 14: 18 sec. 15: 20 sec.	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
525-0	Fuser	Temperature drop switching time setting during printing (Center thermostat)	The first drop	ALL	20 <0-200>	M	This code is valid only when "20" is set to 08-535. Setting value x 5 sec.: from 0 to 1,000 sec. later	2
525-1			The second drop	ALL	38 <0-200>	M		2
525-2			The third drop	ALL	75 <0-200>	M		2
525-3			The fourth drop	ALL	75 <0-200>	M		2
526	Fuser	Pre-running time for first printing (OHP film)		ALL	0 <0-15>	M	0: Invalid 1: 0 sec. 2: 2 sec. 3: 3 sec. 4: 4 sec. 5: 5 sec. 6: 6 sec. 7: 7 sec. 8: 8 sec. 9: 9 sec. 10: 10 sec. 11: 12 sec. 12: 14 sec. 13: 16 sec. 14: 18 sec. 15: 20 sec.	1
527-0	Fuser	Temperature drop switching time setting during printing (Side thermostat)	The first drop	ALL	20 <0-200>	M	This code is valid only when "20" is set to 08-535. Setting value x 5 sec.: from 0 to 1,000 sec. later	2
527-1			The second drop	ALL	30 <0-200>	M		2
527-2			The third drop	ALL	48 <0-200>	M		2
527-3			The fourth drop	ALL	75 <0-200>	M		2
535-0	Fuser	Temperature drop control setting during printing (Temperature/ Time)	Plain paper	ALL	2 <0-20>	M	0: None 1: Pattern 1 2: Pattern 2 3: Pattern 3 4: Pattern 4 5: Pattern 5 6: Pattern 6 7: Pattern 7 8: Pattern 8 9: Pattern 9 10: Pattern 10 11: Pattern 11 12: Pattern 12 13: Pattern 13 14: Pattern 14 15: Pattern 15 16: Pattern 16 17: Pattern 17 18: Pattern 18 19: Pattern 19 20: Manual adjustment	2
535-1			Thick paper (Thick paper1/ Thick paper2/ OHP/ Envelope)	ALL	12 <0-20>	M		2

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
536-0	Fuser	Temperature drop setting during printing (Center thermistor)	The first drop	ALL	1 <0-10>	M	This code is valid only when "20" is set to 08-535. Setting value x -5°C: from 0°C to -50°C	2
536-1			The second drop	ALL	2 <0-10>	M		2
536-2			The third drop	ALL	3 <0-10>	M		2
536-3			The fourth drop	ALL	3 <0-10>	M		2
537-0	Fuser	Temperature drop setting during printing (Side thermistor)	The first drop	ALL	1 <0-10>	M		2
537-1			The second drop	ALL	2 <0-10>	M		2
537-2			The third drop	ALL	3 <0-10>	M		2
537-3			The fourth drop	ALL	5 <0-10>	M		2
538	Image	Density default in image quality mode		ALL	0 <0-7>	SYS	0: AUTO 1: Light 3 2: Light 2 3: Light 1 4: Center 5: Dark 1 6: Dark 2 7: Dark 3	1
539-0	Fuser	Temperature drop setting during printing (Side thermistor/ Thick paper)	The first drop	ALL	1 <0-10>	M	This code is valid only when "20" is set to 08-535. Setting value x -5°C: from 0°C to -50°C	2
539-1			The second drop	ALL	2 <0-10>	M		2
539-2			The third drop	ALL	3 <0-10>	M		2
539-3			The fourth drop	ALL	3 <0-10>	M		2
540-0	Fuser	Temperature drop switching time setting during printing (Thick paper/ Center thermistor)	The first drop	ALL	20 <0-200>	M	This code is valid only when "20" is set to 08-535. Setting value x 5 sec.: from 0 to 1,000 sec.later Thick paper: Thick Paper1/Thick Paper2/OHP/Envelope	2
540-1			The second drop	ALL	48 <0-200>	M		2
540-2			The third drop	ALL	100 <0-200>	M		2
540-3			The fourth drop	ALL	100 <0-200>	M		2
541-0	Fuser	Temperature drop switching time setting during printing (Thick paper/ Side thermistor)	The first drop	ALL	20 <0-200>	M	This code is valid only when "20" is set to 08-535. Setting value x 5 sec.: from 0 to 1,000 sec.later Thick paper: Thick Paper1/Thick Paper2/OHP/Envelope	2
541-1			The second drop	ALL	48 <0-200>	M		2
541-2			The third drop	ALL	100 <0-200>	M		2
541-3			The fourth drop	ALL	100 <0-200>	M		2
550	Image	Default setting of original mode		PPC	0 <0-2>	SYS	0: Text/Photo 1: Photo 2: Text	1
603	User interface	Setting for automatic duplexing mode		PPC	0 <0-2>	SYS	0: Invalid 1: Single-sided to duplex copying 2: Double-sided to duplex copying	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
604	User interface	Default setting for APS/AMS	PPC	0 <0-2>	SYS	0: APS (Automatic Paper Selection) 1: AMS (Automatic Magnification Selection) 2: Not selected	1
609	Paper feeding	Bypass tray priority setting	PPC	0 <0-1>	M	Sets whether the bypass tray or drawer is used as a priority when copy paper of the same size as the original is set both on the bypass tray and the drawer in the Automatic paper selection mode. 0: Bypass tray priority 1: Drawer, PFU and PFP priority	1
611	User interface	Book type original priority	PPC	0 <0-1>	SYS	0: Left page to right page 1: Right page to left page	1
615	General	Size information of main memory	ALL	-	CTL	Displays the sizes of the main memory. Enables to check if main memory is properly recognized.	3
617	User interface	Print setting without department code	ALL	1 <0-1>	CTL	0: Printed 1: Deleted forcibly	1
618	User interface	Default setting when mixed size originals are set on ADF/RADF	PPC	0 <0-1>	SYS	0: Scanned as all in same size 1: Scanned as each original size (RADF only)	1
631	User interface	Custom Mode	ALL	0 <0-5>	-	0: FINISHING 1: DUPLEX 2: 2IN1-4IN1 3: IMAGE SHIFT 4: DUAL PAGE 5: ID CARD	1
632	Paper feeding	Pop-up display for paper setting in a drawer	ALL	UC: 1 Other: 0 <0-1>	SYS	0: OFF 1: ON	1
638	General	Time differences	ALL	EUR: 24 UC: 40 JPN: 6 Other: 0 <0-46>	CTL	0: +12.0h    2: +11.0h 4: +10.0h    5: +9.5h 6: +9.0h     8: +8.0h 10: +7.0h    11: +6.5h 12: +6.0h    13: +5.5h 14: +5.0h    15: +4.5h 16: +4.0h    17: +3.5h 18: +3.0h    20: +2.0h 22: +1.0h    24: 0.0h 26: -1.0h    28: -2.0h 30: -3.0h    31: -3.5h 32: -4.0h    34: -5.0h 36: -6.0h    38: -7.0h 40: -8.0h    42: -9.0h 44: -10.0h   46: -11.0h	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
641	User interface	Automatic Sorting Mode setting (ADF/RADF)	PPC	2 <0,2,4>	SYS	0: Invalid 2: SORT 4: ROTATE SORT	1
642	User interface	Default setting of Sorter Mode	PPC	1 <0,5,6>	SYS	0: SORT 5: ROTATE SORT 6: MAGAZINE SORT	1
649	User interface	Magazine sort setting	PPC	0 <0-1>	SYS	0: Left page to right page 1: Right page to left page	1
650	User interface	2 in 1/4 in 1 page allocating order setting	PPC	0 <0-1>	SYS	0: Horizontal 1: Vertical	1
655	General	Reset the 05/08 codes	-	-	-	Returns the set value for the 05/08 code to its default value. However, various counter values of the 08 codes are not reset.	5
660	Network	Auto-forwarding setting of received FAX	ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
661	Network	Auto-forwarding setting of received E-mail	ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
666	General	BOX partition clearing	ALL	-	CTL	Initializes the Electronic Filing.	5
669	General	System All-clear (Initialization of system NVRAM realm)	ALL	-	CTL	Initializing the system NVRAM realm.	5
672	General	Initialization of department management information	-	-	SYS	Initializing of the department management information * Key in the code and press the [START] button to perform the initialization.	5
684	General	Rebuilding all databases	ALL	-	CTL	Rebuilds all databases.	5
685	RADF	Paper feeding by turns at duplex copying	PPC	1 <0-1>	-	0: Invalid 1: Valid	1
686	General	Rebuilding the address book database	ALL	-	CTL	Rebuilds the address book database	5
689	FAX	Adaptation of paper source priority selection	FAX	0 <0-1>	SYS	0: Not subjected for APS judgment 1: Subjected for APS judgment	1
690	General	CF formatting	ALL	-	CTL	CF formatting	5
691	User interface	template function Setting	ALL	1 <0-1>	-	0: Not permitted 1: Permitted	1
692	FAX	Fax reception data presence display	FAX	JPD: 1 Other: 0 <0-1>	SYS	Displays the message in the copy mode screen when Fax received data are in the memory. 0: Not displayed 1: Displayed	1
693	General	Initialization of NIC information	ALL	-	CTL	Returns the value to the factory shipping default value.	5

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
694	FAX	PIN Number setting	FAX	0 <0-1>	M	0: Enables the PIN number addition: Keypad dialing (direct entry with digital keys) and others. 1: Enables the PIN number addition: Only for Keypad dialing (direct entry with digital keys).	1
695	General	Toner remaining check function (supports embedded IC chip)	ALL	e-STUDIO 165/205: 1 <0-1>  e-STUDIO 167/207/237: JPN: 1 NAD/ASU/SAD/ASD/ARD/CND: 2 Other: 1 <0-2>	M	Checks whether the toner cartridge is inserted or not. 0: Check function disabled (08-971 is automatically changed to "3: Toner near-empty detection disabled".) 1: Check function enabled (08-971 is automatically changed to "1: Toner near empty threshold value (standard)".) 2: Check function and print restriction enabled (08-971 is automatically changed to "1: Toner near empty threshold value (standard)".)	1
698	Paper feeding	Limit function for the number of paper exit	ALL	1 <0-1>	M	0: OFF 1: ON Number set at 08-699 will be set as the limit number of paper exit.	1
699	Paper feeding	Limit number setting for paper exit	ALL	250 <1-999>	M	Sets the limit number of paper exit for 08-698	1
702	Maintenance	Remote-controlled service function	ALL	2 <0-2>	CTL	0: Valid (Remote-controlled server) 1: Valid (L2) 2: Invalid	1
703	Maintenance	Remote-controlled service HTTP server URL setting	ALL	-	CTL	Maximum 256 Bytes	1
707	Maintenance	Remote-controlled service HTTP initially-registered server URL setting	ALL	https:// device.mfp-support.com:443/ device/firstregist.ashx	CTL	Maximum 256 Bytes	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
710	Maintenance (Remote)	Short time interval setting of recovery from Emergency Mode		ALL	24 <1-48>	CTL	Sets the time interval to recover from the Emergency Mode to the Normal Mode. (Unit: Hour)	1
711	Maintenance (Remote)	Short time interval setting of Emergency Mode		ALL	60 <30-360>	CTL	Unit: Minute	1
712	Maintenance	250 sheets limitation for output pages (function flag)	GDI	PRT	0 <0-1>	M	After 250 sheets have exited, the equipment stops and prompts you to remove the output paper. 0: OFF 1: ON	1
713	Maintenance	250 sheets limitation for output pages (function flag)		PRT	0 <0-1>	M	After 250 sheets have exited, the equipment stops and prompts you to remove the output paper. 0: OFF 1: ON	1
714	Maintenance	250 sheets limitation for output pages (function flag)		FAX	0 <0-1>	M	After 250 sheets have exited, the equipment stops and prompts you to remove the output paper. 0: OFF 1: ON	1
715	Maintenance	Remote-controlled service periodical polling timing (Hour/Minute/Minute)		ALL	1230	CTL	0 (0:00) to 2359 (23:59)	1
716	Maintenance	Remote-controlled service Writing data of self-diagnostic code		ALL	0 <0-1>	CTL	0: Prohibited 1: Accepted	1
717	Maintenance	Remote-controlled service response waiting time (Timeout)		ALL	3 <1-30>	CTL	Unit: Minute	1
718	Maintenance	Remote-controlled service initial registration		ALL	0 <0-2>	CTL	0: OFF 1: Start 2: Only certification is scanned	1
719	Maintenance	Remote-controlled service tentative password		ALL	-	CTL	Maximum 10 letters	3
720	Maintenance	Status of remote-controlled service initial registration (Display only)		ALL	0 <0-1>	CTL	0: Not registered 1: Registered	1
721	Maintenance	Service center call function		ALL	2 <0-2>	CTL	0: OFF 1: Notifies all service calls 2: Notifies all but paper jams	1
723	Maintenance	Service center call HTTP server URL setting		ALL	-	CTL	Maximum 256 letters	3
726	Maintenance	HTTP proxy setting		ALL	1 <0-1>	CTL	0: Valid 1: Invalid	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
727	Maintenance	HTTP proxy IP address setting	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	1
728	Maintenance	HTTP proxy port number setting	ALL	0 <0-65535>	CTL		1
729	Maintenance	HTTP proxy ID setting	ALL	-	CTL	Maximum 30 letters	1
730	Maintenance	HTTP proxy password setting	ALL	-	CTL	Maximum 30 letters	1
767	Maintenance (Remote)	Service Notification setting	ALL	0 <0-1>	CTL	Enables to set up to 3 E-mail addresses to be sent. 0: Invalid 1: Valid (E-mail)	1
769	Maintenance (Remote)	Total counter information transmission setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
770	General	Total counter transmission "day of the week" setting	ALL	0 <0-127>	CTL	Indicates the day of the week using the 1st bit to the 7th bit in 1byte 00000000 (0) - 01111111 (127). Multiple days of the week can be set by setting the SUM of the values for the day of the week. 0: Not specified 1: Sunday 2: Monday 4: Tuesday 8: Wednesday 16: Thursday 32: Friday 64: Saturday	1
771	Maintenance (Remote)	PM counter notification setting	ALL	0 <0-1>	SYS	0: Invalid 1: Valid	1
772	Maintenance	Dealer's name	ALL	-	CTL	Maximum 100 letters Needed at initial registration	3
773	Maintenance	Login name	ALL	-	CTL	Maximum 20 letters Needed at initial registration	3
774	Maintenance	Service notification display	ALL	UC: 1 Other: 0 <0-1>	SYS	Displays "SERVICE NOTIFICATION" in the INITIAL SETUP menu. When "1" is set, operation and setting are made available for users. 0: Not displayed 1: Displayed	1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
775	Maintenance	Service call transmission		ALL	0 <0-1>	CTL	When a service call occurs, details of the error are notified by E-mail. 0: Invalid 1: Valid	1
776	General	Total counter transmission time setting		ALL	0000 <0000-2359>	CTL	4-digit value indicates HHMM. E.g:12:34 is indicated as 1234.	1
780	Maintenance	Remote-controlled service polling day selection Day-1		ALL	0 <0-31>	CTL	0: OFF 1 to 31: 1st to 31st of a month	1
781	Maintenance	Remote-controlled service polling day selection Day-2		ALL	0 <0-31>	CTL	0: OFF 1 to 31: 1st to 31st of a month	1
782	Maintenance	Remote-controlled service polling day selection Day-3		ALL	0 <0-31>	CTL	0: OFF 1 to 31: 1st to 31st of a month	1
783	Maintenance	Remote-controlled service polling day selection Day-4		ALL	0 <0-31>	CTL	0: OFF 1 to 31: 1st to 31st of a month	1
784	Maintenance	Remote-controlled service polling day selection Sunday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
785	Maintenance	Remote-controlled service polling day selection Monday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
786	Maintenance	Remote-controlled service polling day selection Tuesday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
787	Maintenance	Remote-controlled service polling day selection Wednesday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
788	Maintenance	Remote-controlled service polling day selection Thursday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
789	Maintenance	Remote-controlled service polling day selection Friday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
790	Maintenance	Remote-controlled service polling day selection Saturday		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
796	Maintenance	Remote-controlled service lengthened interval polling (End of month)		ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
800-0	Fuser	Temperature control lower limit (OHP film)	Center thermistor	ALL	7 <0-12>	M	0: 130°C    1: 135°C 2: 140°C    3: 145°C 4: 150°C    5: 155°C 6: 160°C    7: 165°C	2
800-1			Side thermistor	ALL	5 <0-12>	M	8: 170°C    9: 175°C 10: 180°C 11: 185°C 12: 120°C	2

Setting mode (08)									
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents		Procedure
801-0	Fuser	Temperature control lower limit (Thick paper 1)	Center thermistor	ALL	7 <0-12>	M	0: 130°C	1: 135°C	2
801-1			Side thermistor	ALL	5 <0-12>	M	2: 140°C	3: 145°C	2
							4: 150°C	5: 155°C	
							6: 160°C	7: 165°C	
							8: 170°C	9: 175°C	
							10: 180°C		
							11: 185°C		
							12: 120°C		
802-0	Fuser	Temperature control lower limit (Thick paper 2)	Center thermistor	ALL	11 <0-12>	M	0: 130°C	1: 135°C	2
802-1			Side thermistor	ALL	11 <0-12>	M	2: 140°C	3: 145°C	2
							4: 150°C	5: 155°C	
							6: 160°C	7: 165°C	
							8: 170°C	9: 175°C	
							10: 180°C		
							11: 185°C		
							12: 120°C		
804-0	Fuser	Temperature control lower limit (Envelope)	Center thermistor	ALL	11 <0-12>	M	0: 130°C	1: 135°C	2
804-1			Side thermistor	ALL	11 <0-12>	M	2: 140°C	3: 145°C	2
							4: 150°C	5: 155°C	
							6: 160°C	7: 165°C	
							8: 170°C	9: 175°C	
							10: 180°C		
							11: 185°C		
							12: 120°C		
805	Charger	Main charger bias correction (Text/Photo/OHP film)		PRT	98 <0-255>	M	Corrects the value of the main charger bias adjustment (05-210).		1
806	Charger	Main charger bias correction (Toner Saving Mode/OHP film)		PRT	98 <0-255>	M			1
807	Charger	Main charger bias correction (Text/Photo/OHP film)		PPC	98 <0-255>	M			1
808	Charger	Main charger bias correction (Text/OHP film)		PPC	98 <0-255>	M			1
809	Charger	Main charger bias correction (Photo/OHP film)		PPC	98 <0-255>	M			1
814	Charger	Main charger bias correction (Text/Photo/OHP film)	GDI	PRT	98 <0-255>	M			1
818	Charger	Main charger bias correction		FAX	128 <0-255>	-			1
819	Charger	Main charger bias correction (Text/Photo)	GDI	PRT	128 <0-255>	M			1
826	Charger	Main charger bias correction (Toner saving mode)		PRT	128 <0-255>	M			1
830	Transfer	Transfer transformer DC correction (C)		ALL	128 <0-255>	M			Corrects the value of the transfer transformer DC output adjustment (05-221).

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
831	Separation	Separation transformer DC correction (C)		ALL	128 <0-255>	M	Corrects the value of the separation transformer DC output adjustment (05-234).	1
833	Developer	Developer bias DC correction (Text/Photo/OHP film)		PRT	107 <0-255>	M	Corrects the value of the developer bias adjustment (05-205).	1
834	Developer	Developer bias DC correction (Toner Saving Mode/OHP film)		PRT	107 <0-255>	M		1
835	Developer	Developer bias DC correction (Text/Photo/OHP film)		PPC	107 <0-255>	M		1
836	Developer	Developer bias DC correction (Text/OHP film)		PPC	107 <0-255>	M		1
837	Developer	Developer bias DC correction (Photo/OHP film)		PPC	107 <0-255>	M		1
838	Image processing	Switching of recycled toner saving control		ALL	0 <0-1>	M		0: Switched 1: Not switched
839	Image processing	Correction by temperature/humidity		ALL	0 <0-3>	M	Sets the correction by temperature/humidity. 0: All valid 1: All invalid 2: Valid only in auto-toner sensor 3: All valid except transfer and separation	1
840	Developer	Developer bias DC correction (Text/Photo/OHP film)	GDI	PRT	107 <0-255>	M	Corrects the value of the developer bias adjustment (05-205).	1
857	Developer	Developer bias DC correction (Toner saving mode)		FAX	128 <0-255>	M		1
858	Developer	Developer bias DC correction (Normal)	GDI	PRT	128 <0-255>	M		1
859	Developer	Developer bias DC correction (Toner saving mode)		PRT	128 <0-255>	M	Corrects the value of the developer bias adjustment (05-205).	1
860	Developer	Developer bias DC correction (Normal)		PRT	128 <0-255>	M		1
861	Developer	Developer bias DC correction (Text/Photo)		PPC	128 <0-255>	M		1
862	Developer	Developer bias DC correction (Text)		PPC	128 <0-255>	M		1
863	Developer	Developer bias DC correction (Photo)		PPC	128 <0-255>	M		1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
864	Charger	Main charger bias correction (Normal)		PRT	128 <0-255>	M	Corrects the value of the main charger bias adjustment (05-210).	1
865	Charger	Main charger bias correction (Text/Photo)		PPC	128 <0-255>	M		1
866	Charger	Main charger bias correction (Text)		PPC	128 <0-255>	M		1
867	Charger	Main charger bias correction (Photo)		PPC	128 <0-255>	M		1
868	Transfer	Transfer transformer DC correction (H)		ALL	128 <0-255>	M	Corrects the value of the transfer transformer DC output adjustment (05-220).	1
869	Transfer	Transfer transformer DC correction (L)		ALL	128 <0-255>	M	Corrects the value of the transfer transformer DC output adjustment (05-222).	1
870	Separation	Separation transformer DC correction (H)		ALL	128 <0-255>	M	Corrects the value of the separation transformer DC output adjustment (05-233).	1
871	Separation	Separation transformer DC correction (L)		ALL	128 <0-255>	M	Corrects the value of the separation transformer DC output adjustment (05-235).	1
872	Laser	Laser power correction (Normal)		PRT	128 <0-255>	M	Corrects the value of the laser power adjustment (05-286).	1
873	Laser	Laser power correction (Text/Photo)		PPC	128 <0-255>	M		1
875	Laser	Laser power correction (Toner saving mode)		PRT	128 <0-255>	M		1
876	Laser	Laser power correction (Text)		PPC	128 <0-255>	M		1
877	Laser	Laser power correction (Photo)		PPC	128 <0-255>	M		1
883	Laser	Laser power correction (Normal)	GDI	PRT	136 <0-255>	M		1
884	Laser	Laser power correction (Normal)		FAX	128 <0-255>	M		1

Setting mode (08)								
Code	Classification	Items		Function	Default <Acceptable value>	RAM	Contents	Procedure
886	Fuser	Temperature drop control setting in ready status (Temperature/Time)		ALL	4 <0-20>	M	0: None 1: Pattern 1 2: Pattern 2 3: Pattern 3 4: Pattern 4 5: Pattern 5 6: Pattern 6 7: Pattern 7 8: Pattern 8 9: Pattern 9 10: Pattern 10 11: Pattern 11 12: Pattern 12 13: Pattern 13 14: Pattern 14 15: Pattern 15 16: Pattern 16 17: Pattern 17 18: Pattern 18 19: Pattern 19 20: Manual adjustment	1
896-0	Fuser	Temperature control lower limit (Plain paper/ Low temperature)	Center thermistor	ALL	16 cpm / 20 cpm: 5 23 cpm : 6 <0-12>	M	0: 130°C    1: 135°C 2: 140°C    3: 145°C 4: 150°C    5: 155°C 6: 160°C    7: 165°C 8: 170°C    9: 175°C 10: 180°C 11: 185°C 12: 120°C	2
896-1			Side thermistor	ALL	16 cpm / 20 cpm: 3 23 cpm : 4 <0-12>	M		2
900	Version	System firmware ROM version		ALL	-	-	e-STUDIO165/205 JPN: T282SY0Jxxx UC: T282SY0Uxxx EUR: T282SY0Exxx Other: T282SY0xxxx e-STUDIO167/207/237 JPN: T286SY0Jxxx UC: T286SY0Uxxx EUR: T286SY0Exxx Other: T286SY0xxxx	3
905	RADF	Process for last page (one-sided original) at duplex copying		PPC	0 <0-1>	-	0: One-side copy 1: Double-sided copy (blank paper is added to as the last even numbered page to output the copy in the same orientation with previous pages.)	1
906	Version	PFC firmware version		ALL	-	-		3
921	Version	FROM internal program		ALL	-	-	VTHxx.xxx	3
922	Version	Function table data version		ALL	-	-	e-STUDIO165/205 T282SY1xxxx e-STUDIO167/207/237 T286SY1xxxx	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
923	Version	Language data version	ALL	-	-	e-STUDIO165/205 T282SY2xxxx e-STUDIO167/207/237 T286SY2xxxx	3
945	Network	Two-way setting of RawPort 9100	ALL	2 <1-2>	CTL	1: Valid 2: Invalid	1
947	General	Initialization after software version upgrade	ALL	-	CTL	Perform this code when the software in this equipment has been upgraded.	5
949	General	Automatic interruption page setting during printing	ALL	0 <0-100>	SYS	Sets the automatic interruption page.	1
950	Network	Transmission security type	ALL	0 <0-2>	SYS	0: Telephone number 1: Password 2: Both	1
951	Network	Reception security type	ALL	0 <0-2>	SYS	0: Telephone number 1: Password 2: Both	1
970	User interface	Sound setting when switching to Energy Saving Mode	ALL	JPN: 0 Other: 1 <0-1>	SYS	0: OFF 1: ON	1
971	General	Toner near empty threshold value	ALL	1 <0-3>	SYS	Performs adjustment for the toner near-empty detection timing. 0: Toner near empty threshold value (long) 1: Toner near empty threshold value (standard) 2: Toner near empty threshold value (short) 3: Toner near-empty detection disabled  This code is automatically changed to "3" when the code 08-695 has been set at "0". This code is automatically changed to "1" when the code 08-695 has been set at "1" or "2."	1
973	Network	PCL line feed code setting	PRT	0 <0-3>	CTL	Sets the PCL line feed code. 0: Automatic setting 1: CR=CR, LF=LF 2: CR=CR+LF, LF=LF 3: CR=CR, LF=CR+LF	1
975	General	Job handling when printing is short paid with coin controller	ALL	1 <0-1>	M	Sets whether to pause or stop the printing job if insufficient payment is made when using a coin controller. 0: Pause the job 1: Stop the job	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
978	Network	Raw printing job (Paper feeding drawer)	PRT	0 <0-4>	CTL	0: AUTO 1: Drawer 2: PFU 3: PFP upper drawer 4: PFP lower drawer	1
979	Network	Raw printing job (PCL symbol set)	PRT	0 <0-39>	CTL	0: Roman-8 1: ISO 8859/1 Latin 1 2: ISO 8859/2 Latin 2 3: ISO 8859/9 Latin 5 4: PC-8,Code Page 437 5: PC-8 D/N, Danish/ Norwegian 6: PC-850,Multilingual 7: PC-852, Latin2 8: PC-8 Turkish 9: Windows 3.1 Latin 1 10: Windows 3.1 Latin 2 11: Windows 3.1 Latin 5 12: DeskTop 13: PS Text 14: Ventura Interna- tional 15: Ventura US 16: Microsoft Publishing 17: Math-8 18: PS Math 19: Ventura Math 20: Pi Font 21: Legal 22: ISO 4: United King- dom 23: ISO 6: ASCII 24: ISO 11 25: ISO 15: Italian 26: ISO 17 27: ISO 21: German 28: ISO 60: Danish/Nor- wegian 29: ISO 69: French 30: Windows 3.0 Latin 1 31: MC Text 32: PC Cyrillic 33: ITC Zapf Dingbats 34: ISO 8859/10 Latin 6 35: PC-775 36: PC-1004 37: Symbol 38: Windows Baltic 39: Wingdings	1
986	General	Invalidation setting of copy/ FAX screen shift	ALL	0 <0-4>	SYS	0: No prohibition 1: Shifting to the copy screen is prohibited. 2: Shifting to the Fax screen is prohibited. 4: Shifting to the scan screen is prohibited.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
995	Version	Equipment number (serial number) display	ALL	0 <20 digits>	SYS	The Equipment number can be entered in alphabets (A-Z=*01-*26) and figures (0-9) within 20digits.	3
1002	Network	Selection of NIC board status information	ALL	1 <1-2>	CTL	1: Not printed out when the equipment is restarted 2: Printed out when the equipment is restarted	1
1003	Network	Communication speed and settings of Ethernet	ALL	1 <1-5>	CTL	1: Auto 2: 10MBPS Half Duplex 3: 10MBPS Full Duplex 4: 100MBPS Half Duplex 5: 100MBPS Full Duplex	1
1006	Network	Address Mode	ALL	2 <1-3>	CTL	1: Fixed IP address 2: Dynamic IP address (DHCP) 3: Dynamic IP address (DHCP) without AutoIP	1
1007	Network	Domain name	ALL	-	CTL	Maximum 96 letters	3
1008	Network	IP address	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	3
1009	Network	Subnet mask	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	3
1010	Network	Gateway	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	3
1011	Network	Availability of IPX	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1012	Network	Network frame type	ALL	1 <1-5>	CTL	1: Automatic 2: IEEE802.3 3: Ethernet II 4: IEEE802.3SNAP 5: IEEE802.2	1
1013	Network	Availability of NCP Burst	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1014	Network	Availability of AppleTalk	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1015	Network	Zone setting of AppleTalk	ALL	*	CTL	Maximum 32 letters *: Wildcard character	3
1017	Network	Availability of DNS	ALL	1 <1-2>	CTL	1: Available 2: Not available	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1018	Network	IP address to DNS server (Primary)	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	3
1019	Network	IP address to DNS server (Secondary)	ALL	-	CTL	000.000.000.000-255.255.255.255 (Default value 000.000.000.000)	3
1020	Network	DDNS Desired level	ALL	3 <1-5>	CTL	1: Invalid 2: Via DHCP 3: Insecure DDNS 4: Secure DDNS 5: Multi-secure DDNS	1
1026	Network	Availability of Bindery	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1027	Network	Availability of NDS	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1028	Network	Directory service context	ALL	-	CTL	Maximum 127 letters	3
1029	Network	Directory service tree	ALL	-	CTL	Maximum 47 letters	3
1030	Network	Availability of HTTP server	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1031	Network	Port number to NIC HTTP server	ALL	80 <1-65535>	CTL		1
1032	Network	Port number to system HTTP server	ALL	8080 <1-65535>	CTL		1
1037	Network	Availability of SMTP client	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1038	Network	FQDN or IP address to SMTP server	ALL	-	CTL	Maximum 128 Bytes	3
1039	Network	TCP port number of SMTP client	ALL	25 <1-65535>	CTL		1
1040	Network	Availability of SMTP server	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1041	Network	TCP port number of SMTP server	ALL	25 <1-65535>	CTL		1
1042	Network	E-mail box name to SMTP server	ALL	-	CTL	Maximum 192 letters	3
1043	Network	Availability of Offramp	ALL	2 <1-2>	CTL	1: Available 2: Not available	1
1044	Network	Offramp security	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1045	Network	Printing at Offramp	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1046	Network	Availability of POP3 clients	ALL	1 <1-2>	CTL	1: Available 2: Not available	1
1047	Network	FQDN or IP address to POP3 server	ALL	-	CTL	Maximum 128 Bytes	3
1048	Network	Types of POP3 server	ALL	1 <1-3>	CTL	1: Automatic 2: POP3 3: APOP	1
1049	Network	Login name to POP3 server	ALL	-	CTL	Maximum 96 letters	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1050	Network	Login password to POP3	ALL	-	CTL	Maximum 96 letters	3
1051	Network	E-mail reception interval (Unit: Minute)	ALL	5 <0-4096>	CTL		1
1052	Network	TCP port number of POP3 client	ALL	110 <1- 65535>	CTL		1
1055	Network	TCP port number of FTP client	ALL	21 <1- 65535>	CTL		1
1063	Network	MIB function	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1065	Network	Setting of read Community	ALL	public	CTL	Maximum 31 letters	3
1066	Network	Setting of read/Write Com- munity	ALL	private	CTL	Maximum 31 letters	3
1069	Network	TRAP destination IP address	ALL	-	CTL	000.000.000.000- 255.255.255.255 (Default value 000.000.000.000)	3
1070	Network	Community setting of TRAP (via IP)	ALL	public	CTL	Maximum 31 letters	3
1071	Mainte- nance (Remote)	Total counter transmission date setting 1	ALL	0 <0-31>	CTL	0: Invalid 1 - 31: Date	1
1072	Mainte- nance (Remote)	Total counter transmission date setting 2	ALL	0 <0-31>	CTL	0: Invalid 1 - 31: Date	1
1073	Network	Availability of Raw/TCP	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1074	Network	TCP port number of Raw	ALL	9100 <1- 65535>	CTL		1
1075	Network	Availability of LPD client	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1076	Network	TCP port number of LPD	ALL	515 <1- 65535>	CTL		1
1077	Network	LPD queue name	ALL	-	CTL	Maximum 31 letters	3
1078	Network	Availability of IPP	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1079	Network	Availability of IPP port number "80"	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1080	Network	TCP port number of IPP	ALL	631 <1- 65535>	CTL		1
1081	Network	IPP printer name	ALL	-	CTL	Maximum 127 letters	3
1082	Network	IPP printer location	ALL	-	CTL	Maximum 127 letters	3
1083	Network	IPP printer information	ALL	-	CTL	Maximum 127 letters	3
1084	Network	IPP printer information (more)	ALL	-	CTL	Maximum 127 letters	3
1085	Network	Installer of IPP printer driver	ALL	-	CTL	Maximum 127 letters	3
1086	Network	IPP printer "Make and Model"	ALL	-	CTL	Maximum 127 letters	3
1087	Network	IPP printer information (more) MFGR	ALL	-	CTL	Maximum 127 letters	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1088	Network	IPP message from operator	ALL	-	CTL	Maximum 127 letters	3
1093	Network	Login name to Novell print server	ALL	-	CTL	Maximum 47 letters	3
1094	Network	Login password to Novell print server	ALL	-	CTL	Maximum 31 letters	3
1095	Network	Name of SearchRoot server	ALL	-	CTL	Maximum 31 letters	3
1096	Network	Scan rate setting of print queue	ALL	5 <1-255>	CTL	Unit: Second	1
1097	Network	Page number limitation for printing text of received E-mail	ALL	5 <1-99>	CTL		1
1098	Network	MDN return mail setting when receiving E-mail	ALL	2 <1-2>	CTL	1: Valid 2: Invalid	1
1099	Network	Trap destination of IPX	ALL	-	CTL	Maximum 24 letters (Valid from 0 to 9 and from A to F)	3
1100	Network	Method of SMTP server authentication	ALL	1 <1-6>	CTL	1: Disable 2: Plan 3: Login 4: CRAM-MD5 5: Digest-MD5 6: Auto	1
1101	Network	Login name for SMTP server authentication	ALL	-	CTL	Maximum 64 letters	3
1102	Network	Login password for SMTP server authentication	ALL	-	CTL	Maximum 64 letters	3
1103	Network	Rendezvous setting	ALL	1 <1-2>	CTL	1: Valid 2: Invalid	1
1104	Network	Link local host name	ALL	MFP_ serial	CTL	Maximum 127 letters The Network-related serial number of the equipment appears at "serial"	3
1105	Network	Service name setting	ALL	Refer to content	CTL	<Default value> TOSHIBA e-STUDIOxxx (xxx is number.)	3
1111	Network	POP Before SMTP setting	ALL	2 <1-2>	CTL	1: Enabled 2: Disabled	1
1112	Network	Host name	ALL	MFP_ serial	CTL	Maximum 63 letters The Network-related serial number of the equipment appears at "serial"	3
1114	Network	Sending mail text of InternetFAX	ALL	1 <0-1>	CTL	0: Invalid (Not sending the mail text) 1: Valid (Sending the mail text)	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1118	Network	Scan to Windows 2003 Files	ALL	1 <1-3>	CTL	1: Protects SMB communication using a digital signature when the SMB signature of the SMB server to be communicated is set to valid. 2: Always performs digital signature for communication on the client side and performs SMB communication with the SMB server. Communication with the SMB server cannot be performed when the SMB signature of the SMB server is set to Invalid. 3: Does not perform digital signature for communication on the client side and performs SMB communication with the SMB server. Communication with the SMB server cannot be performed when the SMB signature of the SMB server is set to Valid.	1
1119	Image	Wide A4 mode (for PCL) setting	PRT	0 <0-1>	CTL	The printing area on A4 paper is widened in printing with PCL5. 0: Valid (Printing area: 198 mm x 287 mm) 1: Invalid (printing area: 201.54 mm x 288.54 mm)	1
1123	Network	NT domain ON/OFF setting	ALL	4 <3-4>	CTL	3: ON (Domain selected) 4: OFF (Work group selected)	1
1124	Network	Workgroup name	ALL	work-group	CTL	Maximum 15 letters	3
1141	Network	Display of MAC address	ALL	-	CTL	(**:**:**:**:**)** The address is displayed as above (6-byte data is divided by a colon at every 2 bytes).	3
1143	General	Error report output setting	ALL	1 <0-1>	CTL	0: Error report not printed 1: Error report printed	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1144	Scanner	Process when memory full error occurs	ALL	0 <0-1>	CTL	0: Transfers scanned pages 1: Deletes scanned pages	3
1148	General	RDMS error code notification	ALL	-	CTL	Notifies an error, which occurs at the initial registration to eBR (satellite server), with a code. 0: Initial value 1: When the initial registration succeeds 5010: MFP setting internal error 5012: Authentication error 5013: Communication error with eBR 5014: No SSL certificate error 5015: Invalid SSL certificate error 5016: Invalid SSL certificate time limit error 5017: Other SSL certificate error 5018: Invalid DNS error 5019: Connection error 501A: Proxy error 501B: Invalid URL character string error	3
1149	General	Enhanced bold for PCL6	ALL	0 <0-1>	CTL	0: OFF 1: ON	1
1152	Network	Availability of direct SMTP communication	ALL	0 <0-1>	CTL	0: Not available 1: Available	1
1153	Network	Availability of image encryption during direct SMTP communication	ALL	0 <0-1>	CTL	0: Not available 1: Available	1
1154	Network	Internet FAX transmission dummy full mode setting	ALL	0 <0-1>	CTL	0: Invalid 1: Valid	1
1155	Network	Number of E-mail transmission retries	ALL	3 <0-14>	CTL	0 to 14 times	1
1156	Network	E-mail transmission retry interval	ALL	1 <0-15>	CTL	0 to 15 min.	1
1176	General	Scan Notification Events (Error information)	ALL	0 <0-1>	CTL	Sends an error message. 0: Invalid 1: Valid	1
1177	General	Scan Notification Events (Job completion information)	ALL	0 <0-1>	CTL	Sends a job completion message. 0: Invalid 1: Valid	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1372	Counter	Heater and energizing time accumulating counter Display/0 clearing	ALL	0 <8 digits>	M	Counts up the heater control time accumulated (when power of the equipment is ON) but does not count at the Sleep Mode.	1
1378	Counter	Counter for period of time fuser unit is at ready temperature	ALL	0 <8 digits>	M	Counts up the heater control time accumulated (when the equipment is at ready status).	1
1380	Counter	Counter for period of time fuser unit is at printing temperature	ALL	0 <8 digits>	M	Counts up the heater control time accumulated (during printing).	1
1382	Counter	Counter for period of time fuser unit is at energy saving temperature/Counter reset	ALL	0 <8 digits>	M	Counts up the heater control time accumulated (when the equipment is in the Energy Saving Mode).	1
1385	Counter	Number of output pages (Thick paper 1)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
1386	Counter	Number of output pages (Thick paper 2)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
1388	Counter	Number of output pages (OHP film)	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
1410	Counter	Counter for period of toner cartridge rotation time	ALL	0 <8 digits>	M	Counts up the period of rotation time of the toner cartridge.	1
1411	Counter	Counter for envelope	ALL	0 <8 digits>	M	Counts up when the registration sensor is ON.	1
1428	Data overwrite	Forcible SRAM backup data all clearing	ALL	-	-	When this code is performed, the equipment cannot be started up.	5
1440	Network	IP Conflict Detect	ALL	1 <1-2>	CTL	OFF/ON 1: Valid 2: Invalid	1
1447	Network	IPP administrator name	ALL	-	CTL	This should be an account which can control all IPP jobs.	3
1448	Network	IPP administrator password	ALL	-	CTL	This should be the password of an account which can control all IPP jobs.	3
1449	Network	IPP authentication method	ALL	1 <1-4>	CTL	1: Disabled 2: Basic 3: Digest 4: Basic Digest	1
1450	Network	User name for IPP authentication	ALL	-	CTL	This should be the account at the time IPP authentication was performed.	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1451	Network	Password for IPP authentication	ALL	-	CTL	This should be the password of the account at the time IPP authentication was performed.	3
1628-0	Processing	Drum life correction switching of the drum reverse rotation amount	ALL	4 <0-15>	M		2
1628-1	Processing	Drum life correction switching of the normal drum rotation amount after the reverse rotation	ALL	9 <0-15>	M		2
1882	General	TopAccess setup menu page initialization	ALL	-	CTL	Initializes the setup menu page in TopAccess.	5
1913	Processing	The function clear LED blinks	PPC	1 <0-1>	SYS	Blinks when the value is different from the present default value after copying (until auto clear or all clear.) 0: Invalid (Always off) 1: Valid	1
1951	Version	FROM basic section software version	ALL	-	CTL		3
1952	Version	Controller ROM program version	ALL	-	CTL	e-STUDIO165/205: T282CN0XXXX e-STUDIO167/207/237: T286CN0XXXX	3
1953	Version	Scanner ROM program version	ALL	-	CTL		3
1954	Version	Controller ROM internal program version	ALL	-	CTL	VTCXX.XXXX	3
1955	Version	Scanner ROM internal program version	ALL	-	CTL		3
1960	Network	IP address range for IP filter (Minimum area 1)	ALL	-	CTL	IP filter minimum area 1 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1961	Network	IP address range for IP filter (Maximum area 1)	ALL	-	CTL	IP filter maximum area 1 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1962	Network	IP address range for IP filter (Minimum area 2)	ALL	-	CTL	IP filter minimum area 2 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1963	Network	IP address range for IP filter (Maximum area 2)	ALL	-	CTL	IP filter maximum area 2 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1964	Network	IP address range for IP filter (Minimum area 3)	ALL	-	CTL	IP filter minimum area 3 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1965	Network	IP address range for IP filter (Maximum area 3)	ALL	-	CTL	IP filter maximum area 3 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1966	Network	IP address range for IP filter (Minimum area 4)	ALL	-	CTL	IP filter minimum area 4 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1967	Network	IP address range for IP filter (Maximum area 4)	ALL	-	CTL	IP filter maximum area 4 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1968	Network	IP address range for IP filter (Minimum area 5)	ALL	-	CTL	IP filter minimum area 5 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1969	Network	IP address range for IP filter (Maximum area 5)	ALL	-	CTL	IP filter maximum area 5 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1970	Network	IP address range for IP filter (Minimum area 6)	ALL	-	CTL	IP filter minimum area 6 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1971	Network	IP address range for IP filter (Maximum area 6)	ALL	-	CTL	IP filter maximum area 6 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1972	Network	IP address range for IP filter (Minimum area 7)	ALL	-	CTL	IP filter minimum area 7 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1973	Network	IP address range for IP filter (Maximum area 7)	ALL	-	CTL	IP filter maximum area 7 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1974	Network	IP address range for IP filter (Minimum area 8)	ALL	-	CTL	IP filter minimum area 8 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1975	Network	IP address range for IP filter (Maximum area 8)	ALL	-	CTL	IP filter maximum area 8 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1976	Network	IP address range for IP filter (Minimum area 9)	ALL	-	CTL	IP filter minimum area 9 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1977	Network	IP address range for IP filter (Maximum area 9)	ALL	-	CTL	IP filter maximum area 9 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1978	Network	IP address range for IP filter (Minimum area 10)	ALL	-	CTL	IP filter minimum area 10 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1979	Network	IP address range for IP filter (Maximum area 10)	ALL	-	CTL	IP filter maximum area 10 000.000.000.000- 255.255.255.255 (Default value: 000.000.000.000)	3
1989	Network	Enable server's IP address acquired by DHCP	ALL	1 <1-2>	CTL	the Domain Name Server option (6) 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1
1990	Network	Enable server's IP address acquired by DHCP	ALL	1 <1-2>	CTL	the NetBIOS over TCP/ IP Name Server option (44) =Primary and Sec- ondary Wins NAME 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1
1991	Network	Enable server's IP address acquired by DHCP	ALL	2 <1-2>	CTL	the Host Name Vendor Extension option (12) 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1
1993	Network	Enable server's IP address acquired by DHCP	ALL	2 <1-2>	CTL	the SmtServer Option (69) Simple Mail Server Addresses 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1

Setting mode (08)							
Code	Classification	Items	Function	Default <Acceptable value>	RAM	Contents	Procedure
1994	Network	Enable server's IP address acquired by DHCP	ALL	2 <1-2>	CTL	the Pop3Server Option (70) Post Office Server Addresses 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1
1996	Network	Enable server's IP address acquired by DHCP	ALL	2 <1-2>	CTL	SNTP Server Option (42) NTP Server Addresses 1: Enabled 2: Disabled * This value is used only when DHCP is enabled.	1

<<PM management setting code>>

- 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.

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).

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).

**Notes:**

- 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.
- Sub-code 0 is equivalent to sub-code 6.  
When the value of sub-code 0 is changed, the value of sub-code 6 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	Remarks
Upper Fuser roller bushing	361-0, 1, 3, 4, 6, 7	<Default values of code 361 (16 cpm / 20 cpm / 23cpm )> Sub-code 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Photoconductive drum	1150-0, 1, 3, 4, 6, 7	<Default values of code 1150 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Drum cleaning blade	1158-0, 1, 3, 4, 6, 7	<Default values of code 1158 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Drum separation finger	1172-0, 1, 3, 4, 6, 7	<Default values of code 1172 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Main charger grid	1174-0, 1, 3, 4, 6, 7	<Default values of code 1174 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Needle electrode	1182-0, 1, 3, 4, 6, 7	<Default values of code 1182 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Ozone filter	1198-0, 1, 3, 4, 6, 7	<Default values of code 1198 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Developer material	1200-0, 1, 3, 4, 6, 7	<Default values of code 1200 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Transfer charger wire	1214-0, 1, 3, 4, 6, 7	<Default values of code 1214 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Separation charger wire	1224-0, 1, 3, 4, 6, 7	<Default values of code 1224 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Fuser roller	1246-0, 1, 3, 4, 6, 7	<Default values of code 1246 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Remarks
Pressure roller	1250-0, 1, 3, 4, 6, 7	<Default values of code 1250 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Fuser roller separation finger	1268-0, 1, 3, 4, 6, 7	<Default values of code 1268 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000
Feed roller (Drawer)	1298-0, 1	<Default values of code 1298 (16 CPM / 20 CPM / 23 CPM)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Feed roller (PFU)	1300-0, 1	<Default values of code 1300 (16 CPM / 20 CPM / 23 CPM)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Separation roller (PFP upper drawer)	1312-0, 1	<Default values of code 1312 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Separation roller (PFP lower drawer)	1314-0, 1	<Default values of code 1314 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Separation roller (Bypass unit)	1316-0, 1	<Default values of code 1316 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Feed roller (PFP upper drawer)	1320-0, 1	<Default values of code 1320 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Feed roller (PFP lower drawer)	1322-0, 1	<Default values of code 1322 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Feed roller (Bypass unit)	1324-0, 1	<Default values of code 1324 (16 CPM / 20 CPM / 23 CPM)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Pickup roller (PFP upper drawer)	1328-0, 1	<Default values of code 1328 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Pickup roller (PFP lower drawer)	1330-0, 1	<Default values of code 1330 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000
Pickup roller (Bypass unit)	1332-0, 1	<Default values of code 1332 (16 CPM / 20 CPM / 23 CPM)> Sub-codes 0: 0/0/0 Sub-code 1: 80,000/80,000/80,000

Items	PM management setting <Procedure 4> *Indicated in 8 digits	Remarks
Recovery blade	1336-0, 1, 3, 4, 6, 7	<Default values of code 1336 (16 cpm / 20 cpm / 23cpm)> Sub-codes 0, 3, 6, 7: 0/0 Sub-code 1: 72,000/90,000/90,000 Sub-code 4: 180,000/180,000/157,000

## 2.2.3 Function test

The function test checks each function of the equipment. To enter the function test mode, follow the procedure below, or enter the Service mode (\*, #, \*, \*) and select the menu for the function test.

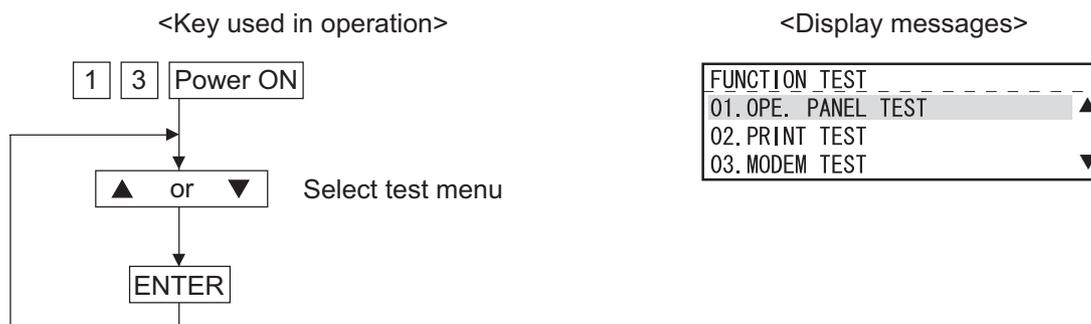


Fig. 2-4

The following tests can be conducted in the Function test mode.

[A]	01. OPE. PANEL TEST
[B]	02. PRINT TEST
[C]	03. MODEM TEST *1 (Factory test)
[D]	04. SENSOR TEST
[E]	05. SRAM TEST
[F]	06. DRAM TEST
[G]	07. CLOCK IC TEST
[H]	08. SCANNER TEST
[I]	09. CODEC TEST
[J]	10. OUTPUT TEST
[K]	11. PRINTER BOARD TEST *2
[L]	12. USB MEMORY TEST *2
[M]	13. CF TEST *3

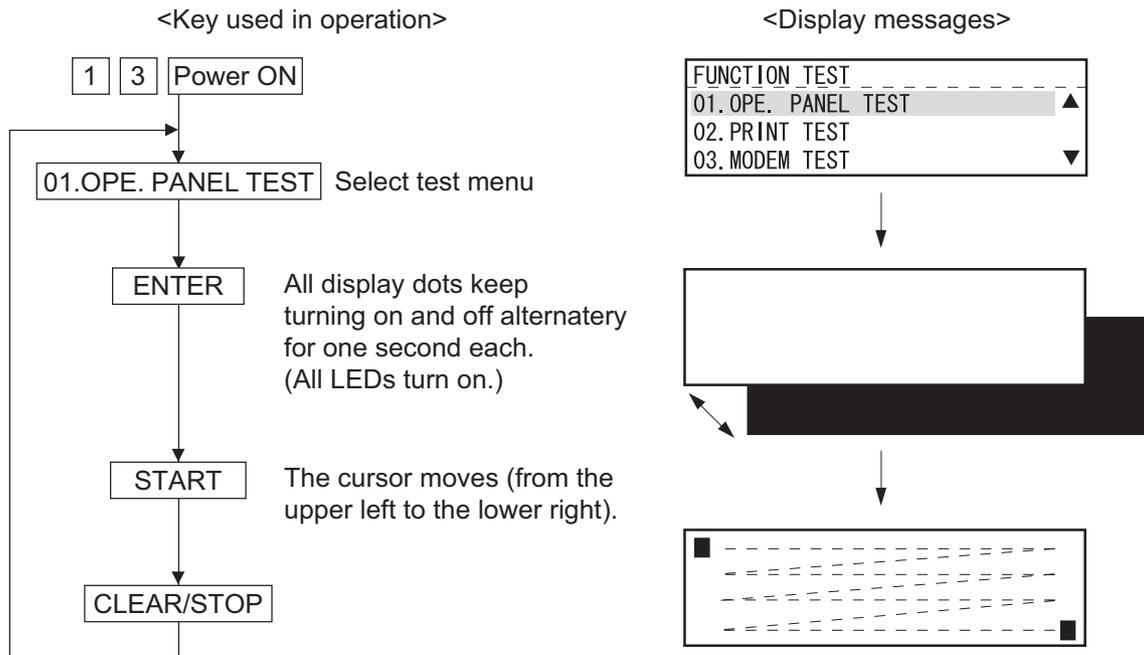
\*1: When the FAX kit (GD-1220/1221) is not installed, the test is not present.

\*2: When the Network Printer kit (GA-1190) is not installed, the test is not present.

\*3: When the Scanner Upgrade kit (GA-1200) is not installed, the test is not present.

**[A] 01. OPE PANEL TEST**

This test checks the control panel display. When any key other than START and CLEAR/STOP is pressed during the display test, O and X are displayed alternately in the lower right of the display.



**Fig. 2-5**

## [B] 02. PRINT TEST

The test pattern is printed when a number is entered according to the displayed instructions.

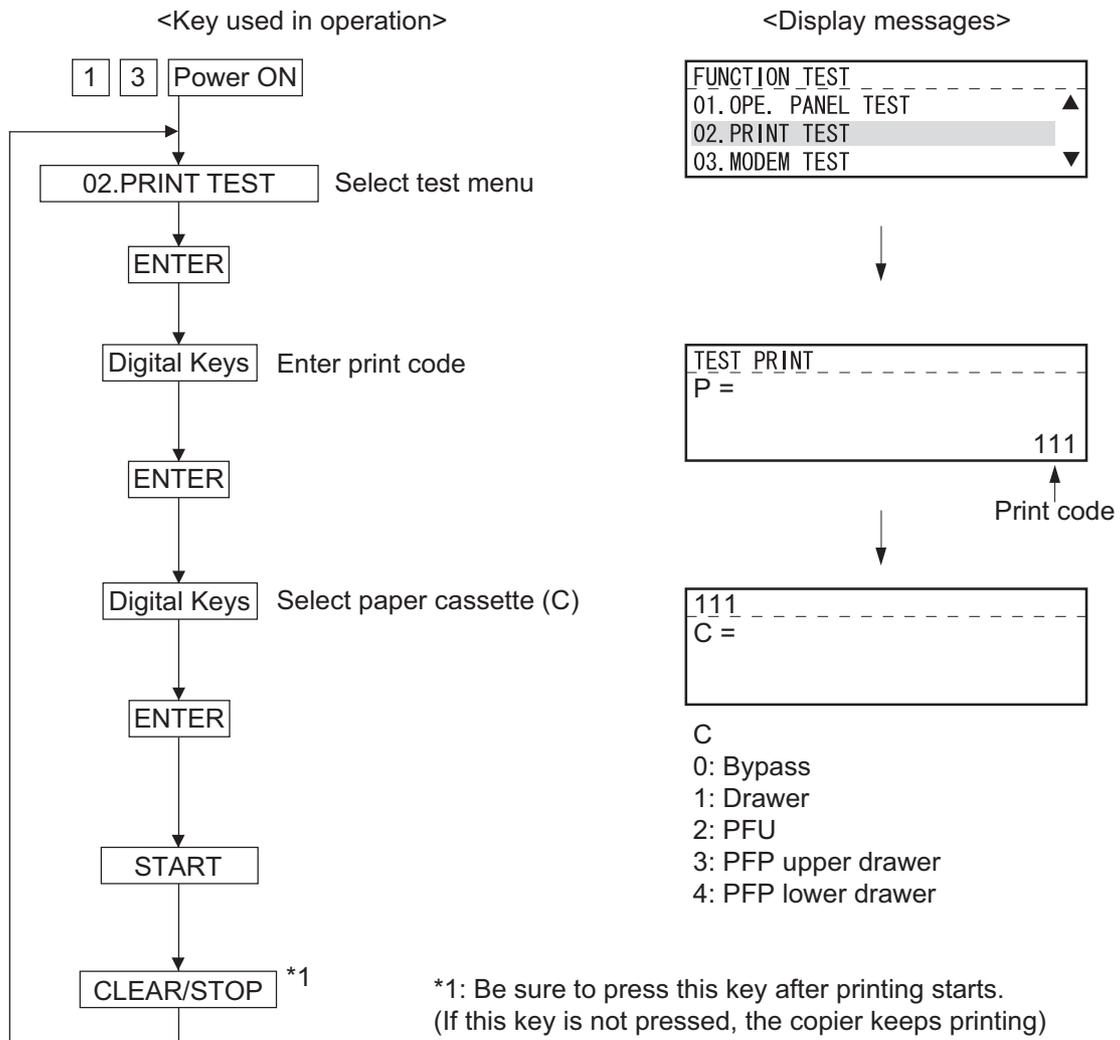


Fig. 2-6

### TEST PRINT ITEMS

Code	Types of test pattern	Remarks
111	Primary scanning direction 33 gradation steps	Error diffusion
113	Secondary scanning direction 33 gradation steps	Error diffusion
142	Grid pattern	Pattern width: 2 dots, Pitch: 10 mm
149	Solid black pattern (Whole area)	A3/LD

## [C] 03. MODEM TEST (Factory test)

Refer to the Service Handbook (GD-1220/1221).

## [D] 04. SENSOR TEST

When the machine enters the SENSOR TEST Mode, the status of each sensor is indicated on the display. The status can be checked by selecting the corresponding bit. (For items to be checked, refer to the Sensor Test Items table.)

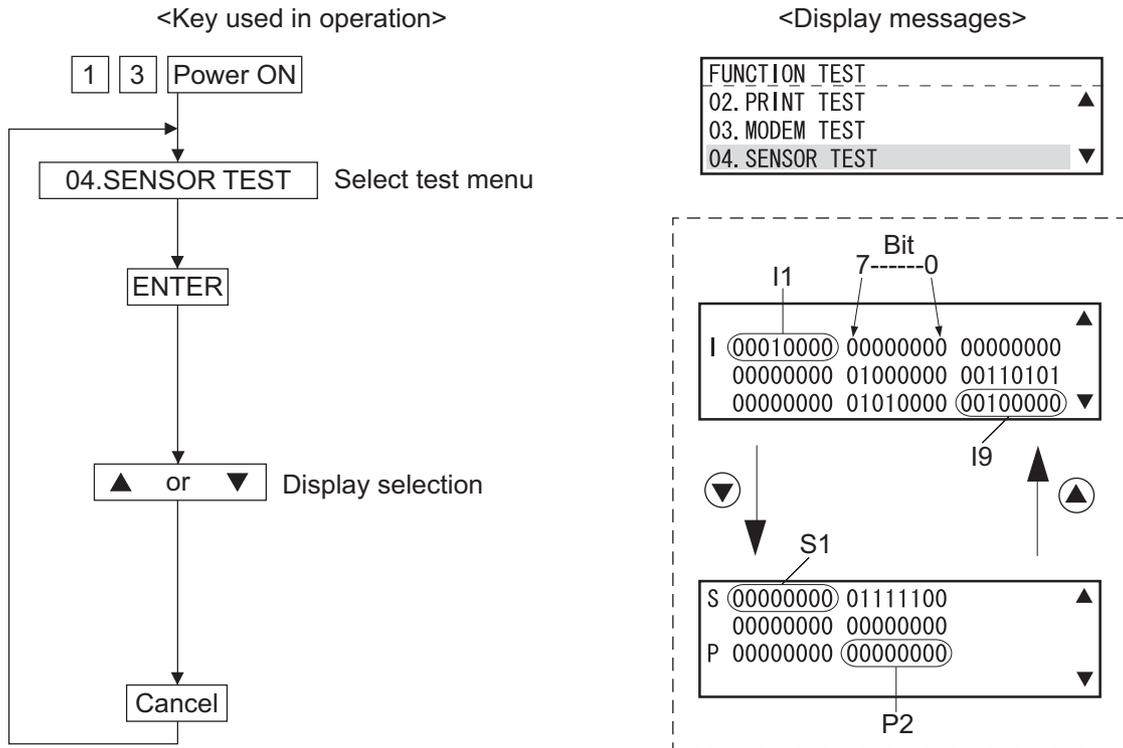


Fig. 2-7

- Explanation of status display  
When the sensor test is carried out, the status of each sensor is indicated on the display with 0 or 1.  
Each signal is divided into 8-bit blocks.  
The character on the left edge of the display indicates as follows:  
I: Signal input to the IO port  
S: Signal from the scanner or R/ADF  
P: Signal from the option connected to the PFC

The display is switched using the or key.

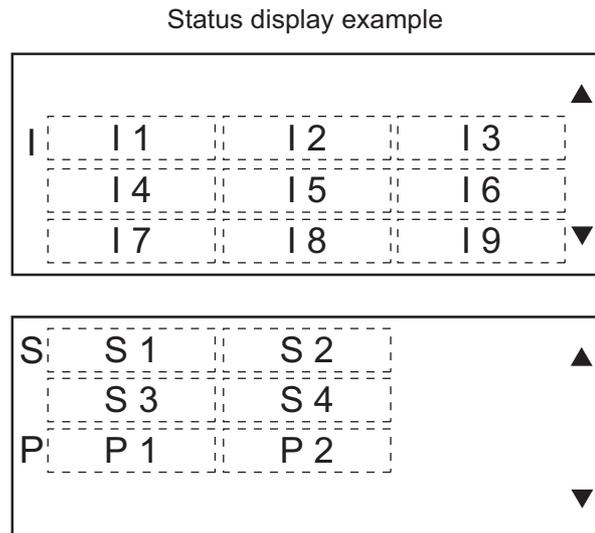


Fig. 2-8

**Example 1:**

Confirm whether the front cover is open or close. The front cover is equipped with the 24-V ON/OFF switch (Interlock switch) and the front cover switch. The status of both switches is 1 when the cover is open, and 0 when it is close. When the status of the one is 0 and that of the other is 1 as shown in the example, there is something wrong with either of these switches.

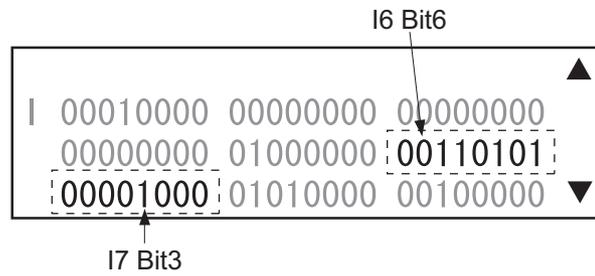


Fig. 2-9

	Front cover	
	Open	Close
I6 bit 6 (Interlock switch)	1	0
I7 bit 3 (Front cover switch)	1	0

## SENSOR TEST ITEMS

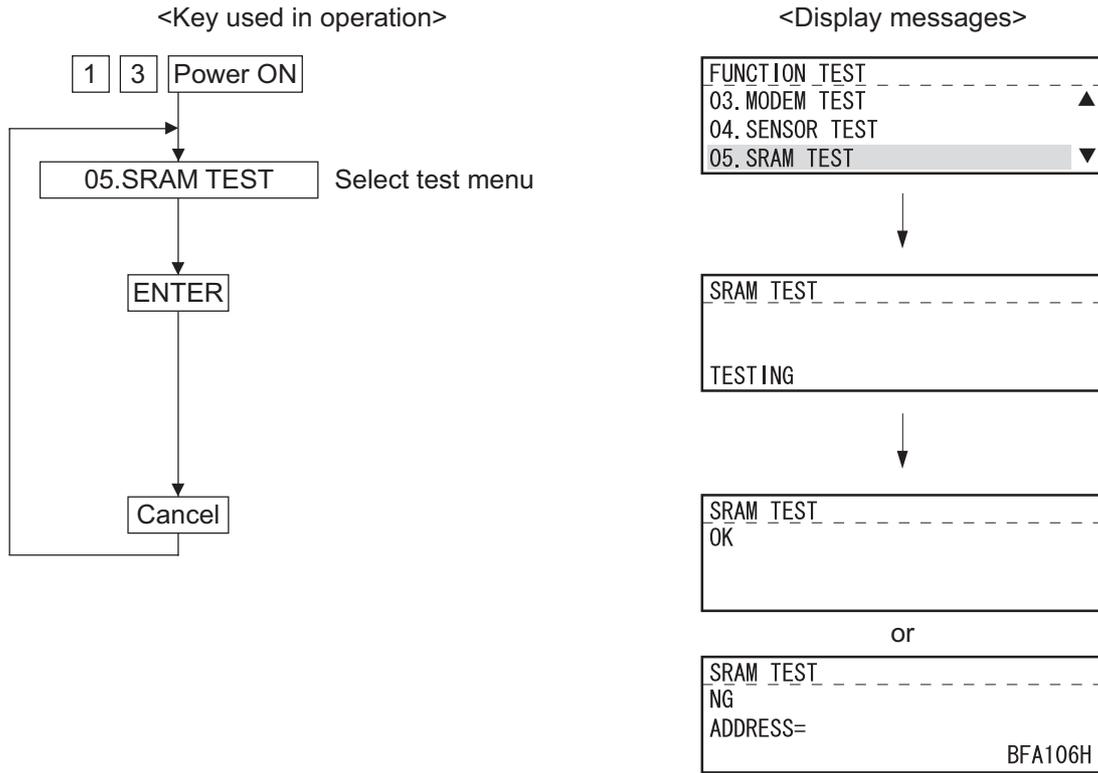
Display position	bit	Items to check	"1" display	"0" display
I1	7	-	-	-
	6	-	-	-
	5	Bypass unit connection	Not connected	Connected
	4	Bypass paper sensor	No paper	Paper present
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-
I2	7	-	-	-
	6	Drawer detection switch	Drawer not installed	Drawer installed
	5	Paper empty sensor	No paper	Paper present
	4	-	-	-
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-
I3	7	-	-	-
	6	-	-	-
	5	-	-	-
	4	-	-	-
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-
I4	7	-	-	-
	6	-	-	-
	5	PFU paper empty sensor	No paper	Paper present
	4	-	-	-
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-
I5	7	-	-	-
	6	PFU drawer detection switch	No drawer	Drawer present
	5	PFU feed sensor	Paper present	No paper
	4	-	-	-
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-

Display position	bit	Items to check	"1" display	"0" display
I6	7	-	-	-
	6	24 V power supply (Front cover opening/closing)	24V ON	24V OFF
	5	PFC board connection	Not connected	Connected
	4	PFU board connection	Not connected	Connected
	3	-	-	-
	2	Polygonal motor rotation status (Open the platen cover or Motor is rotating at 10 Output test)	Abnormal rotation	Normal rotation
	1	-	-	-
	0	-	-	-
I7	7	-	-	-
	6	Registration sensor	Paper present	No paper
	5	Exit sensor	Paper present	No paper
	4	-	-	-
	3	Front cover opening/closing switch	Cover opened	Cover closed
	2	PFU cover opening/closing switch	Cover opened	Cover closed
	1	-	-	-
	0	-	-	-
I8	7	-	-	-
	6	Externally counter connection	Not connected	Connected
	5	-	-	-
	4	Fuser unit switch	Connected	Not connected
	3	Developer unit switch	Not connected	Connected
	2	-	-	-
	1	-	-	-
	0	-	-	-
I9	7	-	-	-
	6	-	-	-
	5	High-voltage transformer error	Normal	Error
	4	-	-	-
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-
S1	7	-	-	-
	6	ADF/RADF connection	Connected	Not connected
	5	Platen sensor	Cover opened	Cover closed
	4	CIS home position sensor	Home position	Other than home position
	3	-	-	-
	2	-	-	-
	1	-	-	-
	0	-	-	-

Display position	bit	Items to check	"1" display	"0" display
S2	7	-	-	-
	6	APS sensor (APS-1)	Original present	No original
	5	APS sensor (APS-2)	Original present	No original
	4	APS sensor (APS-3)	Original present	No original
	3	APS sensor (APS-C)	Original present	No original
	2	APS sensor (APS-R)	Original present	No original
	1	-	-	-
	0	-	-	-
S3	7	-	-	-
	6	ADF/RADF tray sensor	Original present	No original
	5	ADF/RADF empty sensor	Original present	No original
	4	ADF/RADF opening/closing sensor	ADF/RADF opened	ADF/RADF closed
	3	ADF/RADF cover opening/closing sensor	Cover opened	Cover closed
	2	ADF/RADF exit sensor	Original present	No original
	1	RADF reverse sensor	Original present	No original
	0	ADF/RADF read sensor	Original present	No original
S4	7	-	-	-
	6	ADF/RADF registration sensor	Original present	No original
	5	ADF/RADF original length sensor	Original present	No original
	4	ADF/RADF original tray width sensor-1	Original present	No original
	3	ADF/RADF original tray width sensor-2	Original present	No original
	2	RADF original tray width sensor-3	Original present	No original
	1	RADF original width detection sensor-1	Original present	No original
	0	RADF original width detection sensor-2	Original present	No original
P1	7	-	-	-
	6	PFP upper drawer detection switch	Drawer not installed	Drawer present
	5	-	-	-
	4	PFP upper drawer feed sensor	Paper present	No paper
	3	PFP connection	Connected	Not connected
	2	PFP side cover opening/closing switch	Cover opened	Cover closed
	1	PFP upper drawer empty sensor	No paper	Paper present
	0	PFP upper drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
P2	7	-	-	-
	6	PFP lower drawer detection switch	Drawer not installed	Drawer present
	5	-	-	-
	4	PFP lower drawer feed sensor	Paper present	No paper
	3	PFP lower drawer empty sensor	No paper	Paper present
	2	PFP lower drawer tray-up sensor	Tray at upper limit position	Other than upper limit position
	1	ADU connection	Not connected	Connected
	0	ADU entrance sensor	Paper present	No paper

**[E] 05. SRAM TEST**

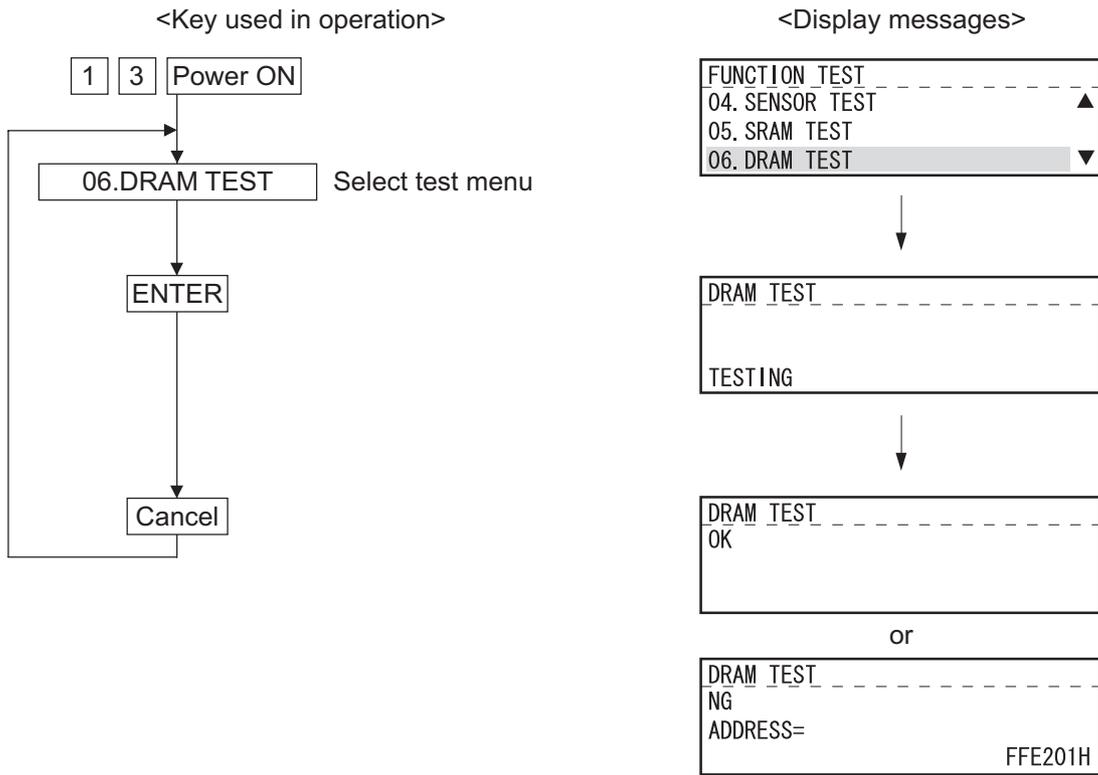
The read/write test is performed throughout the image memory. The test checks the whole SRAM. When an error is found, the address of the erroneous portion is displayed and the test is stopped.



**Fig. 2-10**

**[F] 06. DRAM TEST**

The read/write test is performed on the DRAM. When an error is found, the address of the erroneous portion is displayed and the test is stopped.



**Fig. 2-11**

**[G] 07. CLOCK IC TEST**

After programming the fixed date and time on the clock IC, the test reads the programmed date and time and checks whether or not they are correct.

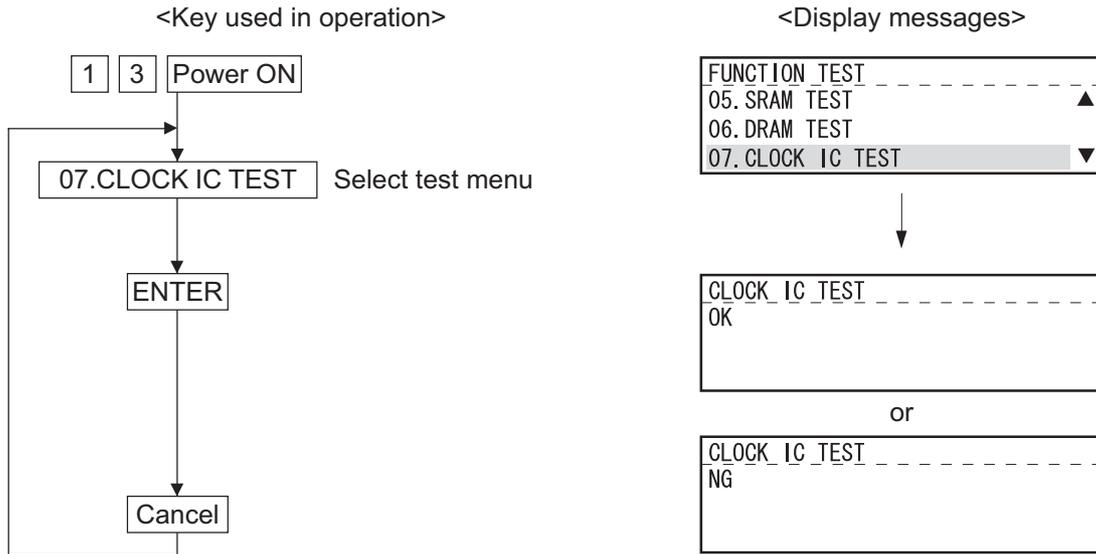


Fig. 2-12

**[H] 08. SCANNER TEST**

The read/write test is performed on the RAM built in the image processing LSI.

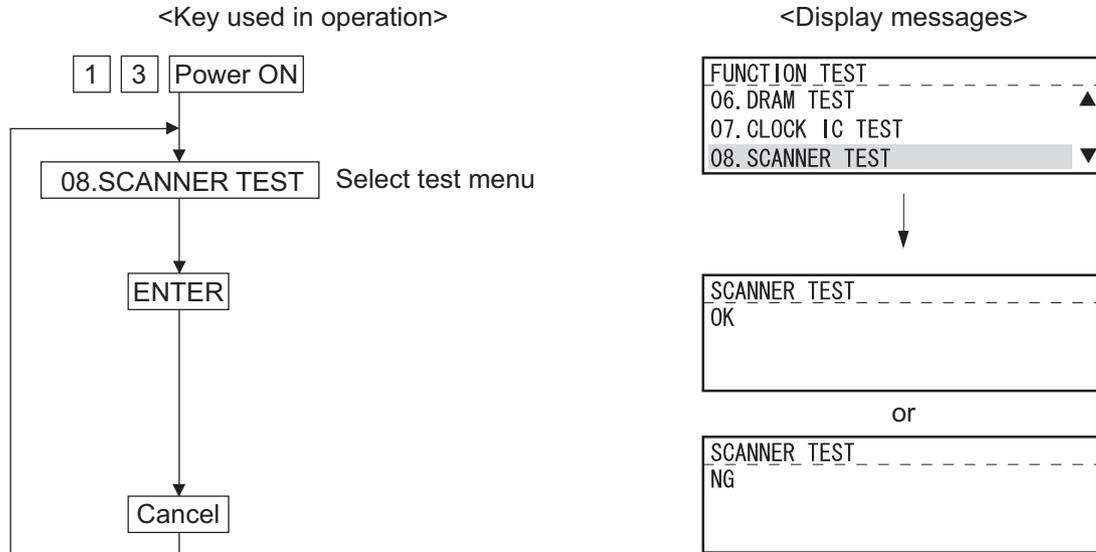


Fig. 2-13

## [I] 09. CODEC TEST

The test encodes data of 10 lines using the MH coding, decodes it and compares it with the original data.

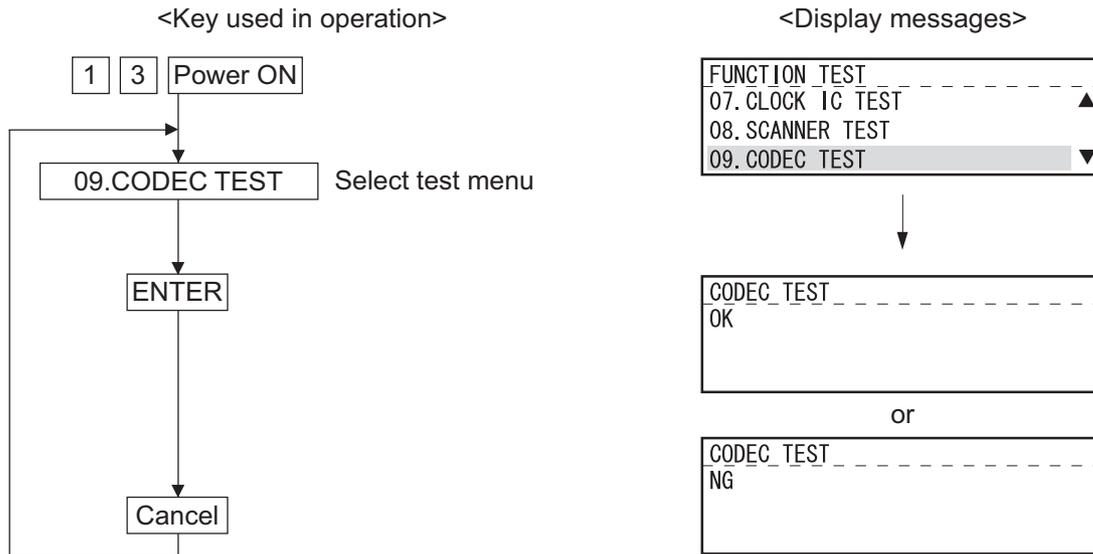


Fig. 2-14

## [J] 10. OUTPUT TEST

This test checks the operation of the motor, clutch and fan separately.

This test can check the operations of two or more parts at the same time. For example, the motor is tuned on while the clutch is on.

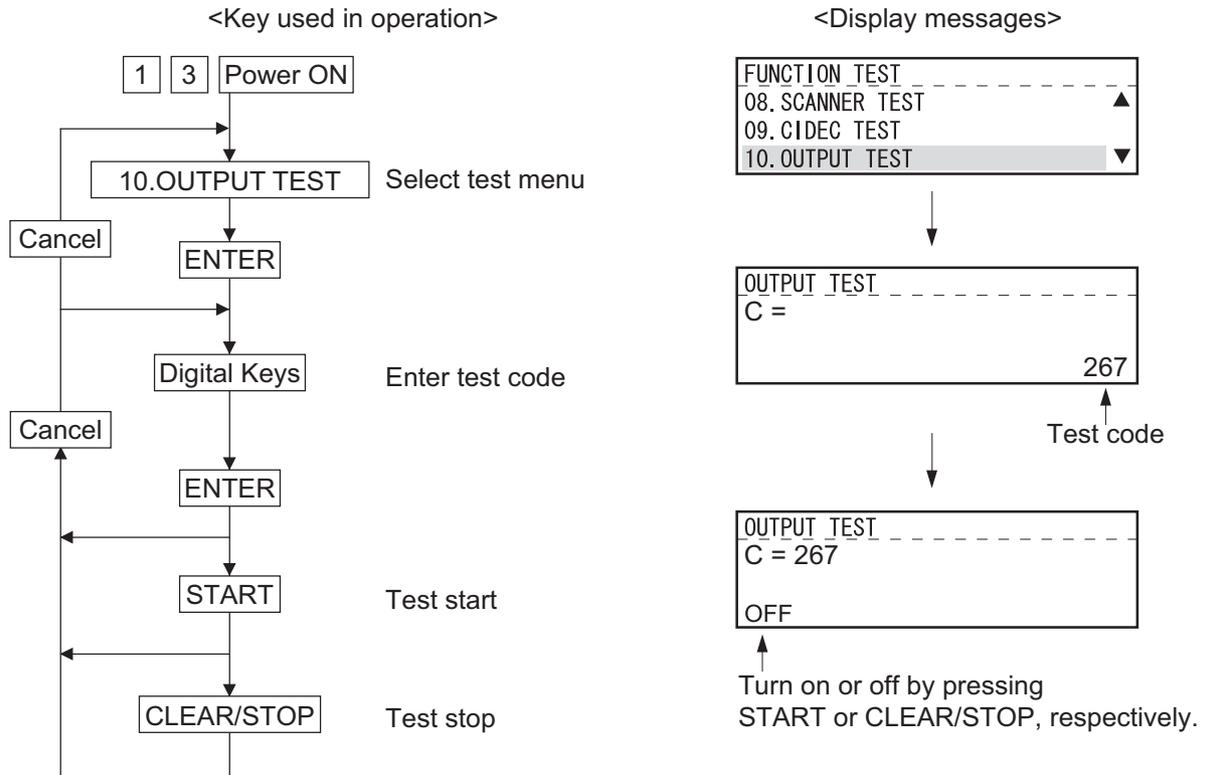


Fig. 2-15

## OUTPUT TEST ITEMS

Code	Function	Code	Function
101	Main motor ON (operational without developer unit)	151	Code No. 101 function OFF
102	Toner motor ON (normal rotation)	152	Code No. 102 function OFF
103	Polygonal motor ON (600 dpi)	153	Code No. 103 function OFF
108	Registration clutch ON	158	Code No. 108 function OFF
109	PFP motor ON	159	Code No. 109 function OFF
110	ADU motor ON (low speed)	160	Code No. 110 function OFF
118	Laser ON	168	Code No. 118 function OFF
120	Exit motor ON (normal rotation)	170	Code No. 120 function OFF
121	Exit motor ON (reverse rotation)	171	Code No. 121 function OFF
201	Pickup solenoid ON/OFF		
202	PFU pickup solenoid ON/OFF		
203	PFU transport clutch (high speed) ON/OFF		
204	Bypass pickup solenoid ON/OFF		
205	PFU transport clutch (low speed) ON/OFF		
218	Key copy counter count up		
225	PFP transport clutch ON/OFF		
226	PFP upper drawer feed clutch ON/OFF		
228	PFP lower drawer feed clutch ON/OFF		
235	Discharge LED ON/OFF		
236	Exhaust fan ON/OFF (low speed)		
237	Exhaust fan ON/OFF (high speed)		
249	Developer bias [-DC] ON/OFF		
252	Main charger ON/OFF		
253	Separation bias ON/OFF		
255	Transfer guide bias ON/OFF		
256	Transfer transformer ON/OFF		
261	Scan motor ON (Automatically stops at limit position; speed can be changed with the [ZOOM] button)		
267	Contact image sensor Unit ON/OFF		
278	PFP upper drawer tray-up motor ON (tray up)		
280	PFP lower drawer tray-up motor ON (tray up)		
281	ADF/RADF feed motor ON/OFF (normal rotation)		
282	ADF/RADF feed motor ON/OFF (reverse rotation)		
283	ADF/RADF read motor ON/OFF (normal rotation)		
284	ADF/RADF reverse motor ON/OFF (normal rotation)		
285	ADF/RADF reverse motor ON/OFF (reverse rotation)		
411	Switching regulator cooling fan high speed rotation / low speed rotation		

**[K] 11. PRINTER BOARD TEST**

The test checks whether or not the printer board operates normally, by exchanging simple commands with the network printer board.

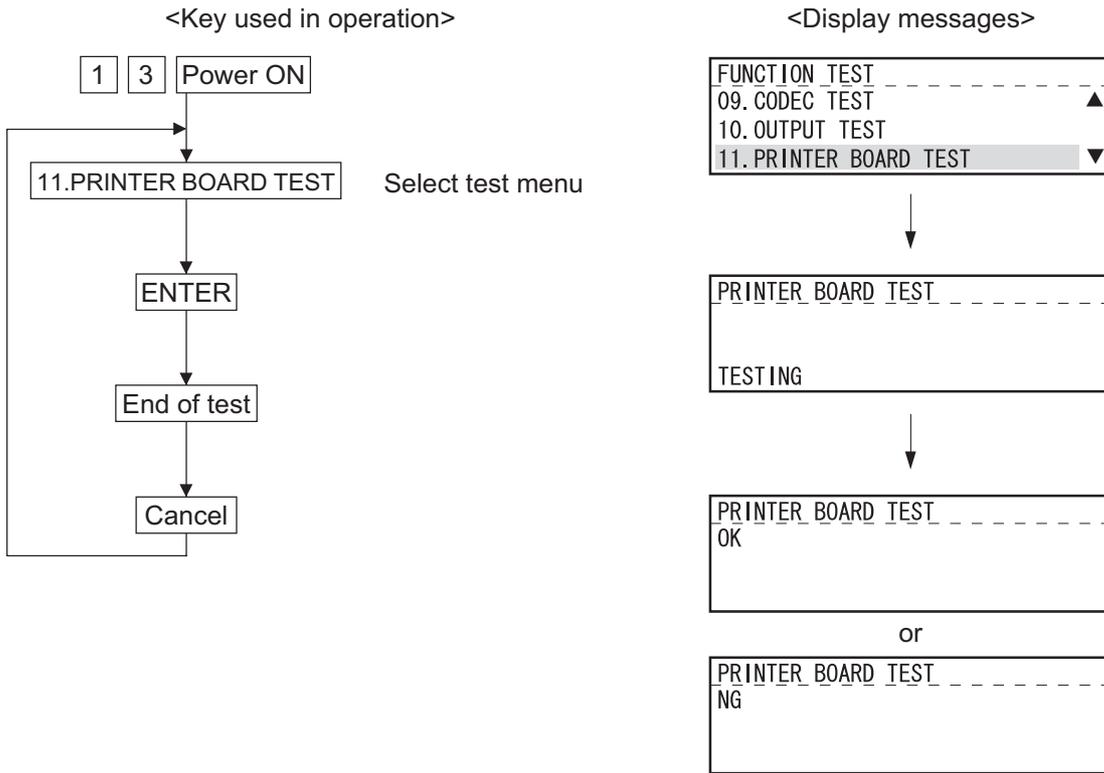


Fig. 2-16

## [L] 12. USB MEMORY TEST

This test checks whether or not the USB storage device connected to the USB connector (host) on the GA-1190 control PC board can be used.

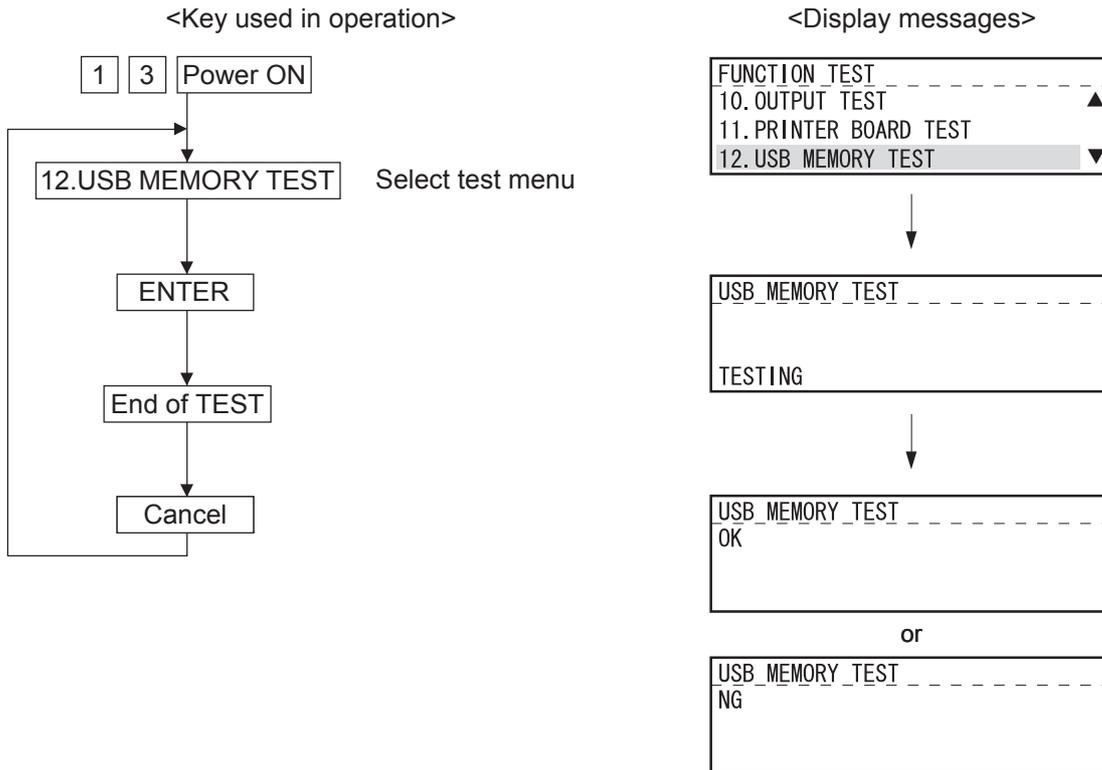


Fig. 2-17

### [M] 13. CF TEST

This test checks whether or not the compact flash of the GA-1200 operates normally.

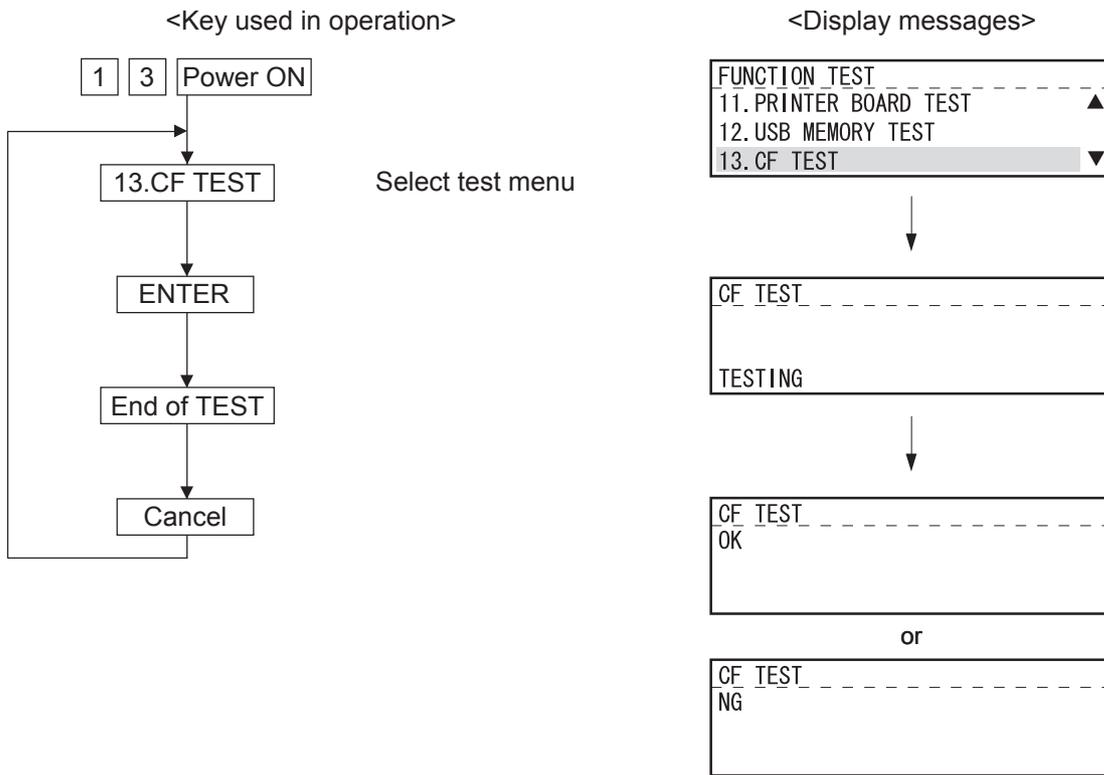


Fig. 2-18

## 2.2.4 AUTO TEST

This mode allows the user to independently diagnose the machine by automatically performing a series of tests.

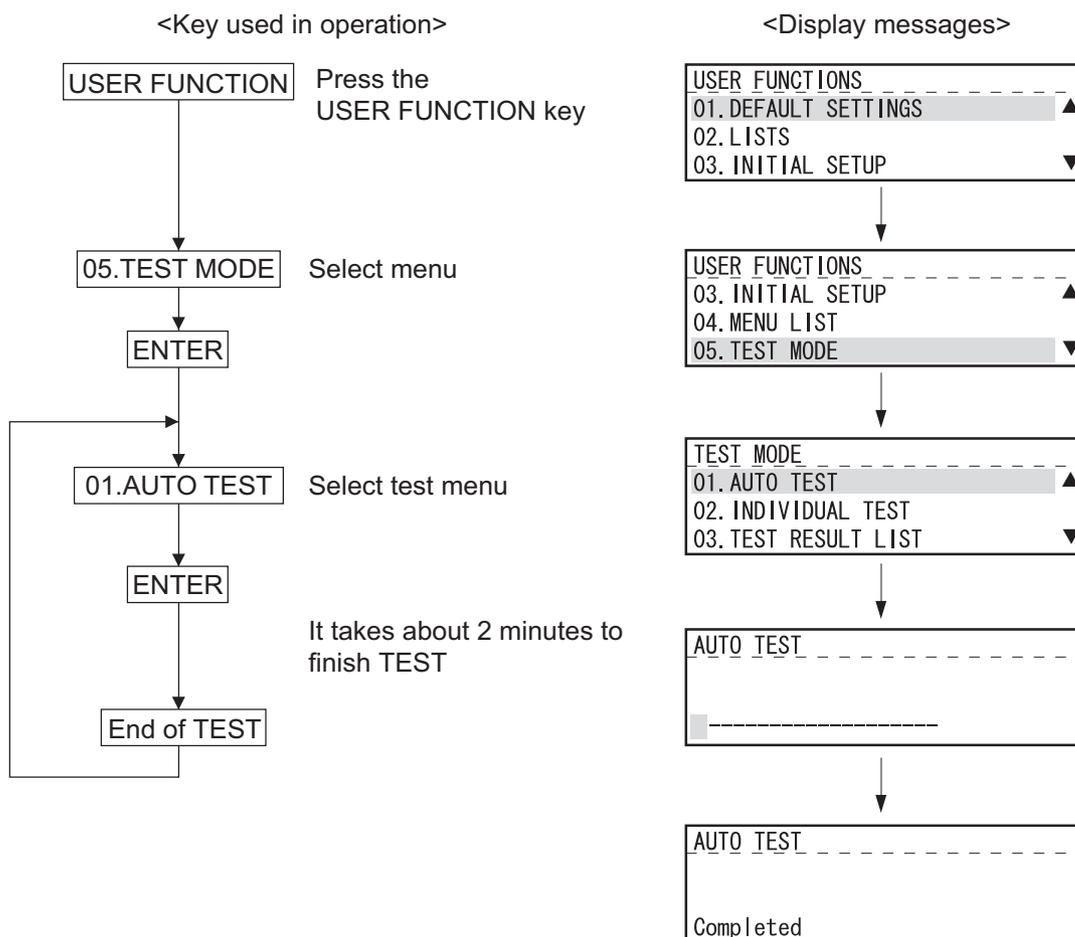


Fig. 2-19

### Test Items

a) Flash ROM test	Calculates and compares the check sums of the firmware, function data and language information with the previously stored corresponding check sum values.
b) SRAM test	Same as Function Test.
c) DRAM test	Same as Function Test.
d) MODEM test	Same as Function Test.
e) SCANNER test	Same as Function Test.
f) CODEC test	Same as Function Test.
g) Printer test	Checks each part of the printer (fan, HVPS, polygon, heater, LSU) and prints one page of test pattern (not performed when there is no paper).
h) Phonebook data test	Calculates and compares the check sum of the phonebook with the previously stored check sum value.

## 2.2.5 INDIVIDUAL TEST

The user can perform a test in interactive mode and locate the faulty point from the test result. The test result is printed in the form of a report.

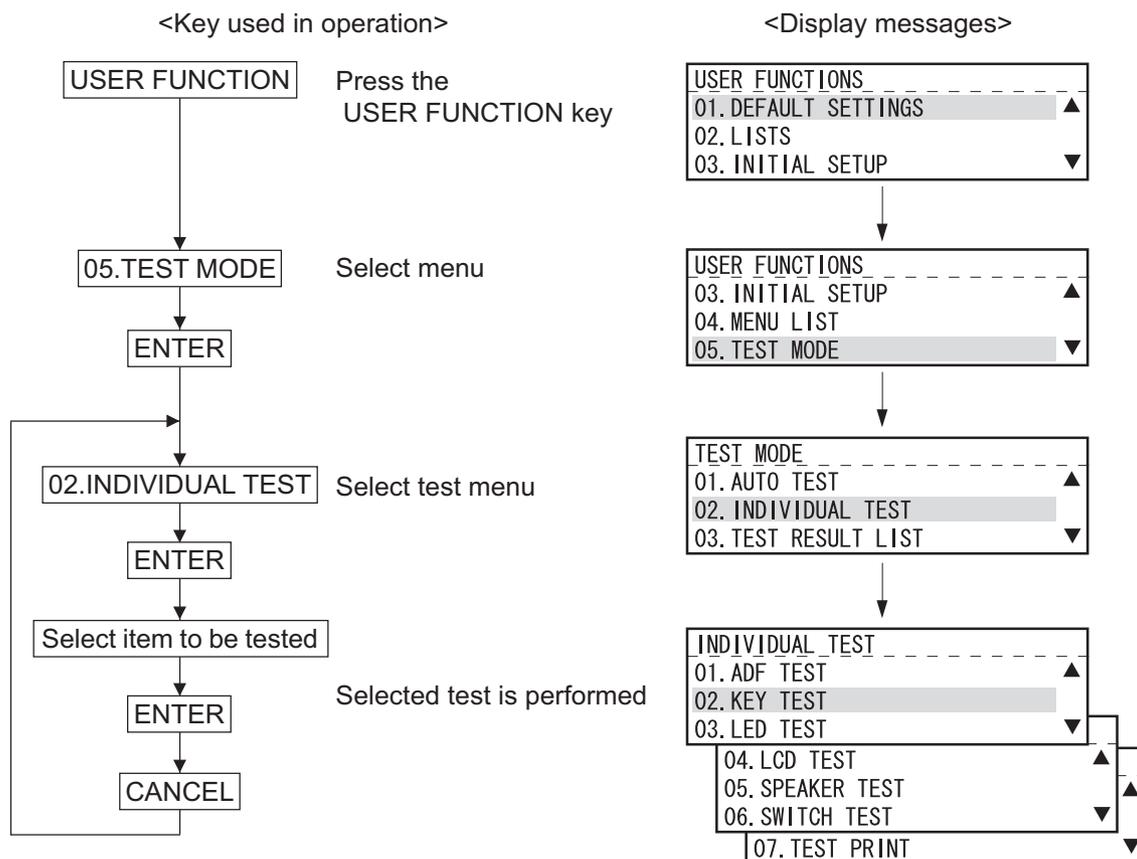


Fig. 2-20

### Test Items

a) ADF test	Transports and ejects originals to check the transport system. Transports and ejects a certain number of originals and displays the number of the originals. The tester checks that this value matches the number of the originals. A transport speed can be selected with the resolution key.
b) Key test	Press all the keys on the operation panel to check if they are detected normally. The key test ends when the STOP key is pressed in the end. If there is any key which is not detected when pressed before the STOP key is pressed, it will be judged to be an error.
c) LED test	When the test is performed, all the LEDs will come on. If there is any LED which is not lit when visually checked, it will be judged to be an error.
d) LCD test	All the dots on the display go off (turn black). When the Start key is then pressed, all the dots light (turn white). If there is any dot which does not light or go off when visually checked, it will be judged to be an error.
e) Speaker test	Check that the volume level from the speaker changes.
f) Sensor test	Sensor test. Open and close the covers by following the guidance appearing on the display.
g) Printer test	Checks the printer function by printing two test patterns.

## 2.2.6 TEST RESULT LIST

Prints the results of P. 2-100 "2.2.4 AUTO TEST" and P. 2-101 "2.2.5 INDIVIDUAL TEST".

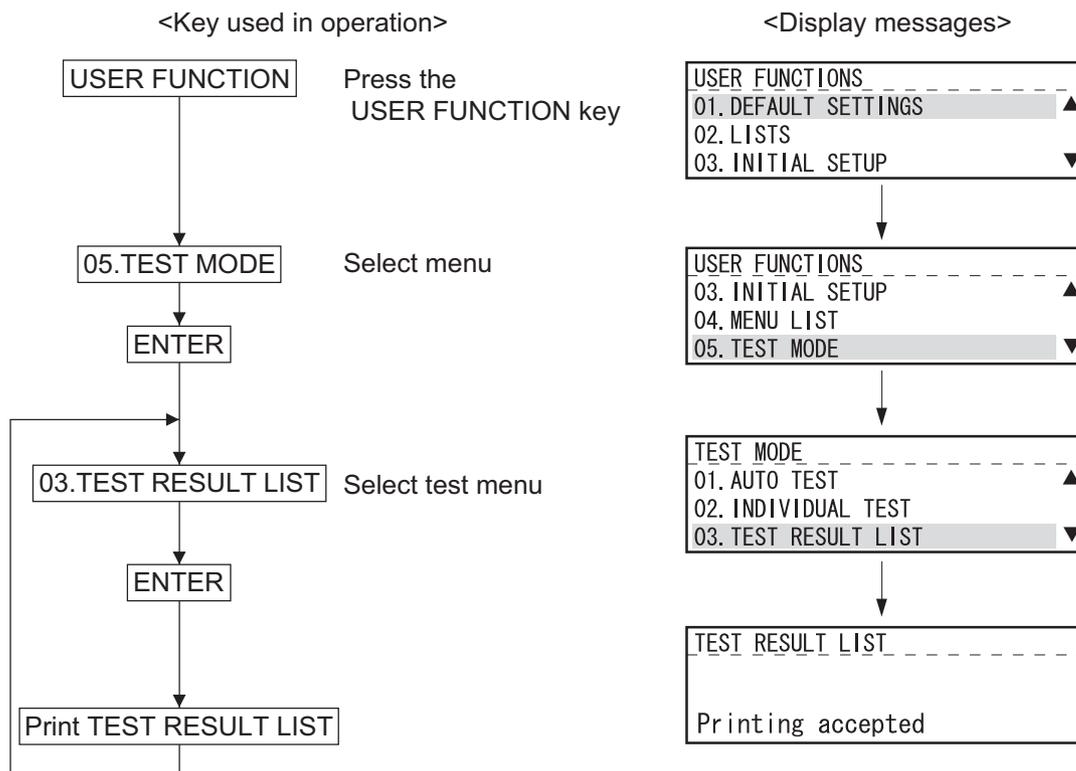


Fig. 2-21

If there is any NG in the RESULT column, the corresponding test is problematic. An test with an asterisk (\*) cannot be executed unless the corresponding option is installed.

SELF TEST REPORT			
			XXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXX XXXXX
	PAGE	:	001
	TIME	:	MMM-DD-YYYY 00:00AM
	TEL NUMBER	:	
	NAME	:	
TEST CONTENTS	RESULT	NOTE	DATE
AUTO TEST			
FLASH ROM			
PROGRAM	OK		MMM-DD-YYYY 00:00AM
FUNCTION	OK		MMM-DD-YYYY 00:00AM
LANGUAGE	OK		MMM-DD-YYYY 00:00AM
SRAM			
ADDRESS BUS	OK		MMM-DD-YYYY 00:00AM
			MMM-DD-YYYY 00:00AM
			MMM-DD-YYYY

Fig. 2-22

## 2.2.7 Function test

The function test checks each function of the equipment.

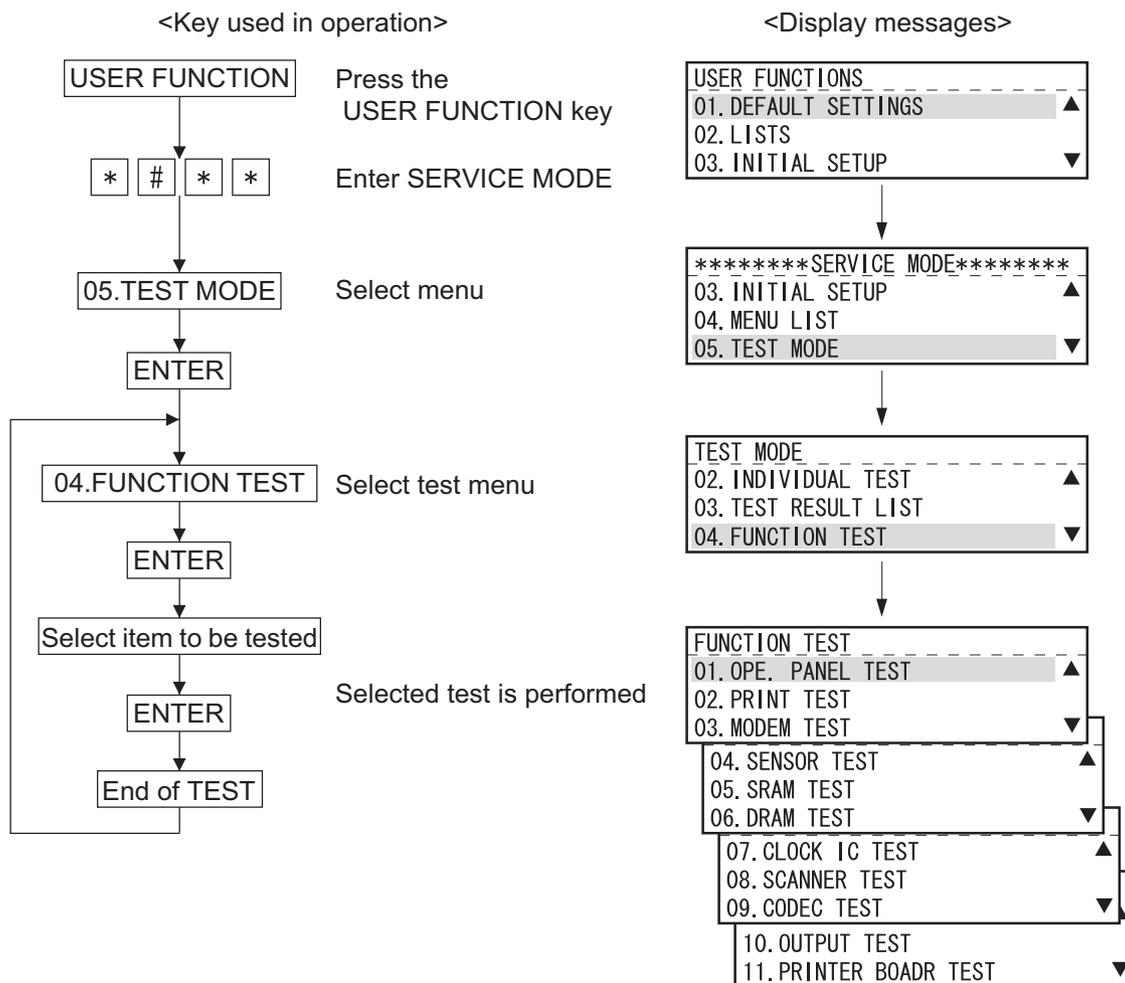


Fig. 2-23

Procedure is same as that of P. 2-83 "2.2.3 Function test"

## 2.2.8 MAINTENANCE

### [A] MEMORY CLEAR

There are two ways to perform memory clear; the power on while pressing the specified keys, and partial memory clear by selecting items to be cleared from the menu.

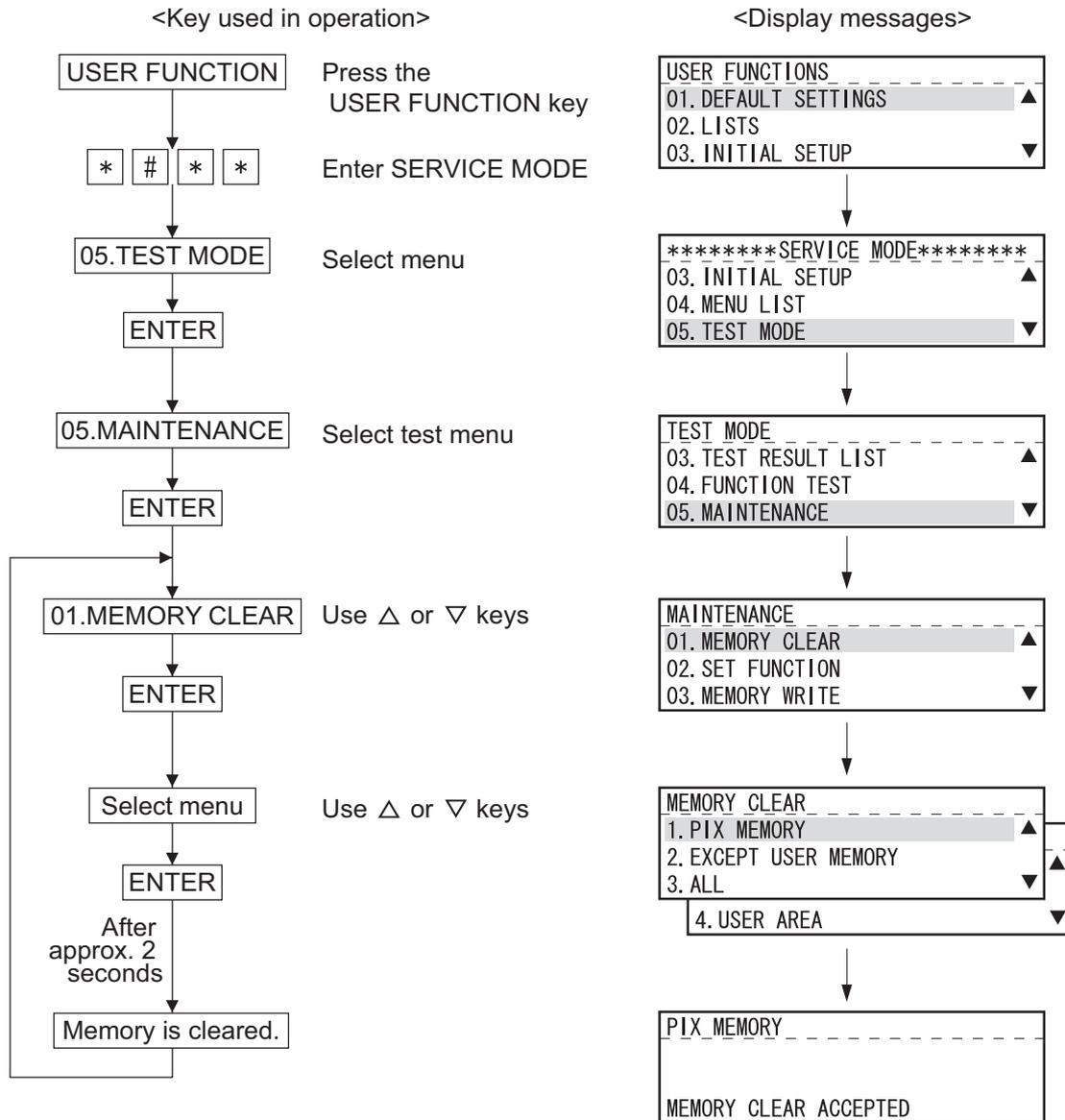


Fig. 2-24

## RAM clear table

	1. PIX MEMORY	2. EXCEPT USER MEMORY	3. ALL <sup>*1</sup> (Same as [1] + [3] + [*]+[POWER]ON)	4. USER AREA <sup>*1</sup>
FUNC/SYSFUNC/UAD etc.		Set default value	Set default value	
Adjustment mode (05)				
Setting mode (08)			Set default value <sup>*e</sup>	
Journal report data		Clear	Clear	
Error data on FAX communication		Clear	Clear	
Protocol trace data			Clear	
Counter data <sup>*a</sup>				
Drum related data <sup>*b</sup>				
Dial data <sup>*c</sup>			Clear	Clear
One touch data			Clear	Clear
Department code data			Clear	Clear
Secure receive data			Clear	Clear
Station name			Clear	Clear
ID number			Clear	Clear
Password <sup>*d</sup>			Clear	Clear
Pending FAX job data	Clear	Clear	Clear	Clear
Stored JOB data			Clear	

\*1: RAM clear may take more than 10 seconds. Note that the error (Broken Registration) results if the power is turned off during RAM clear.

\*a: Total Scan, Print jam, Job counter, Counter for each paper size

\*b: Total Print, Drum counter, Toner counter, etc.

\*c: One touch, Speed, Group etc.

\*d: Polling Password

\*e: Counter values and Process values of the 08 codes are not reset.

## [B] SET FUNCTION

Refer to the Service Handbook (GD-1220/1221).



## 2.2.9 SERVICE LIST

This function allows you to print lists. There are four kinds of lists that can be printed.

- PROTOCOL TRACE \*1
- TOTAL ERRORS \*1
- FUNCTION (FUNC 05, 08 List)
- MEMORY DUMP

\*1: To be printed when the FAX Kit (GD-1220/1221) is installed.

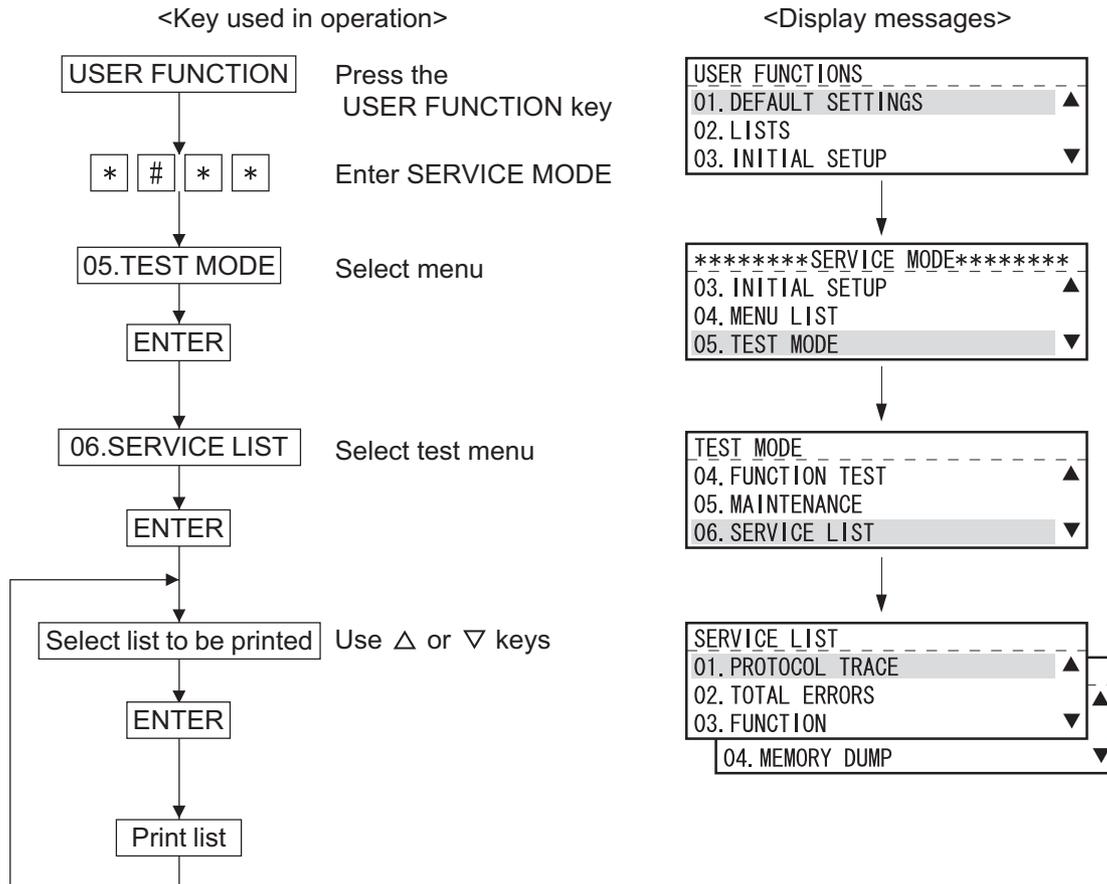


Fig. 2-26

### [A] PROTOCOL TRACE

Refer to the Service Handbook (GD-1220/1221).

### [B] TOTAL ERRORS

Refer to the Service Handbook (GD-1220/1221).

**[C] FUNCTION (FUNC, 05, 08 List)**

This list is printed out with a title of SETTING REPORT FOR MAINTENANCE. It prints a list of present function settings.

Print Items

- 1st Sheet

COUNTRY/REGION	Country/Region code
FUNC 0 to 39	Prints the settings at this point of time in binary format.
PC FUNC 0 to 7	↓
HOME 0 to 2	↓
UAD 0 to 19	↓
EX TYPE 1	↓
ACC DGT 1 to 2	↓

- 2nd Sheet

05 xxx	Prints the set values at this point of time.
08 xxx	↓
(xxx is code number.)	

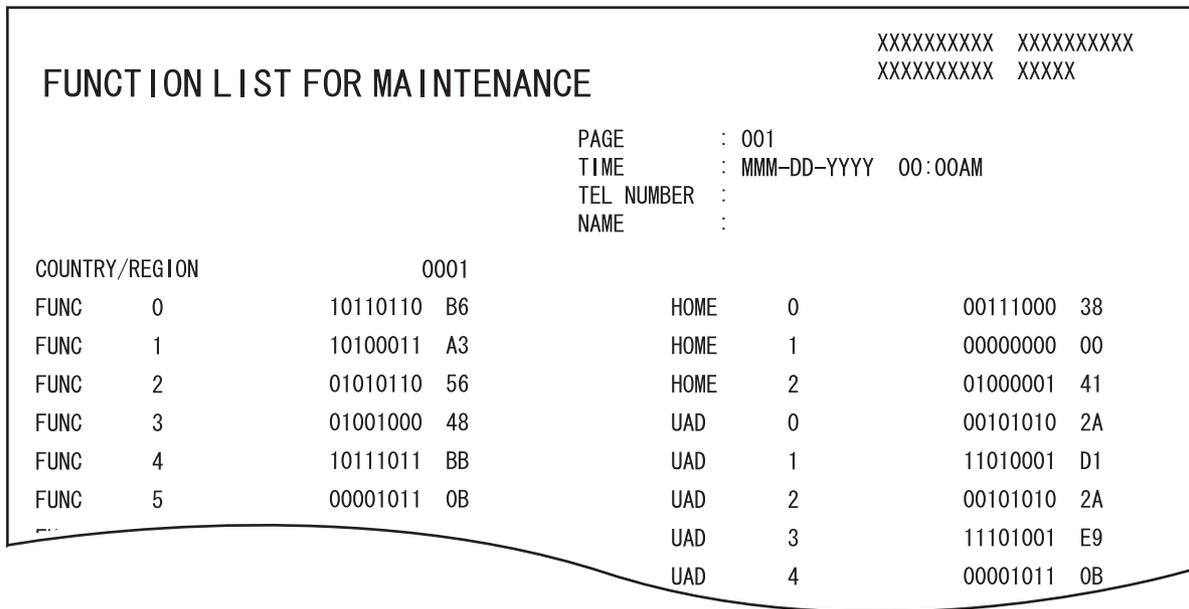


Fig. 2-27

**[D] MEMORY DUMP LIST**

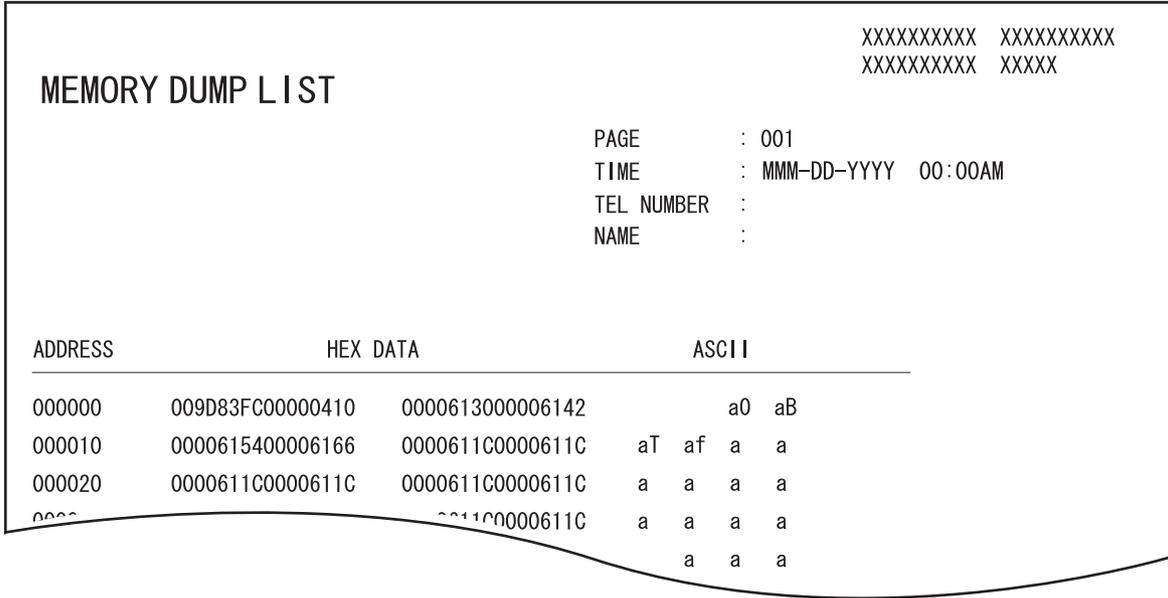
A list of dumped RAM data is printed. Designate a start address (6-digit) and size (4-digit) and press SET for printing.

**Print Data**

- ADDRESS** Memory dump start address. The last digit is always "0." \*1
- HEX** The data in memory is printed in hexadecimal. The last digit is always "0." \*2
- ASCII** Data obtained by converting the data in memory into ASCII code.

**Note:**

- \*1: The last digit is discarded when other than "0."
- \*2: The last digit is rounded up when other than "0."



**Fig. 2-28**

## 2.2.10 FUNCTION (Jam counter ROM ver.)

Press the USER FUNCTIONS key and enter the SERVICE MODE. Then, select LISTS and print a function list so that the user set information will be printed on the first sheet, and the jam counter on the second sheet.

The same data as printed in Chap. 2.2.9 [C] is printed on the third and fourth sheets.

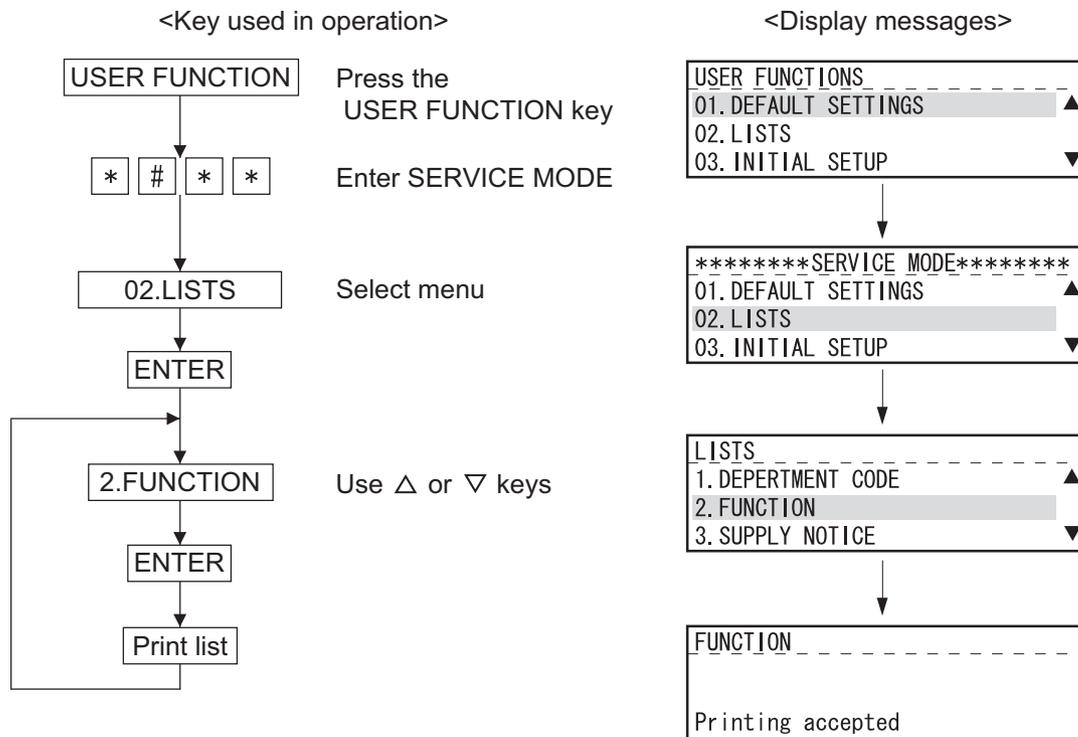


Fig. 2-29

### Print Data (PAGE:002)

#### JAM COUNTER DOCUMENT PAPER

JAM COUNTER	Jam information
DOCUMENT	Jammed original count
PAPER	Total count of TYPE1 to 7
TYPE1 JAM	Jam inside the equipment (at or near the paper feeding section)
TYPE2 JAM	Jam inside the equipment (at or near the center section)
TYPE3 JAM	Jam inside the equipment (at or near the paper exit section)
TYPE4 JAM	Jam at the option (paper feed)
TYPE5 JAM	Jam between the option and the equipment (at the transport path)
TYPE6 JAM	Cover open jam (during copying)
TYPE7 JAM	Other paper jams

#### FLASH ROM PROGRAM FUNCTION LANGUAGE SCANNER

FLASH ROM	Version information
PROGRAM	System firmware version <T28xSY0xxxx> and creation date
FUNCTION	Function table data version <T28xSY1xxxx> and creation date
LANGUAGE	Language data version <T28xSY2xxxx> and creation date
SCANNER	Scanner (ADF/RADF) version <Vxxxx>

```

XXXXXXXXXX XXXXXXXXXXXX
XXXXXXXXXX XXXXX

FUNCTION LIST

PAGE      : 002
TIME      : MMM-DD-YYYY 00:00AM
TEL NUMBER :
NAME      :

JAM COUNTER
DOCUMENT      : 072932
PAPER         : 486980
  TYPE1 JAM   : 922499
  TYPE2 JAM   : 694437
  TYPE3 JAM   : 226349
  TYPE4 JAM   : 951775
  TYPE5 JAM   : 563441
  TYPE6 JAM   : 673012
  TYPE7 JAM   : 390059

PROGRAM       : T282SY0xxxx
              : MMM-DD-YYYY
FUNCTION      : T282SY1xxxx
              : MMM-DD-YYYY
LANGUAGE     : T282SY2xxxx
              : MMM-DD-YYYY
SCANNER      : Vxxxx

```

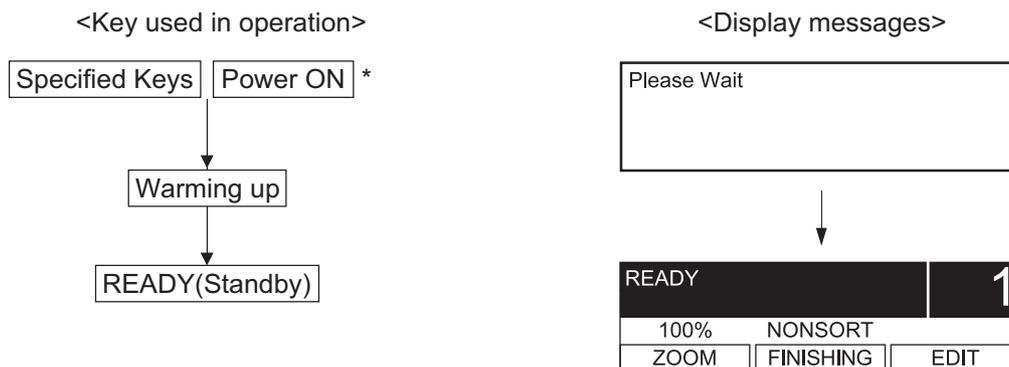
Fig. 2-30

## 2.2.11 RAM clear

There are two methods to perform RAM clear: turning the power ON while pressing the specified keys, and clearing the partial memory by selecting items to be cleared from the menu.

Follow the procedure below to clear the RAM by selecting items to be cleared from the menu, Refer to P. 2-105 "[A] MEMORY CLEAR"

### < RAM clear by turning the power ON >



\* : Continue pushing the key until "Please wait" message is displayed. Moreover, do not turn off the power supply.

Fig. 2-31

RAM clear table

	[1]+[3]+[*]+ [POWER] *1,2	[1]+[3]+[#]+ [POWER] *1	[*]+[#]+ [POWER] *1	[START]+ [STOP]+ [POWER] *1	[0]+ [2]+ [POWER]	[1]+[2]+[*]+ [POWER] *3
FUNC/SYSFUNC/ UAD etc.	Set default value			Set default value	Set default value	
Adjustment mode (05)						
Setting mode (08)	Set default value *4			Set default value *4	Set default value *4	
Journal report data	Clear		Clear		Clear	
Error data on FAX communication	Clear		Clear		Clear	
Protocol trace data	Clear	Clear	Clear	Clear	Clear	
Counter data *a		Clear				
Drum related data *b						
Dial data *c	Clear				Clear	Clear
One touch data	Clear				Clear	Clear
Department code data	Clear				Clear	
Secure receive data	Clear				Clear	
Station name	Clear				Clear	
ID number	Clear				Clear	
Password *d	Clear				Clear	
Pending FAX job data	Clear		Clear		Clear	
Stored JOB data	Clear			Clear	Clear	

\*1: When RAM clear is performed, no message is indicated on the LCD.  
Once RAM clear has been completed, "Please wait" appears on the LCD.

**Note:**

In the equipment with the Scanner Upgrade Kit (GA-1200) installed, do not turn the power OFF within one minute after the message is changed from "Please wait" to "READY" when the RAM clear is started by turning the power ON while pressing [1], [3] and [\*] simultaneously.

\*2: RAM clear may take more than 10 seconds. Note that the error (Broken Registration) results if the power is turned off during RAM clear.

\*3: When the TELBOOK board of the external keyboard (GJ-1040) has been installed, clear its RAM.

\*4: Counter values and Process values of the 08 codes are not reset.

\*a: Total Scan, Print jam, Job counter, Counter for each paper size

\*b: Total Print, Drum counter, Toner counter, etc.

\*c: One touch, Speed, Group etc.

\*d: Polling Password

## 2.2.12 Country/Region code

Setting for the country or region code  
Input the code according to the following table.

Model	Code (Default)	
	e-STUDIO165/205	e-STUDIO167/207/237
NAD	1	1
AUD	-	61
ASU/SYD/SAD	-	65
CND	86	86
ASD	-	852
TWD	886	886
ARD	-	55
KRD	82	82
MJD	44	44

### Important:

When the FAX kit (GD-1220/1221) is not installed, do not input the code except ones in the above table.

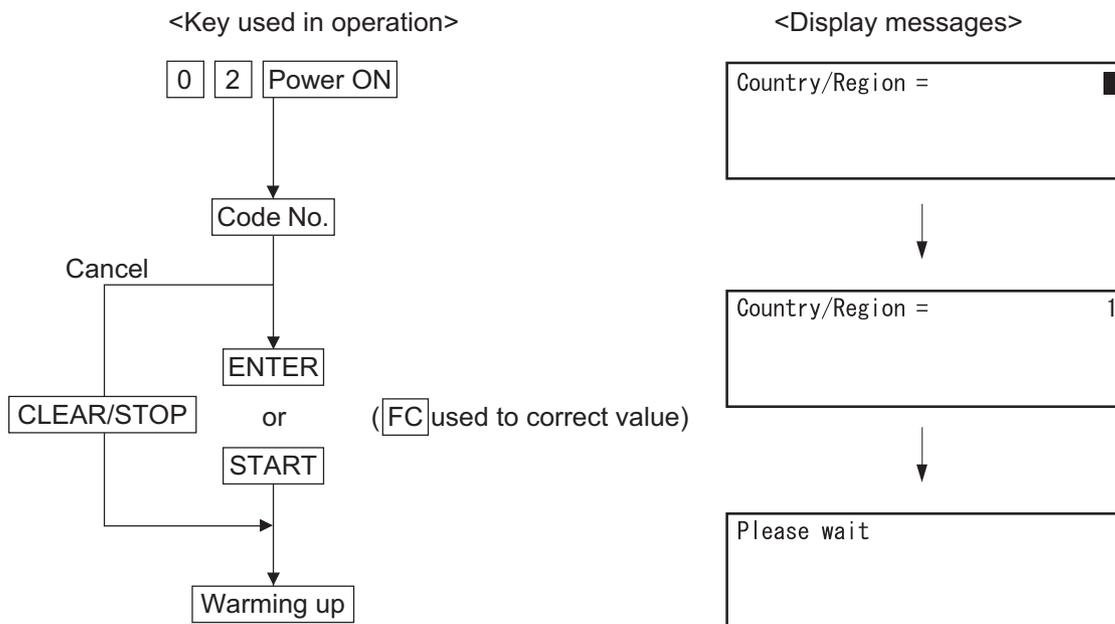


Fig. 2-32

### Note:

When the FAX kit (GD-1220/1221) is installed, refer to the Service Handbook (GD-1220/1221).



### 3. ADJUSTMENT

#### 3.1 Adjustment of Auto-Toner Sensor

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

<Procedure> (Adjustment Mode (05-200))

- (1) Install the process unit into the equipment.

**Note:**

Do not install the toner cartridge.

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

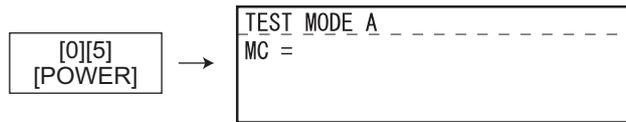


Fig. 3-1

- (3) Key in code [200] and press the [ENTER] button.  
The display changes as follows and the “density LEDs” lights from the left in order.

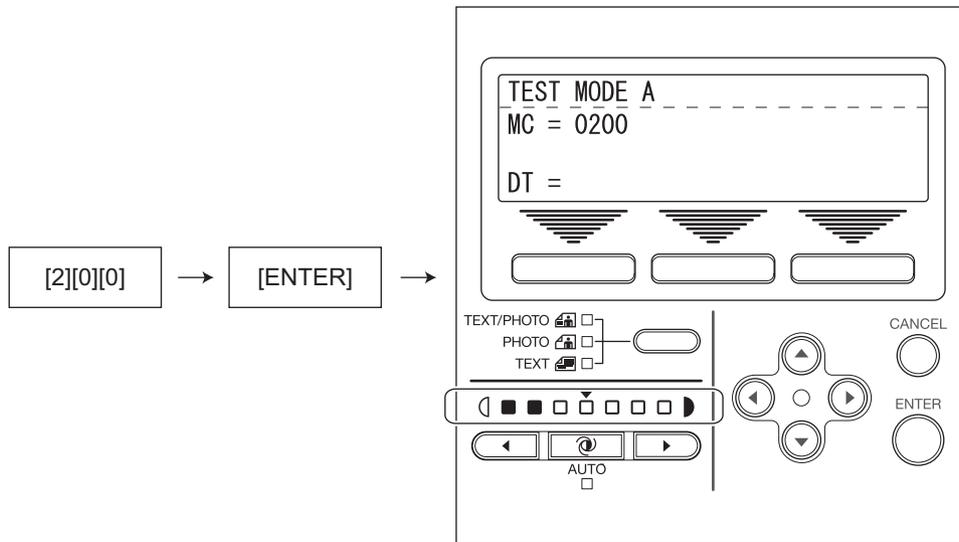


Fig. 3-2

- (4) After about 2 minutes, all the “density LEDs” light and a value in the DT column on the display automatically starts changing.

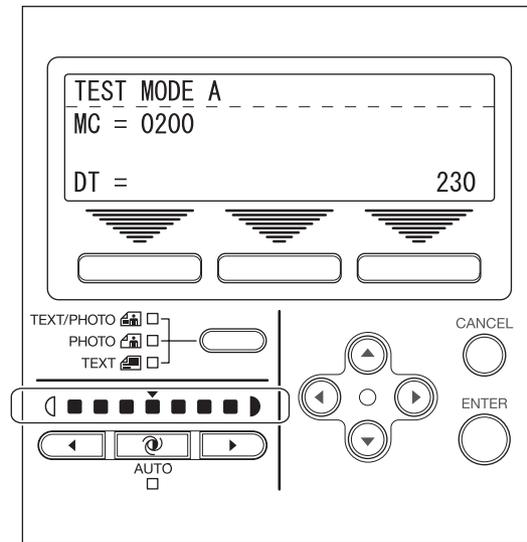


Fig. 3-3

**Note:**

The output voltage of the auto-toner sensor (2.30 V in the above case).  
The drum, developer unit, etc. are in operation.

- (5) After a short time, the value in the DT column on the display becomes stable and all the “density LEDs” are turned off.
- (6) Check if the value in the DT column on the display is within the range of 232 to 248 (i.e. the output voltage range of the auto-toner sensor is 2.32 V to 2.48 V.).
- (7) If the value is not within the range of 232 to 248, press the Up or Down button to adjust the value manually.
- (8) Press the [ENTER] button.  
The drum, developer unit, etc. are stopped and the following is displayed.

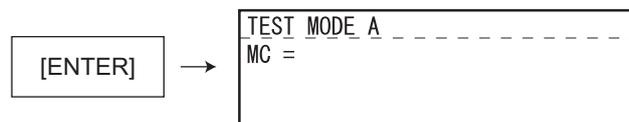


Fig. 3-4

- (9) Turn the power OFF.
- (10) Install the toner cartridge.

## 3.2 Image Dimensional Adjustment

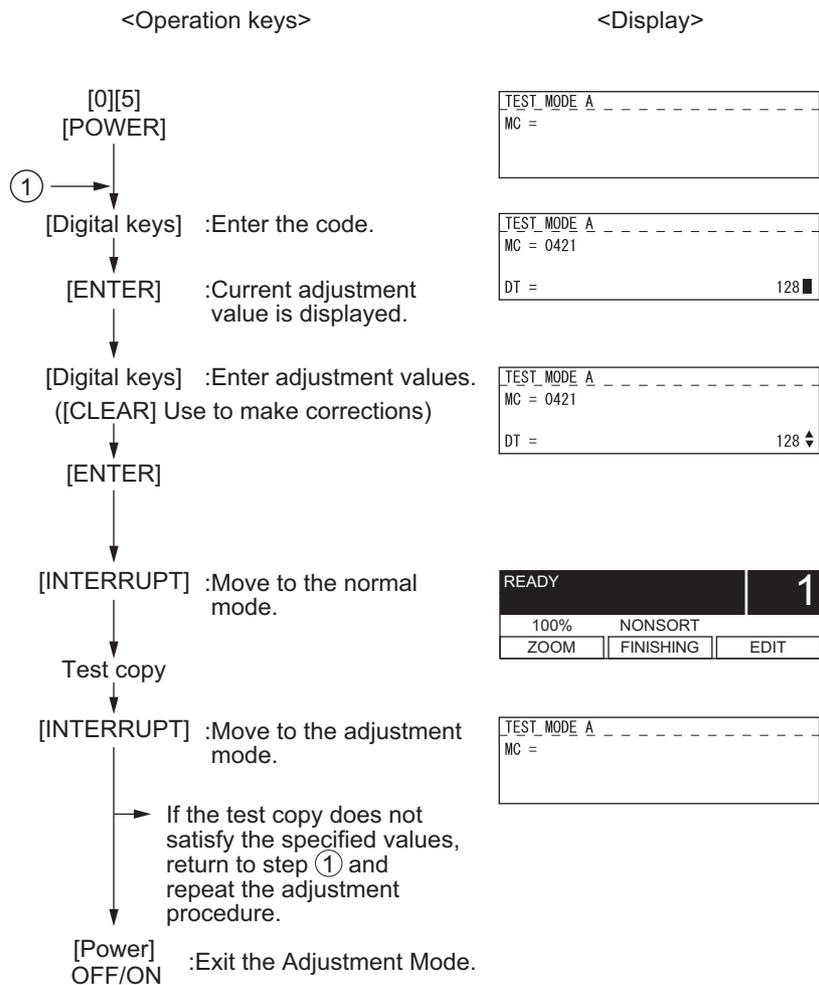
### 3.2.1 General description

There are several adjustment items in the image dimensional adjustment, as listed below. 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	450, 451, 448, 449, 455, 474, 458, 460, 461, 462, 463, 464	
2	Printer related adjustment	(a) Reproduction ratio of primary scanning direction (Fine adjustment of polygonal motor rotation speed)	401
		(b) Primary scanning data laser writing start position	411
		(c) Reproduction ratio of secondary scanning direction (Fine adjustment of main motor rotation speed)	421
		(d) Secondary scanning data laser writing start position	441, 440, 442, 444, 445
3	Scanner related adjustment	(a) Reproduction ratio of primary scanning direction	405
		(b) Image location of primary scanning direction	306
		(c) Reproduction ratio of secondary scanning direction	340
		(d) Image location of secondary scanning direction	305
		(e) Top margin	430
		(f) Right margin	432
		(g) 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.



**Fig. 3-5**

### 3.2.2 Paper alignment at the registration roller

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

Paper type	Weight	Drawer	PFU	PFP upper drawer	PFP lower drawer	ADU	Bypass feed
Plain paper	64-80 g/m <sup>2</sup> 17-20 lb.	450 (*1)	451 (*1)	448 (*1)	449 (*1)	455 (*1)	458 (*1)
Thick paper 1	81-105g/m <sup>2</sup> 21-28 lb.	-	-	-	-	474 (*1)	460 (*1)
Thick paper 2	106-163g/m <sup>2</sup> 29-43 lb.	-	-	-	-	-	461 (*1)
Thick paper 3	164-209g/m <sup>2</sup> 44-55 lb.	-	-	-	-	-	462 (*2)
OHP	-	-	-	-	-	-	463 (*3)
Envelope	-	-	-	-	-	-	464 (*4)

#### Sub-code

(\*1) 0: Long size 1: Middle size 2: Short size

(\*2) 0: Long size 1: Middle size 2: Short size 3: Post card

(\*3) 0: Long size of OHP film 1: Middle size of OHP film 2: Short size of OHP film

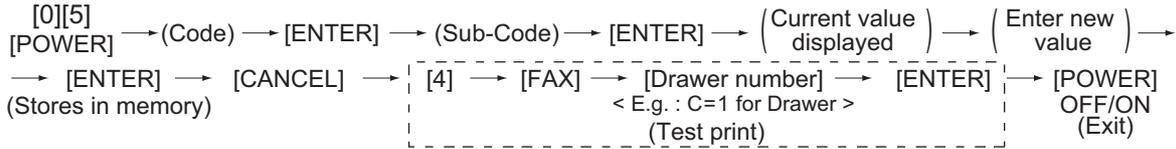
(\*4) 0: Long size of Envelope 1: Middle size of Envelope 2: Short size of Envelope

#### Notes:

1. Long size: 330 mm or longer (13.0 inches or longer)  
Middle size: 220-239 mm (8.7-12.9 inches)  
Short size: 219 mm or shorter (8.6 inches or shorter)
2. The adjustment of "Post card" is for Japan only.

<Procedure>

- (1) Perform the test print according to the following procedure.



- (2) Check if any transfer void is occurring. If there is a transfer problem, try the values in descending order as “31” → “30” → “29”... until the transfer void disappears. At the same time, confirm if any paper jam occurs. Also, when the aligning amount has been increased, this may increase the scraping noise caused by the paper and the Mylar sheet as it is transported by the registration roller. If this scraping noise is annoying, try to decrease the value.

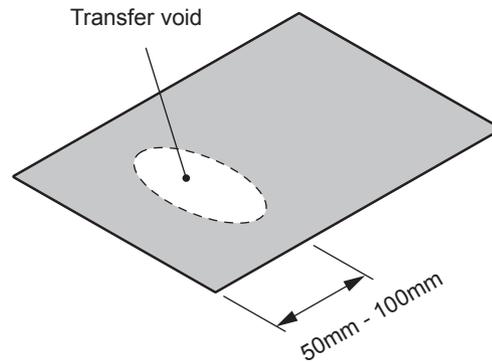


Fig. 3-6

- (3) Perform the same procedure for all paper sources.

**Note:**

When paper thinner than specified is used, paper jams may occur frequently at the registration section. In this case, it is advisable to change (or reduce) the aligning amount. However, if the aligning amount is reduced too much, this may cause the shift of leading edge position. So, when adjusting the aligning amount, try to choose the appropriate amount while confirming the leading edge position is not shifted.

\* As a tentative countermeasure, the service life of the feed roller can be extended by increasing the aligning amount.

### 3.2.3 Printer related adjustment

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

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [1] → [FAX] → [Drawer number] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from standard drawer of the equipment.)
- (3) Check the grid pattern on the test chart printed out and measure the distance A from the 1st line to the 21st line of the grid pattern.
- (4) Check if the distance A is within  $200 \pm 0.5$  mm.
- (5) If not, use the following procedure to change values and measure the distance A again.

(Adjustment Mode) → (Key in code [401]) → [ENTER]  
→ (Key in a value (acceptable values: 0 to 255))  
→ [ENTER] (Stored in memory) → [CANCEL] → "MC" is displayed  
→ Press [1] → [FAX] → Press [Drawer number] → [START]  
→ (A grid pattern is printed out.)

\* The larger the adjustment value is, the longer the distance A becomes (approx. 0.125 mm/step).

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

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [1] → [FAX] → [Drawer number] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from standard drawer of the equipment.)
- (3) Check the grid pattern on the test chart printed out and 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  $52 \pm 0.5$  mm.
- (5) If not, use the following procedure to change values and measure the distance B again.

(Adjustment Mode) → (Key in the code [411]) → [ENTER]  
→ (Key in a value (acceptable values: 0 to 255))  
→ [ENTER] (Stored in memory) → [CANCEL] → "MC" is displayed  
→ Press [1] → [FAX] → Press [Drawer number] → [START]  
→ (A grid pattern is printed out.)

\* The larger the adjustment value is, the longer the distance B becomes (approx. 0.05 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]) → [ENTER]  
→ (Key in the same value in the step 5 above)  
→ Press [ENTER] (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 main motor rotation speed (Copier/Printer))**

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment mode)
- (2) Press [1] → [FAX] → [Drawer number] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START]. (A grid pattern with 10 mm squares is printed out. Use A3/LD from standard drawer of the equipment.)
- (3) Check the grid pattern on the test chart printed out and measure the distance C from the 10th line at the leading edge of the paper to the 30th line of the grid pattern.  
\* Normally, the 1st line of the grid pattern is not printed.
- (4) Check if the distance C is within  $200 \pm 0.5$  mm.
- (5) If not, use the following procedure to change values and measure the distance C again.

(Adjustment Mode) → (Key in code [421]) → [ENTER]  
→ (Key in a value (acceptable values: 0 to 255))  
→ [ENTER] (Stored in memory) → [CANCEL] → "MC" is displayed  
→ Press [1] → [FAX] → Press [Drawer number] → [START]  
→ (A grid pattern is printed out.)  
\* The larger the adjustment value is, the longer the distance C becomes (approx. 0.125 mm/step).

### [D] Secondary scanning data laser writing start position

This adjustment has to be performed for each paper source. (If there is no paper source, skip this step.) The following table shows the order of the paper source to be adjusted, code, paper size and acceptable values.

Order for adjustment	Paper source	Code	Paper size	Acceptable value	Remarks
1	Drawer	440	A3/LD	0 to 40	
2	PFU	441	A4/LT	0 to 40	
3	PFP	444	A4/LT	0 to 15	
4	Bypass feed	442	A4/LT	0 to 15	
5	Duplexing	445	A3/LD	0 to 15	Paper fed from the drawer

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [1] → [FAX] → [Drawer number] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START]. (A grid pattern with 10 mm squares is printed out.)
- (3) Check the grid pattern on the test chart printed out and 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.
- (4) Check if the distance D is within  $50 \pm 0.5$  mm.
- (5) If not, use the following procedure to change values and measure the distance D again.

(Adjustment Mode) → (Key in the code shown above) → [ENTER]  
→ (Key in an acceptable value shown above)  
→ [ENTER] (Stored in memory) → [CANCEL] → "MC" is displayed  
→ Press [1] → [FAX] → Press [Drawer number] → [START]  
→ (A grid pattern is printed out.)

\* The larger the adjustment value is, the longer the distance D becomes (approx. 0.4 mm/step).

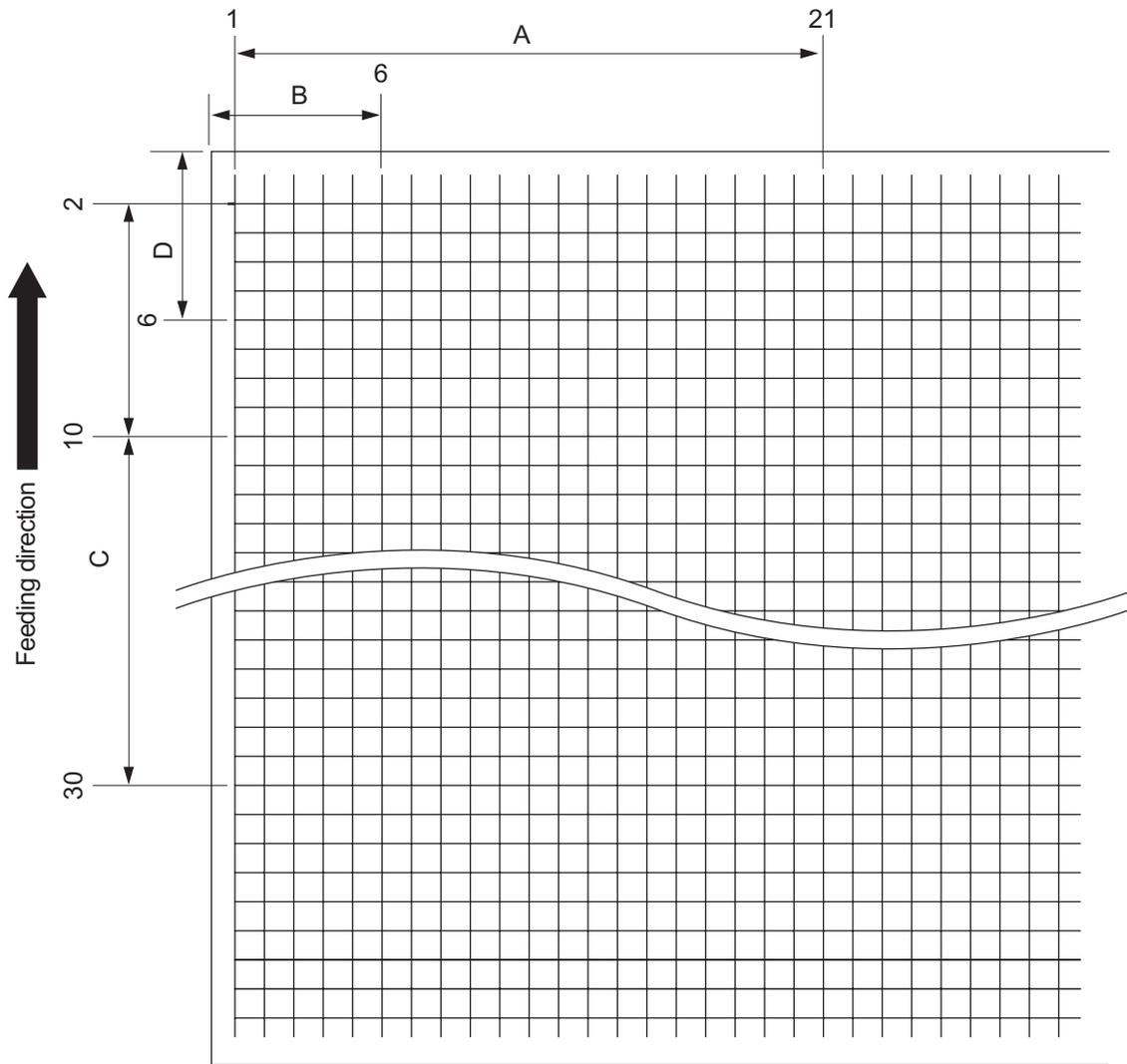


Fig. 3-7 Grid pattern

<Procedure>

[0] [5] [Power ON] → [1] → [FAX] → [Drawer number] → [START]

- |    |  |                                     |
|----|--|-------------------------------------|
| A: | 05-401 (Drawer, A3/LD)   | → 200±0.5 mm (0.125 mm/step)        |
| B: | 05-411 (Drawer, A3/LD)   | → 52±0.5 mm (0.05 mm/step)          |
|    |  | → Key in the same value for 05-410. |
| C: | 05-421 (Drawer, A3/LD)   | → 200±0.5 mm (0.125 mm/step)        |
| D: | 05-440 (Drawer, A3/LD), 441 (PFU, A4/LT), 444 (PFP, A4/LT), 442 (Bypass feed, A4/LT), 445 (Duplexing, A3/LD) | → 50±0.5 mm(0.4 mm/step)            |

### 3.2.4 Scanner related adjustment

#### [A] Reproduction ratio adjustment of the primary scanning direction

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON → (Adjustment Mode)
- (2) Place a ruler on the original glass (along the direction from the rear to the front of the equipment).
- (3) Press the [INTERRUPT] button to enter the normal mode.
- (4) Make a copy at the mode of A3 (LD), 100% and standard drawer of the equipment.
- (5) Press the [INTERRUPT] button to enter the adjustment mode.
- (6) Measure the distance A from 10 mm to 270 mm of the copied image of the ruler.
- (7) Check if the distance A is within the range of  $260 \pm 0.5$  mm.

(8) If not, use the following procedure to change values and repeat the steps (3) to (7) above.

(Adjustment Mode) → (Key in the code [405]) → [ENTER]

→ (Key in a value (acceptable values: 0 to 255))

→ Press the [ENTER] button (stored in memory). → [CANCEL] → ("MC" is displayed.)

\* The larger the adjustment value is, the higher the reproduction ratio and the longer the distance A become (approx. 0.125 mm/step).

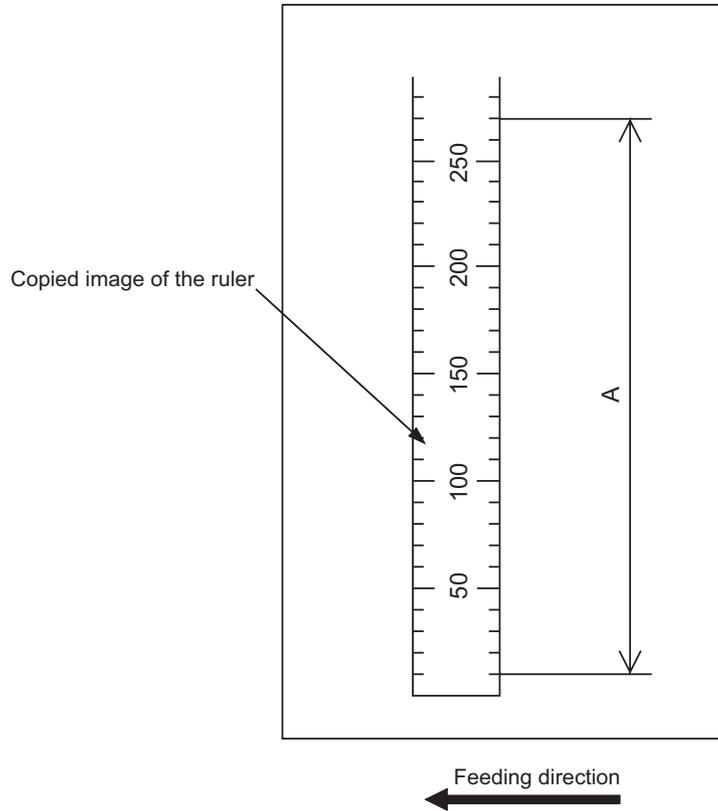


Fig. 3-8

## [B] Image position adjustment of the primary scanning direction

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Place a ruler on the original glass with its leading edge pushed against the rear side and its side along the original scale on the left.
- (3) Press the [INTERRUPT] button to enter the normal mode.
- (4) Make a copy at the mode of A3 (LD), 100% and standard drawer of the equipment.
- (5) Press the [INTERRUPT] button to enter the adjustment mode.
- (6) Measure the distance B from the left edge of the paper to 10 mm of the copied image of the ruler.
- (7) Check if the distance B is within the range of  $10 \pm 0.5$  mm.
- (8) If not, use the following procedure to change values and repeat the steps (3) to (7) above.

(Adjustment Mode) → (Key in the code [306]) → [ENTER]

→ (Key in a value (acceptable values: 121 to 136))

→ Press the [ENTER] button (stored in memory: The density LED blinks.). → [CANCEL]

→ ("MC" is displayed.)

\* The smaller the adjustment value is, the more the image is shifted to the left and the distance B become narrower (0.169 mm/step).

Be sure not to perform any operations while the density LED is blinking.

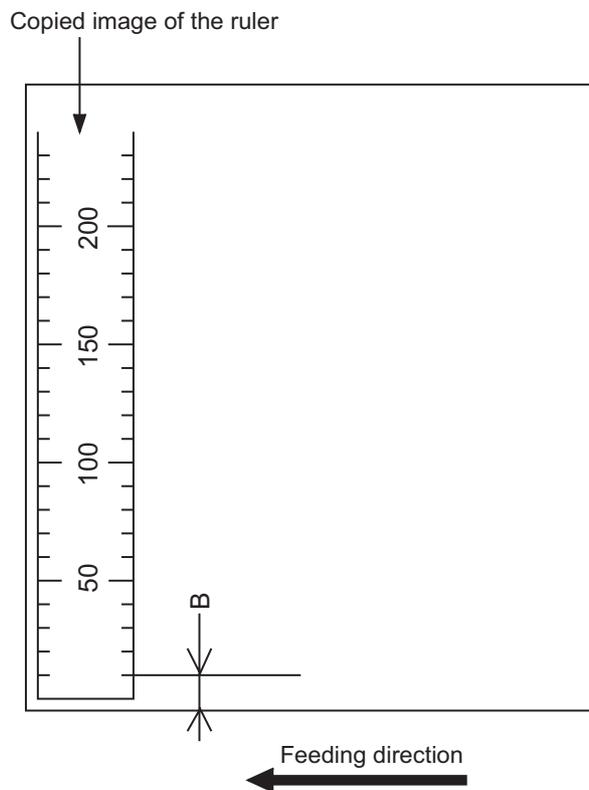


Fig. 3-9

### [C] Reproduction ratio adjustment of the secondary scanning direction

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Place a ruler on the original glass with its leading edge pushed against the original scale on the left.
- (3) Press the [INTERRUPT] button to enter the normal mode.
- (4) Make a copy at the mode of A3 (LD), 100% and standard drawer of the equipment.
- (5) Press the [INTERRUPT] button to enter the adjustment mode.
- (6) Measure the distance C from 200 mm to 400 mm of the copied image of the ruler.
- (7) Check if the distance C is within the range of  $200 \pm 0.5$  mm.
- (8) If not, use the following procedure to change values and repeat the steps (3) to (7) above.

(Adjustment Mode) → (Key in the code [340]) → [ENTER]

→ (Key in a value (acceptable values: 76 to 181))

→ Press the [ENTER] button (stored in memory: The density LED blinks.). → [CANCEL]

→ ("MC" is displayed.)

\* The smaller the adjustment value is, the lower the reproduction ratio becomes (0.189 mm/step).

Be sure not to perform any operations while the density LED is blinking.

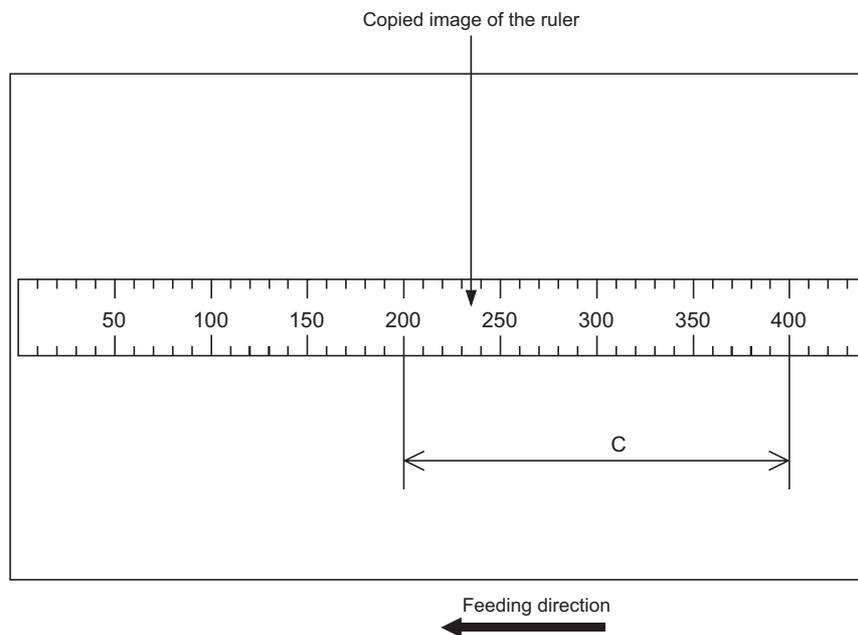


Fig. 3-10

## [D] Image position adjustment of the secondary scanning direction

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Place a ruler on the original glass with its leading edge pushed against the original scale on the left.
- (3) Press the [INTERRUPT] button to enter the normal mode.
- (4) Make a copy at the mode of A3 (LD), 100% and standard drawer of the equipment.
- (5) Press the [INTERRUPT] button to enter the adjustment mode.
- (6) Measure the distance D from the leading edge of the paper to 10 mm of the copied image of the ruler.
- (7) Check if the distance D is within the range of  $10 \pm 0.5$  mm.
- (8) If not, use the following procedure to change values and repeat the steps (3) to (7) above.

(Adjustment Mode) → (Key in the code [305]) → [ENTER]

→ (Key in a value (acceptable values: 51 to 206))

→ Press the [ENTER] button (stored in memory: The density LED blinks.). → [CANCEL]

→ ("MC" is displayed.)

\* The larger the adjustment value is, the more the image is shifted to the trailing edge (0.064 mm/step).

Be sure not to perform any operations while the density LED is blinking.

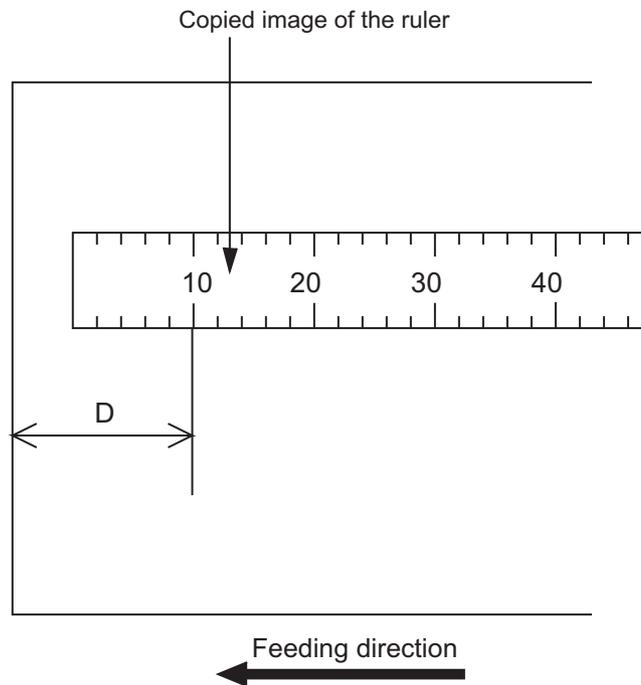


Fig. 3-11

## [E] Top margin

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [4] → [FAX] → [PAPER FEED] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START] (A solid black pattern (whole area) is printed out. Print out 2 sheets in A3/LD size.).
- (3) Place the paper printed out in step (2) to cover the whole area of the original glass.
- (4) Press the [INTERRUPT] button to enter the normal mode.
- (5) Make a copy at the mode of A3/LD, 100%, Text/Photo and standard drawer of the equipment.
- (6) Press the [INTERRUPT] button to enter the adjustment mode.
- (7) Measure the blank area E at the leading edge of the copied image.
- (8) Check if the blank area E is within the range of  $3 \pm 0.5$  mm.
- (9) If not, use the following procedure to change values and repeat the steps (4) to (8) above.

(Adjustment Mode) → (Key in the code [430]) → [ENTER]

→ (Key in a value (acceptable values: 0 to 255))

→ Press the [ENTER] button (stored in memory). → [CANCEL] → ("MC" is displayed.)

\* The larger the adjustment value is, the wider the blank area becomes (approx. 0.04 mm/step).

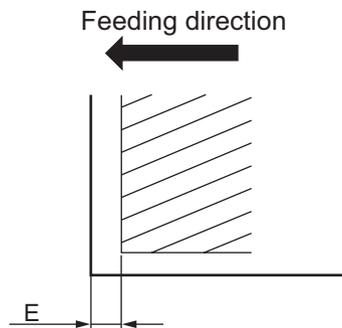


Fig. 3-12

## [F] Right margin

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [4] → [FAX] → [PAPER FEED] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START] (A solid black pattern (whole area) is printed out. Print out 2 sheets in A3/LD size.).
- (3) Place the paper printed out in step (2) to cover the whole area of the original glass.
- (4) Press the [INTERRUPT] button to enter the normal mode.
- (5) Make a copy at the mode of A3/LD, 100%, Text/Photo and standard drawer of the equipment.
- (6) Press the [INTERRUPT] button to enter the adjustment mode.
- (7) Measure the blank area F at the right side of the copied image.
- (8) Check if the blank area F is within the range of  $2 \pm 1.0$  mm.
- (9) If not, use the following procedure to change values and repeat the steps (4) to (8) above.

(Adjustment Mode) → (Key in the code [432]) → [ENTER]

→ (Key in a value (acceptable values: 0 to 255))

→ Press the [ENTER] button (stored in memory). → [CANCEL] → ("MC" is displayed.)

\* The larger the adjustment value is, the wider the blank area at the right side becomes (approx. 0.04 mm/step).

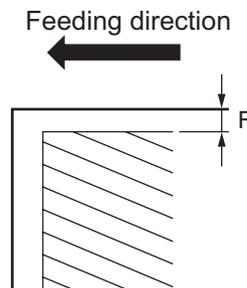


Fig. 3-13

## [G] Bottom margin

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON. → (Adjustment Mode)
- (2) Press [4] → [FAX] → [PAPER FEED] (Select from 0: bypass, 1: drawer, 2: PFU, 3: PFP upper drawer or 4: PFP lower drawer.) → [START] (A solid black pattern (whole area) is printed out. Print out 2 sheets in A3/LD size.).
- (3) Place the paper printed out in step (2) to cover the whole area of the original glass.
- (4) Press the [INTERRUPT] button to enter the normal mode.
- (5) Make a copy at the mode of A3/LD, 100%, Text/Photo and standard drawer of the equipment.
- (6) Press the [INTERRUPT] button to enter the adjustment mode.
- (7) Measure the blank area G at the trailing edge of the copied image.
- (8) Check if the blank area G is within the range of  $2\pm 1.0$  mm.
- (9) If not, use the following procedure to change values and repeat the steps (4) to (8) above.

(Adjustment Mode) → (Key in the code [433]) → [ENTER]

→ (Key in a value (acceptable values: 0 to 255))

→ Press the [ENTER] button (stored in memory). → [CANCEL] → ("MC" is displayed.)

\* The larger the adjustment value is, the wider the blank area at the trailing edge becomes (approx. 0.04 mm/step).

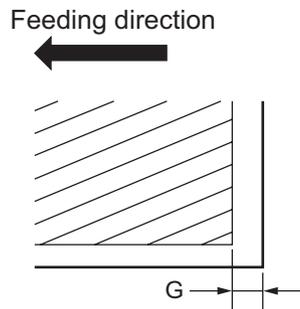


Fig. 3-14

## 3.3 Image Quality Adjustment (Copying Function)

### 3.3.1 Density adjustment

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

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
503	501	504	Manual density mode center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255
505	506	507	Manual density mode light step value	The larger the value is, the lighter the light side becomes. Acceptable values: 0 to 255
508	509	510	Manual density mode dark step value	The larger the value is, the darker the dark side becomes. Acceptable values: 0 to 255
514	512	515	Automatic density mode	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255

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

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in a code and press the [ENTER] button.
- (3) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)
- (4) Press the [ENTER] button to store the value.
- (5) Let the equipment restarted and perform copying job.
- (6) If the desired image density has not been attained, repeat step (2) to (5).

### 3.3.2 Gamma slope adjustment

Gamma slope is adjustable with the following codes.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
593	594	595	Gamma slope adjustment	1 to 9: Select the gamma slope angle. (The larger the value is, the larger the angle becomes.)

<Procedure>

Procedure is same as that of  P. 3-19 "3.3.1 Density adjustment".

### 3.3.3 Sharpness adjustment

If you want to make copy images look softer or sharper, perform the following adjustment.

< Adjustment Mode (05) >

Original mode				Item to be adjusted	Remarks
Text/ Photo	Photo	Text	Photo (Dither)		
620	621	622	623	Sharpness adjustment	<p>Key in the following values depending on the original mode.            One's place            Selecting a filter shape            Ten's place            0: Use Default value            1 to 9: Change intensity            (The larger the value is, the sharper the image becomes.)</p> <ul style="list-style-type: none"> <li>Example of value entry in case the mode is "Text/Photo".</li> </ul> <div style="margin-left: 20px;"> </div> <p><b>Note:</b>            When the value "0" is keyed in at the ten's digit, the value is not displayed on LCD screen.</p>

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

<Procedure>

Procedure is same as that of P. 3-19 "3.3.1 Density adjustment".

### 3.3.4 Setting range correction

The values of the background peak / text peak in the range correction 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 affect the reproduction of the background density and the values of the text peak affect that of the text density.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks										
Text/Photo	Photo	Text												
570	571	572	Range correction for original manually set on the original glass	The following are the default values set for each original mode. Text/Photo: 12, Photo: 12, Text: 22 Each digit stands for: One's place: Automatic density mode Ten's place: Manual density mode The setting conditions possible are as follows: <table style="margin-left: 40px;"> <tr> <td>Background peak</td> <td>Text peak</td> </tr> <tr> <td>1: fixed</td> <td>fixed</td> </tr> <tr> <td>2: varied</td> <td>fixed</td> </tr> <tr> <td>3: fixed</td> <td>varied</td> </tr> <tr> <td>4: varied</td> <td>varied</td> </tr> </table>	Background peak	Text peak	1: fixed	fixed	2: varied	fixed	3: fixed	varied	4: varied	varied
Background peak	Text peak													
1: fixed	fixed													
2: varied	fixed													
3: fixed	varied													
4: varied	varied													
693	694	695	Range correction for original set on the ADF											

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

<Procedure>

Procedure is same as that of  P. 3-19 "3.3.1 Density adjustment".

### 3.3.5 Setting range correction (Adjustment of background peak)

The levels of the background peak for the range correction can be set at the following codes.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
532	533	534	Background peak for range correction	When the value increases, the background (low density area) of the image is not output. Acceptable values: 0 to 255 (Default: Text/Photo: 32, Photo: 22, Text: 46)

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

<Procedure>

Procedure is same as that of  P. 3-19 "3.3.1 Density adjustment".

### 3.3.6 Setting range correction (Adjustment of text peak)

The levels of the text peak for the range correction can be set at the following codes.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
535	536	537	Text peak for range correction	When the value is increased, text (high image density part) becomes lighter. Acceptable values: 0 to 255 (Default: text/photo: 246, photo: 254, text: 236)

\* The image changes slightly in text mode because it is treated as a simple binary format image.

<Procedure>

Procedure is same as that of  P. 3-19 "3.3.1 Density adjustment".

### 3.3.7 Adjustment of smudged/faint text

The smudged/faint text can be set at the following codes.

< Adjustment Mode (05) >

Original mode	Item to be adjusted	Remarks
Text/Photo		
648	Adjustment of smudged/faint spotted text	When the value increases, the faint text is improved. When the value decreases, the smudged text is improved. Acceptable values: 0 to 4 (Default: 3) <b>Note:</b> 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.

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

<Procedure>

Procedure is same as that of  P. 3-19 "3.3.1 Density adjustment".

### 3.3.8 Adjustment of image density

The image density level can be set at the following codes.

< Adjustment Mode (05) >

Code	Item to be adjusted	Remarks
667-0 to 4	Adjustment of image density	<p>When the value is decreased, text becomes lighter. Acceptable values: 0 to 63</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"><li>1. Set not to reverse the large and small number of the setting value corresponding to the sub code. Ex.) When the image density level for 667-0, 667-1, 667-2, 667-3, and 667-4 is assumed to be "A", "B", "C", "D", and "E" respectively, they should have the following correlation: A ≤ B ≤ C ≤ D ≤ E</li><li>2. Remember that 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.</li></ol>

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in the code "667" and press the [ENTER] button.
- (3) Key in the sub code (0, 1, 2, 3 or 4), and press the [ENTER] button.
- (4) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)
- (5) Press the [ENTER] button to store the value in memory.
- (6) For resetting the value, repeat step (2) to (5).
- (7) Turn the power OFF and then back ON to perform printing job.
- (8) If the desired image density has not been attained, repeat step (2) to (7).

## 3.4 Image Quality Adjustment (Printing Function)

### 3.4.1 Adjustment of smudged/faint text

The smudged/faint text can be set at the following codes.

< Adjustment Mode (05) >

Language		Remarks
PS	PCL	
654	655	When the value increases, the smudged text is improved. When the value decreases, the faint text is improved. Acceptable values: 0 to 9 (Default: 5)

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in a code and press the [ENTER] button.
- (3) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)
- (4) Press the [ENTER] button to store the value in memory.
- (5) Turn the power OFF and then back ON to perform printing job.
- (6) If the desired text density has not been attained, repeat step (2) to (5).

### 3.4.2 Adjustment of image density

The image density level can be set with the following codes.

< Adjustment Mode (05) >

Language		Item to be adjusted	Remarks
GDI	PS/PCL		
672-0 to 4	676-0 to 4	Adjustment of image density	<p>When the value is decreased, text becomes lighter. Acceptable values: 0 to 63</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. Set not to reverse the large and small number of the setting value corresponding to the sub code. Ex.) When the image density level for 672-0, 672-1, 672-2, 672-3, and 672-4 is assumed to be "A", "B", "C", "D", and "E" respectively, they should have the following correlation: A ≤ B ≤ C ≤ D ≤ E</li> <li>2. Remember that 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.</li> </ol>

The image density level of the received FAX printing and List printing can be set with the following codes.

< Adjustment Mode (05) >

Code	Item to be adjusted	Remarks
678-0 to 4	Received FAX Printing/List printing Adjustment of image density	<p>When the value is decreased, text becomes lighter. Acceptable values: 0 to 63</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. Set not to reverse the large and small number of the setting value corresponding to the sub code. Ex.) When the image density level for 678-0, 678-1, 678-2, 678-3, and 678-4 is assumed to be "A", "B", "C", "D", and "E" respectively, they should have the following correlation: A ≤ B ≤ C ≤ D ≤ E</li> <li>2. Remember that 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.</li> </ol>

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in a code and press the [ENTER] button.
- (3) Key in the sub code (0, 1, 2, 3 or 4), and press the [ENTER] button.
- (4) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)

- (5) Press the [ENTER] button to store the value in memory.
- (6) For resetting the value, repeat step (2) to (5).
- (7) Turn the power OFF and then back ON to perform printing job.
- (8) If the desired image density has not been attained, repeat step (2) to (7).

### 3.4.3 Gamma balance adjustment

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) >

Language and screen				Item to be adjusted	Remarks
Photo (PS)	Text (PS)	Photo (PCL)	Text (PCL)		
596-0	597-0	598-0	599-0	Low density	The larger the value is, the density of the item to be adjusted becomes darker. Acceptable values: 0 to 255. (Default: 128)
596-1	597-1	598-1	599-1	Medium density	
596-2	597-2	598-2	599-2	High density	

<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 [ENTER] button.
- (3) Key in the value corresponding to the density area to be adjusted (0, 1 or 2) and press the [ENTER] 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 [CLEAR] button.)
- (5) Press the [ENTER] button to store the value in memory.
- (6) For resetting the value, repeat step (2) to (5).
- (7) Let the equipment restart and perform printing job.
- (8) If the image density has not been attained, repeat step (1) to (7).

## 3.5 Image Quality Adjustment (Scanning Function)

### 3.5.1 Density adjustment

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

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
845	847	846	Manual density mode center value	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255
850	852	851	Manual density mode light step value	The larger the value is, the lighter the light side becomes. Acceptable values: 0 to 255
855	857	856	Manual density mode dark step value	The larger the value is, the darker the dark side becomes. Acceptable values: 0 to 255
860	862	861	Automatic density mode	The larger the value is, the darker the image becomes. Acceptable values: 0 to 255

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in a code and press the [ENTER] button.
- (3) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)
- (4) Press the [ENTER] button to store the value.
- (5) Turn the power OFF and then back ON to perform scanning job.
- (6) If the desired image density has not been attained, repeat step (2) to (5).

### 3.5.2 Sharpness adjustment

If you want to make scan images look softer or sharper, perform the following adjustment.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
865-0	867-0	866-0	Reproduction ratio: 25% to 40%	Key in the following values depending on the original mode. One's place Selecting a filter shape Ten's place 0: Use Default value 1 to 9: Change intensity <ul style="list-style-type: none"> <li>The larger the value is, the sharper the image becomes.)</li> <li>Example of value entry in case the mode is "Text/Photo".</li> </ul> <div style="margin-left: 20px;"> <math display="block">\begin{array}{l} \underline{2} \ \underline{1} \\   \quad   \\ \text{Fixed value for Text/} \\ \text{Photo mode} \\ \text{Key in a value 0 to 9} \end{array}</math> </div> <p><b>Note:</b> When the value "0" is keyed in at the ten's digit, the value is not displayed on LCD screen.</p>
865-1	867-1	866-1	Reproduction ratio: 41% to 80%	
865-2	867-2	866-2	Reproduction ratio: 81% to 400%	

<Procedure>

- (1) While pressing [0] and [5] simultaneously, turn the power ON.
- (2) Key in a code and press the [ENTER] button.
- (3) Key in the sub code (0,1 or 2), and press the [ENTER] button.
- (4) Key in an adjustment value.  
(To correct the keyed-in value, press the [CLEAR] button.)
- (5) Press the [ENTER] button to store the value in memory.
- (6) For resetting the value, repeat step (2) to (5).
- (7) Turn the power OFF and then back ON to perform scanning job.
- (8) If the desired image density has not been attained, repeat step (2) to (7).

### 3.5.3 Setting range correction

The values of the background peak / text peak in the range correction 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 affect the reproduction of the background density and the values of the text peak affect that of the text density.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks										
Text/Photo	Photo	Text												
825	827	826	Range correction for original manually set on the original glass	The following are the default values set for each original mode. Text/Photo: 12, Photo: 12, Text: 12 Each digit stands for: One's place: Automatic density mode Ten's place: Manual density mode The setting conditions possible are as follows: <table style="margin-left: 40px;"> <tr> <td>Background peak</td> <td>Text peak</td> </tr> <tr> <td>1: fixed</td> <td>fixed</td> </tr> <tr> <td>2: varied</td> <td>fixed</td> </tr> <tr> <td>3: fixed</td> <td>varied</td> </tr> <tr> <td>4: varied</td> <td>varied</td> </tr> </table>	Background peak	Text peak	1: fixed	fixed	2: varied	fixed	3: fixed	varied	4: varied	varied
Background peak	Text peak													
1: fixed	fixed													
2: varied	fixed													
3: fixed	varied													
4: varied	varied													
830	832	831	Range correction for original set on the RADF											

<Procedure>

Procedure is same as that of  P. 3-29 "3.5.1 Density adjustment".

### 3.5.4 Setting range correction (Adjustment of background peak)

The levels of the background peak for the range correction can be set at the following codes.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
835	837	836	Background peak for range correction	When the value increases, the background (low density area) of the image is not output. Acceptable values: 0 to 255 (Default: text/photo: 32, photo: 16, text: 46)

<Procedure>

Procedure is same as that of  P. 3-29 "3.5.1 Density adjustment".

### 3.5.5 Setting range correction (Adjustment of text peak)

The levels of the text peak for the range correction can be set at the following codes.

< Adjustment Mode (05) >

Original mode			Item to be adjusted	Remarks
Text/Photo	Photo	Text		
820	822	821	Text peak for range correction	When the value is increased, text (high image density part) becomes lighter. Acceptable values: 0 to 255 (Default: text/photo: 246, photo: 254, text: 236)

\* The image changes slightly in text mode because it is treated as a simple binary format image.

<Procedure>

Procedure is same as that of  P. 3-29 "3.5.1 Density adjustment".

## 3.6 Adjustment of High-Voltage Transformer

When replacing the high-voltage transformer, checking each output adjustment of main charger, developer bias, transfer charger and separation charger is needed.

### 3.6.1 Adjustment

#### [ 1 ] Preparation

Items to check		Developer Bias	Main Charger	Transfer Charger	Separation Charger
Process Unit		Take off from the equipment. (Not used)			
High-Voltage Transformer Jig		Install the high-voltage transformer jig in the equipment. <b>Note:</b> Connect the green cable of the high-voltage transformer jig to ground on the equipment frame. Refer to  P. 3-34 "[A] Installation of the high-voltage transformer jig".			
Digital Tester	(+) terminal	Connect with the black cable of the high-voltage transformer jig.	Connect with the red cable (thick line) of the high-voltage transformer jig.	Connect with the red cable (thin line) of the high-voltage transformer jig.	
	(-) terminal	Connect with the white cable of the high-voltage transformer jig.			
	Function switch	DC			
	Full-scale (range)	1000 V		2 V	
	Remarks	Use a digital tester with an input resistance of 10 MΩ (RMS value) or higher.			
How to turn ON the power		Attach the door switch jig and start with the adjustment mode [05] while the front cover opened. Then press the front cover opening/closing switch.			
Note		Refer to  P. 3-36 "[B] Connection for developer bias adjustment".	Refer to  P. 3-36 "[C] Connection for main charger adjustment".	Refer to  P. 3-37 "[D] Connection for transfer/separation charger adjustment".	

### [A] Installation of the high-voltage transformer jig

- (1) Open the bypass tray, ADU and transfer cover.
- (2) Open the front cover and take off the toner cartridge.
- (3) Disconnect 1 connector. Loosen 2 screws and pull out the process unit.

**Note:**

Be careful not to let the connector and the harness be caught when installing the process unit after adjustment.

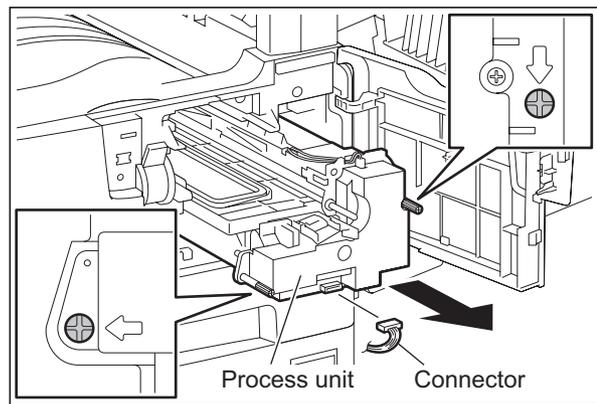


Fig. 3-15

- (4) Install the high-voltage transformer jig and fix it with 2 screws.

**Note:**

Be careful not to let the connector and the harness be caught.

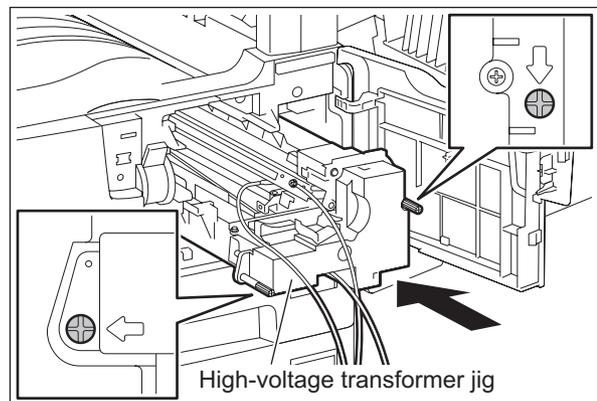


Fig. 3-16

- (5) Fix the green cable of the high-voltage transformer jig to the frame of the equipment.

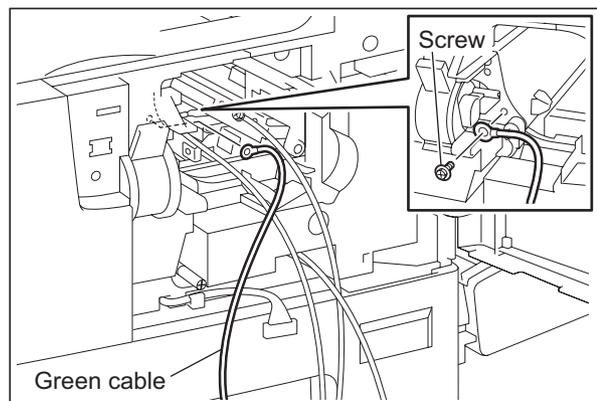
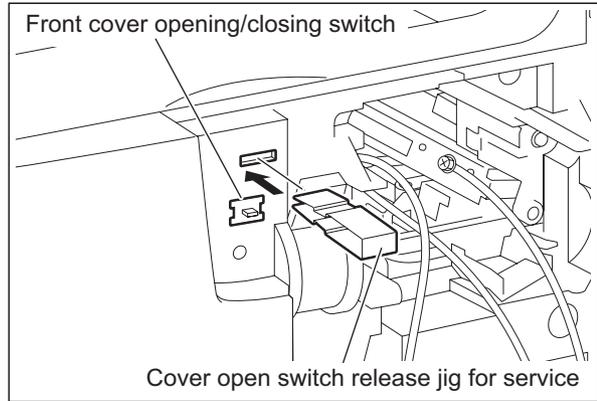


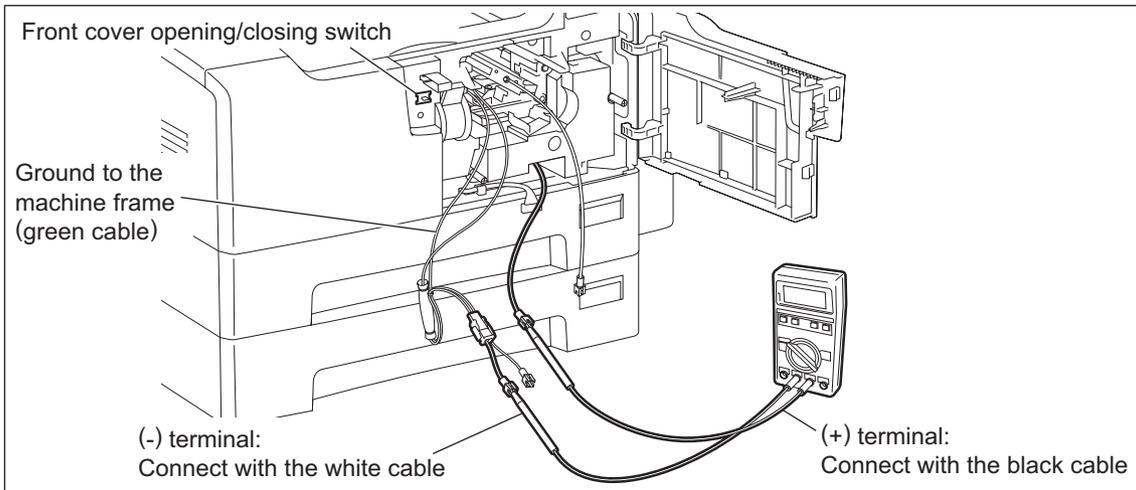
Fig. 3-17

- (6) Install the cover open switch release jig for service.
- (7) Close the transfer cover.



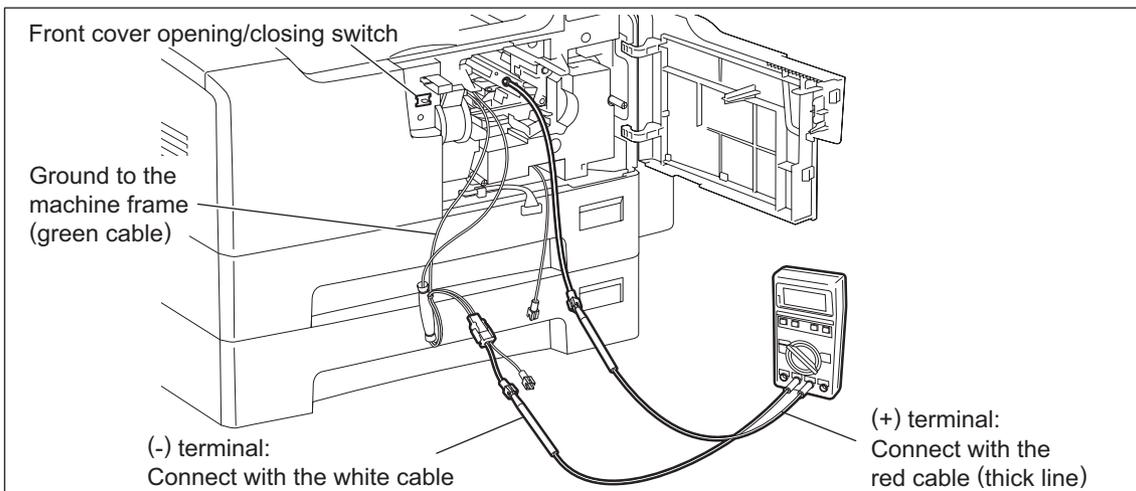
**Fig. 3-18**

**[B] Connection for developer bias adjustment**



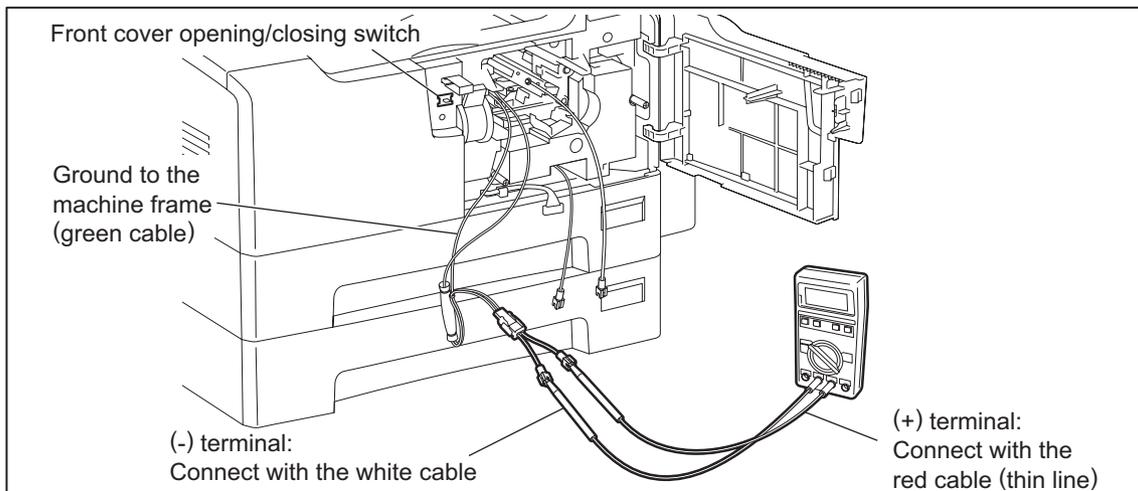
**Fig. 3-19**

**[C] Connection for main charger adjustment**



**Fig. 3-20**

**[D] Connection for transfer/separation charger adjustment**



**Fig. 3-21**

## [ 2 ] Operation

### Note:

When adjusting output of high-voltage transformer, make sure to use the high-voltage transformer jig.

Connect the digital testers as described in "[1] Preparation", and follow the procedure on the next page to adjust the output from the main charger, developer bias charger, transfer charger and separation charger.

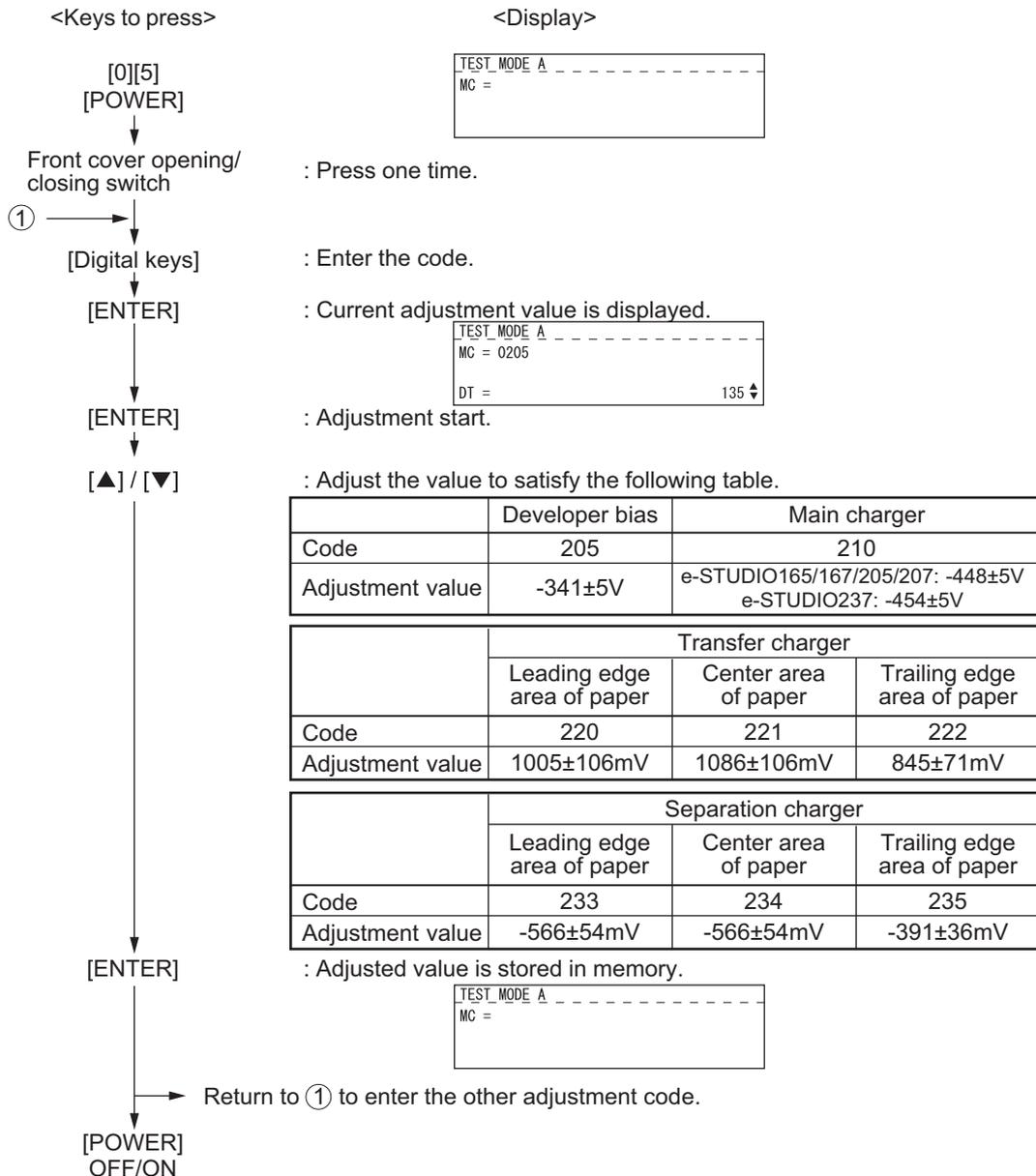


Fig. 3-22

## 3.6.2 Precautions

### [ 1 ] Developer bias

#### Note for adjustment

Adjust the developer bias if fogging occurs over the entire image even though the main charger grid voltage and toner density are appropriate. However, the following may occur if the developer bias is lowered too much:

- Image contrast becomes low.
- Image is patchy or blurred.
- The carrier in the developer material adheres to the photoconductive drum, causing scratches around the cleaner.

### [ 2 ] Transfer

#### Items to check before adjustment

Blotched image or poor transfer can be also caused by matters other than defective adjustment of transfer output. Check the following items before adjusting the transfer charger. If there is no problem, adjust the output of the transfer charger.

- Is the charger wire incorrectly installed or dirty? Is the transfer guide deformed?
- Is the process unit properly installed? Is the developer magnetic brush in contact with the drum? Is the process unit worked correctly? Is the toner density low?
- Is the copy paper fed straight? Is the copy paper abnormally moist?
- Is the rotation of the registration roller normal?
- Is the separation output different from the set value?
- Is the developer bias value an appropriate one?
- Are the transfer/separation charger case grounded? Is the high-voltage transformer grounded?

#### Note for adjustment

##### When blotched image appear:

- If blotched image appear in halftone areas, lower the transfer output value. Remember that transfer performance becomes low if the transfer output value is lowered too much.

##### When poor transfer occurs:

Increase the transfer output value under the following conditions. Remember that blotched image appear if the transfer output value is increased too much.

- Transfer is poor even though the charger wire is not dirty.
- Thick paper has been frequently used.

The adjustment code varies according to where blotched image and poor transfer occur. Select the required adjustment code while referring to the following diagram.

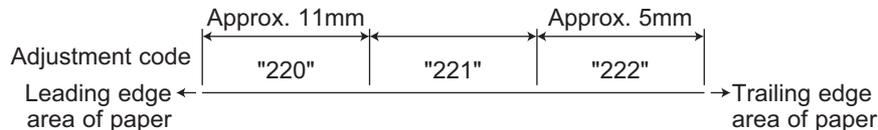


Fig. 3-23

### [ 3 ] Separation

#### Items to check before adjustment

Poor paper separation from the drum can be also caused by matters other than defective adjustment of the separation output. Check the following items before making an adjustment. If there is no problem, adjust the output of the separation charger.

- Is the charger wire incorrectly installed or dirty?
- Is the process unit installed properly? Is the developer magnetic brush in contact with the drum?  
Is the process unit worked correctly? Is the toner density low?
- Is the copy paper fed straight? Is the copy paper abnormally moist?
- Is the rotation of the registration roller normal?
- Is the output of the main charger normal?
- Is the developer bias an appropriate value?
- Is the transfer output different from the set value?
- Is the transfer/separation charger case grounded? Is the high-voltage transformer grounded?
- Is the separation finger in contact with the drum surface?

#### Note for adjustment

##### When poor paper separation occurs:

Increase the separation output value under the following conditions. Remember that if the separation output value is increased too much, blotched image occurs and separation performance becomes low.

- Poor separation occurs even though the charger wire is not dirty.
- Thin paper has been frequently used.

##### When poor transfer occurs:

- Decrease the separation output value when poor transfer occurs. Remember that the separation performance becomes low if the separation output value is decreased too much.

The adjustment code varies according to where poor paper separation and poor transfer occur. Select the required adjustment code while referring to the following diagram.

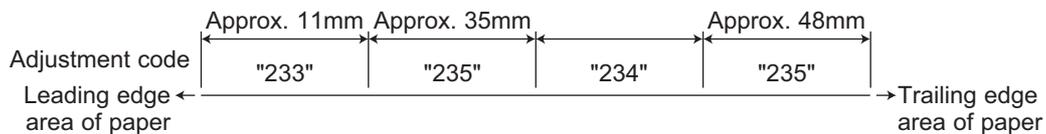


Fig. 3-24

- \* Adjustment code 235 performs the adjustment for 2 areas.

## 3.7 Adjustment of the Scanner Section

### 3.7.1 CIS unit

#### [A] Replacing the CIS unit

- The CIS unit must not be readjusted and some part of its components must not be replaced in the field since the unit is precisely adjusted. If any of the components is defective, replace the whole unit.
- Handle the CIS unit with care not to contaminate the lens with fingerprints or such.
- Take off 2 original glass guides from the CIS unit, and then install a new CIS unit.
- Be sure to perform "05-310" with the platen cover or the ADF/RADF closed after replacing the CIS unit.

<Error recovery procedure>

Check the following items and perform "05-310" again.

If an error occurs during the execution of "05-310", the alarm lamp is lit.

- (1) Check the connection of the harness and connector. Reconnect them if they are not connected securely.
- (2) Check if the harness is open-circuited or damaged. Replace the harness if it is.
- (3) Replace the MAIN board.
- (4) Replace the CIS unit.
- (5) Perform "08-463" and check the control status to see if "0" (normal end) is displayed.

### 3.7.2 CIS unit drive belt-1

Adjust the tension of the CIS unit drive belt-1 when installing it.

<Procedure>

- (1) Install the CIS unit drive belt-1 after the tension bracket fixing screw are loosened.
- (2) Tighten the tension bracket fixing screw.

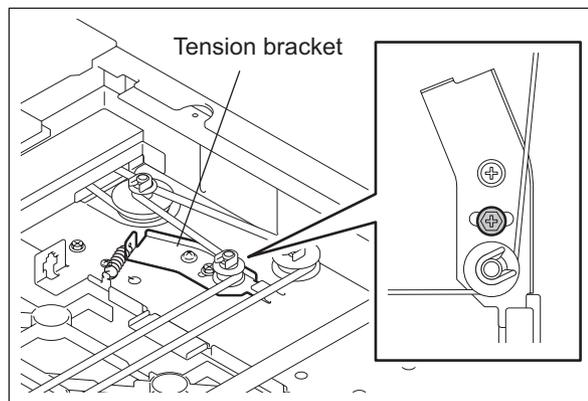


Fig. 3-25

### 3.7.3 Scan motor (CIS unit drive belt-2)

When installing the scan motor and CIS unit drive belt-2, adjust the tension of the CIS unit drive belt-2 with the belt tension jig.

<Procedure>

- (1) Temporarily fix screws A and B.

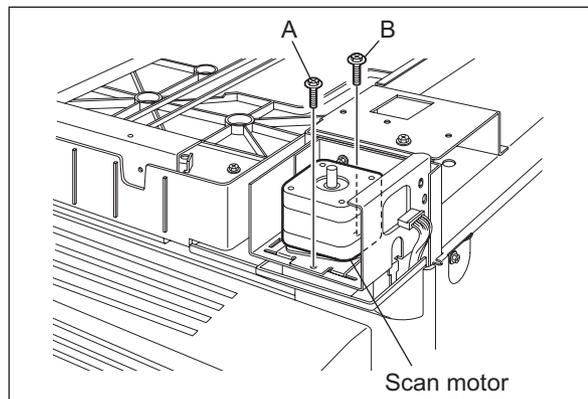


Fig. 3-26

- (2) Hook the belt tension jig on the motor bracket and frame.

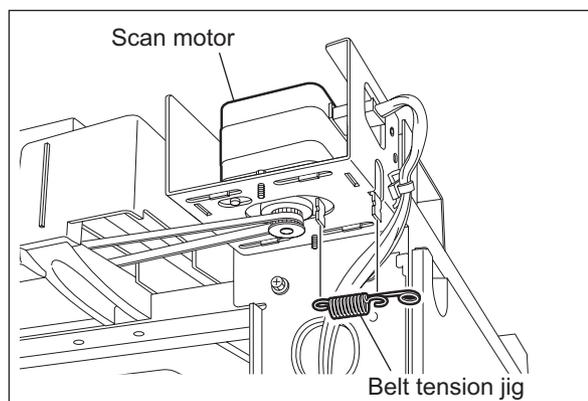


Fig. 3-27

- (3) Tighten screws A and B where the scan motor pulled by the belt tension jig stops.

## 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).

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).

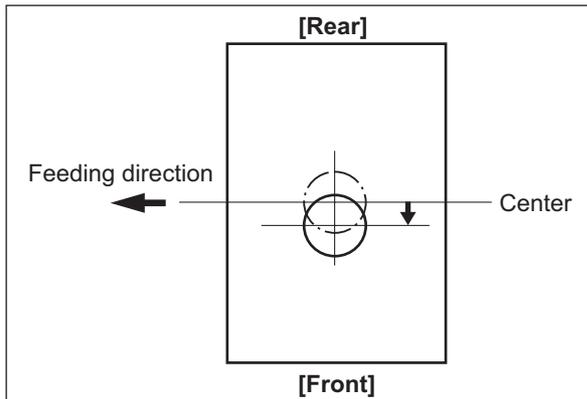


Fig. 3-28

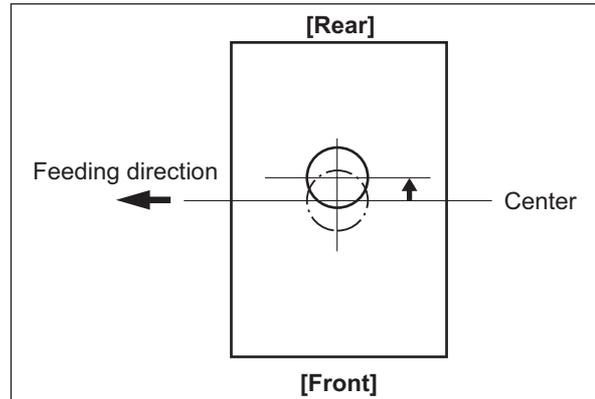


Fig. 3-29

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

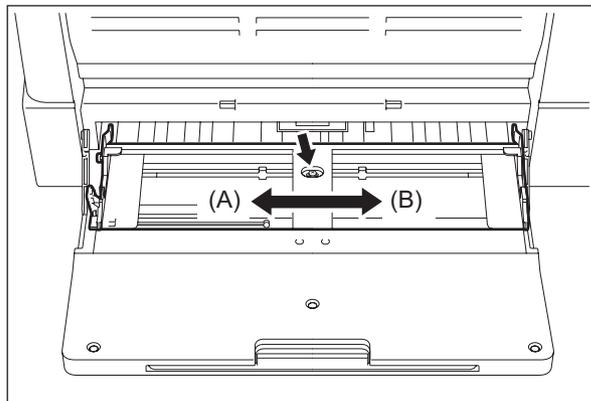


Fig. 3-30

## 3.9 Adjustment of Developer Unit

### 3.9.1 Doctor-to-sleeve gap

Adjustment tool to use: Doctor-sleeve jig  
<Procedure>

- (1) Perform the adjustment code "05-280".
- (2) Take out the process unit from the equipment.
- (3) Take out the developer unit from the process unit.
- (4) Remove 2 screws and take off the developer unit upper cover and discharge the developer material.

**Note:**

Discharge the developer material from the rear side, being careful not to let it be scattered on the gear.

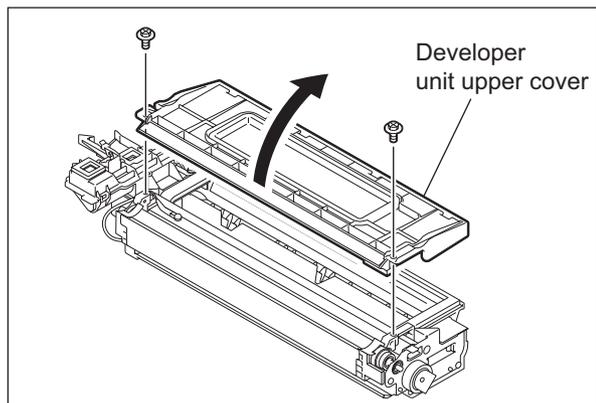


Fig. 3-31

- (5) Turn the adjustment screw to widen the gap so that the jig can be inserted in it.  
(Turning the screw clockwise widens the gap)

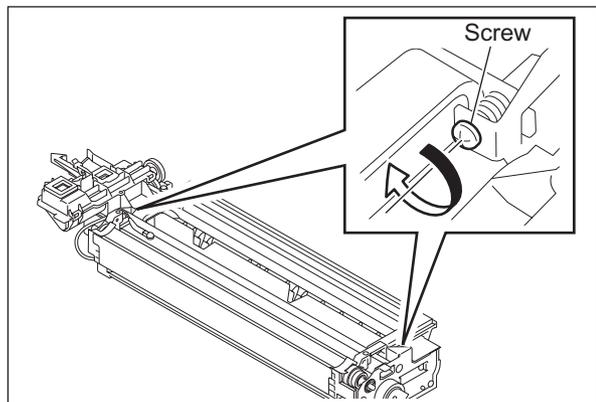


Fig. 3-32

- (6) Insert the gauge with the thickness “0.45” of the doctor sleeve jig into the gap between the developer sleeve and doctor blade after lifting up the toner scattering prevention sheet.

Adjust the screws with the doctor blade to push the doctor sleeve jig lightly.

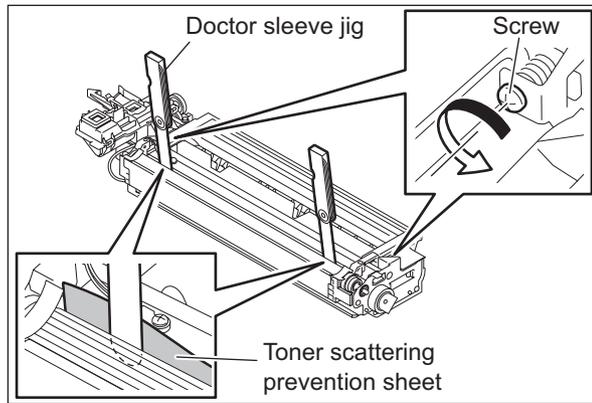


Fig. 3-33

- (7) Insert the gauge “0.40” of the doctor sleeve jig into the gap between the developer sleeve and doctor blade. Confirm that the jig moves smoothly to the front and rear side, and the gauge “0.50” cannot be inserted into the gap.

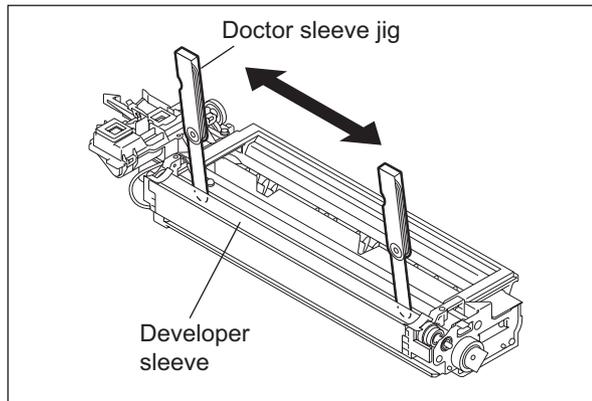


Fig. 3-34

- (8) Confirm that the side seals are attached on the toner scattering prevention sheet.

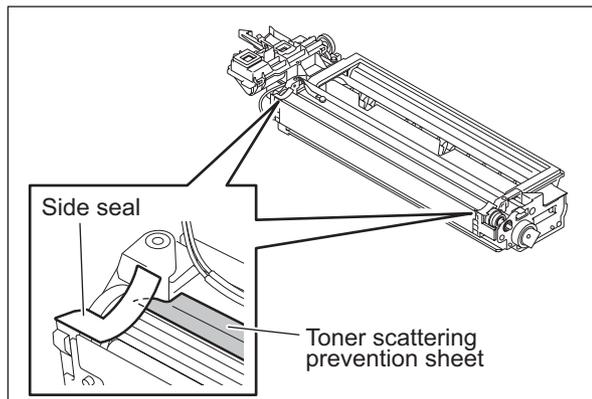
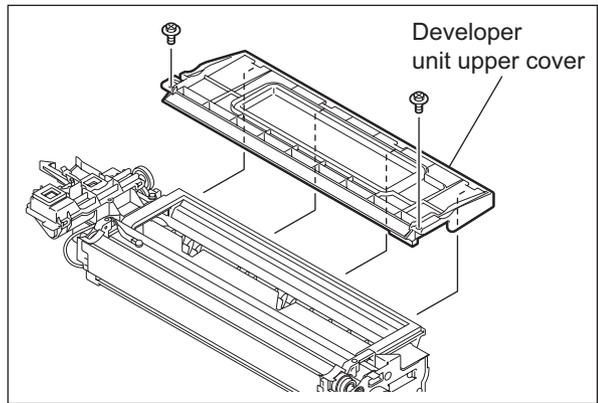


Fig. 3-35

- (9) Attach the developer unit upper cover and tighten 2 screws.

**Note:**

After the developer material has been replaced, adjust the auto-toner sensor.  
(See  P. 3-1 "3.1 Adjustment of Auto-Toner Sensor".)



**Fig. 3-36**

## 3.10 Adjustment of the ADF/RADF (MR-2017/3019)

### 3.10.1 Adjustment of ADF/RADF Position

Perform this adjustment when the ADF/RADF is not installed in the correct position.

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF.

#### [A] Checking

- (1) Open the ADF/RADF and install 2 positioning pins (the positioning pins are installed to the back side of the hinge which is on the left side of the ADF/RADF).

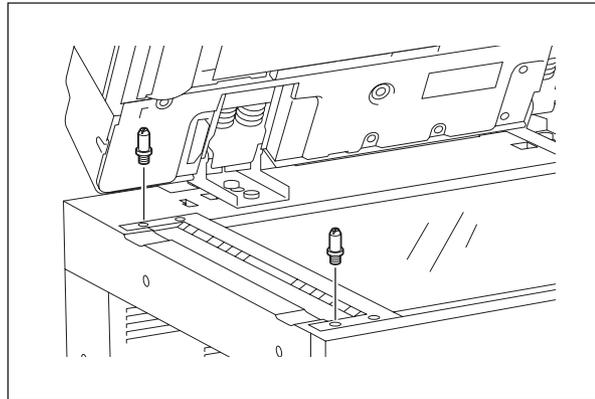


Fig. 3-37

- (2) Remove the platen sheet.

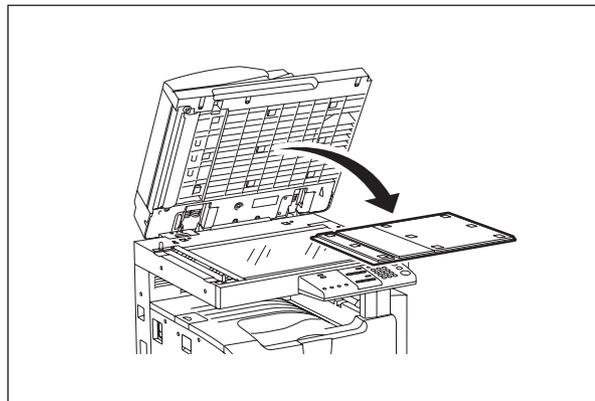
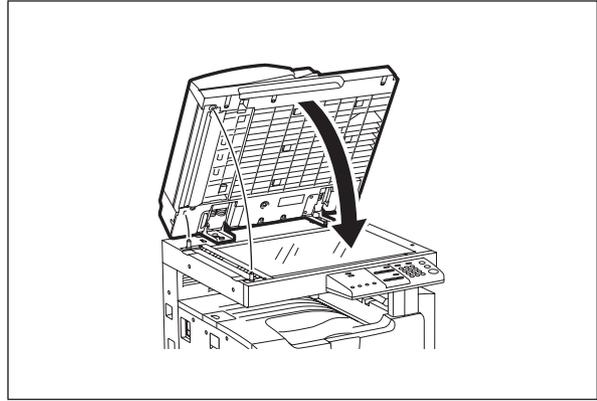


Fig. 3-38

- (3) Close the ADF/RADF and check if the positioning pins fit the holes on the ADF/RADF.

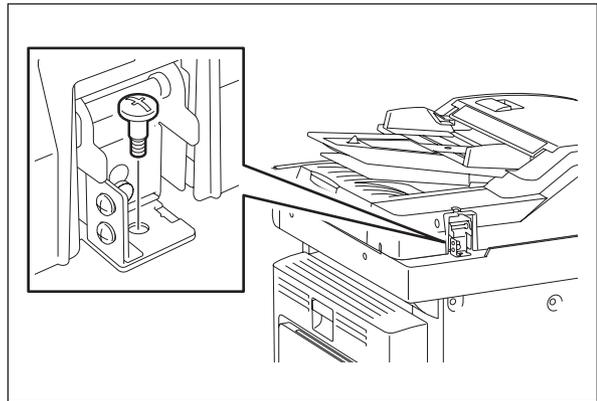


**Fig. 3-39**

### **[B] Adjustment**

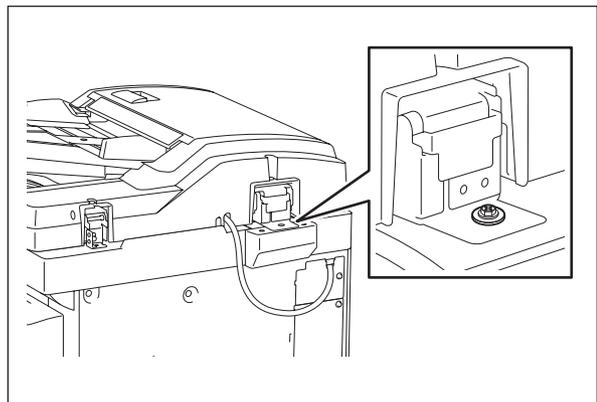
If the pins cannot be fitted into the holes, perform the adjustment according to the following procedure.

- (1) Remove the right-hand hinge screw at the rear side.



**Fig. 3-40**

- (2) Loosen the left-hand hinge screw at the rear side.



**Fig. 3-41**

- (3) Loosen the hinge screws at the front side.

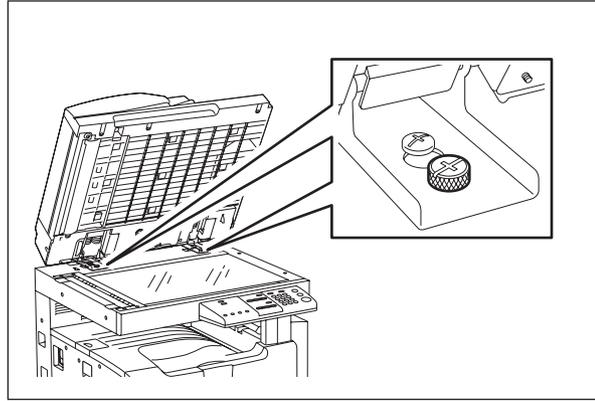


Fig. 3-42

- (4) Position the pins with the holes on the ADF/RADF by moving it so that the pins fit into the holes when the ADF/RADF is closed.

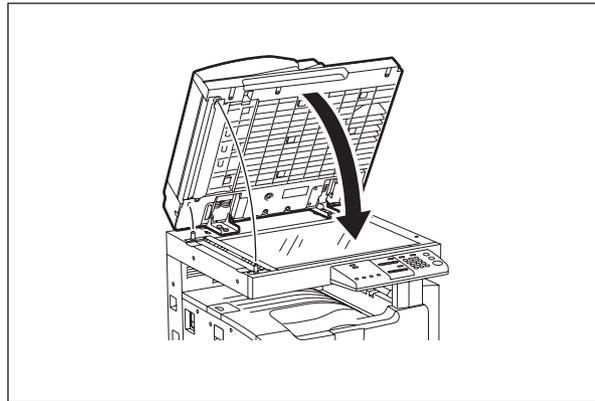


Fig. 3-43

- (5) Tighten the left-hand hinge screw at the rear side.

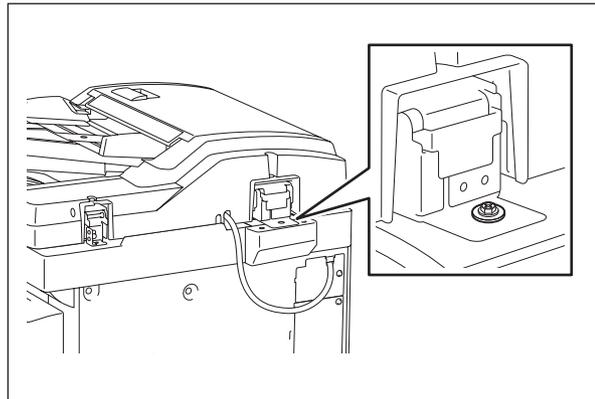
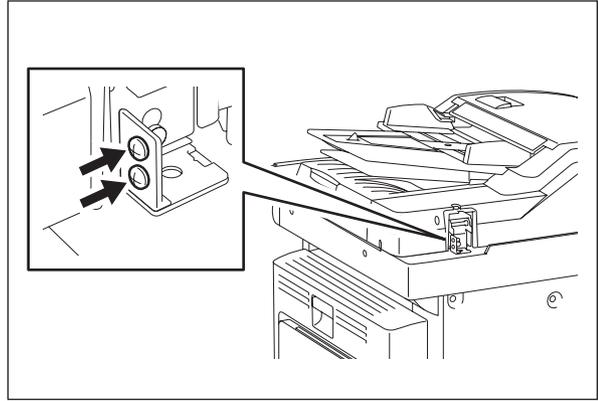


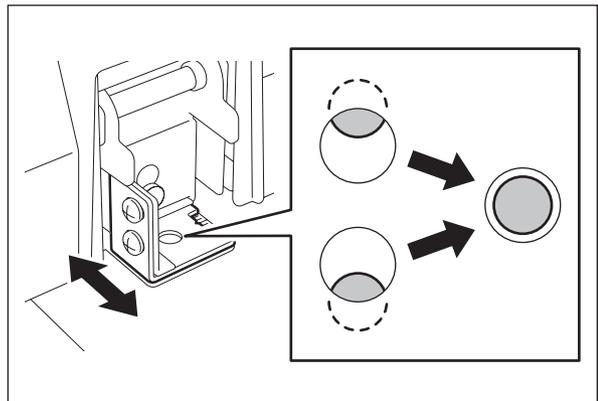
Fig. 3-44

- (6) Loosen the hole position adjustment screws on the right hand side.



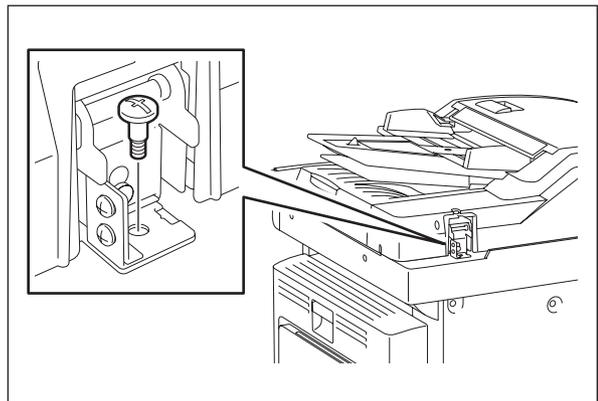
**Fig. 3-45**

- (7) Match the screw hole positions.



**Fig. 3-46**

- (8) Install the right-hand hinge screw at the rear side.



**Fig. 3-47**

- (9) Loosen the hinge screws at the front side.

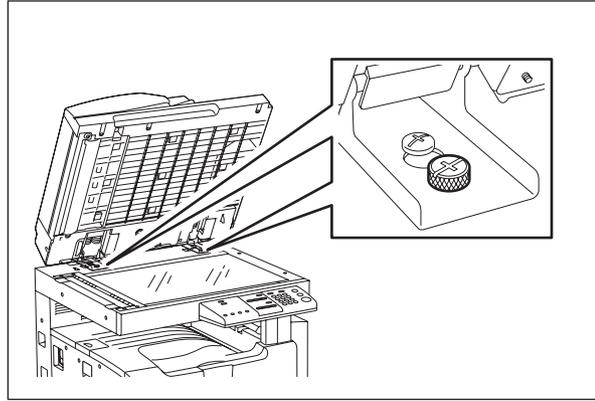


Fig. 3-48

- (10) Place the platen sheet on the original glass and align it to the top left corner. Close the ADF/RADF gently and open it to check if the platen sheet is attached properly.

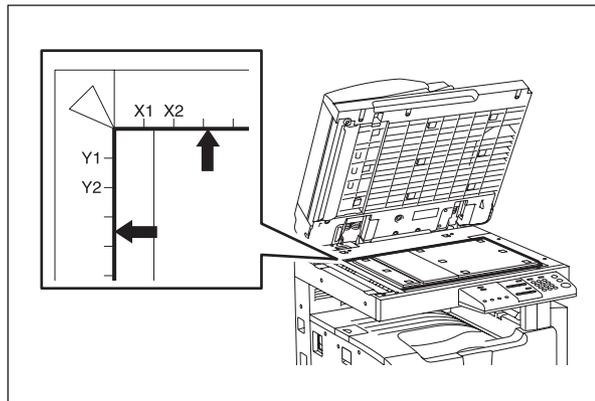


Fig. 3-49

### 3.10.2 Adjustment of ADF/RADF Height

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF.

**[A] Checking**

- (1) Close the ADF/RADF.
- (2) Light the exposure lamp.
  - Turn the power ON while pressing [1] and [3] simultaneously.
  - Select [10. OUTPUT TEST] from the test menu, press the [ENTER] button.
  - Key in [261], press the [ENTER] button, and then press the [START] button. Wait until the CIS unit stops.
  - Key in [267], press the [ENTER] button, and then press the [START] button to turn ON the exposure lamp.
- (3) Visually check the gap between platen guide holder "A" and upper surface of the original glass "B" from the left hand side of the equipment. If the value is not within the tolerance, perform the adjustment according to the following procedure.

[Tolerance of the gap]  
Rear side: 0 - 0.2 mm  
Front side: 0 mm

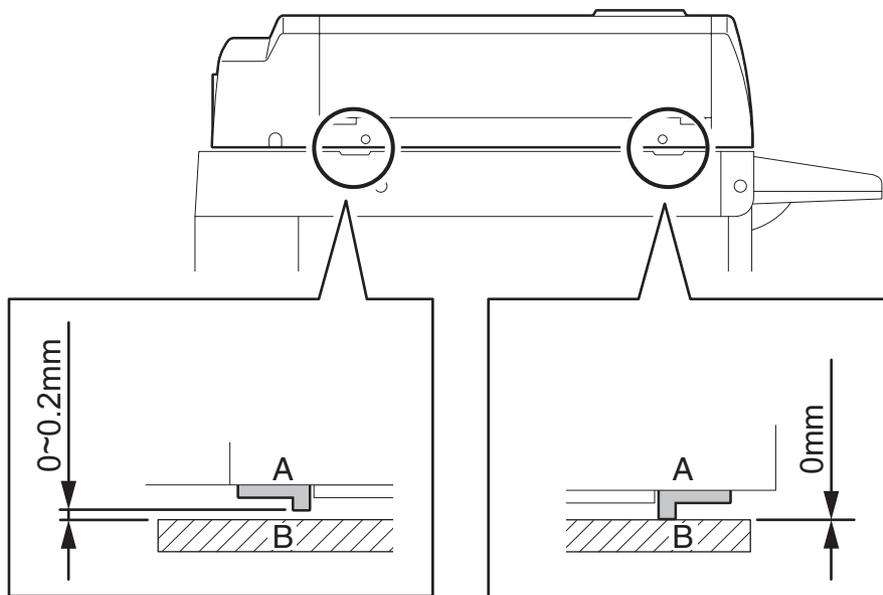


Fig. 3-50

- (4) After the adjustment, press the [CANCEL] button to turn OFF the exposure lamp.

## [B] Adjustment

- (1) Close the ADF/RADF.
- (2) Adjust it by turning the adjustment screws on the hinges.
  - Adjust the height on the rear side by means of the screw on the hinge on the feed side of the ADF/RADF.  
Turn it clockwise ..... Heightened  
Turn it counterclockwise ..... Lowered

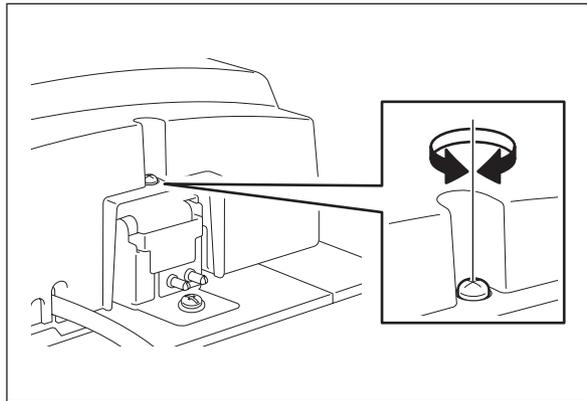


Fig. 3-51

- Adjust the gap on the rear side by means of the screw on the hinge on the feed side of the ADF/RADF.  
Turn it clockwise ..... Lowered  
Turn it counterclockwise ..... Heightened

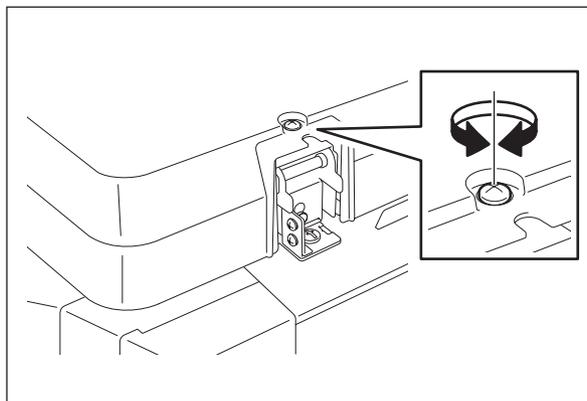


Fig. 3-52

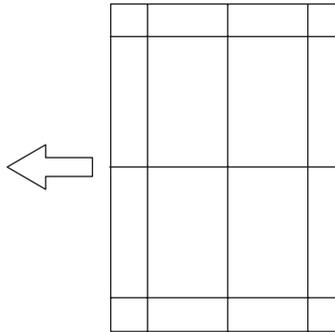
### 3.10.3 Adjustment of Skew

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF. Also, the ADF/RADF position and height shall be adjusted properly.

**[A] Checking**

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.



**Fig. 3-53 Chart (Original)**

Simplex copying (ADF/RADF):

- (1) Place the chart provided as an original with its face up on the original tray of the ADF/RADF, select [1 Sided -> 1 Sided] and press the [START] button.
- (2) Superimpose the chart on the copy and check the inclination of the copy image.

Duplex copying (RADF):

- (1) Place the chart provided as an original with its face up on the original tray of the RADF, select [2 Sided -> 2 Sided] and press the [START] button.
- (2) Superimpose the chart on the copy and check the inclination of the copy image.

## [B] Adjustment

### Simplex copying (ADF/RADF):

- (1) Shift the aligning plate with the scale as the guide shown in the figure below to adjust the skew.

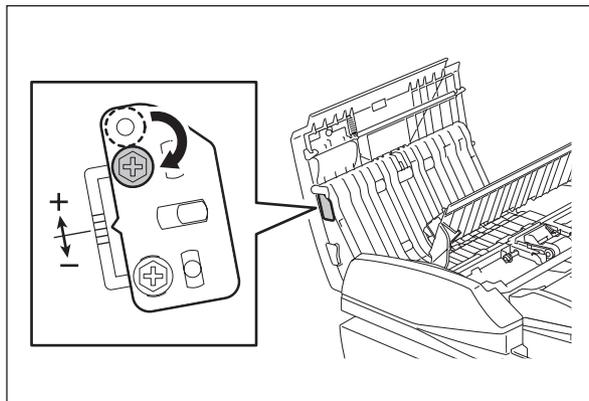


Fig. 3-54

- (2) If the image skew is "C" as shown in the figure below, shift the aligning plate in the direction of "+", and if "D", shift it to "-".

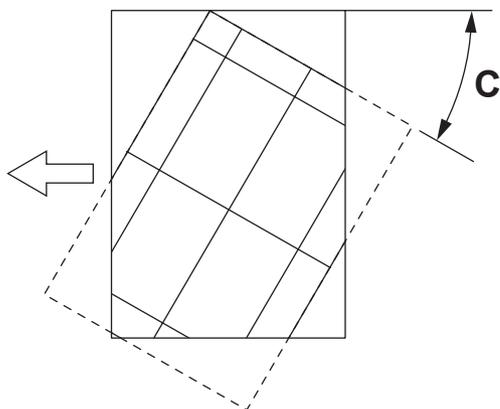


Fig. 3-55

Shift the aligning plate in the direction of "+".

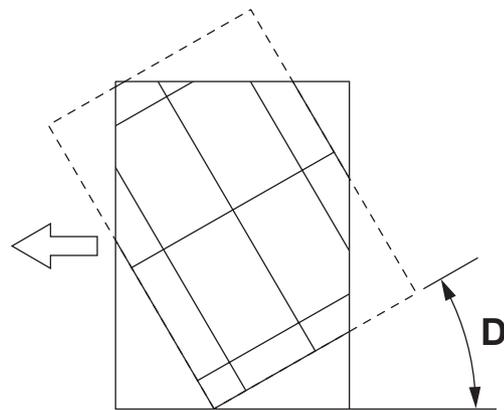


Fig. 3-56

Shift the aligning plate in the direction of "-".

Duplex copying (RADF):

- (1) Shift the aligning plate with the scale as the guide shown in the figure below to adjust the skew.

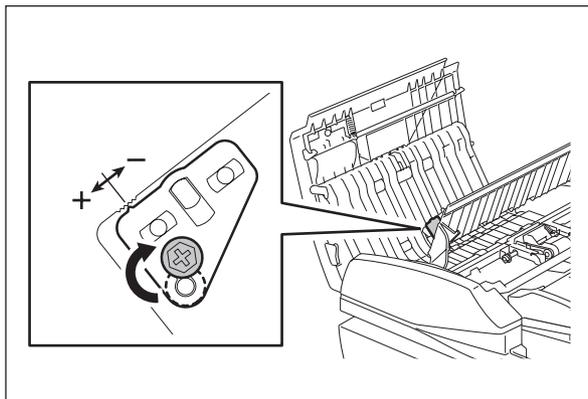


Fig. 3-57

- (2) If the image skew is "C" as shown in the figure below, shift the aligning plate in the direction of "-", and if "D", shift it to "+".

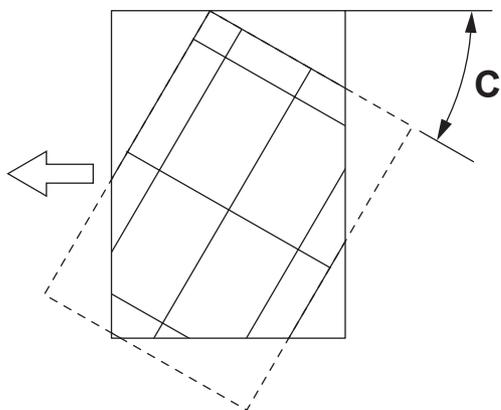


Fig. 3-58

Shift the aligning plate in the direction of "-".

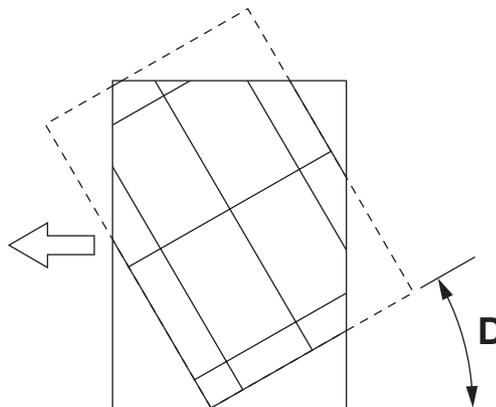


Fig. 3-59

Shift the aligning plate in the direction of "+".

### 3.10.4 Adjustment of the Leading Edge Position

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF. Also, the ADF/RADF position and height shall be adjusted properly.

**[A] Checking**

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.

Simplex copying (ADF/RADF):

- (1) Place the chart provided as an original with its face up on the original tray of the ADF/RADF, select [1 Sided -> 1 Sided] and press the [START] button.
- (2) Superimpose the chart on the copy and check the leading edge E of the chart and F of the copy.

Duplex copying (RADF):

- (1) Place the chart provided as an original with its face up on the original tray of the RADF, select [2 Sided -> 2 Sided] and press the [START] button.
- (2) Superimpose the chart on the copy and check the leading edge E of the chart and F of the copy.

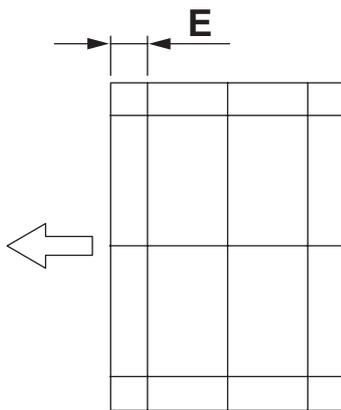


Fig. 3-60 Chart (Original)

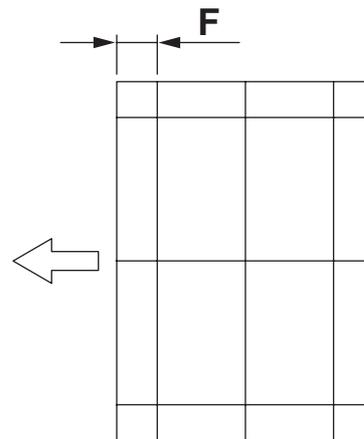


Fig. 3-61 Copy

## **[B] Adjustment**

### Simplex copying (ADF/RADF)

- (1) Turn the power ON while pressing [0] and [5] simultaneously, key in [365] and then press the [ENTER] button.
- (2) Enter the value.
  - If the leading edge (F) margin of the copy image is larger than the (E) margin of the chart, enter a value smaller than the current one.

**Note:**

Changing one value shifts the copy image by 0.2 mm.

- If the leading edge (F) margin of the copy image is smaller than the (E) margin of the chart, enter a value larger than the current one.

**Note:**

Changing one value shifts the copy image by 0.2 mm.

- (3) Press the [ENTER] button.

### Duplex copying (RADF):

- (1) Turn the power ON while pressing [0] and [5] simultaneously, key in [366] and then press the [ENTER] button.
- (2) Enter the value.
  - If the leading edge (F) margin of the copy image is larger than the (E) margin of the chart, enter a value smaller than the current one.

**Note:**

Changing one value shifts the copy image by 0.2 mm.

- If the leading edge (F) margin of the copy image is smaller than the (E) margin of the chart, enter a value larger than the current one.

**Note:**

Changing one value shifts the copy image by 0.2 mm.

- (3) Press the [ENTER] button.

### 3.10.5 Adjustment of Horizontal Position

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF. Also, the ADF/RADF position and height shall be adjusted properly.

**[A] Checking**

Check the image using the chart (original) with a center line in the following procedure.

- (1) Place the chart provided as an original with its face up on the original tray of the ADF/RADF.
- (2) Press the [START] button.
- (3) Fold the copy in half and check if the center line is misaligned.

**[B] Adjustment**

- (1) Turn the power ON while pressing [0] and [5] simultaneously.
- (2) Key in [358] and then press the [ENTER] button.
  - If the center line of the copy image is shifted to the front side of the equipment, enter a value larger than the current one.

**Note:**

Changing one value shifts the copy image by 0.169 mm.

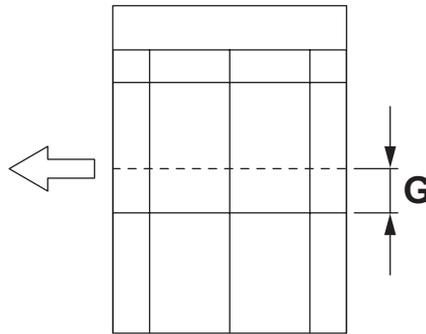


Fig. 3-62

- If the center line of the copy image is shifted to the rear side of the equipment, enter a value smaller than the current one.

**Note:**

Changing one value shifts the copy image by 0.169 mm.

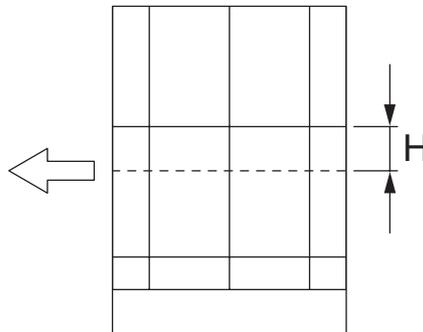


Fig. 3-63

- (3) Press the [ENTER] button.

### 3.10.6 Adjustment of Copy Ratio

**Note:**

Check if the image adjustment for the equipment is performed properly before this adjustment of the ADF/RADF. Also, the ADF/RADF position and height shall be adjusted properly.

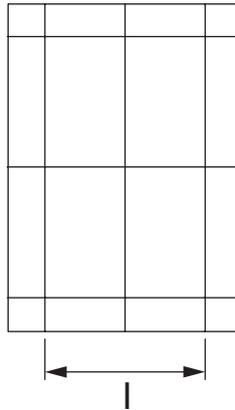
**[A] Checking**

Check the image using the chart (original) with vertical and horizontal lines in the following procedure.

- (1) Place the chart provided as an original with its face up on the original tray of the ADF/RADF.
- (2) Press the [START] button.
- (3) Superimpose the chart on the copy and check the image dimension "l".

**[B] Adjustment**

- (1) Turn the power ON while pressing [0] and [5] simultaneously.
- (2) Key in [357] and then press the [ENTER] button.
  - If the copy image dimension "l" is larger than the chart dimension, enter a value smaller than the current one.
  - If the copy image dimension "l" is smaller than the chart dimension, enter a value larger than the current one.



**Fig. 3-64**

- (3) Press the [ENTER] button.

### 3.10.7 Adjustment of ADF/RADF Opening/Closing Sensor

Adjust the bracket position so that the sensor is turned ON when the height "A" becomes 100 mm or less (within the empty weight falling limit).

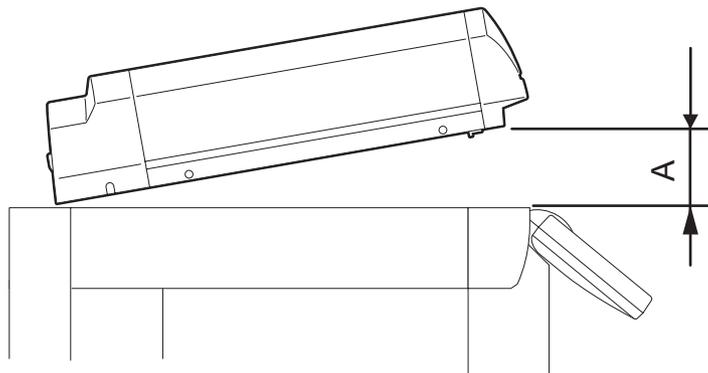


Fig. 3-65

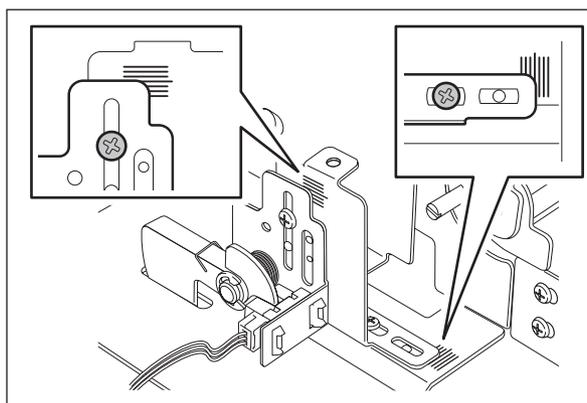


Fig. 3-66



## 4. PREVENTIVE MAINTENANCE (PM)

### 4.1 General Descriptions for PM Procedure

Perform the preventive maintenance in the following timing.

e-STUDIO165/167:every 72,000 sheets

e-STUDIO205/207/237:every 90,000 sheets

- (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.
  - 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.
- (4) After preventive maintenance, set the value of 08-252 (Current value of PM counter Display) to "0".
  - \* This deletes the message "Time for maintenance".

## 4.2 Operational Items in Overhauling

Overhaul each equipment with the following timing.

e-STUDIO165/167: When the number of output pages has reached 216,000 or 2.5 years have passed from the start of use (Whichever is earlier)

e-STUDIO205/207/237: When the number of output pages has reached 270,000 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) Check if the harnesses, thermistors, fuses, etc. are damaged. Replace them if necessary.

## 4.3 Preventive Maintenance Checklist

Symbols 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 X5-6020) W2: White grease (Molykote HP-300) AV: Alvania No.2 FL: Floil (GE-334C)	Value: Replacement cycle (Value x 1000) R: Replace if deformed or damaged	O: After cleaning or replacement, confirm there is no problem.

### [Preventive Maintenance checklist]

#### Notes:

- Perform cleaning and lubricating in the following timing.  
Exceptionally, the lubrication for the drum unit, main charger, developer unit and transfer unit must follow the PM cycle of each unit.  
e-STUDIO165/167: every 72,000 sheets  
e-STUDIO205/207/237: every 90,000 sheets
- Value under "Replacement" indicates the replacement cycle for e-STUDIO165/167/ e-STUDIO205/207/237.
- The replacement cycle of the parts in the feeding section equals to the number of sheets fed from each paper source.
- Be careful not to put oil on the rollers, belts and belt pulleys when lubricating.
- Page-Item (P-I) is described in the column of the Parts list.

#### A. Scanner

	Items to check	Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
A1	Original glass	B or A				P17-I1	*a1
A2	ADF original glass	B				P17-I2	*a1
A3	Carriage rail	B				P9-I9	
A4	Original glass guide	B		R			
A5	Automatic original detection sensor	B			O	P9-I19	

#### B. Laser unit

	Items to check	Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
B1	Slit glass	B					

### C. Feed unit

	Items to check	Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
C1	Pickup roller			90		P16-I17	
C2	Paper guide	B					
C3	Drive gear (tooth face and shaft)		W1				*c1
C4	GCB bushing bearing		L				
C5	One side of the plastic bushing		W1				
C6	Registration roller (metal)	A		R		P16-I4	
C7	Registration roller (rubber)	A		R		P11-I18	

### D. ADF (MR-2017)

	Items to check	Cleaning (30K)	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
D1	Pickup roller	A		90		P5-I1	
D2	Separation roller	A		90		P4-I10	
D3	Feed roller	A		90		P5-I1	
D4	Registration roller	A					
D5	Intermediate transfer	A					
D6	Front read roller	A					
D7	Rear read roller	A					
D8	Exit/reverse roller	A					
D9	Platen sheet	B or A					

### E. Bypass feed unit

	Items to check	Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
E1	Pickup roller			90		P14-I22	
E2	Feed roller			90		P14-I22	
E3	Separation pad			90		P13-I22	
E4	Bypass tray	B					
E5	Drive gear (tooth face and shaft)		W1				
E6	GCB bushing bearing		L				
E7	One side of the plastic bushing		W1				

## F. Main charger

	Items to check	Cleaning	Lubrication	Replacement (KD)	Operation check	Parts list <P-I>	Remarks
F1	Main charger case	B				P18-I1	*f1
F2	Needle electrode			72/90		P18-I2	*f1
F3	Contact point of terminals	B					
F4	Main charger wire cleaner			R	○	P18-I7	
F5	Main charger grid			72/90		P18-I3	

## G. Transfer / Separation charger

	Items to check	Cleaning	Lubrication	Replacement (KD)	Operation check	Parts list <P-I>	Remarks
G1	Charger case	B				P19-I2	*g1
G2	Transfer charger wire			72/90	○	P19-I18	*g1
G3	Separation charger wire			72/90	○	P19-I18	*g1
G4	Pre-transfer guide	B or A					
G5	Post-transfer guide	B or A					
G6	Separation supporter	B				P19-I17	
G7	Terminal cover	B				P19-I10	
G8	Contact point of terminals	B					
G9	Transfer guide roller	B		R		P19-I14	

## H. Drum/Cleaner related section

	Items to check	Cleaning	Lubrication	Replacement (KD)	Operation check	Parts list <P-I>	Remarks
H1	Photoconductive drum			72/90			Chap. 4.7.2
H2	Discharge LED	B					
H3	Whole cleaner unit	B					
H4	Drum cleaning blade			72/90		P20-I5	*h1
H5	Separation finger for drum			72/90		P20-I17	*h2
H6	Recovery blade	B		72/90		P20-I6	*h3
H7	Ozone filter			72/90		P11-I3	

### I. Developer unit / Toner cartridge related section

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
I1	Whole developer unit	B					
I2	Developer material			72/90			*i1
I3	Front shield	B		R			
I4	Oil seal (6 pcs.)		AV	360/450		P21-I11	*i2
I5	Guide roller	B or A					
I6	Side shield	B		R			
I7	Developer unit lower stay	B					
I8	Toner cartridge drive gear shaft		W1				

### J. Fuser/Paper exit unit

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
J1	Fuser roller			72/90		P23-I8	
J2	Pressure roller			72/90		P24-I4	
J3	Separation finger for fuser roller			72/90		P23-I14	*j1
J4	Fuser unit entrance guide	A				P24-I9	
J5	Thermistor (3 pcs.)	A		R		P23-I6	*j2
J6	Drive gear (tooth face and shaft)		W2	R		P23-I22 P23-I23	
J7	Fuser roller gear			R		P23-I10	
J8	Pressure roller bushing			72/90		P23-I30	
J9	Exit roller	A		R		P23-I19	

### K. PFU (MY-1027)

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
K1	Pickup roller	A		90		P3-I12	
K2	Feed roller	A				P3-I16	

### L. Automatic duplexing unit (MD-0103)

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
L1	Transport roller (upper, middle and lower)	A		R			
L2	One side of the GCB busing to which the shaft is inserted		L				
L3	One side of the plastic busing to which the shaft is inserted		W1				
L4	Paper guide	B				P1-I19	

### M. RADF (MR-3019)

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
M1	Pickup roller	A		90		P5-I1	
M2	Separation roller	A		90		P4-I10	
M3	Feed roller	A		90		P5-I1	
M4	Registration roller	A				P4-I30	
M5	Intermediate transfer roller	A				P3-I13	
M6	Front read roller	A				P3-I14	
M7	Rear read roller	A				P3-I1	
M8	Reverse registration roller	A				P3-I10	
M9	Exit/reverse roller	A				P4-I25	
M10	Platen sheet	B or A				P1-I25	

### N. PFP (KD-1013/1022)

Items to check		Cleaning	Lubrication	Replacement (x 1,000 sheets)	Operation check	Parts list <P-I>	Remarks
N1	Pickup roller (upper/lower)			80		P5-I20	
N2	Feed roller (upper/lower)			80		P5-I24	
N3	Separation roller (upper/lower)		AV, W2	80		P5-I5	*n1
N4	Drive gear (tooth face)		W1				

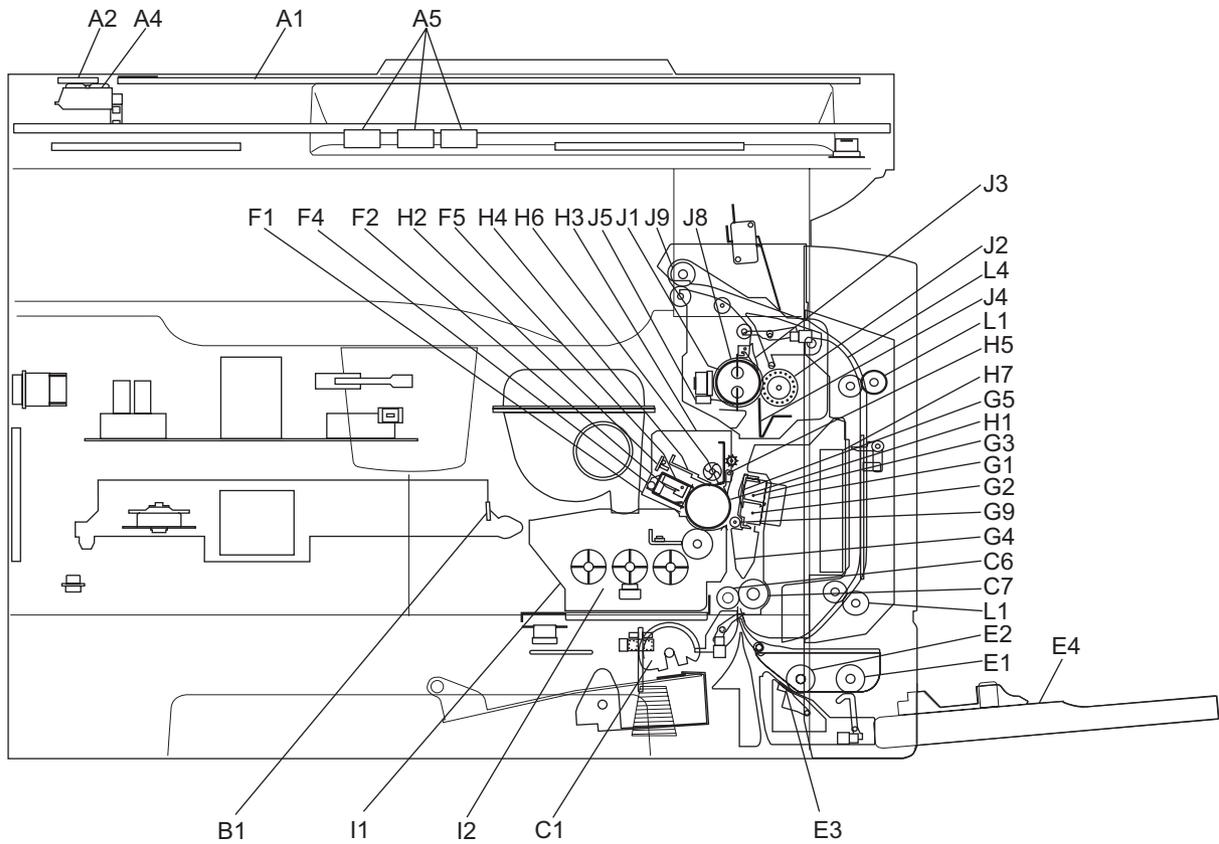


Fig. 4-1 Front side

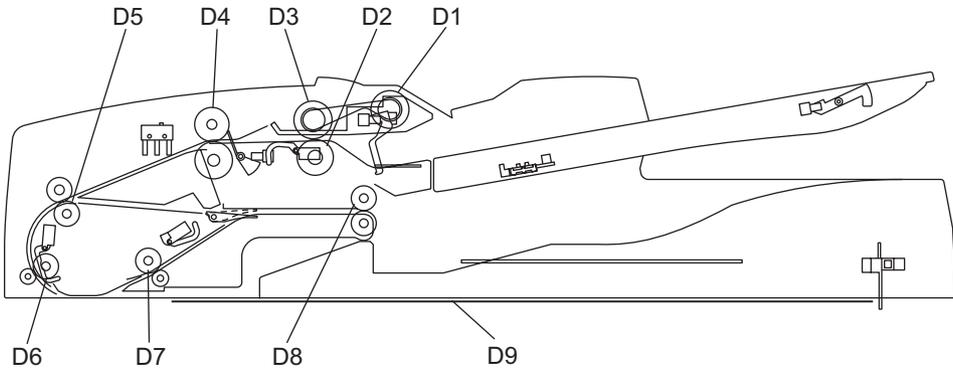


Fig. 4-2 Automatic Document Feeder (ADF)

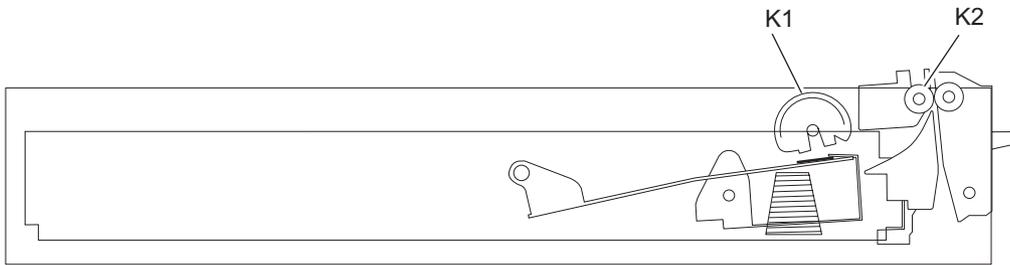


Fig. 4-3 Paper Feed Unit (PFU)

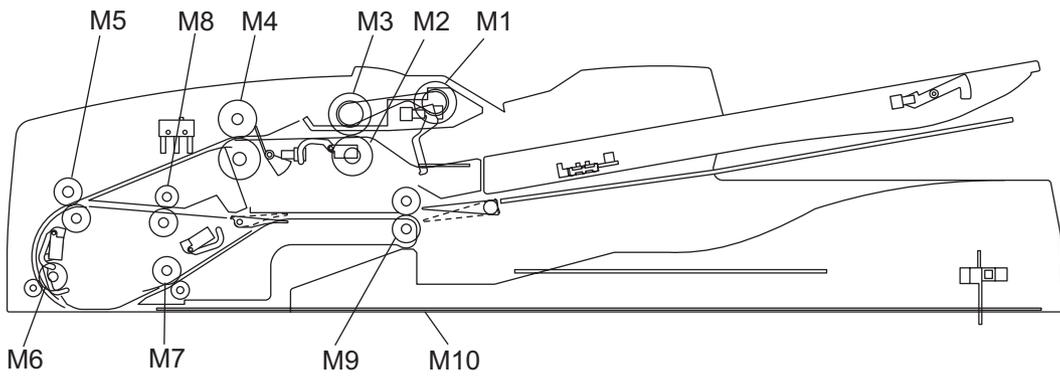
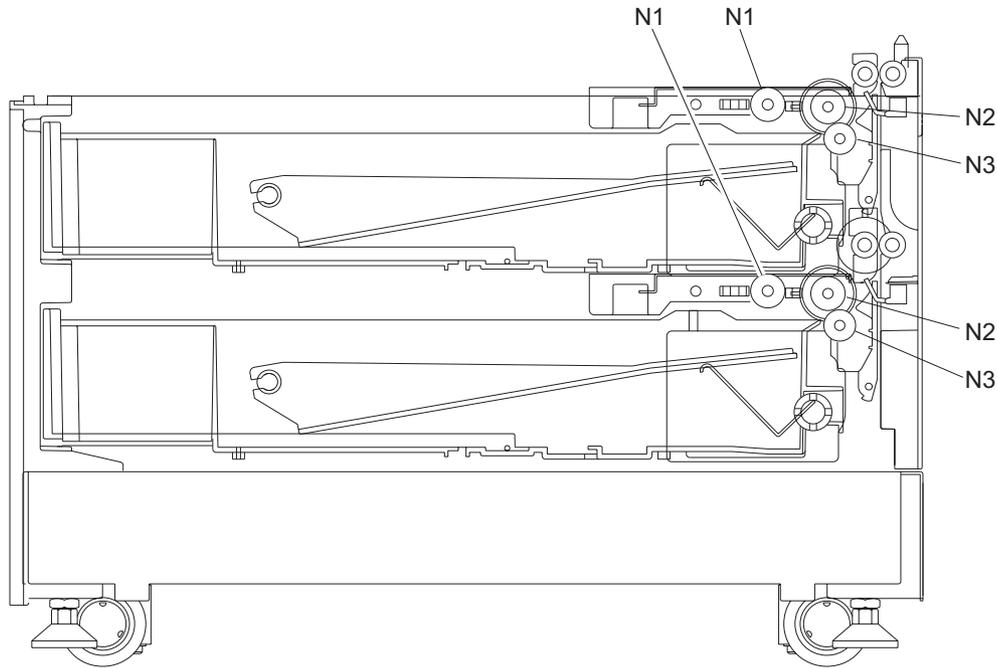


Fig. 4-4 Reversing Automatic Document Feeder (RADF)



**Fig. 4-5 Paper Feed Pedestal (PFP)**

**Remarks “\*” in the Preventive Maintenance Check List**

- \* a1. Original glass / ADF original glass  
Clean both sides of the original glass and ADF original glass.  
Make sure that there is no dust 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.

- \* c1. Drive gears in the paper feeding section (teeth of gears and shafts)  
Apply some white grease (Molykote X5-6020) to the teeth of gears and shafts 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.

- \* f1. Main charger case / Needle electrode  
Clean the main charger case with a cloth soaked in water and squeezed tightly, and then wipe them with a dry cloth.  
Clean the needle electrode only with the main charger cleaner.  
Replace the needle electrode with a new one if it is damaged regardless of the number of output pages which have been made.

**Note:**

Do not touch the needle electrode with your bare hand when attaching the needle electrode.

- \* g1. Transfer / separation charger case and transfer / separation charger wire  
Clean the transfer / separation charger case with a cloth soaked in water and squeezed tightly, and then wipe them with a dry cloth.  
Replace the wire with a new one if it is damaged regardless of the number of output pages which have been made.

**Notes:**

- Do not deform the metal plate of the transfer guide roller.
- Be careful of the following when attaching a new wire (length: 353 mm)
  - Insert the wire securely into the V-grooves of the front and rear sides.
  - Do not twist the wire.
  - Do not touch the wire with your bare hand.

- \* h1. Drum cleaning blade  
Since the edge of the blade is vulnerable and can be easily damaged by factors such as the adherence of paper dust. Replace the cleaning blade with new ones if poor images are printed due to the damaged blade regardless of the number of output pages if which have been made.

- \* h2. Separation fingers for drum  
The paper jam may be caused if the tip of the separation 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.  
If any mark which was made by the finger appears on the printed image, clean the tip of the finger.

**Notes:**

1. Wipe the tip of the finger lightly with a dry cloth trying not to deform it.  
Do not leave the lint on the tip.
2. Apply patting powder to the tip of the fingers and drum surface after replacing or cleaning them to reduce the load on the drum surface by the finger.

- \* h3. Recovery blade  
Replace the recovery blade regardless the number of output pages if the edge of the blade get damaged.

- \* i1. Developer material  
Make sure to perform "05-280" and take off the process unit before the developer material is replaced.  
After replacing the developer material, be sure to perform the auto-toner adjustment.  
( P. 3-1 "3.1 Adjustment of Auto-Toner Sensor")

- \* i2. Oil seal (Developer unit)  
Mixer unit (Shafts of mixers-1, -2 & -3) 6 pcs.

**Note:**

Lubricate the oil seal only when the oil seal is replaced.

During replacement, coat the oil seal with grease (Alvanian No.2).

- (1) Push in a new oil seal parallel to the mounting hole section of the developer frame or outside of the holder.
  - \* 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: About two small drops
- (3) Wipe off any grease the exudes from the inside.

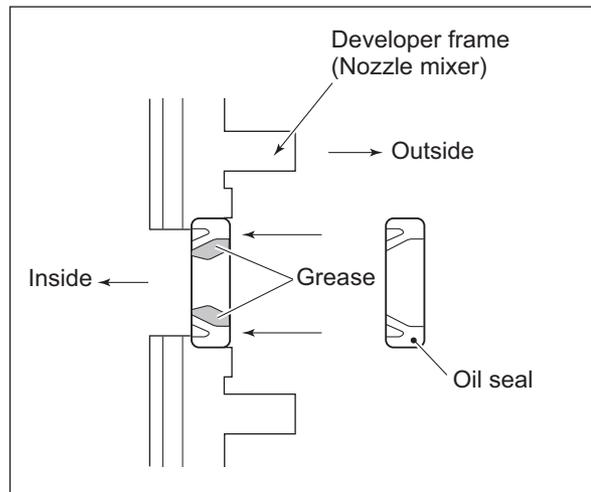


Fig. 4-6

- \* j1. Separation fingers for fuser roller  
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.
- \* j2. Thermistor  
Clean the thermistor with alcohol if the toner or dirt is sticking to it when the fuser 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.
- \* n1. Separation roller: PFP  
Apply an even coat of grease (Alvania No.2) to all round the inside of the spring. When replacing the separation roller, apply adequate amount 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.

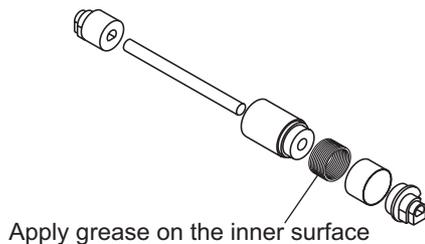


Fig. 4-7

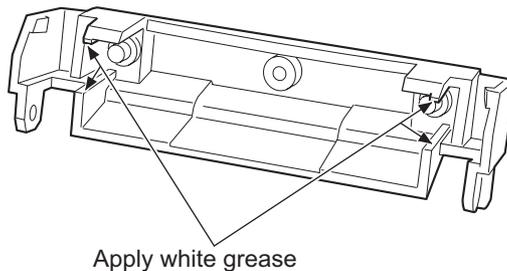


Fig. 4-8

## 4.4 PM KIT

Item	Product name	Part name	Qty.
DEV-KIT-2340	Developer material	D-2320	1
	Drum cleaning blade	BL-2320D	1
	Separation finger for drum	SCRAPER-371	2
	Recovery blade	BLADE-REC	1
	Main charger grid	GRID-CH-M-371	1
	Needle electrode	CH-M	1
	Transfer charger wire	WIRE-CH-060-353-R	1
	Separation charger wire	WIRE-CH-060-353-R	1
FR-KIT-1640	Ozone filter	FILTER-OZON-TRU-371	1
	Fuser roller	HR-1640-U	1
	Pressure roller	HR-1640-L	1
	Separation finger for fuser roller	SCRAPER-280	5
	Bush for fuser roller	BUSH-HR/RLR	2
DF-KIT-3018	Pickup roller	ASYS-ROL-FEED	1
	Feed roller	ASYS-ROL-FEED	1
	Separation roller	ASYS-ROL-RET	1

## 4.5 Jig List

Item	Parts list	
	Page	Item
Door switch jig	101	1
Brush	101	2
Doctor sleeve jig	101	3
Developer material nozzle	101	4
Belt tension jig	101	6
High-voltage transformer jig	101	7
Downloading jig (DLM board)	102	1
Download JIG-2 (6 Flash ROMs)	102	2
Download JIG-1 (2 Flash ROMs)	102	3
ROM writer adapter (For 1881)	102	4
ROM writer adapter (For 1931)	102	5

## 4.6 Grease List

	Grease name	Part name	Volume	Container	Parts list	
					Page	Item
SI	Silicon oil	ASM-SILICONE-1M	100cc	Bottle	101	10
L	Launa 40	OIL-LAUNA40-100	100cc	Oiler	101	11
W2	White grease (Molykote HP-300)	ASM-PG-HP300-S	100g	Bottle	101	12A
W2	White grease (Molykote HP-300)	GREASE-HP300-S	10g	Bottle	101	12B
AV	Alvania No.2	ASM-PG-ALV2	100g	Tube	101	13
W1	White grease (Molykote X5-6020)	MOLYKOTE-100	100g	Tube	101	14
FL	Floil (GE-334C)	ASM-PG-GE334C-S	20g	Bottle	101	15

## 4.7 Precautions for Storing and Handling Supplies

### 4.7.1 Precautions for storing TOSHIBA supplies

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

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) Fuser roller / Pressure roller

Avoid places where the rollers may be subjected to high humidity, chemicals and/or their fumes.

5) Paper

Avoid storing 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.

## 4.7.2 Checking and cleaning of photoconductive drum

### 1) Use of gloves

If fingerprints or oil adhere to the drum surface, the property of the photoconductive drum may degrade, affecting the quality of the print image. So, do not touch the drum surface with your bare hands.

### 2) Handling precautions

As the photoconductive drum surface is very sensitive, be sure to handle the drum carefully when installing and removing it so as not damage its surface.

Be sure to apply "patting powder" (lubricant) to the entire surface of the drum (including both ends of the drum where OPC is not coated) when replacing the drum. When the drum has been replaced with a new one, the drum counter (the Setting Mode 08-1150-0,3,6,7) must be cleared to 0 (zero).

#### Notes:

- Application of patting powder is for reducing the friction between the drum and cleaning blade. If the application of patting powder is neglected, the drum and cleaning blade may be damaged.
- When paper fibers or thread adhere to the cleaning blade edge, they may reduce the cleaning efficiency and, in addition, may damage the blade and the drum. Be sure to remove any fibers found adhering to the blade.

### 3) Installation of the equipment and storage of drum

Avoid installing the equipment where it may be subjected to high temperature, high humidity, chemicals and/or their fumes.

Do not place the light 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.

### 4) Cleaning the drum

At preventive maintenance calls, wipe the entire surface of the drum clean using the designated cleaning cotton. 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.

### 5) Scratches on photoconductive drum surface

If the surface is scratched in such a way that the aluminum substrate is exposed, no print image will be produced on this area. In addition, the cleaning blade will be damaged so replacement with a new drum will be necessary.

### 6) Collecting used photoconductive drums

Regarding the recovery and disposal of used photoconductive drums, we recommend following the relevant local regulations or rules.

### 4.7.3 Checking and cleaning of drum cleaning blade

#### 1) 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.

#### 2) Cleaning procedure

Clean the blade edge with a cloth moistened with water and squeezed lightly.

### 4.7.4 Checking and cleaning of fuser roller and pressure roller

#### 1) Handling precautions

##### - Fuser roller

Do not leave any oil (fingerprints, etc.) on the fuser roller.

Be careful not to allow any hard object to hit or rub against the fuser roller, or it may be damaged, possibly resulting in poor cleaning.

##### - Pressure roller

Do not leave any oil (fingerprints, etc.) on the pressure roller.

#### 2) Checking

- Check for stain and damage on the fuser and pressure rollers, and clean if necessary.
- Check the separation guide and fingers and check for chipped tips.
- Check the thermistors for proper contact with the pressure roller.
- Check the fused and fixed condition of the toner.
- Check the gap between the entrance guide and pressure roller.
- Check the fuser roller for proper rotation.

#### 3) Cleaning procedure

When fuser roller and pressure roller become dirty, they will cause jamming. If this happens, wipe the surface clean with a piece of soft cloth. For easier cleaning, clean the roller while they are still warm.

#### **Note:**

Be careful not to rub the fuser roller and pressure roller surface with your nails or hard objects because it can be easily damaged. Do not use silicone oil on the fuser roller and pressure roller.

## 5. TROUBLESHOOTING

### 5.1 Diagnosis and Prescription for Each Error Code

#### 5.1.1 Paper transport jam

[E01] Leading edge of paper not reaching the exit sensor

[E02] Trailing edge of paper not passing the exit sensor

Open the transfer cover. Is there any paper on the transport path?

↓ YES → Remove the paper.

NO

Is the exit sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the exit sensor is disconnected.  
| 2) Check if the connector CN17 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the exit sensor.  
| 6) Replace the MAIN board.

↓

YES

Is the registration roller clutch working?

(Perform the output check in the test mode: 04-108/158)

| NO → 1) Check if the connector of the registration roller clutch is discon-  
| nected.  
| 2) Check if the connector CN26 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the registration roller clutch.  
| 6) Replace the MAIN board.

↓

YES

- 1) Check the registration roller. Replace it if it is worn out.
- 2) Check if the aligning amount is appropriate. (See  P. 3-5 "3.2.2 Paper alignment at the registration roller")  
An [E01] error occurs both when the amount is too large and too small.

**[E03] Paper remaining inside the equipment at power-ON**

Open the cover of the unit/area whose picture is blinking on the control panel. Is there any paper on the transport path? (Refer to the following table.)

↓ YES → Remove the paper.

NO

Is the sensor in the jamming area working? (Perform the input check in the test mode: refer to the following table.)

- | NO →
- 1) Check if the connector of the sensor is disconnected.
  - 2) Check if any of the connectors on the MAIN board is disconnected.
  - 3) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
  - 5) Replace the sensor.
  - 6) Replace the MAIN board.
- ↓

YES

Replace the MAIN board.

Relation between the jamming area and the corresponding sensors and covers  
(If a jam is occurring in the PFU, check the PFU board.)

Jamming area	Cover	Sensor	Test mode / Input check
Registration area	Transfer cover	Registration sensor	13-[04. SENSOR TEST]
Exit area	Transfer cover	Exit sensor	13-[04. SENSOR TEST]
PFU	PFU side cover	PFU feed sensor	13-[04. SENSOR TEST]

**[E21] Paper fed from the PFU drawer not reaching the registration sensor**

**[E30] Paper fed from the PFP upper drawer not reaching the registration sensor**

**[E33] Paper fed from the PFP lower drawer not reaching the registration sensor**

Open the transfer cover. Is there paper in front of the registration sensor?

↓ YES → Remove the paper.

NO

Is the registration sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the registration sensor is disconnected.  
| 2) Check if the connector CN26 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the registration sensor.  
| 6) Replace the MAIN board.  
↓

YES

Are the PFU transport clutches (High speed/Low speed) working?

(Perform the output check in the test mode: 04-203, 205)

| NO → 1) Check if the connectors of the PFU transport clutches (High speed/  
| Low speed) are disconnected.  
| 2) Check if the connector CN4 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the PFU transport clutches (High speed/Low speed).  
| 6) Replace the MAIN board.  
↓

YES

- 1) Check the condition of the pickup roller of paper source, and replace it if it is worn out.
- 2) Check the transport roller. Replace it if it is worn out.

**[E32] Paper fed from the PFP upper drawer not reaching the PFU feed sensor**

**[E35] Paper fed from the PFP lower drawer not reaching the PFU feed sensor**

Open the side cover. Is there paper in front of the PFU feed sensor?

↓ YES → Remove the paper.

NO

Is the PFU feed sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the PFU feed sensor is disconnected.  
| 2) Check if the connector CN4 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the PUF feed sensor.  
| 6) Replace the MAIN board.  
↓

YES

Are the PFU transport clutches (High speed/Low speed) working?

(Perform the output check in the test mode: 04-203, 205)

| NO → 1) Check if the connectors of the PFU transport clutches (High speed/  
| Low speed) are disconnected.  
| 2) Check if the connector CN4 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the PFU transport clutches (High speed/Low speed).  
| 6) Replace the MAIN board.  
↓

YES

Is the PFP transport clutch working? (Perform the output check in the test mode: 04-225)

| NO → 1) Check if the connector of the PFP transport clutch is disconnected.  
| 2) Check if any of the connectors CN241, CN242 and CN244 on the  
| PFP board is disconnected.  
| 3) Check if the connector CN13 on the MAIN board is disconnected.  
| 4) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 5) Check if the conductor patterns on the PFP board and MAIN board  
| are short circuited or open circuited.  
| 6) Replace the PFP transport clutch.  
| 7) Replace the PFP board.  
| 8) Replace the MAIN board.  
↓

YES

- 1) Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
- 2) Check the transport roller. Replace it if it is worn out.

**[E36] Paper fed from the PFP lower drawer not reaching the PFP upper drawer feed sensor**

Open the PFP side cover. Is there any paper in front of the PFP upper drawer feed sensor?

↓ YES → Remove the paper.

NO

Is the PFP upper drawer feed sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

- | NO →
- 1) Check if the connector of the PFP upper drawer feed sensor is disconnected.
  - 2) Check if either of the connectors CN241 or CN243 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP upper drawer feed sensor.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.
- ↓

YES

Is the PFP transport clutch working? (Perform the output check in the test mode: 04-225)

- | NO →
- 1) Check if the connector of the PFP transport clutch is disconnected.
  - 2) Check if any of the connectors CN241, CN242 and CN244 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP transport clutch.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.
- ↓

YES

- 1) Check the condition of the feed roller, separation roller and pickup roller of each paper source, and replace them if they are worn out.
- 2) Check the PFP transport roller. Replace it if it is worn out.

**[E51] ADU transport jam (paper not reaching the ADU sensor)**

Open the ADU. Is there any paper in front of the ADU sensor?

↓ YES → Remove the paper.

NO

Is the ADU sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

- | NO →
- 1) Check if either of the connectors CN251 on the ADU board is disconnected.
  - 2) Check if the connector CN13 on the MAIN board is disconnected.
  - 3) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 4) Check if the conductor patterns on the ADU board and MAIN board are short circuited or open circuited.
  - 5) Replace the ADU board.
  - 6) Replace the MAIN board.
- ↓

YES

Check the rollers in the ADU. Replace them if they are worn out.

## 5.1.2 Paper misfeeding

### [E11] ADU misfeeding

Open the transfer cover. Is there any paper in front of the registration sensor?

↓ YES → Remove the paper.

NO

Is the registration sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the registration sensor is disconnected.
- 2) Check if the connector CN26 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the registration sensor.
- 6) Replace the MAIN board.

↓

YES

Check the rollers in the ADU. Replace them if they are worn out.

### [E12] Bypass misfeeding

Open the transfer cover. Is there any paper in front of the registration sensor?

↓ YES → Remove the paper.

NO

Is the registration sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the registration sensor is disconnected.
- 2) Check if the connector CN26 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the registration sensor.
- 6) Replace the MAIN board.

↓

YES

Is the bypass pickup solenoid working? (Perform the output check in the test mode: 04-204)

Is the bypass paper sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the bypass pickup solenoid and bypass paper sensor are disconnected.
- 2) Check if the connector CN26 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the bypass pickup solenoid and bypass paper sensor.
- 6) Replace the MAIN board.

↓

YES

Check the bypass pickup roller. Replace it if it is worn out.

**[E13] Drawer misfeeding (paper not reaching the registration sensor)**

Open the transfer cover. Is there any paper in front of the registration sensor?

↓ YES → Remove the paper.

NO

Is the registration sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the registration sensor is disconnected.  
| 2) Check if the connector CN26 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the registration sensor.  
| 6) Replace the MAIN board.  
↓

YES

Is the pickup solenoid working?

(Perform the output check in the test mode: 04-201)

| NO → 1) Check if the connector of the pickup solenoid is disconnected.  
| 2) Check if the connector CN26 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the pickup solenoid.  
| 6) Replace the MAIN board.  
↓

YES

Check the drawer pickup roller. Replace it if it is worn out.

**[E14] PFU drawer misfeeding (paper not reaching the PFU feed sensor)**

Open the side cover. Is there any paper in front of the PFU feed sensor?

↓ YES → Remove the paper.

NO

Is the PFU feed sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the PFU feed sensor is disconnected.  
| 2) Check if the connector CN4 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the PFU feed sensor.  
| 6) Replace the MAIN board.  
↓

YES

Is the PFU pickup solenoid working?

(Perform the output check in the test mode: 04-202)

| NO → 1) Check if the connector of the PFU pickup solenoid is disconnected.  
| 2) Check if the connector CN4 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 5) Replace the PFU pickup solenoid.  
| 6) Replace the MAIN board.  
↓

YES

Check the PFU drawer pickup roller. Replace it if it is worn out.

**[E15] PFP upper drawer misfeeding (paper not reaching the PFP upper drawer feed sensor)**

Open the PFP side cover. Is there any paper in front of the PFP upper drawer feed sensor?

↓ YES → Remove the paper.

NO

Is the PFP upper drawer feed sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

- | NO →
- 1) Check if the connector of the PFP upper drawer feed sensor is disconnected.
  - 2) Check if either of the connectors CN241 or CN243 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP upper drawer feed sensor.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.
- ↓

YES

Is the PFP upper drawer feed clutch working?

(Perform the output check in the test mode: 04-226)

- | NO →
- 1) Check if the connector of the PFP upper drawer feed clutch is disconnected.
  - 2) Check if any of the connectors CN241, CN242 and CN247 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP upper drawer feed clutch.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.
- ↓

YES

Check the PFP upper drawer feed roller, separation roller and pickup roller.  
Replace them if they are worn out.

**[E16] PFP lower drawer misfeeding (paper not reaching the PFP lower drawer feed sensor)**

Open the PFP side cover. Is there any paper in front of the PFP lower drawer feed sensor?

↓ YES → Remove the paper.

NO

Is the PFP lower drawer feed sensor working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

- ↓ NO →
- 1) Check if the connector of the PFP lower drawer feed sensor is disconnected.
  - 2) Check if either of the connectors CN241 or CN243 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP lower drawer feed sensor.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.

YES

Is the PFP lower drawer feed clutch working?

(Perform the output check in the test mode: 04-228)

- ↓ NO →
- 1) Check if the connector of the PFP lower drawer feed clutch is disconnected.
  - 2) Check if any of the connectors CN241, CN242 and CN248 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP lower drawer feed clutch.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.

YES

Check the PFP lower drawer feed roller, separation roller and pickup roller.  
Replace them if they are worn out.

### 5.1.3 Cover open jam

#### [E40] ADU cover opened during printing

Is the ADU cover open?

↓ YES → Remove paper if there is any, then close the cover.

NO

Is the voltage of 24V being supplied from the power supply unit?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector for 24 V power supply is disconnected.
- 2) Check if the connector CN23 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the MAIN board.

YES

Replace the MAIN board.

#### [E41] Front cover opened during printing

Is the front cover open?

↓ YES → Close the cover.

NO

Is the front cover opening/closing switch working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the front cover opening/closing switch is disconnected.
- 2) Check if the connector CN3 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the front cover opening/closing switch.
- 6) Replace the MAIN board.

YES

Is the voltage of 24V being supplied from the power supply unit?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector for 24 V power supply is disconnected.
- 2) Check if the connector CN23 on the MAIN board is disconnected.
- 3) Check if the connector pins are disconnected and the harnesses are open circuited.
- 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 5) Replace the MAIN board.

YES

Replace the MAIN board.

**[E42] PFP side cover opened during printing**

Is the PFP side cover open?

↓ YES → Remove the paper if there is any, then close the cover.

NO

Is the PFP side cover opening/closing switch working?

(Perform the input check in the test mode: 13-[04. SENSORT TEST])

- | NO →
- 1) Check if the connector of the PFP side cover opening/closing switch is disconnected.
  - 2) Check if either of the connectors CN241 or CN243 on the PFP board is disconnected.
  - 3) Check if the connector CN13 on the MAIN board is disconnected.
  - 4) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 5) Check if the conductor patterns on the PFP board and MAIN board are short circuited or open circuited.
  - 6) Replace the PFP side cover opening/closing switch.
  - 7) Replace the PFP board.
  - 8) Replace the MAIN board.
- ↓

YES

- 1) Replace the PFP board.
- 2) Replace the MAIN board.

**[E44] PFU cover opened during printing**

Is the PFU cover open?

↓ YES → Remove the paper if there is any, then close the cover.

NO

Is the PFU cover opening/closing switch working?

(Perform the input check in the test mode: 13-[04. SENSOR TEST])

- | NO →
- 1) Check if the connector of the PFU cover opening/closing switch is disconnected.
  - 2) Check if the connector CN4 on the MAIN board is disconnected.
  - 3) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 4) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
  - 5) Replace the PFU cover opening/closing switch.
  - 6) Replace the MAIN board.
- ↓

YES

Replace the MAIN board.

## 5.1.4 Transport jam (ADF)

### [E71] Jam not reaching the original registration sensor

Are the pickup roller, feed roller and separation roller stained or worn out?

↓ YES → Clean the rollers or replace them.

NO

Is the original excessively curled or folded?

↓ YES → Flatten and set it again.

NO

Are the original registration sensor working?

(Perform the input check: 13-[04. SENSOR TEST])

| NO → 1) Check if the connectors of the original registration sensor are disconnected.  
| 2) Check if the connector CN74 on the ADF 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 ADF board is short circuited or open circuited.  
| 5) Replace the original registration sensor.  
| 6) Replace the ADF board.  
↓

YES

Replace the ADF board.

### [E72] Jam not reaching the read sensor

Are the registration roller and read roller stained?

↓ YES → Clean the rollers.

NO

Is the read sensor working? (Perform the input check: 13-[04. SENSOR TEST])

| NO → 1) Check if the connector of the read sensor are disconnected.  
| 2) Check if the connector CN75 on the ADF 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 ADF board is short circuited or open circuited.  
| 5) Replace the read sensor.  
| 6) Replace the ADF board.  
↓

YES

Replace the ADF board.

**[E73] Stop jam at the exit sensor**

Is the exit roller stained?

↓ YES → Clean the roller.

NO

Is the exit sensor working? (Perform the input check: 13-[04. SENSOR TEST])

- | NO → 1) Check if the connector of the exit sensor is disconnected.
- | 2) Check if the connector CN75 on the ADF 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 ADF board is short circuited or open circuited.
- | 5) Replace the exit sensor.
- | 6) Replace the ADF board.

YES

Replace the ADF board.

**[E74] Stop jam at the reverse sensor (RADF)**

Are the read roller and reverse roller stained?

↓ YES → Clean the rollers.

NO

Is the reverse sensor working? (Perform the input check: 13-[04. SENSOR TEST])

- | NO → 1) Check if the connector of the reverse sensor is disconnected.
- | 2) Check if the connector CN4 on the RADF 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 RADF board is short circuited or open circuited.
- | 5) Replace the reverse sensor.
- | 6) Replace the RADF board.

YES

Replace the RADF board.

**[E86] ADF jam access cover open**

Is the ADF jam access cover opened?

↓ YES → Remove the original, if any, and close the ADF jam access cover.

NO

Is the ADF jam access cover switch working?

(Perform the input check: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the ADF jam access cover switch is disconnected.
- 2) Check if the connector CN75 on the ADF 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 ADF board is short circuited or open circuited.
- 5) Replace the ADF jam access cover switch.
- 6) Replace the ADF board.

YES

Replace the ADF board.

**[E87] ADF open jam**

Is the ADF opened?

↓ YES → Remove the original, if any, and close the ADF.

NO

Is the ADF opening/closing sensor adjusted within the specified range?

↓ NO → Adjust the ADF opening/closing sensor.

YES

Is the ADF opening/closing sensor working?

(Perform the input check: 13-[04. SENSOR TEST])

↓ NO →

- 1) Check if the connector of the ADF opening/closing sensor is disconnected.
- 2) Check if the connector CN74 on the ADF 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 ADF board is short circuited or open circuited.
- 5) Replace the ADF opening/closing sensor.
- 6) Replace the ADF board.

YES

Replace the ADF board.

## 5.1.5 Drive system related service call

### [C01] Main motor is abnormal

Is the main motor working? (Perform the output check in the test mode: 04-101/151)

- | NO → 1) Check if the connector CN1 of the main motor is disconnected.  
| 2) Check if the connector CN16 on the MAIN board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor patterns on the main motor board and MAIN  
| board are short circuited or open circuited.  
| 5) Replace the main motor.  
| 6) Replace the MAIN board.  
↓

YES

Is the LED on the main motor board lit without flickering?

- | NO → 1) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 2) Check if the conductor patterns on the main motor board and MAIN  
| board are short circuited or open circuited.  
| 3) Replace the main motor.  
| 4) Replace the MAIN board.  
↓

YES

- 1) Check if the PLL lock signal CN305-B8 output from the MAIN board is always level "L".
- 2) Check if the voltage supplied to the CPU input terminal IC24-12 is always "L".
- 3) Replace the MAIN board.

### [C07] Exit motor IC overcurrent detection error

(only for e-STUDIO165/205)

Is the exit motor working?

- | NO → 1) Check if the connector of the exit motor is disconnected.  
| 2) Check if the connector CN245 on the PFU board is disconnected.  
| 3) Check if the connector pins are disconnected and the harnesses are  
| open circuited.  
| 4) Check if the conductor patterns on the PFC board are short circuited  
| or open circuited.  
| 5) Replace the exit motor.  
| 6) Replace the PFC board.  
↓

YES

- 1) Check if the voltage supplied to the driver IC terminal IC5-8 on the PFC board is always at level "H".
- 2) Replace the PFC board.

### [C08] ADU motor IC overcurrent detection error



## 5.1.6 Paper feeding system related service call

### [C04] PFP motor is abnormal

Is the PFP motor working? (Perform the output check in the test mode: 04-109/159)

- | 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 CN13 on the MAIN board is disconnected.
  - 7) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 8) Check if the conductor patterns on the PFP motor board, PFP board and MAIN board are short circuited or open circuited.
  - 9) Replace the PFP motor.
  - 10) Replace the PFP board.
  - 11) Replace the MAIN board.
- | ↓

YES

Is the LED on the PFP motor board lit without flickering?

- | NO →
- 1) Check if the connector pins are disconnected and the harnesses are open circuited.
  - 2) Check if the conductor patterns on the PFP motor board, PFP board and MAIN board are short circuited or open circuited.
  - 3) Replace the PFP motor.
  - 4) Replace the PFP board.
  - 5) Replace the MAIN board.
- | ↓

YES

- 1) Check if the PLL lock signal CN246-8 output from the PFP board is always "L" level.
- 2) Check if the voltage supplied to the microcomputer input terminal IC5-17 is always "L" level.
- 3) Replace the PFP board.
- 4) Replace the MAIN board.





## 5.1.8 Fuser unit related service call

### **CAUTION**

Be sure to turn OFF the power and unplug the power cable beforehand when checking the heater.

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.

### **[C41] Thermistor or heater is abnormal at power ON**

#### 1. Check the thermistors

- (1) Check if the connectors are disconnected.
- (2) Check if the center, side and edge thermistors are in contact with the surface of the fuser roller properly.
- (3) Check if the harnesses of the center, side and edge thermistors are open circuited.

#### 2. Check the heater

- (1) Check if the heater is broken.
- (2) Check if the connector of the heater is disconnected.
- (3) Check if the thermostat is blown.

#### 3. Check the MAIN board

- (1) Check if the connectors CN17 are disconnected.
- (2) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- (3) Replace the MAIN board.

#### 4. Check the switching regulator

Check if the connectors CN108 are disconnected.

#### 5. Clear the status counter

After repairing the matter which caused the error [C41], perform the following:

- (1) Turn ON the power while [0] and [8] are pressed simultaneously.
- (2) Key in "400", then press [ENTER].
- (3) Change the current status counter value "1" or "2" to "0", then press [ENTER] (to cancel [C41]).
- (4) Turn the power OFF and then back ON. Make sure that the equipment enters the normal ready state.

## **[C43] Thermistor abnormality during warming up or in ready status after abnormality judgment**

### 1. Check the thermistors

- (1) Check if the connectors are disconnected.
- (2) Check if the center, side and edge thermistors are in contact with the surface of the fuser roller properly.
- (3) Check if the harnesses of the center, side and edge thermistors are open circuited.

### 2. Check the heater

- (1) Check if the heater is broken.
- (2) Check if the connector of the heater is disconnected.
- (3) Check if the thermostat is blown.

### 3. Check the MAIN board

- (1) Check if the connectors CN17 are disconnected.
- (2) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- (3) Replace the MAIN board.

### 4. Clear the status counter

After repairing the matter which caused the error [C43], perform the following:

- (1) Turn ON the power while [0] and [8] are pressed simultaneously.
- (2) Key in "400", then press [ENTER].
- (3) Change the current status counter value "4" to "0", then press [ENTER] (to cancel [C43]).
- (4) Turn the power OFF and then back ON. Make sure that the equipment enters the normal ready state.

## **[C44] Fuser is abnormal after abnormality judgment**

### 1. Check the thermistors

- (1) Check if the connectors are disconnected.
- (2) Check if the center, side and edge thermistors are in contact with the surface of the fuser roller properly.
- (3) Check if the harnesses of the center, side and edge thermistors are open circuited.

### 2. Check the heater

- (1) Check if the heater is broken.
- (2) Check if the connector of the heater is disconnected.
- (3) Check if the thermostat is blown.

### 3. Check the MAIN board

- (1) Check if the connectors CN17 are disconnected.
- (2) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- (3) Replace the MAIN board.

### 4. Clear the status counter

Change the current status counter value (08-400) "5", "7" or "9" to "0" for [C44], taking the same procedure as that for [C41].

- \* The status counter value is as follows in the following cases. Change them to "0" respectively.
- The error occurred during warming-up: "5"
  - The error occurred after the equipment has become ready: "7"
  - The temperature detected by the center thermistor is 230°C or higher: "9"
  - The temperature detected by the side thermistor is 230°C or higher: "9"
  - The temperature detected by the edge thermistor is 230°C or higher: "9" only during printing.

## **[C45] Thermistor abnormality during printing**

### 1. Check the edge thermistor

- (1) Check if the connector is disconnected.
- (2) Check if the edge thermistor is in contact with the surface of the fuser roller properly.
- (3) Check if the harness of the edge thermistor is open circuited.

### 2. Check the MAIN board

- (1) Check if the connector CN17 is disconnected.
- (2) Check if the conductor pattern on the board is short circuited or open circuited.
- (3) Replace the MAIN board.

### 3. Clear the status counter

Change the current status counter value (08-400) "6" to "0".

## 5.1.9 ADF related service call

No service call for the ADF (MR-2017) and RADF (MR-3019).

## 5.1.10 Laser optical unit related service call

### [CA1] Polygonal motor is abnormal

Is the polygonal motor rotating?

- | NO → 1) Check if the connector of the harness is disconnected between MAIN  
| board (CN24) and the laser optical unit.  
| 2) Check if the harness is open circuited and the connector pin is dis-  
| connected.  
| 3) Check if the conductor pattern on the MAIN board is short circuited or  
| open circuited.  
| 4) Replace the laser optical unit.  
| 5) Replace the MAIN board.  
↓

YES

- 1) Check if the conductor pattern on the MAIN board is short circuited or open circuited.
- 2) Replace the MAIN board.

### [CA2] H-Sync detection error

Are the harness open circuited and the connectors disconnected or misconnected between the MAIN board (CN21, CN22) and laser optical unit?

- ↓ YES → 1) Connect the disconnected connectors.  
2) Replace the laser optical unit if the harness is open circuited.

NO

- 1) Replace the MAIN board.
- 2) Replace the laser optical unit.

## 5.1.11 Service call for others

### [C94] Firmware update error

Check if the updated firmware is for the intended model. Re-update if it was the wrong firmware.

**Note:**

A C94 error message appears if the firmware for e-STUDIO167/207/237 is updated on e-STUDIO165/205 by mistake. Remember that no error message appears when the firmware for e-STUDIO165/205 is updated on e-STUDIO167/207/237.

### [C97] 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 matters is on the needle electrode or the main charger grid.
- (5) Is the transfer/separation charger installed securely?
- (6) Check if the transfer/separation charger wire is broken or unhooked.
- (7) Check if any foreign matter is on the transfer/separation charger wire.

### [C99] PFC microcomputer abnormality

- (1) Check if the error still occurs when the power is turned OFF and then back ON.
- (2) Check if the conductor patterns on the PFC board are short circuited or open circuited.
- (3) Replace the PFC board.

### [F14] Invalid backup counter

Has the MAIN board been replaced?

- ↓ YES → Download the counter value of the SRAM board to the MAIN board in the setting mode (08-389).

NO

Has the SRAM board been replaced?

- ↓ YES → Download the counter value of the MAIN board to the SRAM board in the setting mode (08-388).

NO

- 1) Check if the connector CN2 on the SRAM board and the connector CN2 on the MAIN board are securely connected.
- 2) Replace the SRAM board.
- 3) Replace the MAIN board.

## 5.1.12 Optical communication related service call

### [C55] ADF I/F error

### [F11] ADF I/F error

- (1) Check if the connector CN71 on the ADF/RADF board is disconnected.
- (2) Check if the relay connector between the ADF/RADF board and the PFC board is disconnected.
- (3) Check if the connector CN246 on the PFC board is disconnected.
- (4) Check if the connector pins are disconnected and the harnesses are open circuited.
- (5) Check if the conductor patterns on the ADF/RADF board and the MAIN board are short circuited or open circuited.
- (6) Replace the ADF/RADF board.
- (7) Replace the MAIN board.

### [C56] PFC board I/F error

- (1) Check if the connector CN113 on the MAIN board is disconnected.
- (2) Check if the connector CN112 on the switching regulator is disconnected.
- (3) Check if any of the connectors CN241 and CN242 on the PFC board is disconnected.
- (4) Check if the relay connector between the ADU board and the PFC board is disconnected.
- (5) Check if the connector pins are disconnected and the harnesses are open circuited.
- (6) Check if the conductor patterns on the PFC board and the MAIN board are short circuited or open circuited.
- (7) Replace the PFC board.
- (8) Replace the MAIN board.

## 5.2 Troubleshooting for the Image

### 1) Abnormality of image density / Gray balance

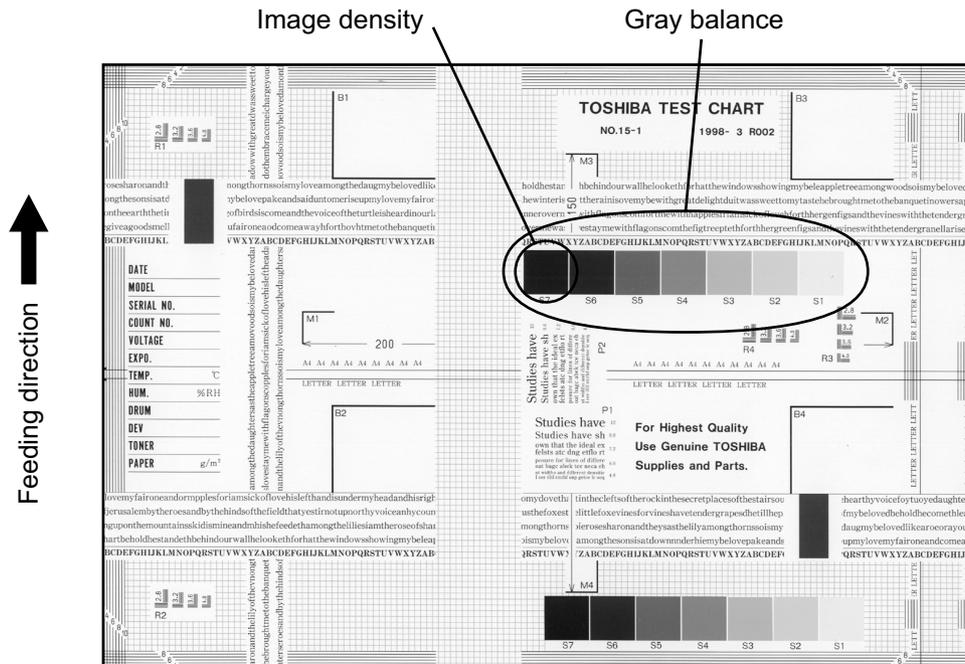


Fig. 5-1

Defective area	Step	Check items	Prescription
Density/Gray balance	1	Check the density/gray balance.	Adjust the density.
Printer section	2	Check test print image (13- [02. PRINT TEST] -113).	Go to step 4 if there is any problem on image.
Scanner	3	Are the original glass and CIS unit dirty?	Clean them.
Printed image	4	Is the image faded?	Perform troubleshooting for faded image.
	5	Is background fogging occurring?	Perform troubleshooting for background fogging.
	6	Is there a blotch on the image?	Perform troubleshooting for blotched image.
	7	Is the image transferred normally?	Perform troubleshooting for abnormal transfer.

## 2) Background fogging

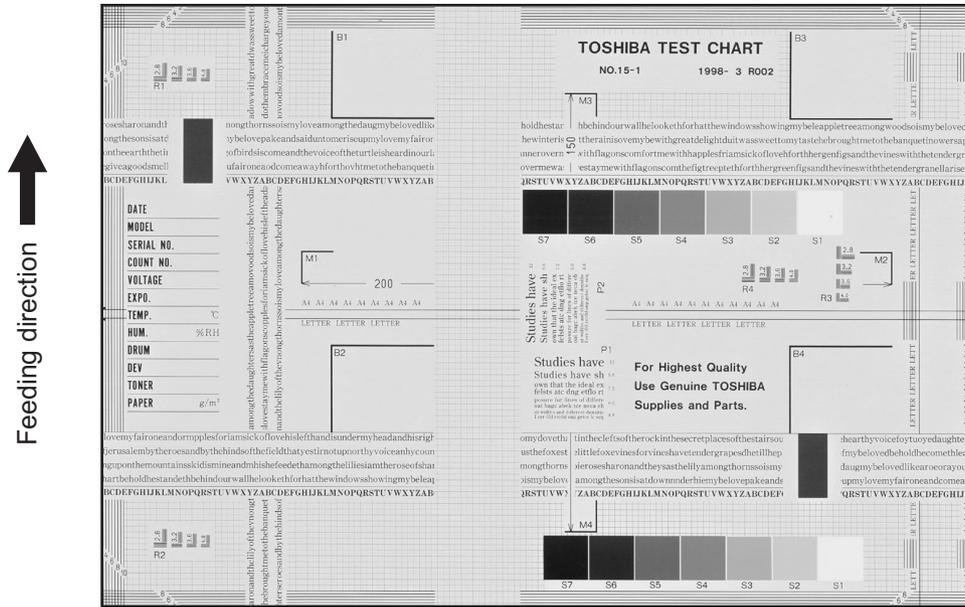


Fig. 5-2

Defective area	Step	Check items	Prescription
Density reproduction	1	Check the reproduction of the image density.	Adjust the density.
Background reproduction	2	Check the background reproduction.	Adjust the background.
Printer section	3	Check test print image (13- [02. PRINT TEST] -113).	Go to step 4 if there is any problem on image.
Scanner	4	Are the original glass and CIS unit dirty?	Clean them.
Auto-toner	5	Is the auto-toner sensor normal?	Check the performance of the auto-toner sensor and readjust.
	6	Is the toner supplied normally?	Check the motor and circuits.
High-voltage transformer (Main charger / Developer bias)	7	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
Developer unit	8	Is the contact between the drum and developer material normal?	Adjust the doctor-sleeve gap and polarity.
Developer material/Toner/ Drum	9	Using the specified developer material, toner and drum?	Use the specified developer material, toner and drum.
	10	Have the developer material and drum reached their PM life?	Replace the developer material and drum.
	11	Is the storage environment of the toner cartridge 35°C less without dew?	Use the toner cartridge stored in the environment within specification.
Drum cleaning blade	12	Is the drum cleaned properly?	Check the pressure of the drum cleaning blade.
Toner dusting	13	Is toner heaped on the seal of the developer unit?	Remove the toner and clean the developer unit.

### 3) Moire/lack of sharpness

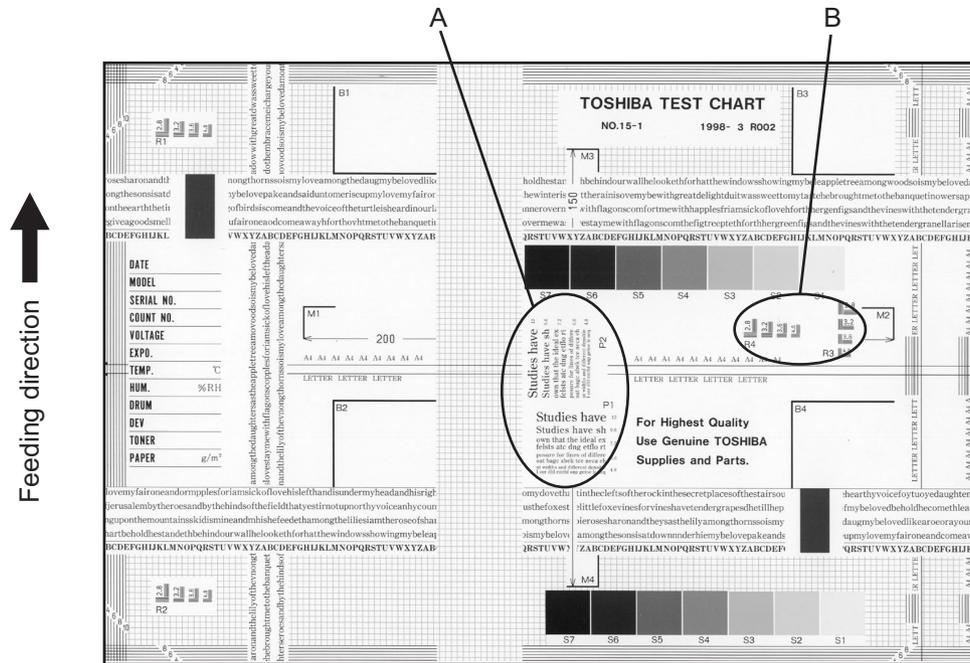


Fig. 5-3

#### Moire

Defective area	Step	Check items	Prescription
Density reproduction	1	Check the reproduction of the image density.	Adjust the density.
Parameter adjustment value	2	Check the image processing parameters.	Check the adjustment value for sharpness.
Printer section	3	Check test print image (13- [02. PRINT TEST] -113).	When defects occur, perform the corresponding troubleshooting procedure.

#### Lack of sharpness

Defective area	Step	Check items	Prescription
Density reproduction	1	Check the reproduction of the image density.	Adjust the density.
Parameter adjustment value	2	Check the image processing parameters.	Check the adjustment value for sharpness.
Printer section	3	Check test print image (13- [02. PRINT TEST] -113).	When defects occur, perform the corresponding troubleshooting procedure.
	4	Check the image processing parameters.	Check the encircled areas A and B in the image, and change the sharpness intensity in the sharpness adjustment mode.

#### 4) Toner offset

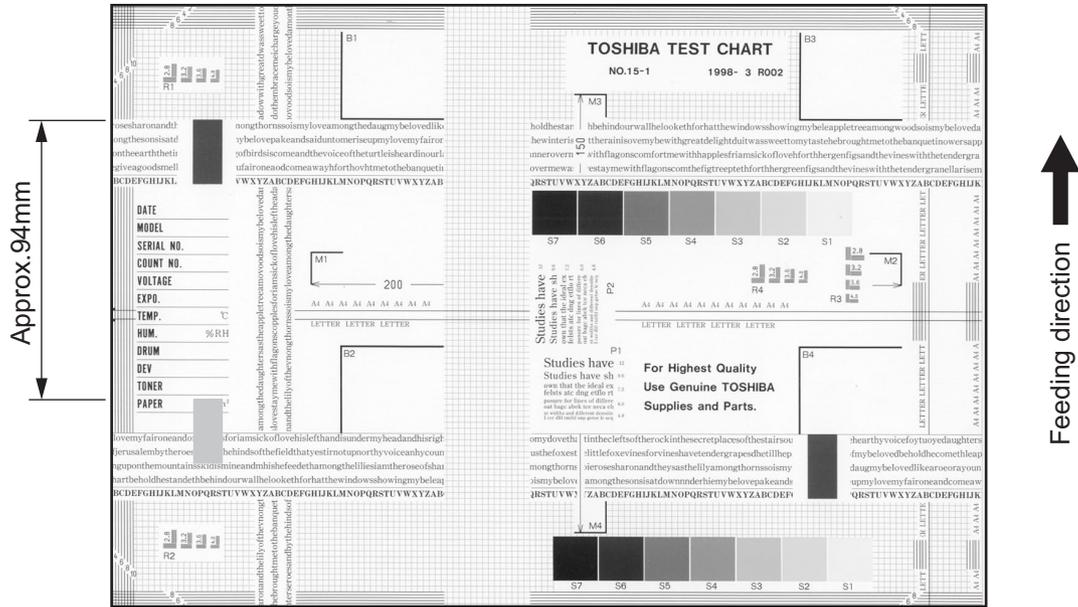


Fig. 5-4

Toner offset (Shadow image appears approx. 94 mm toward the dark image.)

Defective area	Step	Check items	Prescription
Density	1	Is the density too high?	Adjust the density.
Fuser unit	2	Is the pressure of the fuser roller normal?	Check the pressure releasing parts and pressurization mechanism.
	3	Is the thermistor in contact with the fuser roller?	Contact the thermistor with the fuser roller.
	4	Is there a scratch on the fuser roller surface?	Replace the fuser roller.
	5	Has the fuser roller reached its PM life?	Replace the fuser roller.
	6	Is the setting temperature of the fuser roller normal?	Check the adjustment values of fuser roller temperature? 08-407, 410, 411, 450, 515, 516
	Paper	7	Has the appropriate paper type been selected?
8		Is the setting temperature of the fuser roller in each paper type normal?	Check the setting and correct it. 08-413, 437, 438, 451, 452, 453, 520, 521
9		Using the recommended paper?	Use the recommended paper.
Developer material	10	Using the specified developer material?	Use the specified developer material and toner.
Scanner	11	Are the original glass (especially the position of shading correction plate) and CIS unit dirty?	Clean them.

## 5) Blurred image

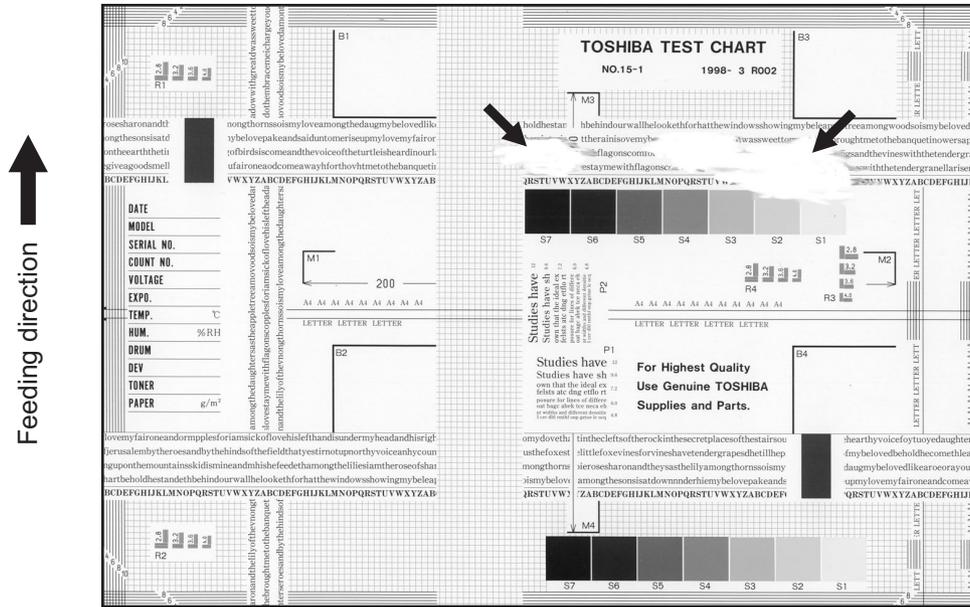


Fig. 5-5

Defective area	Step	Check items	Prescription
Paper	1	Is the paper in the drawer damp?	Change paper. Avoid storing paper in damp place.
Bedewed scanner	2	Is the scanner bedewed?	Clean the scanner.
Drum	3	Is the drum surface wet or dirty?	Wipe the drum with a piece of dry cloth. * Do not use alcohol or other organic solvents.
Ozone exhaust	4	Is the exhaust fan operating properly?	Check the connection of connector. Replace the ozone exhaust fan.
	5	Is the ozone filter stained or damaged?	Replace the ozone filter.

## 6) Poor fusing

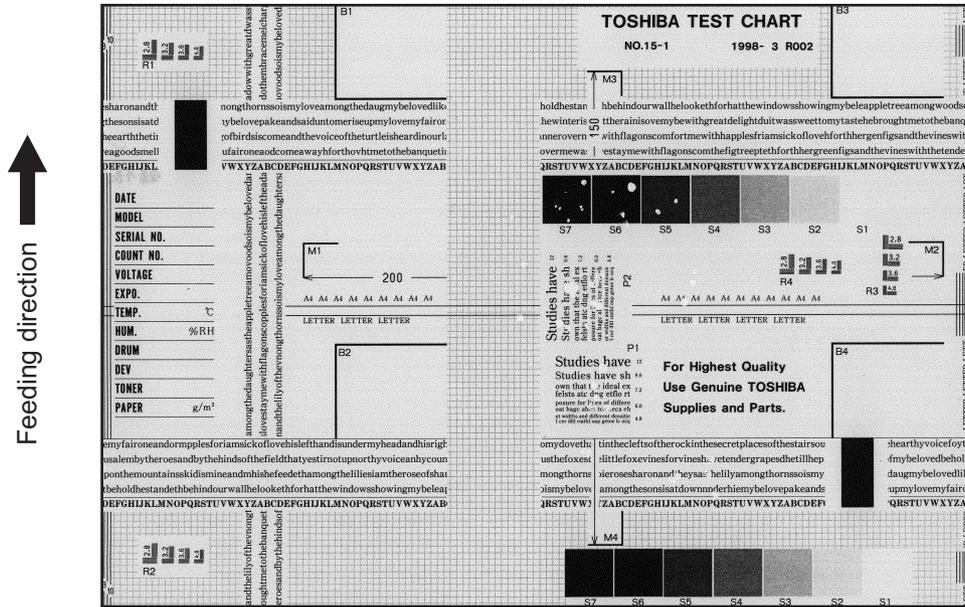


Fig. 5-6

Defective area	Step	Check items	Prescription
Heater electric power	1	Check if the connector contacts properly.	Correct it.
	2	Is the heater shorted or broken?	Replace the heater.
Pressure between fuser roller and pressure roller	3	Are the pressure springs working properly?	Check and adjust the pressure springs.
Fuser roller temperature	4	Is the temperature of the fuser roller normal?	Check the setting and correct it. 08-407, 410, 411, 450, 515, 516
Developer material/Toner	5	Using the specified developer material and toner?	Use the specified developer material and toner.
Paper	6	Is the paper in the drawer damp?	Avoid storing paper in damp place.
	7	Is the paper type corresponding to its mode?	Use the proper type of paper or select the proper mode.
	8	Is the setting temperature of the fuser roller in each paper type normal?	Check the setting and correct it. 08-413, 437, 438, 451, 452, 453, 520, 521
	9	Using the recommended paper?	Use the recommended paper.

7) Blank copy



Fig. 5-7

Defective area	Step	Check items	Prescription
Transfer charger wire	1	Is the transfer charger wire cut off?	Replace the transfer charger wire.
High-voltage transformer (Transfer charger, Developer bias)	2	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
	3	Are the connectors of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.
Developer unit	4	Is the developer unit installed properly?	Check and correct the engaging condition of the developer unit gears.
	5	Do the developer sleeve and mixers rotate?	Check and fix the drive system of the developer unit.
	6	Is the developer material smoothly transported?	Remove the foreign matter from the developer material.
	7	Has the magnetic brush phase been shifted?	Adjust the developer polarity.
	8	Is the doctor blade positioned properly?	Adjust it using the doctor-sleeve jig.
Drum	9	Is the drum rotating?	Check the drive system of the drum.
MAIN, LDR, SNS boards, CIS unit and harnesses	10	Are the connectors securely connected? Check if the harnesses connecting the boards are open circuited.	Connect the connectors securely. Replace the harness.

8) Solid copy

↑  
Feeding direction



Fig. 5-8

Defective area	Step	Check items	Prescription
Scanner	1	Does the exposure lamp light?	Check if the connector contacts with the MAIN board and CIS unit terminal.
Bedewed scanner and drum	2	Is the scanner or drum bedewed?	Clean the CIS unit and drum. Keep the power cord plugged in all trough the day and night. (For the model with damp heater)
Main charger	3	Is the main charger securely installed?	Install it securely.
	4	Is the needle electrode broken?	Replace the needle electrode.
High-voltage transformer (Main charger)	5	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
	6	Are the connectors of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.
MAIN, LDR, SNS boards, CIS unit and harnesses	7	Are the connectors securely connected? Check if the harnesses connecting the boards are open circuited.	Connect the connectors securely. Replace the harness.

9) White banding (in the feeding direction)

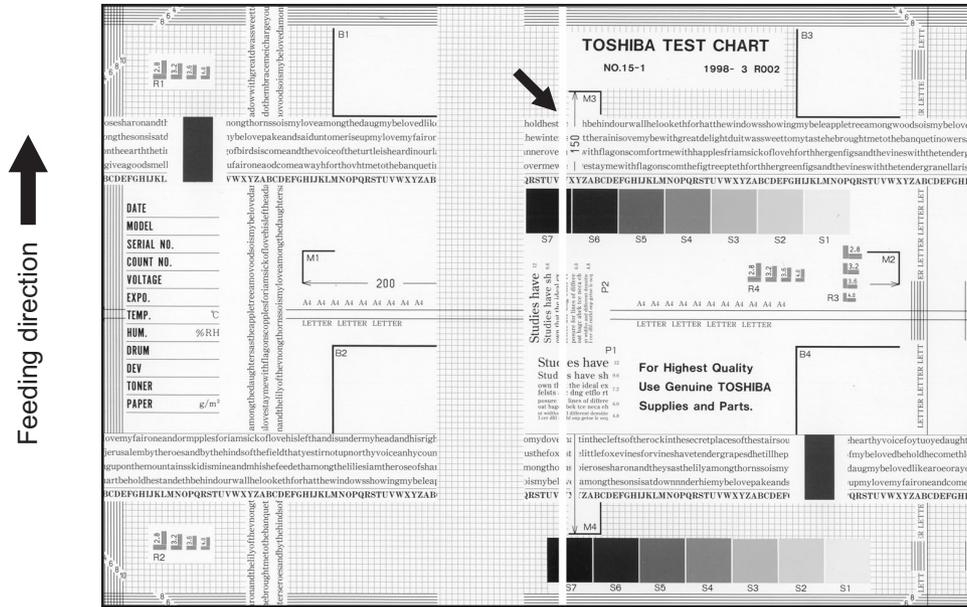


Fig. 5-9

Defective area	Step	Check items	Prescription
Laser optical unit	1	Is there a foreign matter or stain on the slit glass?	Remove the foreign matter or stain.
Main charger grid	2	Is there a foreign matter or dew on the charger grid?	Remove the foreign matter.
Transfer charger wire	3	Is there any foreign matter or stain on the transfer charger wire?	Clean the transfer charger wire.
Developer unit	4	Is the developer material transported properly?	Remove the foreign matter if there is any.
	5	Is there a foreign matter or dew on the drum seal?	Remove the foreign matter or dew.
	6	Is the upper drum seal of the developer unit in contact with the drum?	Correct the position of the drum seal or replace it.
Drum	7	Is there a foreign matter on the drum surface?	Replace the drum.
Transport path	8	Does the toner image contact with any foreign matter before the paper enters the fusing section after the separation?	Remove the foreign matter.
Discharge LED	9	Is any of the discharge LEDs off?	Replace the discharge LED.
Scanner	10	Are the original glass (especially the position of shading correction plate) and CIS unit dirty?	Clean them.
Cleaner	11	Is there any foreign matter, which contacts the drum on the cleaner stay?	Remove the foreign matter.

10) White banding (at right angle with the feeding direction)

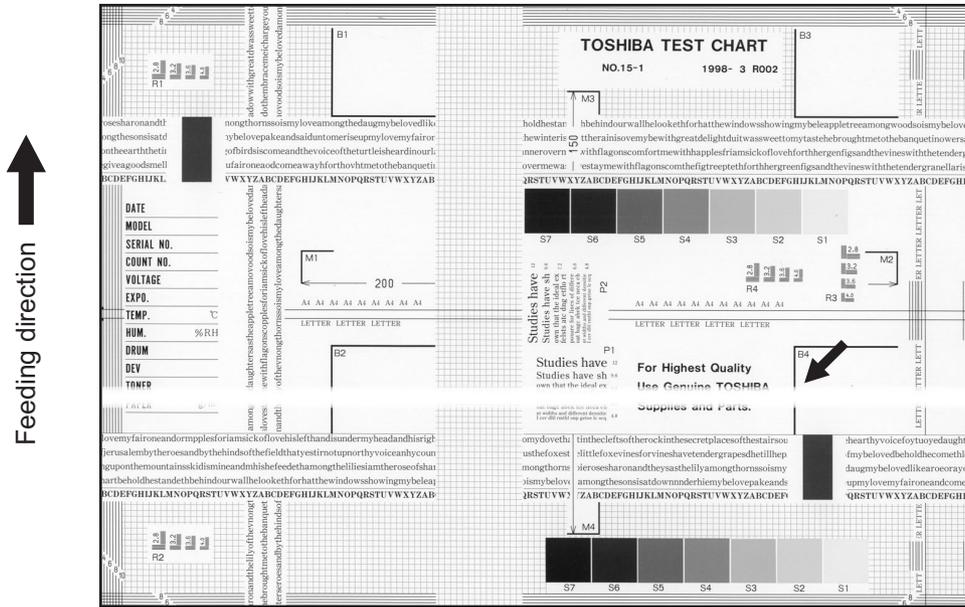


Fig. 5-10

Defective area	Step	Check items	Prescription
Main charger	1	Is there a foreign matter on the charger?	Remove the foreign matter.
	2	Is the connector in proper contact with the terminal?	Clean or adjust the terminal.
Drum	3	Is there any abnormality on the drum surface?	Replace the drum.
Discharge LED	4	Does the discharge LED light normally?	Replace the discharge LED or check the harness and the circuit.
Developer unit	5	Is the developer sleeve rotating normally? Is there any abnormality on the sleeve surface?	Check the drive system of the developer unit, or clean the sleeve surface.
Drive system	6	Are the drum and scanner jittering?	Check each drive system.
High-voltage transformer (Main charger / Developer bias / Transfer charger)	7	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
Transfer charger	8	Is any foreign matter such as paper shred sticking to the transfer charger wire?	Remove the foreign matter from the wire.
Feed system	9	Is the aligning amount proper?	Adjust the aligning amount.

11)Skew (inclined image)

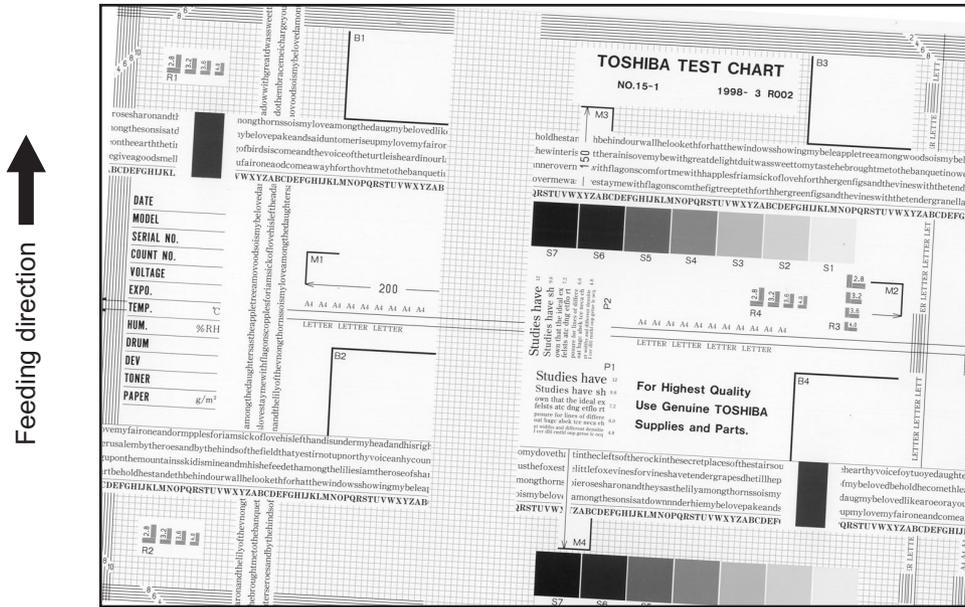


Fig. 5-11

Defective area	Step	Check items	Prescription
Drawers	1	Is the drawer properly installed?	Install the drawer properly.
	2	Is there too much paper in the drawer?	Reduce paper to 250 sheets or less.
	3	Is the corner of the paper folded?	Change the direction of the paper and set it again.
	4	Are the side guides of the drawer properly installed?	Adjust the position of the side guides.
Feed roller	5	Is the surface of the feed roller dirty?	Clean the feed roller surface with alcohol, or replace the roller.
Rollers	6	Are the roller and shaft secured?	Check and tighten the E-rings, pins, clips and setscrews.
Registration roller	7	Is the spring detached from the registration roller?	Attach the spring correctly. Clean the roller if it is dirty.
Pre-registration guide	8	Is the pre-registration guide properly installed?	Correct it.
CIS unit	9	Is the CIS unit slanted?	Replace the CIS case.
Feed system	10	Is the aligning amount proper?	Adjust the aligning amount.

12) Black banding (in the feeding direction)

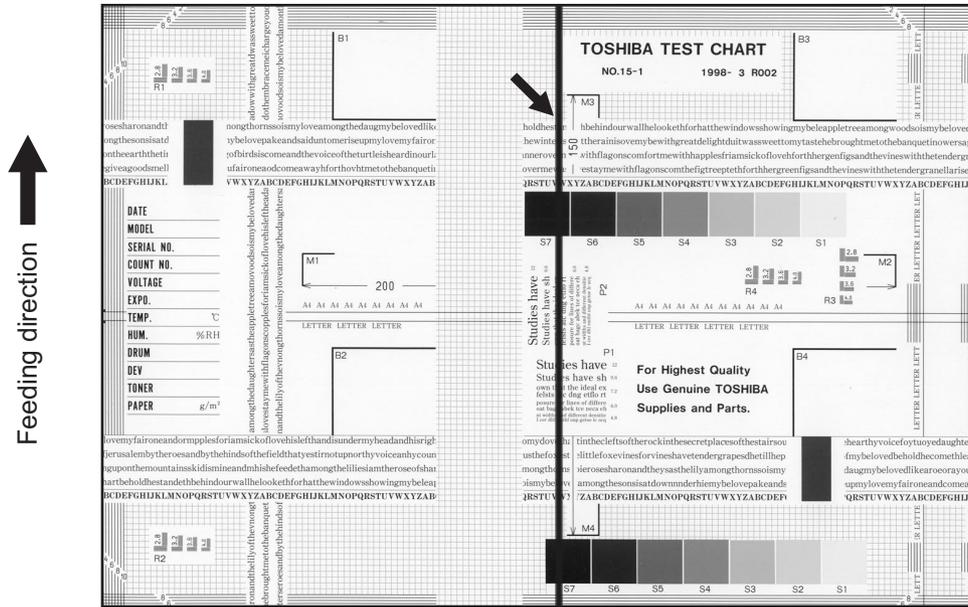


Fig. 5-12

Defective area	Step	Check items	Prescription
Shading correction plate	1	Is there dust or stains on part of the original glass where the shading correction plate is placed.	Clean the plate.
Main charger	2	Is there a foreign matter on the main charger grid?	Remove the foreign matter.
	3	Is the main charger grid dirty or deformed?	Clean or replace the main charger grid.
	4	Is there a foreign matter on the main charger?	Remove the foreign matter.
	5	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
	6	Is there a foreign matter inside the main charger case?	Remove the foreign matter.
	7	Is the inside of the main charger case dirty?	Clean the inside of the main charger case.
	Cleaner	8	Is there paper dust sticking to the drum cleaning blade edge?
9		Is the drum cleaning blade working properly?	Check the pressurization of the drum cleaning blade.
10		Has the used toner been recovered properly?	Clean the toner recovery auger.
Fuser unit	11	Is the fuser roller surface dirty or damaged?	Clean or replace the fuser roller.
	12	Is the thermistor dirty?	Clean the thermistor.
Drum	13	Are there scratches on the drum surface?	Replace the drum.
Laser optical unit	14	Is there a foreign matter or stain on the slit glass?	Remove the foreign matter or the stain.

13) Black banding (at right angle with the feeding direction)

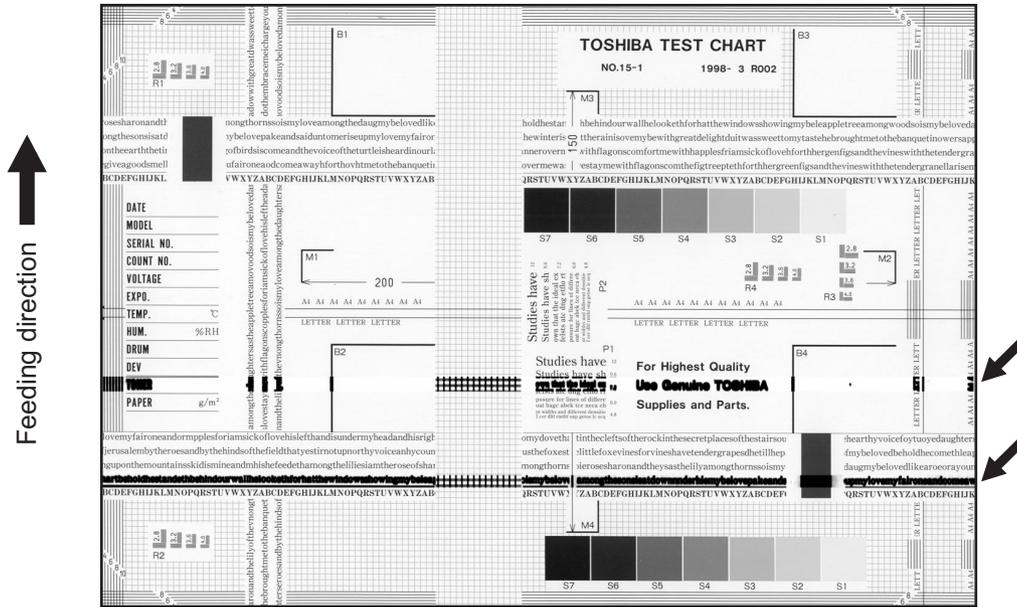


Fig. 5-13

Defective area	Step	Check items	Prescription
Main charger	1	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
Fuser unit	2	Are the fuser roller, separation finger for fuser roller and thermistor dirty?	Clean them.
	3	Has the cleaning roller, pressure roller, fuser roller and separation finger for fuser roller reached their PM life?	Replace them.
High-voltage transformer (Main charger / Developer bias / Transfer charger)	4	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
Drum	5	Is there a deep scratch on the drum surface?	Replace the drum if the scratch has reached the aluminum base.
	6	Is there thin scratch (drum pitting) on the drum surface?	Check and adjust the contact condition of the cleaning blade and recovery blade.
Scanner	7	Are the original glass (especially the position of shading correction plate) and CIS unit dirty?	Clean them.

14)White spots

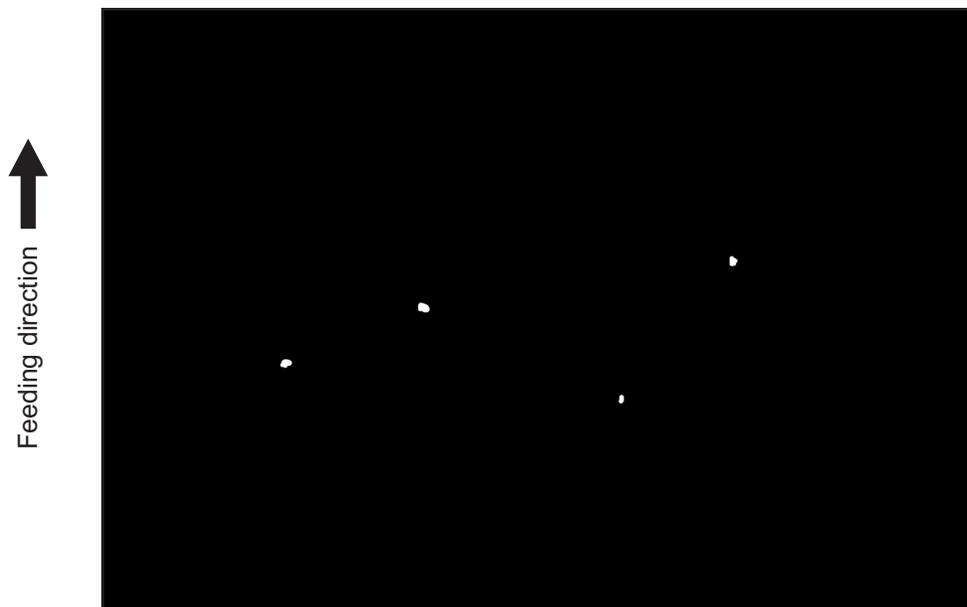


Fig. 5-14

Defective area	Step	Check items	Prescription
Developer unit, Toner cartridge	1	Is the toner density in the developer material appropriate?	Check and correct the auto-toner sensor and toner supply operation. Check if the amount of the toner is sufficient in the toner cartridge.
	2	Is the doctor-sleeve gap proper?	Adjust the doctor-sleeve gap.
Developer material, Toner, Drum	3	Using the specified developer material, toner and drum?	Use the specified developer material, toner and drum.
	4	Have the developer material and drum reached their PM life?	Replace the developer material and drum.
	5	Is the storage environment of the toner cartridge 35°C or less without dew?	Use the toner cartridge stored in the environment with specification.
	6	Is there any dent on the drum surface?	Replace the drum.
	7	Is there any film forming on the drum?	Clean or replace the drum.
Main charger	8	Is there any foreign matter on the charger?	Remove it.
	9	Is the needle electrode dirty or deformed?	Clean or replace the needle electrode.
High-voltage transformer (Main charger / Developer bias / Transfer charger)	10	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.
Transfer/Separation charger	11	Is there any foreign matter such as fiber in the paper transport area of the transfer/separation charger?	Clean the transfer/separation charger.

5

### 15) Poor image transfer

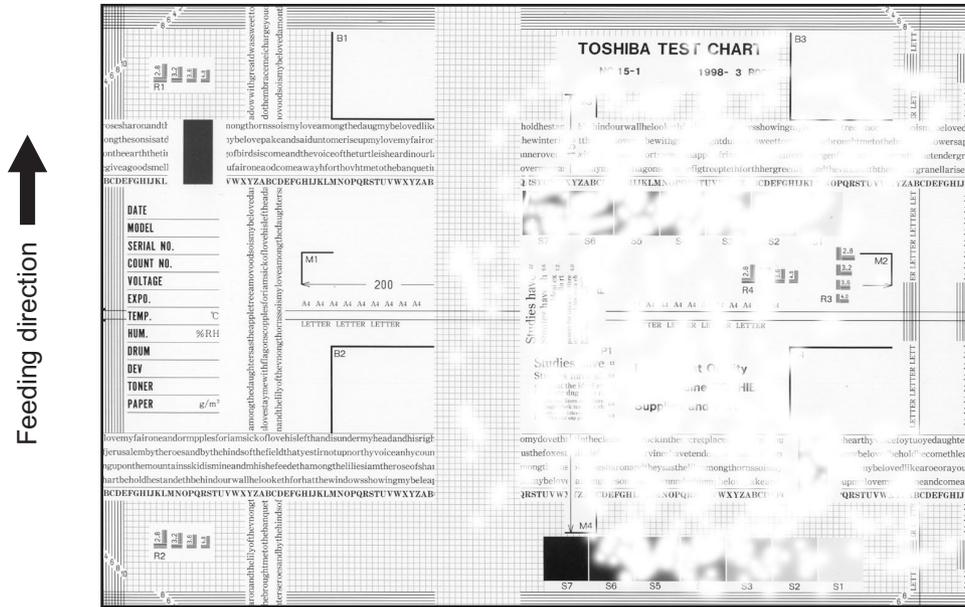


Fig. 5-15

Defective area	Step	Check items	Prescription
Paper	1	Is the paper in the drawer curled?	Reinsert the paper with the reverse side up or change the paper.
	2	Is the paper in the drawer damp?	Avoid storing paper in damp place.
	3	Is the paper type corresponding to its mode?	Select the proper mode.
	4	Using the recommended paper?	Use the recommended paper.
Transfer charger	5	Is the transfer charger case dirty?	Clean the transfer charger case.
	6	Is the transfer charger wire dirty?	Clean the transfer charger wire.
Registration roller	7	Is there any abnormality related to the registration roller or with the roller itself?	Clean the roller if it is dirty. Securely attach the springs if they are detached. Replace the clutch if it is defective. Adjust the rotation speed of the roller.
High-voltage transformer (Transfer charger)	8	Is the high-voltage transformer output defective?	Adjust the output, or replace the transformer.

## 16) Uneven image density

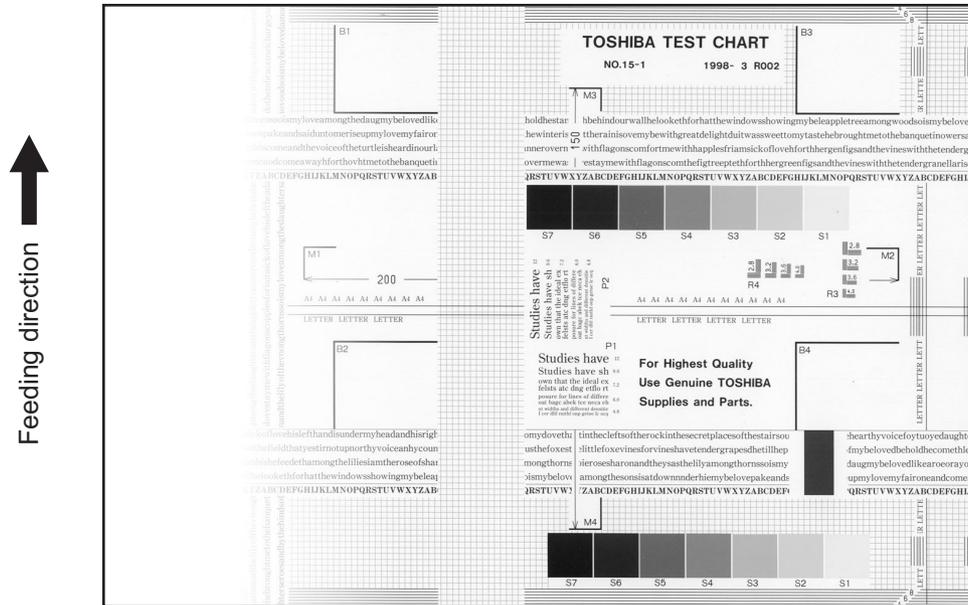


Fig. 5-16

Defective area	Step	Check items	Prescription
Main charger	1	Is the main charger dirty?	Clean or replace the needle electrode and main charger grid.
Transfer charger	2	Is the transfer charger dirty?	Clean the transfer charger.
	3	Is the transfer charger wire dirty?	Clean the transfer charger wire.
Laser optical unit	4	Is there any foreign matter or stain on the slit glass?	Remove the foreign matter or stain.
Discharge LED	5	Are the connectors of discharge LED harness securely connected?	Reconnect the harness securely.
	6	Is the discharge LED dirty?	Clean the discharge LED.
	7	Is any of the discharge LEDs off?	Replace the discharge LED.
Developer unit	8	Is the magnetic brush in proper contact with the drum?	Adjust the doctor-sleeve gap.
	9	Is the developer sleeve pressurization mechanism working?	Check the mechanism.
	10	Is the developer material transported normally?	Remove foreign matters if there is any.
Scanner section	11	Is the platen cover or ADF opened?	Close the platen cover or ADF.
	12	Are the original glass (especially the position of shading correction plate) and CIS unit dirty?	Clean them.

17) Faded image (low density, abnormal gray balance)

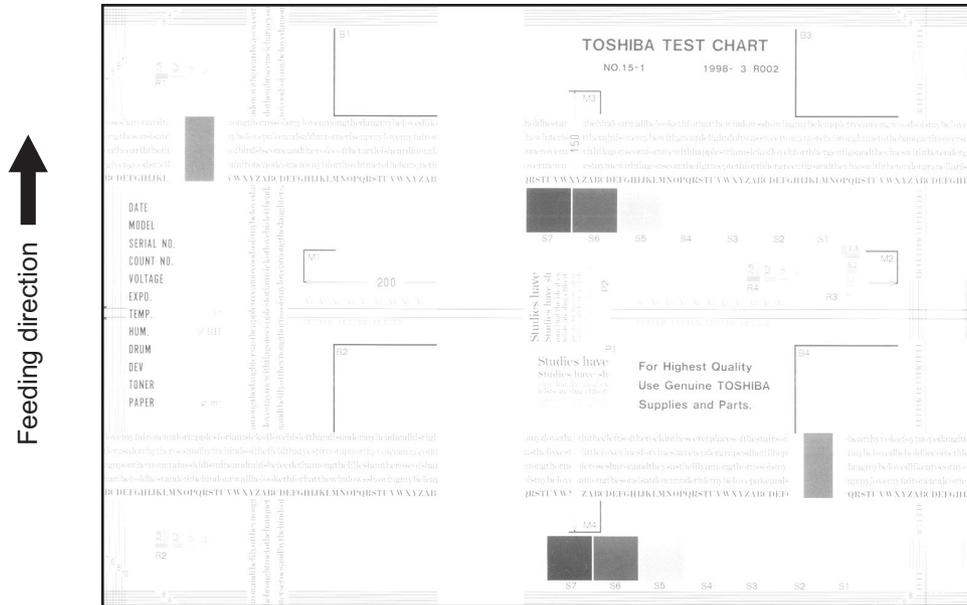


Fig. 5-17

Defective area	Step	Check items	Prescription
Toner empty	1	Is "ADD TONER" symbol lit?	Replace the toner cartridge.
Auto-toner circuit	2	Is there enough toner in the cartridge?	Check the performance of the auto-toner circuit.
	3	Is the toner density in the developer material too low?	
Toner motor	4	Is the toner motor working normally?	Check the toner motor and the motor drive.
Toner cartridge	5	Is there any problem with the toner cartridge?	Replace the toner cartridge.
Developer material	6	Has the developer material reached its PM life?	Replace the developer material.
Developer unit	7	Is the magnetic brush in proper contact with the drum?	Check the installation of the developer unit. Adjust the doctor-sleeve gap and polarity.
	8	Is the developer sleeve pressurization mechanism working?	Check the mechanism.
Main charger	9	Is the main charger dirty?	Clean it or replace the needle electrode and main charger grid.
Drum	10	Is "film-forming" occurring on the drum surface?	Clean or replace the drum.
	11	Has the drum reached its PM life?	Replace the drum.
Transfer charger	12	Is the transfer charger wire cut off?	Replace the transfer charger wire.
High-voltage transformer	13	Is the setting for the high-voltage transformer proper?	Adjust the output from the high-voltage transformer.
	14	Are the connectors of the high-voltage harness securely connected? Is the harness open circuited?	Reconnect the harness securely. Replace the high-voltage harness.
Discharge LED	15	Are the connectors of discharge LED harness securely connected?	Reconnect the harness securely.

18) Image dislocation in feeding direction

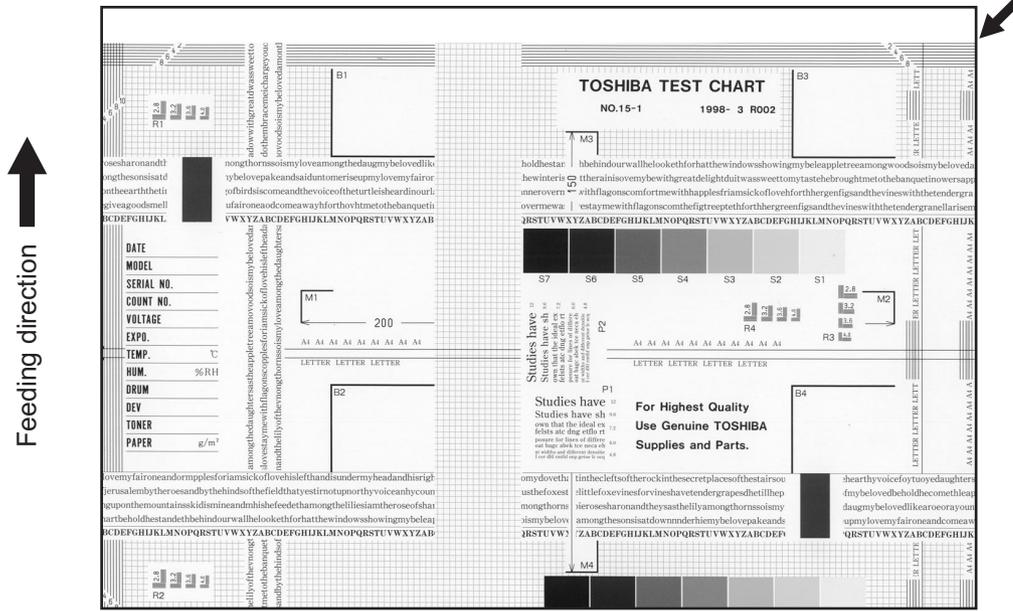


Fig. 5-18

Defective area	Step	Check items	Prescription
Scanner/Printer adjustment	1	Have the printed images been dislocated in the same manner?	Adjust the position of the leading edge of paper in the Adjustment Mode.
Registration roller	2	Is the registration roller dirty, or the spring detached?	Clean the registration roller with alcohol. Securely attach the springs.
	3	Is the registration roller working properly?	Adjust or replace the gears if they are not engaged properly.
Registration clutch	4	Is the registration clutch working properly?	Check the registration clutch, and replace them if necessary.
Pre-registration guide	5	Is the pre-registration guide installed properly?	Install the guide properly.
Feed system	6	Is the aligning amount proper?	Adjust the aligning amount.

### 19) Jittering image

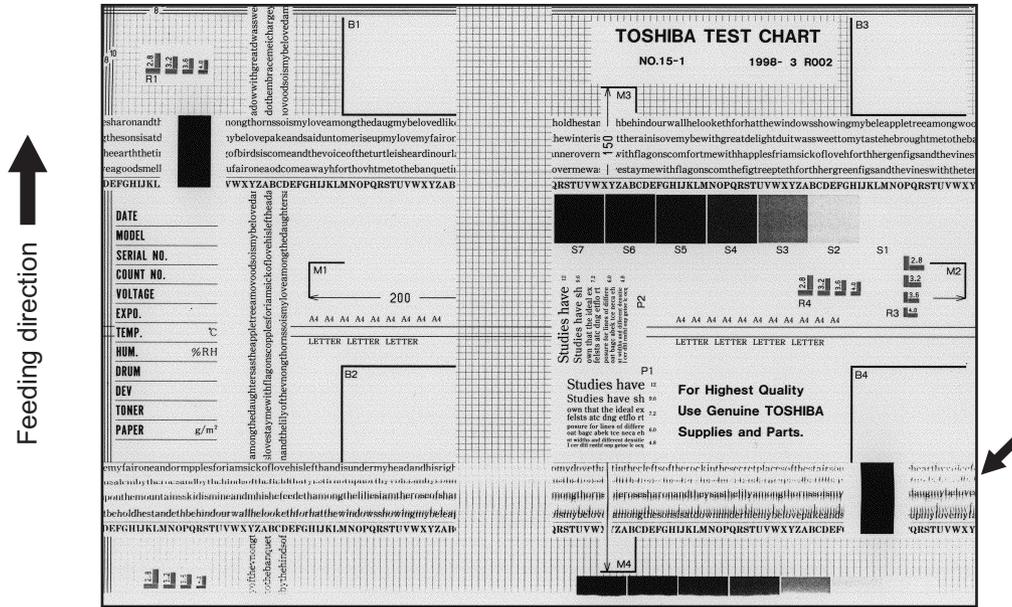


Fig. 5-19

Defective area	Step	Check items	Prescription
—	1	Is the toner image on the drum normal?	If normal, perform steps 2 to 4. Perform step 5 and followings in case the image is abnormal.
Registration roller	2	Is the registration roller rotating normally?	Check the registration roller area and springs for installation condition.
Fuser roller and pressure roller	3	Are the fuser roller and pressure roller rotating normally?	Check the fuser roller area. Replace the rollers if necessary.
Drum	4	Is there a big scratch on the drum?	Replace the drum.
Operation of carriage	5	Is there any problem with the carriage foot?	Replace the carriage foot.
	6	Is the tension of the timing belt normal?	Adjust the tension.
	7	Is there any problem with the drive system of the carriage?	Check the drive system of the carriage.
Scanner	8	Is the CIS unit secured?	Secure it.
Drum drive system	9	Is there any problem with the drive system of the drum?	Check the drive system of the drum. Clean or replace the gears if they have stains or scratches.

20) Poor cleaning

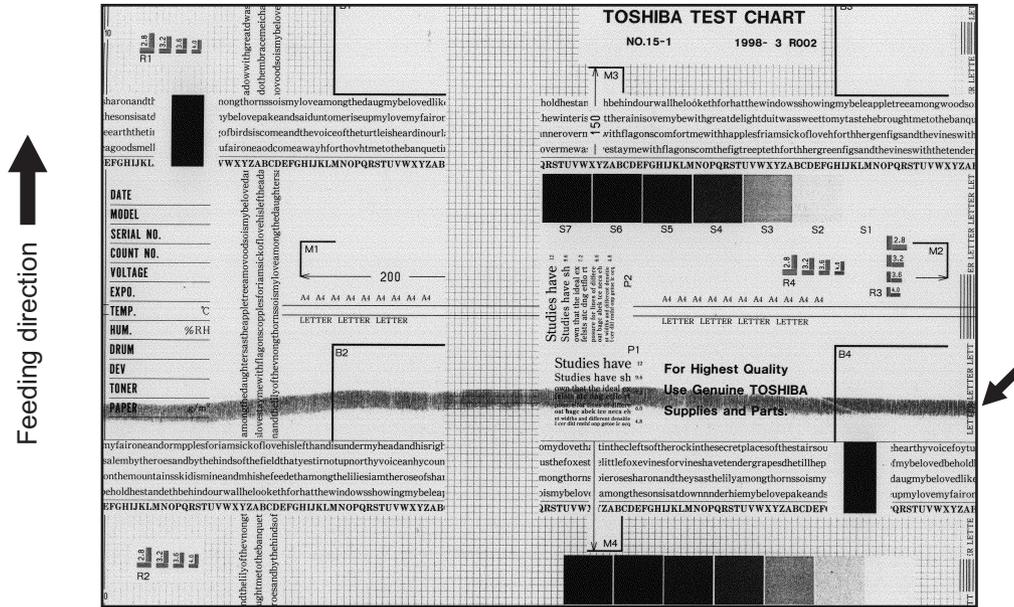


Fig. 5-20

Defective area	Step	Check items	Prescription
Developer material	1	Using the specified developer material?	Use the specified developer material and toner.
Cleaner	2	Is the cleaning blade in proper contact with the drum?	Check the cleaning blade.
	3	Has the cleaning blade been turned up?	Replace the cleaning blade. Check and replace drum if necessary.
Toner recovery auger	4	Is the toner recovered normally?	Clean the toner recovery auger. Check the pressure of the cleaning blade.
Fuser unit	5	Is the cleaning roller damaged or has it reached its PM life?	Replace the cleaning roller.
	6	Are there bubble-like scratches on the fuser roller (94 mm pitch on the image)?	Replace the fuser roller. Check and adjust the temperature control circuit.
	7	Has the fuser roller reached its PM life?	Replace the fuser roller.
	8	Is the pressure of the fuser roller normal?	Check and adjust the mechanism.
	9	Is the setting temperature of the fuser roller normal?	Check the setting and correct it. 08-407, 410, 411, 450, 515, 516

21) Uneven light distribution



Fig. 5-21

Defective area	Step	Check items	Prescription
Original glass	1	Is the original glass dirty?	Clean the original glass.
Main charger	2	Are the needle electrode, main charger grid and main charger case dirty?	Clean or replace them.
Discharge LED	3	Is the discharge LED dirty?	Clean the discharge LED.
	4	Is any of the discharge LEDs off?	Replace the discharge LED.
Scanner	5	Are the original glass (especially the position of shading correction plate) and CIS unit dirty?	Clean them.
Exposure lamp	6	Is the CIS unit degraded?	Replace the CIS unit.

22) Blotched image

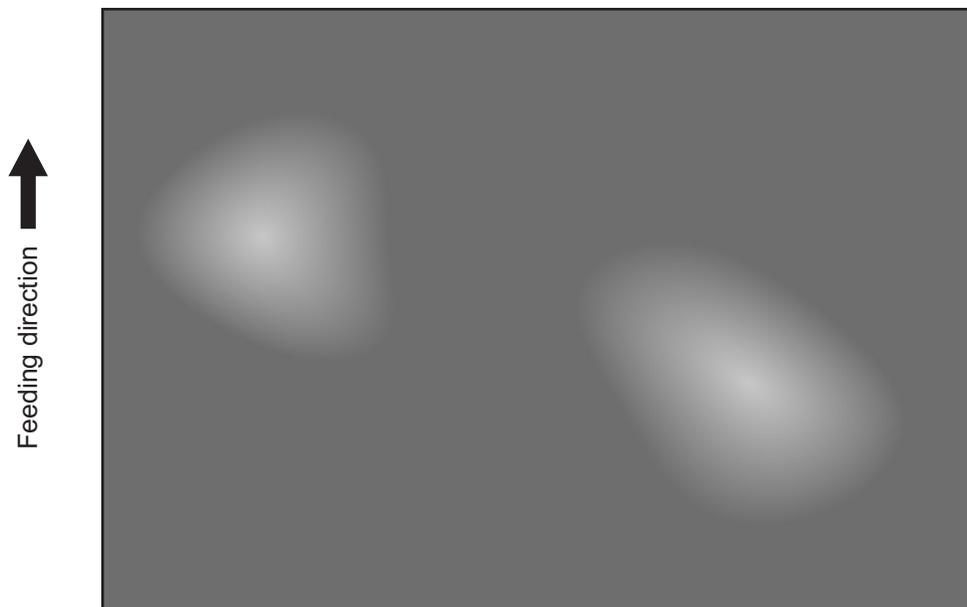


Fig. 5-22

Defective area	Step	Check items	Prescription
Paper	1	Is the paper type corresponding to its mode?	Check the paper type and mode.
	2	Is the paper too dry?	Change the paper.
Separation	3	Is the output from the separation charger too high?	Adjust the output, from the separation charger.
Transfer	4	Is the transfer charger case dirty?	Clean the transfer charger case.
	5	Is the transfer charger wire dirty?	Clean the transfer charger wire.
High-voltage transformer (Transfer charger)	6	Is the output from the high-voltage transformer normal?	Adjust the output. Replace the transformer if necessary.

## 5.3 Replacement of PC Boards

### 5.3.1 Replacing MAIN board

<<CAUTION IN REPLACING the MAIN board>>

The procedure for replacing the MAIN board is as follows.

<After replacing the MAIN board>

- (1) Install SRAM board to the new MAIN board (from the old MAIN board).
- (2) [If an expansion memory (GC-1240) has already been installed]  
Install expansion memory (GC-1240) to the new MAIN board (from the old MAIN board).
- (3) Update the version of system ROMs (System Firmware, OS data, UI data) (The ROMs had been used for the old MAIN board).  
\* See  P. 6-1 "6. FIRMWARE UPDATING" for the details of System ROM update.
- (4) Perform 08-389 (Copying total counter / SRAM board → MAIN board) to recover the total counter.
- (5) Be sure to perform "05-310" with the platen cover or the ADF/RADF closed after replacing the MAIN board.

### 5.3.2 Replacing SRAM board

<<CAUTION IN REPLACING the SRAM board>>

The procedure for replacing the SRAM board is shown below:

\* If the adjustment values in the SRAM can be viewed, print them out in the list print mode before replacing the SRAM board.

- (1) Take off the MAIN board from the equipment.
- (2) Take off the SRAM board including the locking support from the equipment.
- (3) Remove the socket and the battery from the SRAM board, and install them to the new SRAM board.
- (4) Install the new SRAM board to the MAIN board, and the MAIN board to the equipment.
- (5) While pressing [1], [3] and [\*] simultaneously, turn the power ON. (RAM clear)
- (6) Turn the power OFF and then start with the setting mode (08).
- (7) Perform 08-655 (Reset the 05/08 codes).
- (8) Perform 08-388 (Copying total counter / MAIN board -> SRAM board) to recover the total counter.
- (9) While pressing [1], [3] and [#] simultaneously, turn the power ON. (RAM clear)
- (10) Turn the power OFF.

- (11) While pressing [0] and [2] simultaneously, turn the power ON. Enter the code for the destination and press the [ENTER] button. (Refer to  P. 2-115 "2.2.12 Country/Region code".)  
(Destination code: NAD: 1, CND: 86, Other destinations: 44)  
For the equipment with the Fax Kit (GD-1220/1221) installed, the destination codes different from those above need to be entered. Refer to the GD-1220/1221 Service Handbook for details.  
\* After pressing the [ENTER] button, wait until the equipment goes into the ready status as it starts in the normal mode automatically.

(12) Turn the power OFF and then start with the adjustment mode (05).

(13) Set the adjustment value.

Set the adjustment values of the following codes according to the list printed out in advance.  
(If the adjustment values could not be printed out because of the SRAM board damage or any other reason, enter the values on the list output at the last maintenance. If there is no list, enter the default values.)

- 05-201 (Correction of auto-toner sensor)
  - 05-205 (Developer bias DC output adjustment)
  - 05-210 (Main charger grid bias output adjustment)
  - 05-220 (Transfer transformer DC output adjustment (H))
  - 05-221 (Transfer transformer DC output adjustment (C))
  - 05-222 (Transfer transformer DC output adjustment (L))
  - 05-233 (Separation transformer DC output adjustment (H))
  - 05-234 (Separation transformer DC output adjustment (C))
  - 05-235 (Separation transformer DC output adjustment (L))
  - 05-305 (Image location adjustment of secondary scanning direction (scanner section))
  - 05-306 (Image location adjustment of primary scanning direction (scanner section))
  - 05-340 (Reproduction ratio adjustment of secondary scanning direction (scanner section))
  - 05-401 (Adjustment of primary scanning direction reproduction ratio (printer))
  - 05-405 (Adjustment of primary scanning direction reproduction ratio (copy))
  - 05-410 (Adjustment of primary scanning laser writing start position (copy))
  - 05-411 (Adjustment of primary scanning laser writing start position (printer))
  - 05-421 (Adjustment of secondary scanning direction reproduction ratio)
  - 05-440 (Adjustment of secondary scanning laser writing start position (drawer))
  - 05-442 (Adjustment of secondary scanning laser writing start position (bypass tray))
  - 05-430 (Top margin adjustment (blank area at the leading edge of the paper))
  - 05-431 (Left margin adjustment (blank area at the left of the paper along the paper feeding direction))
  - 05-432 (Right margin adjustment (blank area at the right of the paper along the paper feeding direction))
  - 05-433 (Bottom margin adjustment (blank area at the trailing edge of the paper))
  - 05-501 (Density adjustment Fine adjustment of "manual density"/Center value (Photo))
  - 05-503 (Density adjustment Fine adjustment of "manual density"/Center value (Text/Photo))
  - 05-504 (Density adjustment Fine adjustment of "manual density"/Center value (Text))
  - 05-512 (Density adjustment Fine adjustment of "automatic density" (Photo))
  - 05-514 (Density adjustment Fine adjustment of "automatic density" (Text/Photo))
  - 05-515 (Density adjustment Fine adjustment of "automatic density" (Text))
- Also, set the adjustment values which have been changed for servicing.

(14) Be sure to perform "05-310" with the platen cover or the ADF/RADF closed after replacing the SRAM board.

(15) Turn the power OFF and then start with the setting mode (08).

(16) Set the setting value.

Set the setting values of the following codes according to the list printed out in advance.

(If the adjustment values could not be printed out because of the SRAM board damage or any other reason, enter the values on the list output at the last maintenance. If there is no list, enter the default values.)

- 08-252 (Current value of PM counter Display)
- 08-361\_0 (Upper Fuser roller bushing (Present number of output pages))
- 08-361\_1 (Upper Fuser roller bushing (Recommended number of output pages for replacement))
- 08-361\_3 (Upper Fuser roller bushing (Present driving counts))
- 08-361\_4 (Upper Fuser roller bushing (Recommended driving counts to be replaced))
- 08-361\_6 (Upper Fuser roller bushing (Present output pages for control))
- 08-361\_7 (Upper Fuser roller bushing (Present driving counts for control))
- 08-1150\_0 (Photoconductive drum (Present number of output pages))
- 08-1150\_1 (Photoconductive drum (Recommended number of output pages for replacement))
- 08-1150\_3 (Photoconductive drum (Present driving counts))
- 08-1150\_4 (Photoconductive drum (Recommended driving counts to be replaced))
- 08-1150\_6 (Photoconductive drum (Present output pages for control))
- 08-1150\_7 (Photoconductive drum (Present driving counts for control))
- 08-1158\_0 (Drum cleaning blade (Present number of output pages))
- 08-1158\_1 (Drum cleaning blade (Recommended number of output pages for replacement))
- 08-1158\_3 (Drum cleaning blade (Present driving counts))
- 08-1158\_4 (Drum cleaning blade (Recommended driving counts to be replaced))
- 08-1158\_6 (Drum cleaning blade (Present output pages for control))
- 08-1158\_7 (Drum cleaning blade (Present driving counts for control))
- 08-1172\_0 (Drum separation finger (Present number of output pages))
- 08-1172\_1 (Drum separation finger (Recommended number of output pages for replacement))
- 08-1172\_3 (Drum separation finger (Present driving counts))
- 08-1172\_4 (Drum separation finger (Recommended driving counts to be replaced))
- 08-1172\_6 (Drum separation finger (Present output pages for control))
- 08-1172\_7 (Drum separation finger (Present driving counts for control))
- 08-1174\_0 (Main charger grid (Present number of output pages))
- 08-1174\_1 (Main charger grid (Recommended number of output pages for replacement))
- 08-1174\_3 (Main charger grid (Present driving counts))
- 08-1174\_4 (Main charger grid (Recommended driving counts to be replaced))
- 08-1174\_6 (Main charger grid (Present output pages for control))
- 08-1174\_7 (Main charger grid (Present driving counts for control))
- 08-1182\_0 (Needle electrode (Present number of output pages))
- 08-1182\_1 (Needle electrode (Recommended number of output pages for replacement))
- 08-1182\_3 (Needle electrode (Present driving counts))
- 08-1182\_4 (Needle electrode (Recommended driving counts to be replaced))
- 08-1182\_6 (Needle electrode (Present output pages for control))
- 08-1182\_7 (Needle electrode (Present driving counts for control))
- 08-1198\_0 (Ozone filter (Present number of output pages))
- 08-1198\_1 (Ozone filter (Recommended number of output pages for replacement))
- 08-1198\_3 (Ozone filter (Present driving counts))
- 08-1198\_4 (Ozone filter (Recommended driving counts to be replaced))
- 08-1198\_6 (Ozone filter (Present output pages for control))
- 08-1198\_7 (Ozone filter (Present driving counts for control))
- 08-1200\_0 (Developer material (Present number of output pages))
- 08-1200\_1 (Developer material (Recommended number of output pages for replacement))
- 08-1200\_3 (Developer material (Present driving counts))
- 08-1200\_4 (Developer material (Recommended driving counts to be replaced))
- 08-1200\_6 (Developer material (Present output pages for control))
- 08-1200\_7 (Developer material (Present driving counts for control))

08-1214\_0 (Transfer charger wire (Present number of output pages))  
 08-1214\_1 (Transfer charger wire (Recommended number of output pages for replacement))  
 08-1214\_3 (Transfer charger wire (Present driving counts))  
 08-1214\_4 (Transfer charger wire (Recommended driving counts to be replaced))  
 08-1214\_6 (Transfer charger wire (Present output pages for control))  
 08-1214\_7 (Transfer charger wire (Present driving counts for control))  
 08-1224\_0 (Separation charger wire (Present number of output pages))  
 08-1224\_1 (Separation charger wire (Recommended number of output pages for replacement))  
 08-1224\_3 (Separation charger wire (Present driving counts))  
 08-1224\_4 (Separation charger wire (Recommended driving counts to be replaced))  
 08-1224\_6 (Separation charger wire (Present output pages for control))  
 08-1224\_7 (Separation charger wire (Present driving counts for control))  
 08-1246\_0 (Fuser roller (Present number of output pages))  
 08-1246\_1 (Fuser roller (Recommended number of output pages for replacement))  
 08-1246\_3 (Fuser roller (Present driving counts))  
 08-1246\_4 (Fuser roller (Recommended driving counts to be replaced))  
 08-1246\_6 (Fuser roller (Present output pages for control))  
 08-1246\_7 (Fuser roller (Present driving counts for control))  
 08-1250\_0 (Pressure roller (Present number of output pages))  
 08-1250\_1 (Pressure roller (Recommended number of output pages for replacement))  
 08-1250\_3 (Pressure roller (Present driving counts))  
 08-1250\_4 (Pressure roller (Recommended driving counts to be replaced))  
 08-1250\_6 (Pressure roller (Present output pages for control))  
 08-1250\_7 (Pressure roller (Present driving counts for control))  
 08-1268\_0 (Fuser roller separation finger (Present number of output pages))  
 08-1268\_1 (Fuser roller separation finger (Recommended number of output pages for replacement))  
 08-1268\_3 (Fuser roller separation finger (Present driving counts))  
 08-1268\_4 (Fuser roller separation finger (Recommended driving counts to be replaced))  
 08-1268\_6 (Fuser roller separation finger (Present output pages for control))  
 08-1268\_7 (Fuser roller separation finger (Present driving counts for control))  
 08-1298\_0 (Feed roller (Drawer) (Present number of output pages))  
 08-1298\_1 (Feed roller (Drawer) (Recommended number of output pages for replacement))  
 08-1300\_0 (Feed roller (PFU) (Present number of output pages))  
 08-1300\_1 (Feed roller (PFU) (Recommended number of output pages for replacement))  
 08-1312\_0 (Separation roller (PFP upper drawer) (Present number of output pages))  
 08-1312\_1 (Separation roller (PFP upper drawer) (Recommended number of output pages for replacement))  
 08-1314\_0 (Separation roller (PFP lower drawer) (Present number of output pages))  
 08-1314\_1 (Separation roller (PFP lower drawer) (Recommended number of output pages for replacement))  
 08-1316\_0 (Separation roller (Bypass unit) (Present number of output pages))  
 08-1316\_1 (Separation roller (Bypass unit) (Recommended number of output pages for replacement))  
 08-1320\_0 (Feed roller (PFP upper drawer) (Present number of output pages))  
 08-1320\_1 (Feed roller (PFP upper drawer) (Recommended number of output pages for replacement))  
 08-1322\_0 (Feed roller (PFP lower drawer) (Present number of output pages))  
 08-1322\_1 (Feed roller (PFP lower drawer) (Recommended number of output pages for replacement))  
 08-1324\_0 (Feed roller (Bypass unit) (Present number of output pages))  
 08-1324\_1 (Feed roller (Bypass unit) (Recommended number of output pages for replacement))

08-1328\_0 (Pickup roller (PFP upper drawer) (Present number of output pages))  
 08-1328\_1 (Pickup roller (PFP upper drawer) (Recommended number of output pages for replacement))  
 08-1330\_0 (Pickup roller (PFP lower drawer) (Present number of output pages))  
 08-1330\_1 (Pickup roller (PFP lower drawer) (Recommended number of output pages for replacement))  
 08-1336\_0 (Recovery blade (Present number of output pages))  
 08-1336\_1 (Recovery blade (Recommended number of output pages for replacement))  
 08-1336\_3 (Recovery blade (Present driving counts))  
 08-1336\_4 (Recovery blade (Recommended driving counts to be replaced))  
 08-1336\_6 (Recovery blade (Present output pages for control))  
 08-1336\_7 (Recovery blade (Present driving counts for control))  
 08-1372 (Heater and energizing time accumulating counter Display/0 clearing)  
 08-1378 (Counter for period of time fuser unit is at ready temperature)  
 08-1380 (Counter for period of time fuser unit is at printing temperature)  
 08-1382 (Counter for period of time fuser unit is at energy saving temperature/Counter reset)  
 08-1385 (Number of output pages (Thick paper 1))  
 08-1386 (Number of output pages (Thick paper 2))  
 08-1388 (Number of output pages (OHP film))  
 08-1410 (Counter for period of toner cartridge rotation time)  
 08-1411 (Counter for envelope)

Also, set the setting values which have been changed for servicing.

(17) Check that the setting value for 08-203 (Line adjustment mode) is "0" (For factory shipment). If it is "1" (For line), change it to "0".

(18) Start the equipment in the normal mode and set the time and date.

## 6. FIRMWARE UPDATING

When you want to update the firmware above or the equipment becomes inoperative status due to some defectives of the firmware, updating the firmware is available by the following actions.

- Updating with the download jig  
 ☞ P. 6-1 "6.1 Firmware Updating with Download Jig"
- Updating with PC connected  
 ☞ P. 6-10 "6.2 Firmware Updating with TOSHIBA Viewer (e-STUDIO165/205 only)"
- Updating with the USB Storage Device (When GA-1190/GA-1200 is installed)  
 ☞ P. 6-13 "6.3 Firmware Updating with USB Storage Device (When GA-1190/GA-1200 is installed)"

### 6.1 Firmware Updating with Download Jig

In this equipment, it is feasible to update the firmware automatically by connecting the download jig using the dedicated connector and turning ON the equipment.

Firmware	Stored	Download jig
System ROM	Main PC board (MAIN board)	PWA-DWNLD-350-JIG1 (16 MB) or PWA-DWNLD-350-JIG2 (48 MB)
Controller ROM	GA-1190 control PC board (GA-1190)	PWA-DWNLD-350-JIG2 (48 MB)
ADF ROM	ADF control PC board (MR-2017)	K-PWA-DLM-320
RADF ROM	RADF control PC board (MR-3019)	

#### PWA-DWNLD-350-JIG

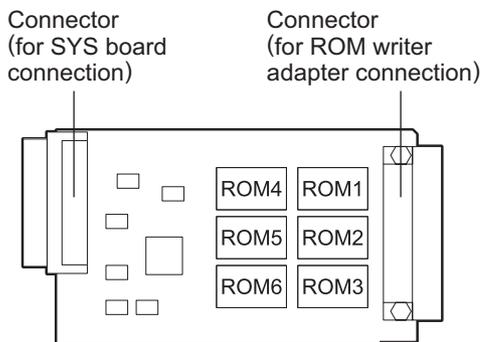


Fig. 6-1 Jig board: PWA-DWNLD-350-JIG2(48 MB)

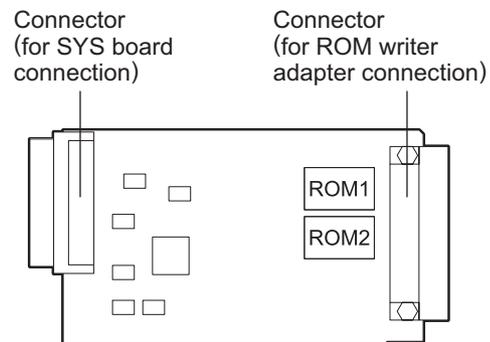


Fig. 6-2 Jig board: PWA-DWNLD-350-JIG1(16 MB)

**Important:**

- The download jig (PWA-DWNLD-350-JIG) has two types having different ROM capacity.

Download jig	ROM capacity
PWA-DWNLD-350-JIG2 (48 MB)	8 MB x 6
PWA-DWNLD-350-JIG1 (16 MB)	8 MB x 2

- The download jig (PWA-DWNLD-350-JIG) 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.

📖 P. 6-7 "6.1.2 Writing the data to the download jig (PWA-DWNLD-350-JIG)"

**K-PWA-DLM-320**

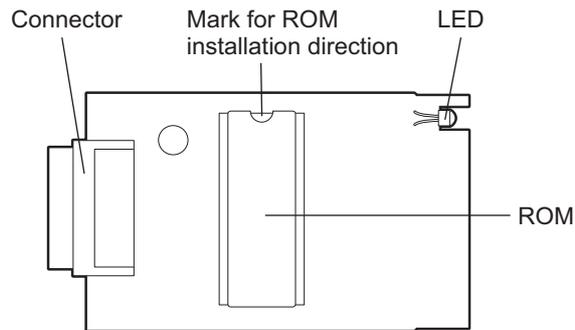


Fig. 6-3 Jig board: K-PWA-DLM-320

**Important:**

Pay attention to the direction of the ROM.

## 6.1.1 PWA-DWNLD-350-JIG

### [A] Update procedure

#### Important:

- Turn OFF the power before installing and removing the download jig.
- Do not turn OFF the power during the update. The data could be damaged and not be operated properly.
- Ensure that the firmware to be updated is for the intended model.
- If the firmware for e-STUDIO167/207/237 is updated on e-STUDIO165/205 by mistake, a C94 error message appears when the power is turned OFF and then back ON after the update. Remember that no error message appears when the firmware for e-STUDIO165/205 is updated on e-STUDIO167/207/237 by mistake.

#### <Updating System ROM>

- (1) Write the data to the download jig.  
P. 6-7 "6.1.2 Writing the data to the download jig (PWA-DWNLD-350-JIG)"
- (2) Turn OFF the power of the equipment.
- (3) Take off the connector cover.

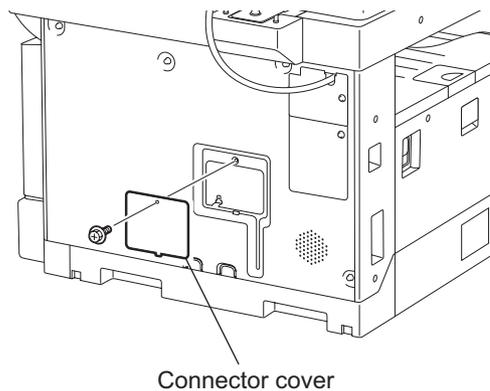


Fig. 6-4

- (4) Connect the download jig with the connector (CN1) on the MAIN board.

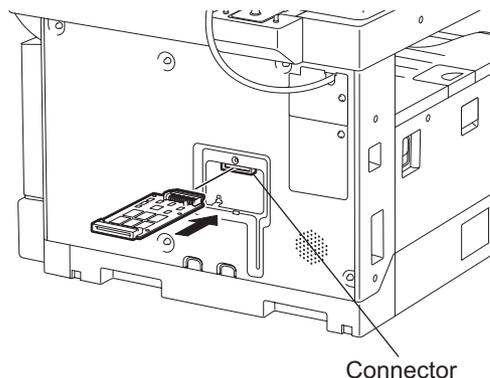


Fig. 6-5

**Note:**

In case the external keyboard (GJ-1040) is used, the update must be performed after the TEL-BOOK PC board is disconnected from the connector and the download jig is connected.

- (5) Turn ON the power.  
Downloading starts automatically and the processing status is displayed on the LCD.

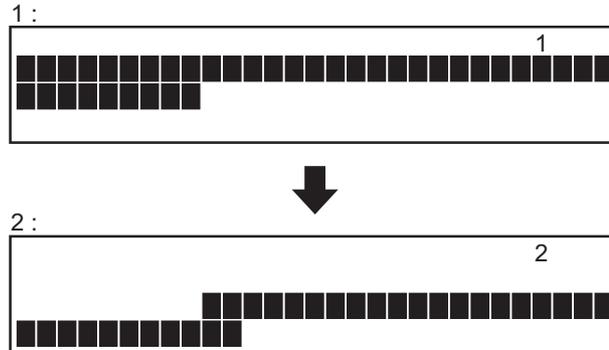
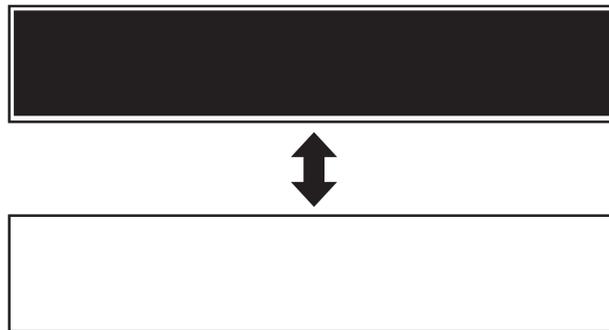


Fig. 6-6

- (6) After the update is completed properly, the LCD blinks.



If an error occurs, the following error number is displayed and the update is interrupted. Turn OFF the power, and then check the following items. After confirming and clearing the problems, 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?

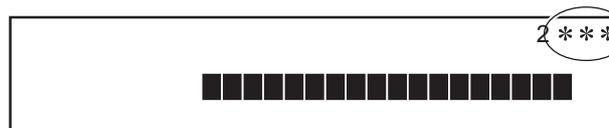


Fig. 6-8

- (7) Turn OFF the power, remove the download jig and install the connector cover.

<Updating Controller ROM (GA-1190)>

- (1) Write the ROM data to be updated to the download jig.  
📖 P. 6-7 "6.1.2 Writing the data to the download jig (PWA-DWNLD-350-JIG)"
- (2) Turn OFF the power of the equipment.
- (3) Take off the cover plate.

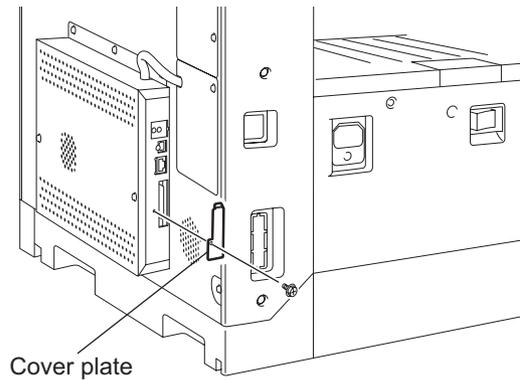


Fig. 6-9

- (4) Connect the download jig with the jig connector on the GA-1190 control pc board.

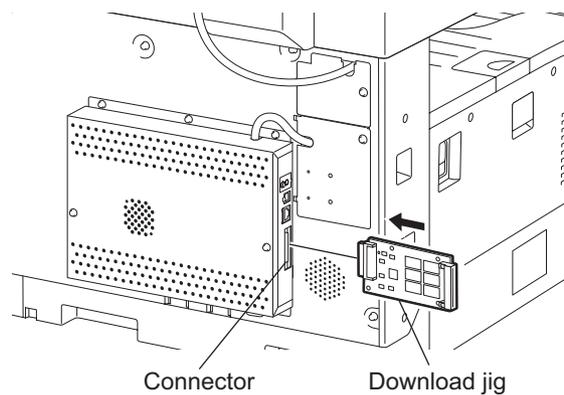


Fig. 6-10

- (5) Turn ON the power while [8] button and [9] button are pressed simultaneously. Updating starts automatically and the LED on the download jig lights.
- (6) When the update is completed properly, the LED (LED 7) on the download jig blinks. The LED starts blinking in approx. 4 minutes since the update starts. It is assumed that the update is failed if it does not start blinking even though 5 minutes has passed. In this case, turn OFF the power and check the following items. Then, clear the problem 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 OFF the power, remove the download jig and install the cover plate.

- (8) Perform the initialization of the updating data.
- Turn ON the power while [0] button and [8] button are pressed simultaneously.
  - Key in "947", and then press the [START] button.
  - Press the [START] 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.

<Updating System ROM>

- 08-900: System ROM version
- 08-921: FROM internal program version
- 08-922: Function table data version
- 08-923: Language data version

<Updating Controller ROM>

- 08-1952: Controller ROM version

## 6.1.2 Writing the data to the download jig (PWA-DWNLD-350-JIG)

The download jig (PWA-DWNLD-350-JIG) is the jig 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 download procedure, instruction manual of each ROM writer, or others.

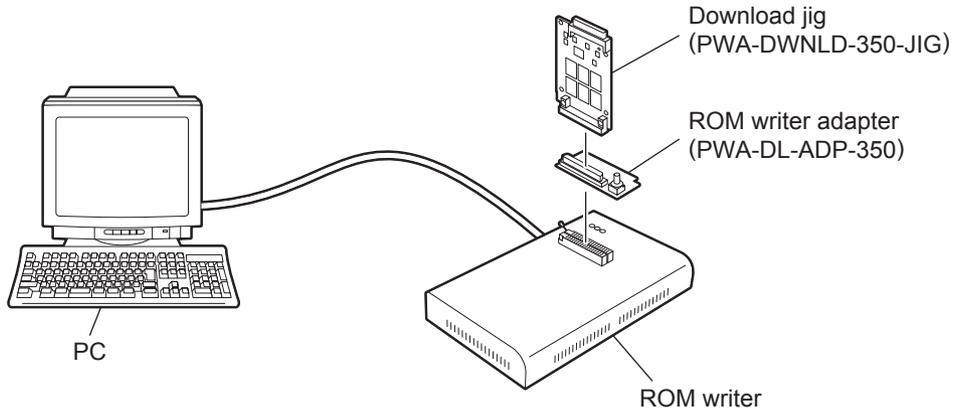


Fig. 6-11

### 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)

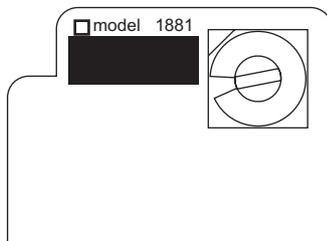


Fig. 6-12 PWA-DL-ADP-350-1881

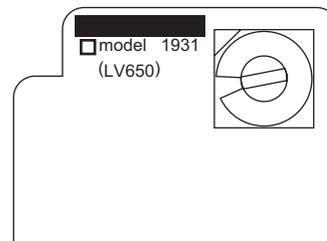


Fig. 6-13 PWA-DL-ADP-350-1931

**[A] Precaution when writing the data**

- Set the writing voltage (VID) to 3.3V.
- When writing the data, set the address from 0 to 3FFFFFF. The data may not be written correctly if it is not set.
- The Flash ROM in which the data will be written, on the download jig is selected by switching the rotary switch on the adapter. Be sure to switch the rotary switch on the adapter depending on the data (file) to be written.

**Important:**

When an error such as "Over current detects" appears while the data are being written to the download jig and the writing cannot be finished, set the writing voltage (VID) to 12 V and then write them.

System ROM		
Rotary Switch	File Name	Flash ROM
1	rom_H. bin	ROM1
2	N/A	ROM2
3	N/A	ROM3
4	N/A	ROM4
5	N/A	ROM5
6	N/A	ROM6

Controller ROM		
Rotary Switch	File Name	Flash ROM
1	firmImage0.bin	ROM1
2	firmImage1.bin	ROM2
3	firmImage2.bin	ROM3
4	firmImage3.bin	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.

### 6.1.3 K-PWA-DLM-320

It is feasible to update the firmware automatically by connecting the download jig to the ADF control PC board or the RADF control PC board and turning the power of the equipment ON.

< Procedure >

- (1) Turning OFF the power of the equipment and take off the ADF or RADF rear cover.
  - (2) Connect the download jig with the connector (CN81) on the PC board.
  - (3) While pressing [0] and [8] simultaneously, turn ON the power. (rewriting data starts)
  - (4) During the data is rewritten, the LED on the download jig lights. When the data rewriting is completed, the LED blinks slowly (at an interval of 0.8 sec.). If the LED blinks fast (at an interval of 0.1 sec.), the rewriting has been failed.
  - (5) Turn OFF the power of the equipment and remove the download jig.
  - (6) Install the ADF or RADF rear cover.
- \* If rewriting data is failed, turn OFF the power and repeat the procedure.

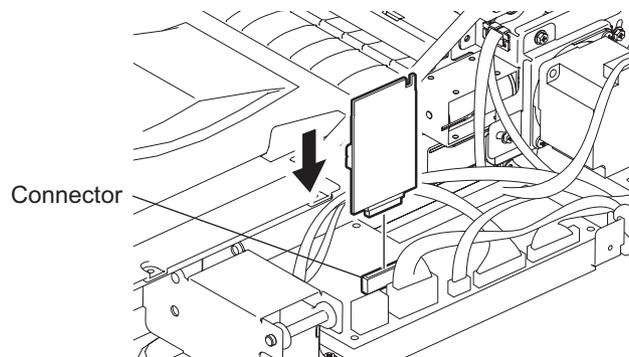


Fig. 6-14

**Note:**

Be sure to print out the "FUNCTION LIST" to confirm the firmware version for the ADF or RADF.  
📖 P. 2-111 "2.2.10 FUNCTION (Jam counter ROM ver.)"

## 6.2 Firmware Updating with TOSHIBA Viewer (e-STUDIO165/205 only)

Using the TOSHIBA Viewer, you can download the firmware from the PC to this copier for updating.

**Important:**

- Data to be downloaded should be stored in the same drive as the TOSHIBA Viewer program. If the data is stored in a different drive (including a floppy disk or the drive of another PC connected to the network), downloading may not be performed normally.
- Do not turn off the power of the copier and the PC while data is being updated. Data may be damaged causing the copier not to operate normally.

1) Start the TOSHIBA Viewer, and then Click [Setup] on the main welcome menu.

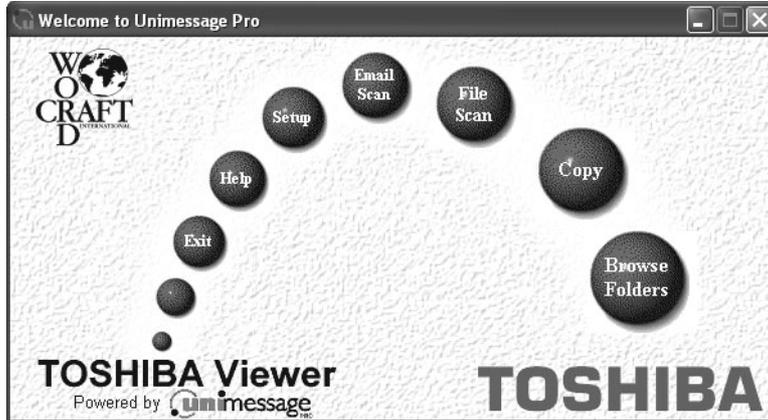


Fig. 6-15

The Toshiba Setup screen appears.

2) Double click [Download (main board)] in Data sources.

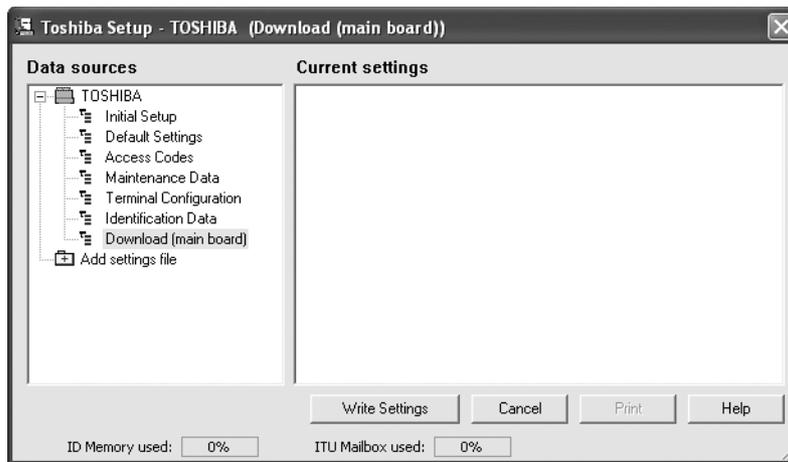


Fig. 6-16

The Service setting dialog box appears.

3) Enter the password "TSBSERVICE".

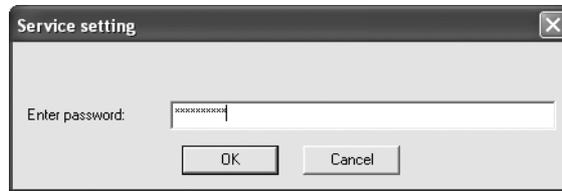


Fig. 6-17

4) Click [OK].  
The Download firmware update dialog box appears.

5) Select the file for the download firmware.

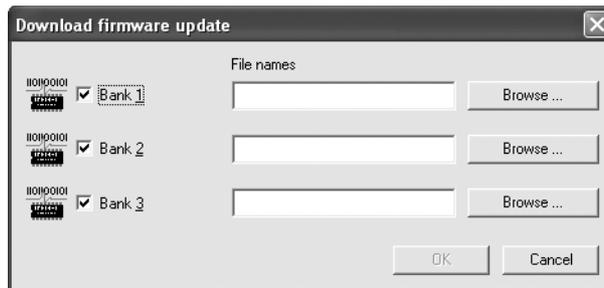


Fig. 6-18

Click [Browse] to select the file to be downloaded.  
The selected files are displayed in File.

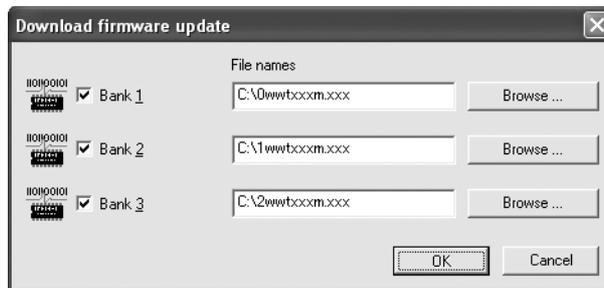


Fig. 6-19

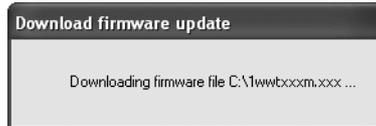
**Notes:**

- The files with the checked boxes are downloaded.
- The following files should be selected for the banks.  
Select files according to bank.  
Bank 1: Program data  
Bank 2: Function data  
Bank 3: Language data
- When an inappropriate file is selected for the bank, the following message is displayed.  
Select the appropriate file.



**Fig. 6-20**

- 6) Click [OK].  
Downloading starts and the file that is downloaded is displayed.

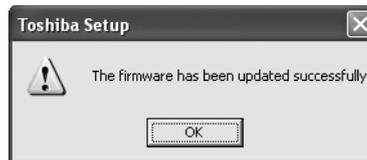


**Fig. 6-21**

**Notes:**

- It takes approx. 15 to 20 minutes to download the data (when three files are downloaded).
- The copier is automatically reset while downloading.

When the downloading is completed, the following dialog box is displayed.



**Fig. 6-22**

- 7) Click [OK].
- 8) Turn OFF the power of the equipment.
- 9) Perform the initialization of the download data.
- Turn ON the power while [0] button and [8] button are pressed simultaneously.
  - Key in "947", and then press the [START] button.
  - Press the [START] button.

## 6.3 Firmware Updating with USB Storage Device (When GA-1190/GA-1200 is installed)

In this equipment, it is feasible to update the firmware by connecting the USB storage device on which the firmware data is written to the USB connector mounted on the GA-1190 control PC board and turning ON the power.

The type of firmware which can be updated with this method are as follows in the table below.

Firmware	Stored	Model specific folder name	Sub folder name	Data file name
System ROM	Main PC board (MAIN board)	e-STUDIO165/205: 165_205  e-STUDIO167/207/237: 167_237	SYS_JIG	cjH_prog.dgb
Function data				cjH_func.dgb
Language data				cjH_lang.dgb
Controller ROM	GA-1190 control PC board (GA-1190)		CON_JIG	lang.img rom.img rom2.img sysfirm.tz uiw.img vxWorks.st_rom.bin
Scanner ROM	Compact Flash (GA-1200)		SCN_JIG	Samba.out scan.tz webdata1.db webfile.zip webhelp1.zip

### Important:

- Only the USB storage device which meets 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 storage device with a flash memory (to be connected directly to the USB port) and its capacity is between 64 MB to 512 MB (or 1 GB).
  - A USB storage device which complies 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 storage devices are complied 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 the use in PC environment (Windows or Macintosh). Therefore, confirm thoroughly that the device is operational in the equipment for which the updating will be performed when purchasing the device.
- The data file (sub folder) for updating is stored in the model specific folder. Never change the model specific folder name since it is used for discriminating the data file when the updating data files for multiple models are stored in the USB storage device.
- Store the model specific folder in the root directory of the USB storage device.
- Distinguish between the firmware for e-STUDIO165/205 and that for e-STUDIO167/207/237 by its model specific folder name.
- The USB storage device complied with USB1.1 and USB2.0 can be used for updating. However, the update is performed in the speed of USB1.1 when the device complied with USB2.0 is used.
- 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.

- When updating the firmware for the Controller ROM (GA-1190) or the Scanner ROM (GA-1200), change the model specific folder name to “165\_205” if the model is e-STUDIO165/205. Change it to “167\_237” if the model is e-STUDIO167/207/237.

Since the model specific folder to be detected differs depending on the controller ROM version, change the model specific folder name accordingly before updating the firmware for the Controller ROM (GA-1190) or the Scanner ROM (GA-1200) which is connected with e-STUDIO167/207/237.

The following model specific folder names are not correctly detected in the Controller ROM versions noted below, even if the Controller ROM (GA-1190) or the Scanner ROM (GA-1200) is connected with e-STUDIO167/207/237. Change the folder name to “165\_205” otherwise the correct model specific folder will not be detected and therefore the firmware update will fail.

<b>Controller ROM version</b>	<b>Model specific folder name</b>
Earlier than T282CN0*200	165_205
T282CN0*200 or later	167_237

## [A] Update procedure

### Important:

- The file system of USB storage device should be formatted in FAT format. Be careful since the devices formatted in FAT32 or NTFS format will not be operated. The file system can be confirmed on the properties in applications such as Explorer of Windows.
- Do not turn OFF the power during the update. The data could be damaged and not to be operated properly.

- (1) Connect the USB storage device to the PC and write the model specific folder and sub folder in which the data file is stored.
  - Confirm the model specific folder name, sub folder name and data file name before writing the data  
( P. 6-13 "6.3 Firmware Updating with USB Storage Device (When GA-1190/GA-1200 is installed)").
  - The file system of USB storage device should be formatted in FAT format.
  - Windows 95 and NT do not support USB. Be careful since the data can not be written on the devices in the PCs with these operating systems.
- (2) Turn OFF the power of the equipment.
- (3) GA-1190 only: Take off the cover plate.

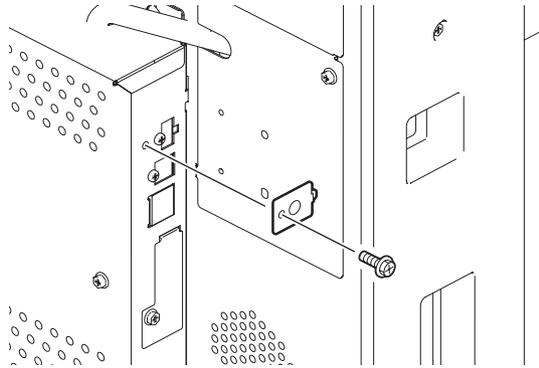


Fig. 6-23

When GA-1200 is installed: Take off the cover and disconnect the dongle from the USB connector (host).

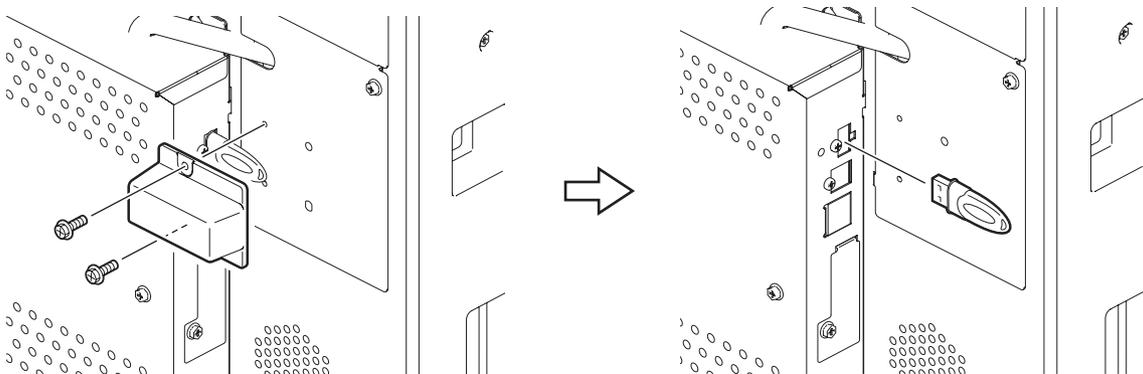


Fig. 6-24

- (4) Connect the USB storage device to the USB connector (host) on the SYS board.

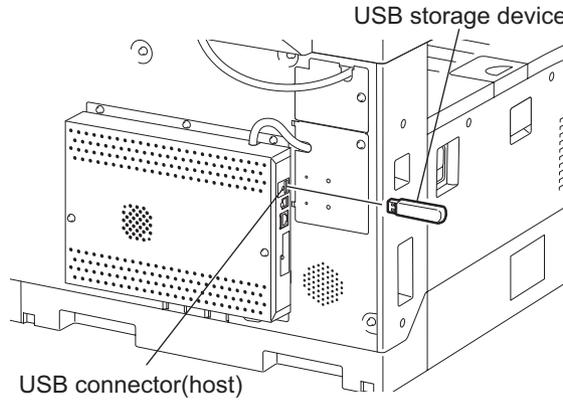


Fig. 6-25

- (5) Turn ON the power while [4] button and [9] button are pressed simultaneously. The items to be updated are highlighted in approx. 20 seconds, and updating starts. "Install" then "Wait" is displayed next to the item being updated.

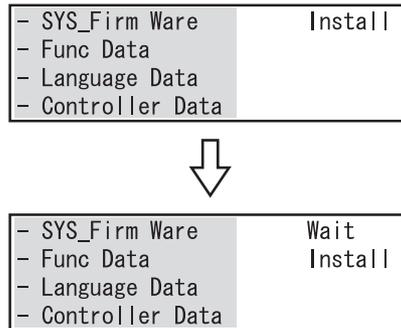


Fig. 6-26

**Note:**

The items to be updated (highlighted items) vary depending on the types of data written on the USB storage device. Each item is displayed only when each data file is written on the USB storage device in the following conditions. The item "Controller Data" is displayed when either or both [CON\_JIG] and [SCN\_JIG] sub folders are written.

Item	Condition		
	Model specific folder name	Sub folder name	Data file name
SYS_Firm Ware	e-STUDIO165/205: 165_205  e-STUDIO167/207/237: 167_237	SYS_JIG	cjH_prog.dgb
Func Data			cjH_func.dgb
Language Data			cjH_lang.dgb
Controller Data		CON_JIG	lang.img rom.img rom2.img sysfirm.tz uiw.img vxWorks.st_rom.bin
		SCN_JIG	Samba.out scan.tz webdata1.db webfile.zip webhelp1.zip

If the USB storage device is not recognized properly in approx. 30 seconds, items are not highlighted. In this case, turn OFF the power of the equipment, connect the device properly, and then repeat the procedure from step (5).

- SYS_Firm Ware
- Func Data
- Language Data
- Controller Data

Fig. 6-27

- (6) When the updating is completed properly, "Complete" is displayed next to all the highlighted items.

- SYS_Firm Ware	Complete
- Func Data	Complete
- Language Data	Complete
- Controller Data	Complete

Fig. 6-28

**Note:**

It takes approx. 9 minutes to complete updating all items (SYS\_Firm Ware/Func Data/Language Data/Controller Data). Update time varies approx. ±30% depending on the rotation speed of the USB storage device and the status of the Flash ROM in the equipment.

- (7) Turn OFF the power and remove the USB storage device.
- (8) GA-1190 only: Install the cover plate.  
When GA-1200 is installed: connect the dongle to the USB connector (host) and install the cover.
- (9) Perform the initialization of the updating data.
- Turn ON the power while [0] button and [8] button are pressed simultaneously.
  - Key in "947", and then press the [START] button.
  - Press the [START] 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.

### <Updating System ROM>

- 08-900: System ROM version
- 08-921: FROM internal program version
- 08-922: Function table data version
- 08-923: Language data version

### <Updating Controller ROM>

- 08-1952: Controller ROM version

### <Updating Scanner ROM>

- 08-1953: Scanner ROM version

## 6.4 Firmware Updating with Software Update Tool

### 6.4.1 General Description

The software update tool is used for upgrading the version of the system ROM for the equipment. You can download the system ROM data from a PC to equipment by installing this tool and connecting a PC with the equipment using a USB cable.

### 6.4.2 System Requirements

Tools introduced in this manual shall be operated under the following systems:

- OS : Windows 2000 SP4, Windows XP SP1, Windows XP SP2
- USB version: USB Ver.2.0 (Recommended)
- USB Cable : USB2.0 Hi-Speed certified cable (USB cable supporting the USB2.0 Hi-Speed mode (480 Mbps of transfer speed) certified by the USB Implementers Forum.)

### 6.4.3 Preparation and Precaution

- (1) Confirm that there is a software updating tool USB driver (created by decompressing "eST163\_PCDL\_Inst\_Rev210.zip") on your PC.
- (2) Only installation by hardware wizard can recognize e-STUDIO165/167/205/207/237.
- (3) If the TOSHIBA Viewer USB driver is already installed, the software update tool USB driver cannot be. Delete the corresponding COM port on the Device Manager window and then start the installation of the software update tool USB driver.

### 6.4.4 Update Procedure

- (1) Turn OFF the power of the equipment, and connect the equipment and PC with a USB cable.

**Note:**

Do not connect the USB of GA-1190/GA-1200 if GA-1190/GA-1200 is installed.

- (2) Turn the power ON while pressing [2] and [9] buttons simultaneously.

**Notes:**

1. The following screen appears on the control panel when the equipment goes into the update mode.
2. Refer to Note in step (11) for the screen displayed during the update.



A rectangular box containing a list of update options:

- SYS\_Firm Ware
- Func Data
- Language Data
- Controller Data

Fig. 6-29

- (3) Double-click the icon "FirmwareDownload.exe" to start up the Software update tool.

- (4) The Port Setting window below appears. Select the port and click [OK].

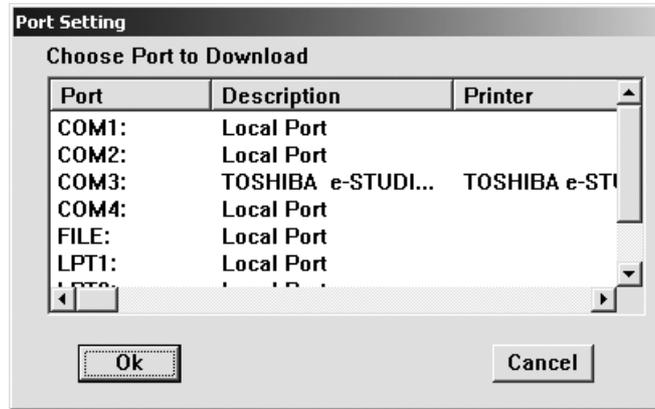


Fig. 6-30

- (5) The Download window below appears. Click the folder icon.

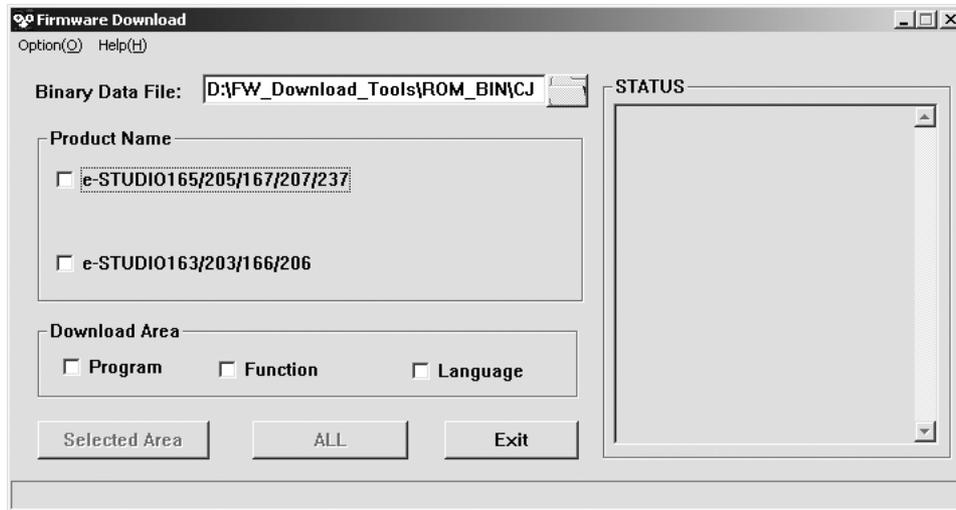


Fig. 6-31

- (6) Select the firmware data file to be updated on the Local Firmware Data window (in the figure below, "rom\_HJ\_V52.bin" is selected). Double-click the file or click [Open (O)] to open it.

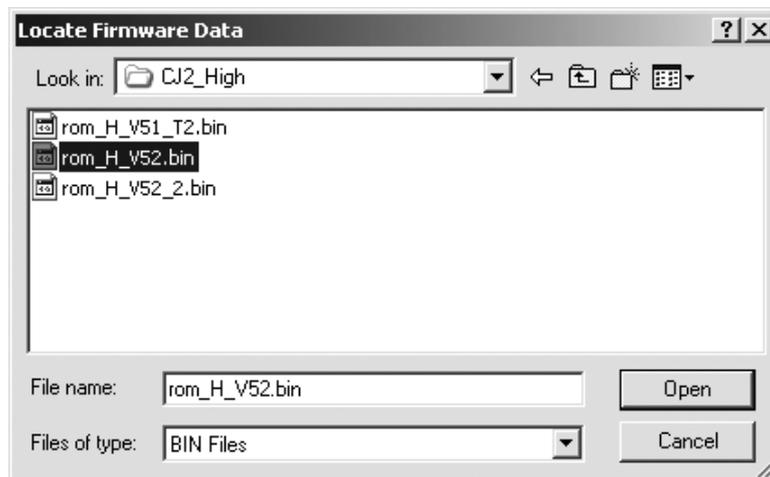


Fig. 6-32

- (7) Select the "e-STUDIO165/205/167/207/237" check box in the Product Name field.

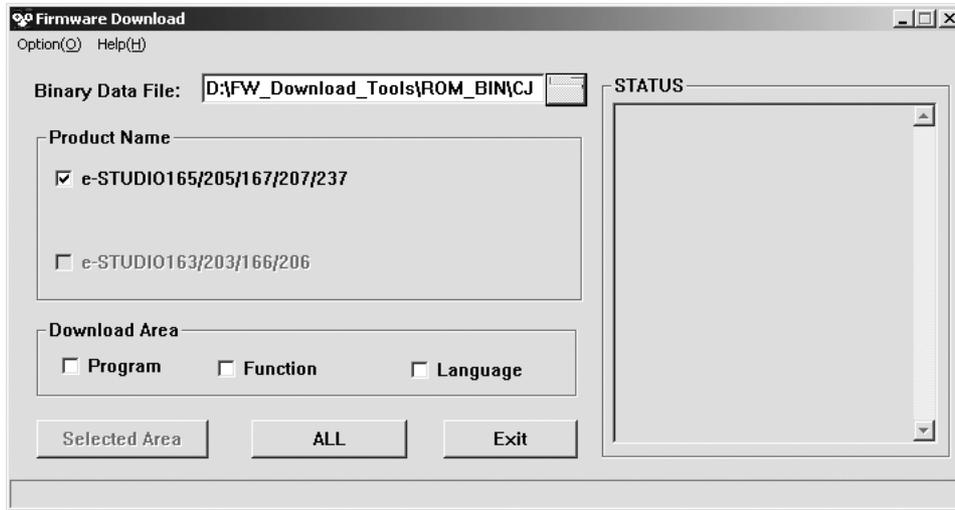


Fig. 6-33

- (8) Confirm that both the "Program" and the "Function" check boxes in the Download Area field are cleared, and then click [ALL].

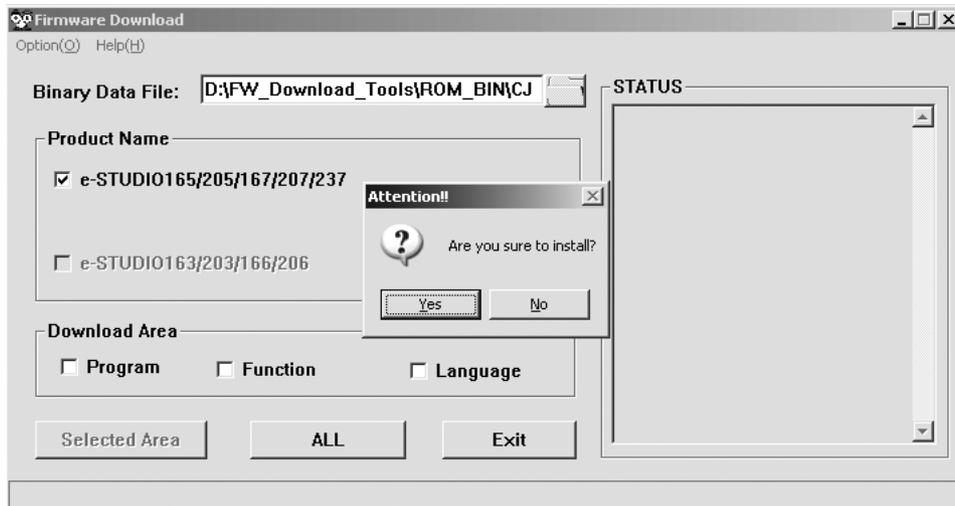


Fig. 6-34

**Note:**

In e-STUDIO165/167/205/207/237, the download area has three selections; "Program (program data)", "Function (function data)" and "Language (language data)". Updating is available on each area individually, but it is recommended that you update data on all the areas.

Perform step (8) when you want to update all the data in one go. Perform the following procedure when you want to update the data individually.

Select the program you want to update. (Select any of the Program, Function and Language check boxes. The Program and Function check boxes are selected in the following example.)

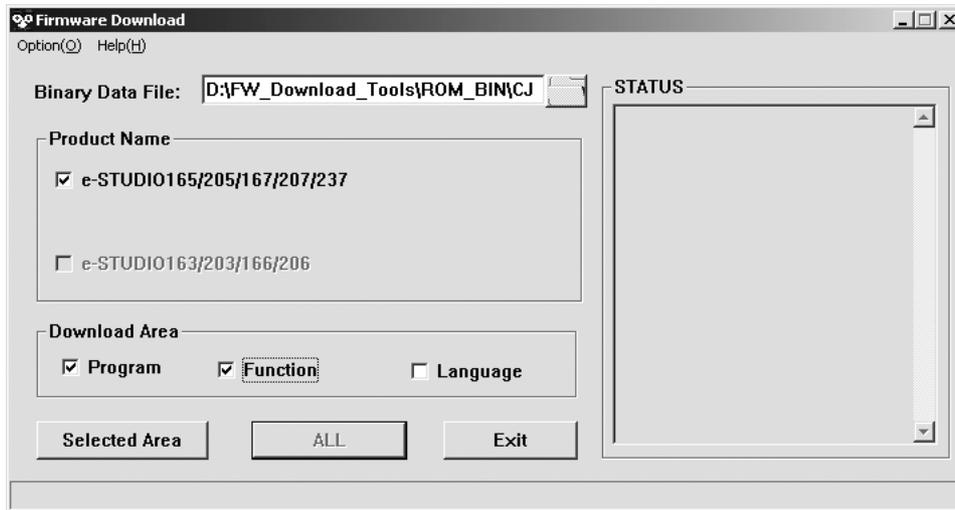


Fig. 6-35

Click [Selected Area].  
The Attention window appears. Click [Yes].

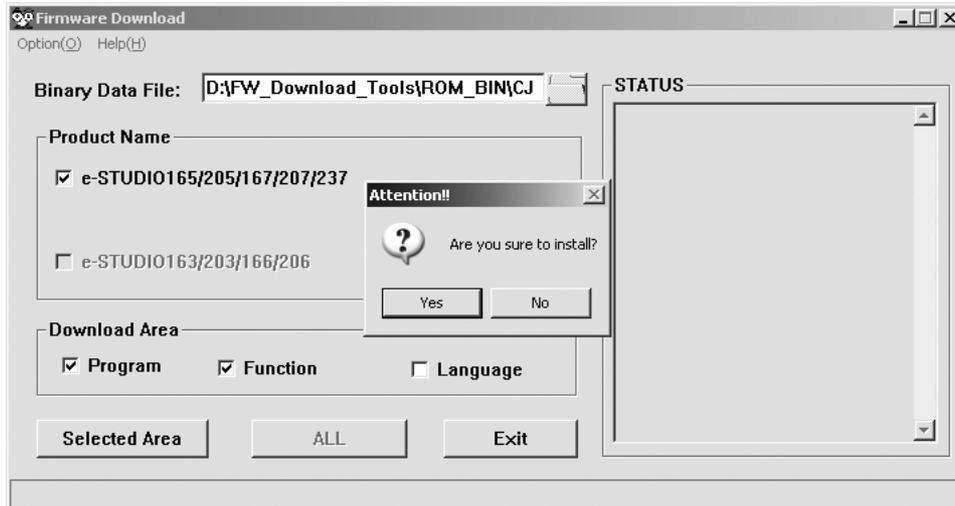


Fig. 6-36

- (9) When updating has started, USB communication data are displayed in the STATUS field, and a bar indicating the updating status appears at the bottom of the window.

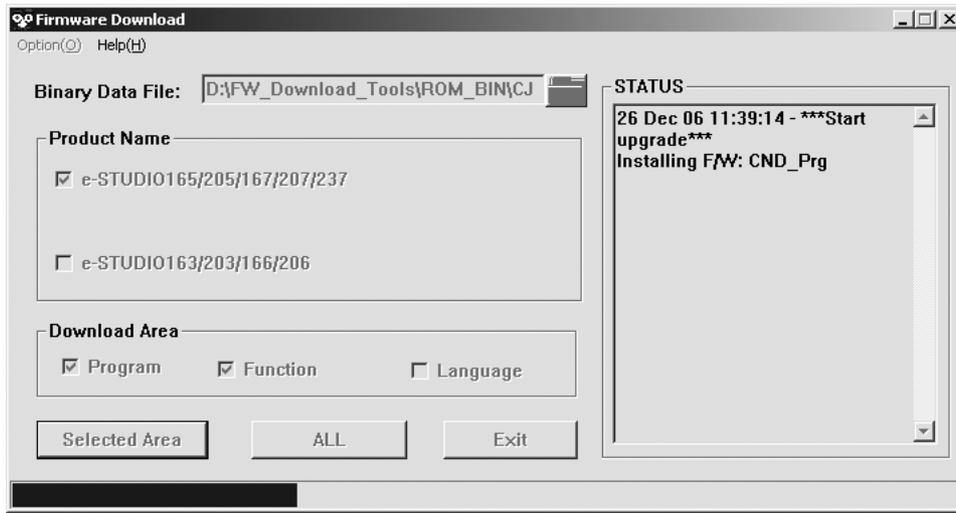


Fig. 6-37

- (10) When the program data transmission is completed, the message window shown below appears on your PC monitor. Click [OK] to finish displaying the status.



Fig. 6-38

- (11) Click [Exit] in the Firmware Download window to finish updating.

**Note:**

The display on the control panel of the equipment during the update is as shown below. "Controller Data" is displayed; however, they are not downloaded.

- Before update



Fig. 6-39

- During the update  
During the update, "Wait" is displayed after each item.

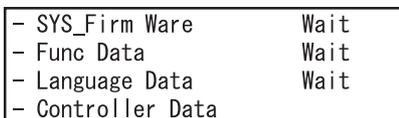


Fig. 6-40

- When properly completed  
When the update is completed correctly, "Complete" is displayed after each item.

- SYS_Firm Ware	Complete
- Func Data	Complete
- Language Data	Complete
- Controller Data	

**Fig. 6-41**

- On an update error  
If the update is not completed correctly, "Error" is displayed after each item.

- SYS_Firm Ware	Error
- Func Data	Error
- Language Data	Error
- Controller Data	

**Fig. 6-42**

**Note:**

IF an error occurs, repeat the procedure from the first step to retry updating.

- (12) Turn OFF the power of the equipment, and disconnect the USB cable.
- (13) Perform the initialization of the update data.
  - Turn the power ON while pressing [0] and [8] buttons simultaneously.
  - Key in "947", and then press the [START] button.
  - Press the [START] button.

**Note:**

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

08-900: System firmware ROM version  
 08-921: FROM internal program version  
 08-922: Function table data version  
 08-923: Language data version

## 7. POWER SUPPLY UNIT

### 7.1 Output Channel

The following are 6 output channels for the main switch line.

- 1) +5V  
+5V: CN104 Pin 3  
Output to the MAIN board  
  
+5V: CN112 Pins 3 and 4  
Output to the PFC board, ADU (via PFC board), PFP (via PFC board)  
  
+5VB: CN104 Pin 8  
Output to the FUS board  
  
+5VB: CN104 Pins 9 and 10  
Output to the MAIN board
- 2) +12V  
+12V: CN110 Pin 3  
Output to the FAX unit
- 3) -12V  
-12V: CN104 Pin 2  
Output to the control panel (via MAIN board)  
  
-12V: CN110 Pin 2  
Output to the FAX unit
- 4) +24V  
+24V: CN104 Pins 19 and 20  
Output to the MAIN board, PFU (via MAIN board)  
  
+24V: CN112 Pins 1 and 2  
Output to the PFC board, ADU (via PFC board), PFP (via PFC board)  
  
+24VDF: CN104 Pins 17 and 18  
Output to the RADF/ADF (via MAIN board)

The following is an output channel for the cover switch line.

- 1) +24V  
+24VCOV-OFF: CN104 Pins 23 and 24  
Output to the MAIN board

## 7.2 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
+24V	MAIN board	Scan motor	M1	F203: 4A
		Polygonal motor	M4	
		Switching regulator cooling fan	M6	
		Registration clutch	CLT1	
		Pickup solenoid	SOL1	
		Bypass pickup solenoid	SOL2	
		Contact image sensor unit	CIS	
	PFC board	Exit motor	M7	
	ADU board	ADU motor	M8	
		PFU		
	PFP			
+24VDF	ADF			F202: 4A
+24VCOV-OFF	MAIN board	Toner motor	M2	F201: 4A
		Main motor	M3	
		Exhaust fan	M5	
		Auto-toner sensor	S6	
		Discharge LED	ERS	
	Coin controller			

## 7.3 Configuration of Power Supply Unit

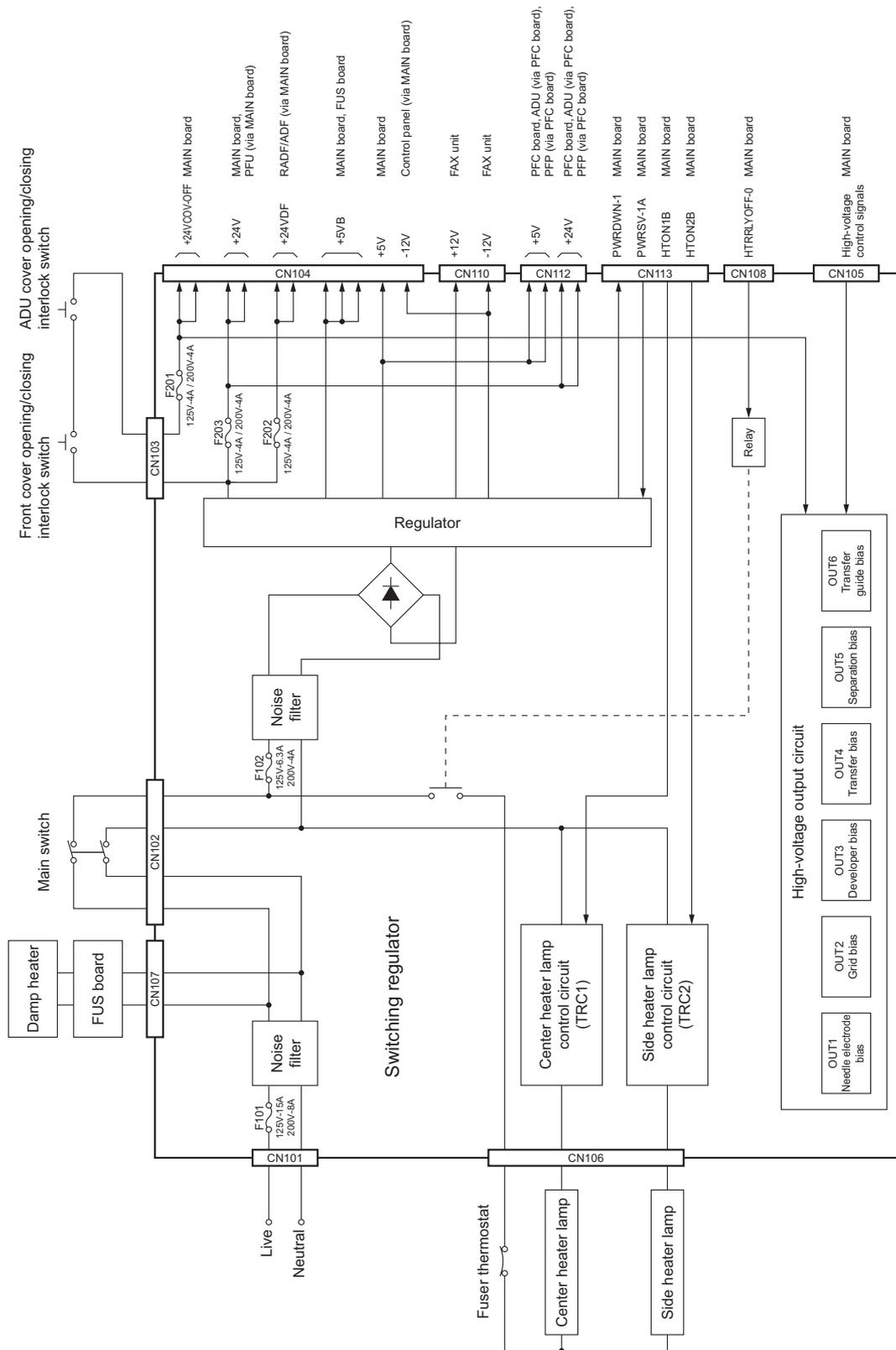


Fig. 7-1



## 8. REMOTE SERVICE

There are the following functions as Remote Service.

Service Notification: This function notifies the service technician of the status of the equipment by E-mail or FAX.

Supply Notice: When "toner near-empty" is detected, this function notifies the service technician of it by E-mail or FAX.

### 8.1 SERVICE NOTIFICATION

#### 8.1.1 Outline

This function automatically notifies the status of the equipment to the service technician by E-mail. The following two are the items to be notified. GA-1190 and GA-1200 must be installed in order to use this function.

- Total Counter Transmit  
When this function is effective, it notifies each counter information periodically (on the set date and time every month).
- Service Call Transmission  
When this function is enabled, information such as the error code corresponding to the service call is notified by E-mail.
- PM Counter Transmit  
When this function is effective, it notifies that the PM timing has come when the present PM count has reached to its setting value.

## 8.1.2 Setting

### [A] Setting items

**Notes:**

1. GA-1190 and GA-1200 must be installed in order to use this function.
2. When using this function, it is required that sending and receiving E-mails are available. Confirm the details to the administrator.

Set the Service Notification setting in the following setting mode(08).

Items	08 code	Contents
Service Notification setting	767	0: OFF (Invalid) 1: E-mail
Total Counter Transmit setting	769	0: OFF (Invalid) 1: ON (Valid)
Total counter transmission "day of the week" setting	770	0: OFF (Invalid) 1: Sunday 2: Monday 4: Tuesday 8: Wednesday 16: Thursday 32: Friday 64: Saturday Multiple days of the week can be set by setting the SUM of the values for the day of the week.
Service notification display	774	Displays "SERVICE NOTIFICATION" in the INITIAL SETUP menu. When "1" is set, operation and setting are made available for users. 0: OFF 1: ON
Service call transmission	775	When this function is enabled, it notifies the error code corresponding to the service call by E-mail. 0: OFF 1: ON
Total counter transmission interval setting (Hour/Hour/Minute/Minute)	776	00:00-23:59
PM Counter Transmit setting	771	0: OFF (Invalid) 1: ON (Valid)
Total counter transmission date setting 1	1071	0: OFF (Invalid) 1 to 31: Date
Total counter transmission date setting 2	1072	0: OFF (Invalid) 1 to 31: Date

## [B] E-mail address setting

<Operation flow>

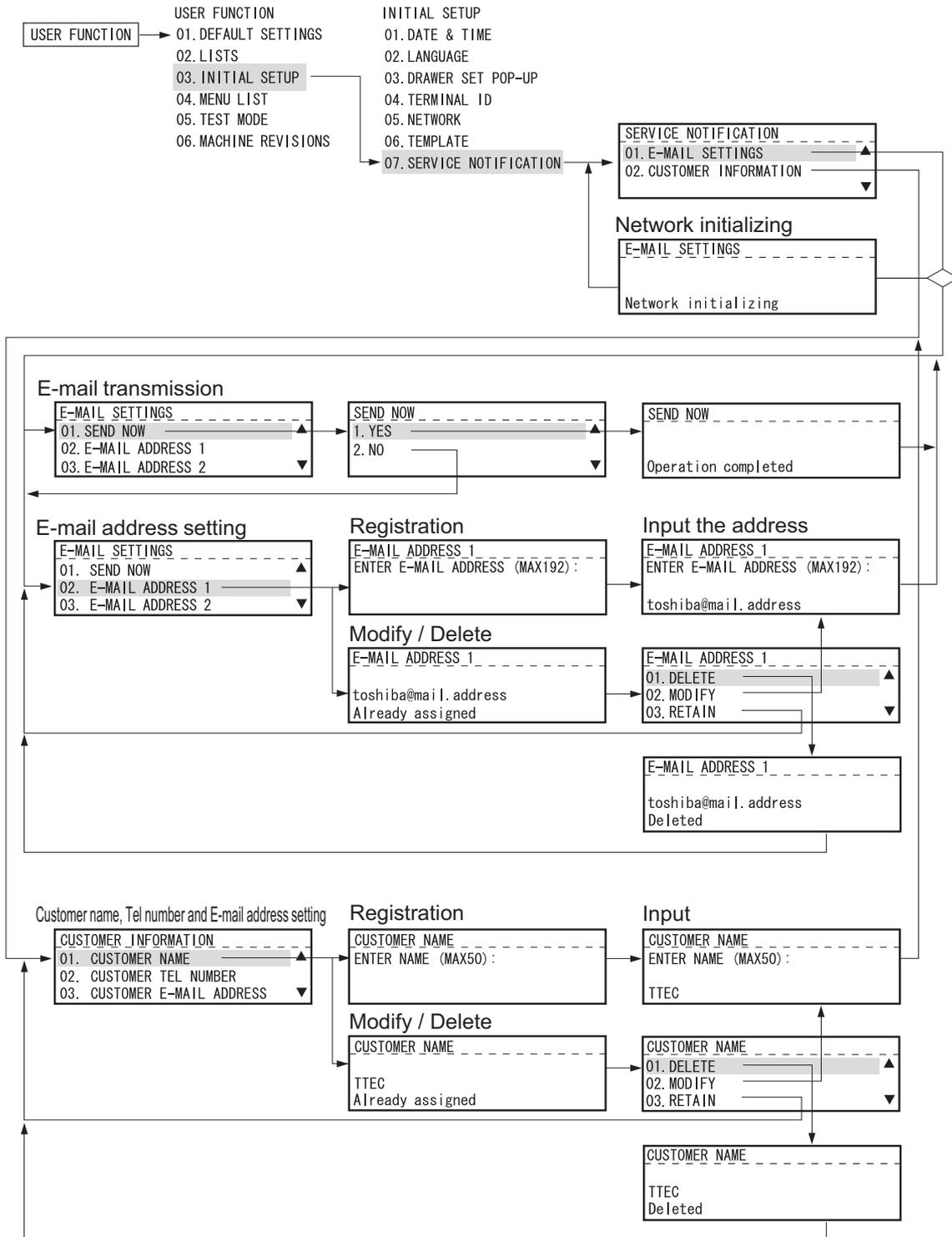


Fig. 8-1

### Note:

This menu does not appear unless GA-1190 and GA-1200 are installed.

### 8.1.3 Items to be notified

The items to be notified are shown below.

1) Total Counter Transmit / PM Counter Transmit by E-mail (XML file attached to E-mail has also the same format.)

Subject: Counter Notification

(In case of the PM Counter Transmit, it is shown as "Periodical Maintenance Notification".)

①	Date	:	08/19/2007 15:54	
②	Machine Model	:	TOSHIBA e-STUDIO207	
③	Serial Number	:	1234567890	
④	Total Counter	:	00300000	
⑤	Customer:			
	Name:		ABCDEFGHIJKLMNQRSTUWXYZA	
	Tel Number:		123456789012345678901234567	
	E-Mail:		ABCDEFGHIJKLMNQRSTUWXYZA	
	ChargeCounterFormat:			
⑥	LargeSizeChargeCount		1	
⑦	LargeSizeChargePaperDefinition		1	
	PMCounterFormat:			
⑧	LargeSizePMCount		1	
⑨	LargeSizePMPaperDefinition		1	
	Charge Counter:			
			Large	Small
	<Print Counter>			
⑩	Copy		00000000	00000000
⑪	Print		00000000	00000000
⑫	List		00000000	00000000
⑬	FAX		00000000	00000000
				(*1)
	<Scan Counter>			
⑭	Copy Scan		00000000	00000000
⑮	FAX Scan		00000000	00000000
⑯	Net Scan		00000000	00000000
	<FAX Counter>			
⑰	Transmit		00000000	00000000
⑱	Receive		00000000	00000000
	Periodical Maintenance Counter:			
⑲	Set PM		00000000	
⑳	Current PM		00000000	
㉑	Printer Error History:			
	Date	Time	ErrorCode	
	08/18/2007	16:44	C01	(*2)
	08/15/2007	22:28	E01	
	08/15/2007	22:23	E01	
	08/11/2007	22:23	E02	
	07/25/2007	11:12	C15	

Fig. 8-2

- ① Date
- ② Machine model name
- ③ Serial number
- ④ Total counter value  
\*1 Total value of 9 to 12
- ⑤ Customer information
- ⑥ Count setting of large-sized paper (Fee charging system counter) (08-352)
- ⑦ Definition setting of large-sized paper (Fee charging system counter) (08-353)
- ⑧ Count setting of large-sized paper (PM) (08-346)
- ⑨ Definition setting of large-sized paper (PM) (08-347)
- ⑩ Number of output pages in the Copier Function (08-320-0 / 08-320-1)
- ⑪ Number of output pages in the Printer Function (08-321-0 / 08-321-1)
- ⑫ Number of output pages at the List Print Mode (08-322-0 / 08-322-1)
- ⑬ Number of output pages in the FAX Function (08-323-0 / 08-323-1)
- ⑭ Number of scanning pages in the Copier Function (08-327-0 / 08-327-1)
- ⑮ Number of scanning pages in the FAX Function (08-328-0 / 08-328-1)
- ⑯ Number of scanning pages in the Network Scanning Function (08-329-0 / 08-329-1)
- ⑰ Number of transmitted pages in the FAX Function (08-330-0 / 08-330-1)
- ⑱ Number of received pages in the FAX Function (08-332-0 / 08-332-1)
- ⑲ PM count setting value (08-251)
- ⑳ PM count present value (08-252)
- ㉑ History of error  
\*2 The latest 8 errors are displayed.

## 8.2 Supply Notice

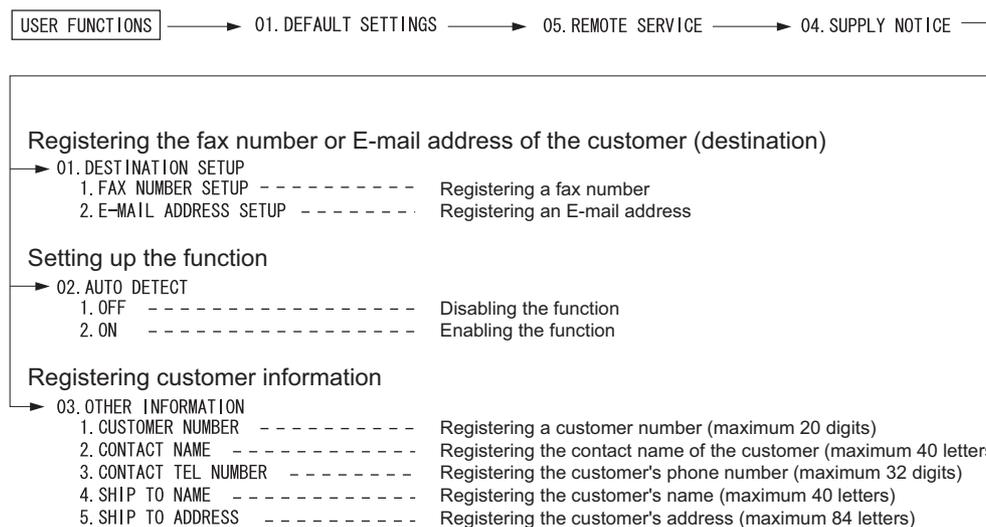
### 8.2.1 Outline

“Supply Notice” is a function which automatically notifies users one of “toner near-empty” status for a cartridge to previously registered fax numbers or E-mail addresses.

If the notice is sent to a fax number, the Fax Kit (GD-1220/1221) must be installed to the equipment. If it is sent to an E-mail address, the Network Printer Kit (GA-1190) and the Scanner Upgrade Kit (GA-1200) must be installed.

### 8.2.2 Setting

<Operation flow>



#### Notes:

1. Only a fax number or an E-mail address can be registered for “01. DESTINATION SETUP”.
2. The Supply Notice function is enabled only when “02. AUTO DETECT” is set to “ON”.
3. “02. AUTO DETECT” cannot be set if no fax number or E-mail address is registered for “01. DESTINATION SETUP”.

# 9. WIRE HARNESS CONNECTION

## 9.1 AC Wire Harness

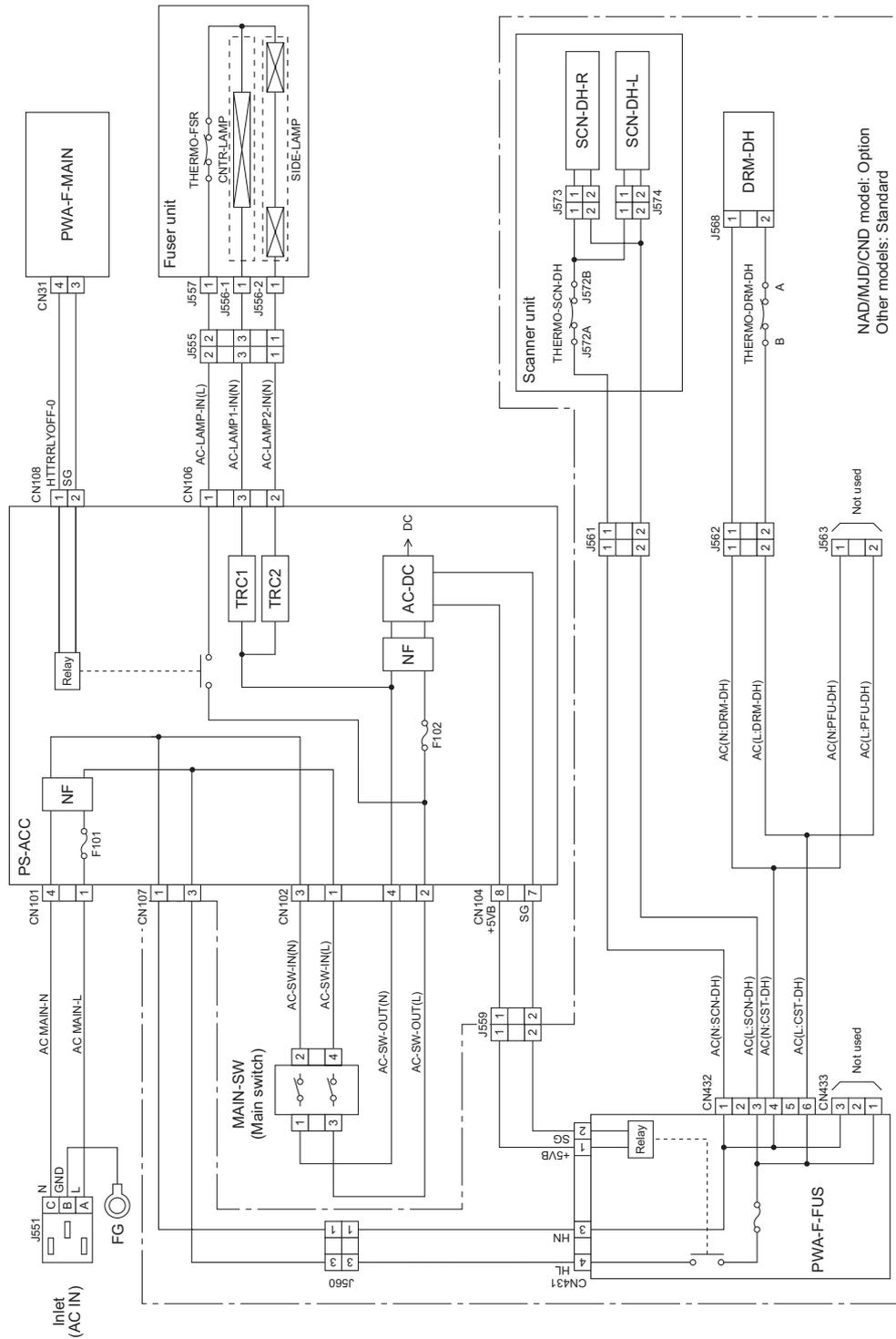


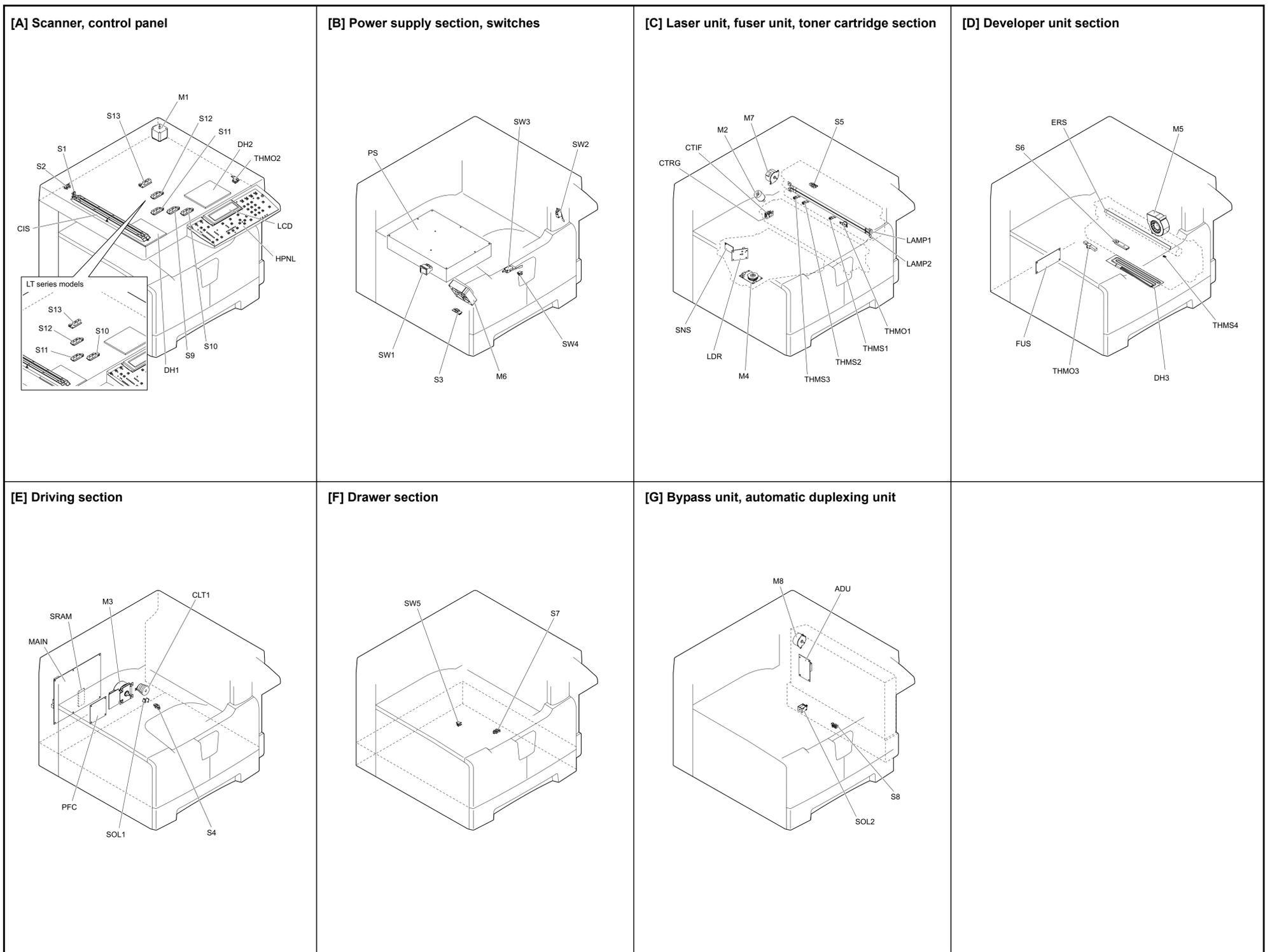
Fig. 9-1







### 9.3 Electric Parts Layout



Motors			
Symbol	Name	Figure	Wire harness location
M1	SCAN-MOT Scan motor	[A]	6-D
M2	TNR-MOT Toner motor	[C]	1-A
M3	MAIN-MOT Main motor	[E]	1-B
M4	M/DC-POL Polygonal motor	[C]	8-B
M5	EXT-FAN-MOT Exhaust fan	[D]	8-C
M6	PS-FAN-MOT Switching regulator cooling fan	[B]	1-D
M7	EXIT-MOT Exit motor * Option	[C]	8-F
M8	ADU-MOT ADU motor * Option	[G]	8-F

Sensors and Switches			
Symbol	Name	Figure	Wire harness location
S1	HOME-SNR CIS home position sensor	[A]	6-C
S2	PLTN-SNR Platen sensor	[A]	6-C
S3	TEMP/HUMI-SNR Temperature/humidity sensor	[B]	1-D
S4	RGST-SNR Registration sensor	[B]	8-D
S5	EXIT-SNR Exit sensor	[E]	1-C
S6	ATTNR-SNR Auto-toner sensor	[C]	1-C
S7	EMP-SNR Paper empty sensor	[D]	8-D
S8	SFB-SNR Bypass paper sensor	[G]	8-C
S9-13	APS 1-3, APS-C, APS-R Automatic original detection sensor * S9: only for A4 series models	[A]	6-C 6-D
SW1	MAIN-SW Main switch	[B]	AC wire harness
SW2	ADU-COV-INTLCK-SW ADU cover opening/closing interlock switch	[B]	1-E AC wire harness
SW3	FRNT-COV-INTLCK-SW Front cover opening/closing interlock switch	[B]	1-E AC wire harness
SW4	FRNT-COV-SW Front cover opening/closing switch	[B]	1-D
SW5	CST-SW Drawer detection switch	[F]	8-D

Electromagnetic spring clutch			
Symbol	Name	Figure	Wire harness location
CLT1	RGST-CLT Registration clutch	[E]	8-C

Solenoids			
Symbol	Name	Figure	Wire harness location
SOL1	CST-SOL Pickup solenoid	[E]	8-C
SOL2	SFB-SOL Bypass pickup solenoid	[G]	8-C

PC boards			
Symbol	Name	Figure	Wire harness location
MAIN	PWA-F-MAIN Main PC board (MAIN board)	[E]	4-A
SRAM	PWA-F-SRAM SRAM PC board (SRAM board)	[E]	3-C
LDR	PWA-F-LDR Laser driving PC board (LDR board)	[C]	8-B
SNS	PWA-F-SNS H-sync signal detection PC board (SNS board)	[C]	8-A
HPNL	PWA-F-HPNL Control panel PC board-H (HPNL board)	[A]	6-G
CTIF	PWA-F-CTIF Toner cartridge interface PC board (CTIF board)	[C]	1-A
CTRG	PWA-F-CTRG Toner cartridge PC board (CTRG board)	[C]	1-A
FUS	PWA-F-FUS Fuse PC board (FUS board) * Optional for NAD/MJD/CND model, standard for other models	[D]	2-G AC wire harness
PFC	PWA-F-PFC Paper feed controller PC board (PFC board) * Standard for JPD/FJP model, optional for other models	[E]	7-G
ADU	PWA-F-ADU ADU driving PC board (ADU board) * Option	[G]	8-F AC wire harness

Lamps and heaters			
Symbol	Name	Figure	Wire harness location
LAMP1	CNTR-LAMP Center heater lamp	[C]	AC wire harness
LAMP2	SIDE-LAMP Side heater lamp	[C]	AC wire harness
ERS	LP-ERS Discharge LED	[D]	1-C
DH1	SCN-DH-L Scanner damp heater (Left) * Optional for NAD/MJD/CND model, standard for other models	[A]	AC wire harness
DH2	SCN-DH-R Scanner damp heater (Right) * Optional for NAD/MJD/CND model, standard for other models	[A]	AC wire harness
DH3	DRM-DH Drum damp heater * Optional for NAD/MJD/CND model, standard for other models	[D]	AC wire harness

Thermistors and thermostats			
Symbol	Name	Figure	Wire harness location
THMS1	THMS-C-HTR Center thermistor	[C]	1-B
THMS2	THMS-S-HTR Side thermistor	[C]	1-B
THMS3	THMS-EDG-HTR Edge thermistor	[C]	1-B
THMS4	THMS-DRM Drum thermistor	[D]	1-C
THMO1	THERMO-FSR Fuser thermostat	[C]	AC wire harness
THMO2	THERMO-SCN-DH Scanner damp heater thermostat * Optional for NAD/MJD/CND model, standard for other models	[A]	AC wire harness
THMO3	THERMO-DRM-DH Drum damp heater thermostat * Optional for NAD/MJD/CND model, standard for other models	[D]	AC wire harness

Others			
Symbol	Name	Figure	Wire harness location
CIS	CIS Contact image sensor unit	[A]	6-B
PS	PS-ACC Switching regulator	[B]	1-F AC wire harness
LCD	LCD LCD panel	[A]	5-G



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