Canon

Revision 2.0

LBP654C Series

Service Manual

Introduction

Important Notices

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products.
This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products.
When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

Trademarks

The product names and company names used in this manual are the registered trademarks of the individual companies.

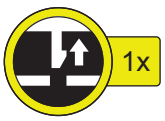
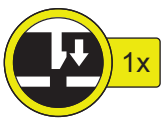
Copyright

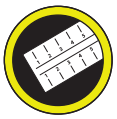
Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Explanation of Symbols

The following symbols are used throughout this Service Manual.

Symbols	Explanation	Symbols	Explanation
	Check.		Remove the claw.
	Check visually.		Insert the claw.
	Check a sound.		Push the part.

Symbols	Explanation	Symbols	Explanation
	Disconnect the connector.		Connect the power cable.
	Connect the connector.		Disconnect the power cable.
	Remove the cable/wire from the cable guide or wire saddle.		Turn on the power.
	Install the cable/wire to the cable guide or wire saddle.		Turn off the power.
	Remove the screw.		Loosen the screw.
	Install the screw.		Tighten the screw.
	Cleaning is needed.		Measurement is needed.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow indicates the direction of the electric signal.
   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1' is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low". (The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine.

Contents

Safety Precautions

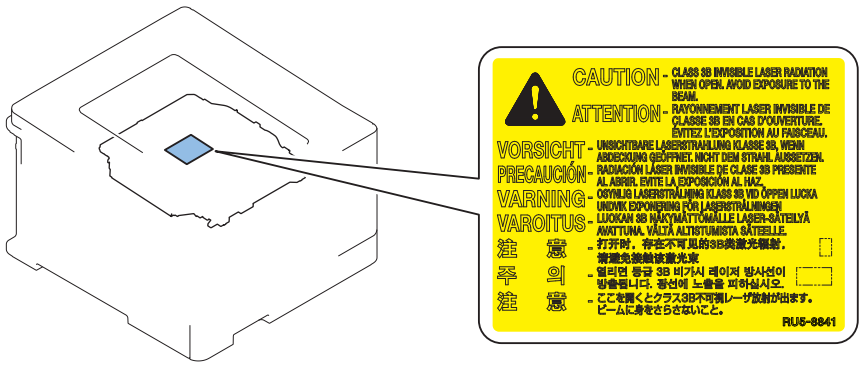
Laser Safety

Since radiation emitted inside this machine is completely confined with protective housings and external covers, the laser beam cannot escape from the machine during any phase of normal use by users.
Therefore, this machine is classified as a Class 1 laser product under the international standard IEC60825-1 that is regarded as safe during normal use.

How to Handle the Laser Scanner Unit

This machine is classified as a Class 1 laser product.
However, the laser scanner unit contains source of Class 3B laser beam and exposure to the beam may cause eye injuries.
Therefore, be sure not to disassemble the laser scanner unit. No adjustment can be made to the laser scanner unit in the machine in the field.
The label shown in the following figure is affixed on the laser scanner unit.

Dieses Gerät ist der Klasse 1 der Laserprodukte zugeordnet.
Allerdings enthält die Laserscannereinheit eine Laserstrahlquelle der Klasse 3B, die Augenschäden verursachen kann, wenn man in diesen Strahl blickt.
Deshalb darf die Laserscannereinheit nicht zerlegt werden. An der Laserscannereinheit kann keine Justage vor Ort vorgenommen werden.
Der in folgendem Bild dargestellte Aufkleber ist auf der Laserscannereinheit angebracht.



Toner Safety

About Toner

Toner is a nontoxic matter composed of plastic, iron and a trace of pigments.

⚠ CAUTION:
Never throw toner in flames to avoid explosion.

Handling Adhered Toner

- Use dry tissue paper to wipe off toner adhered to skin or clothes and wash in water.
- Never use warm water for cleaning up toner to prevent toner particles from being gelated to soak into fibers permanently.
- Toner particles are reactive with vinyl polymers. Avoid contacting these materials.

Notes When Handling a Lithium Battery

Dispose of used batteries according to the instructions.

⚠ CAUTION:
Risk of explosion if battery is replaced by an incorrect type.

The following warnings are given to comply with Safety Principles (EN60950-1).

⚠ CAUTION:
Wenn mit dem falschen Typ ausgewechselt, besteht Explosionsgefahr.
Gebrauchte Batterien gemäß der Anleitung beseitigen.

警告

如果更換不正確之電池型式會有爆炸的風險

請依製造商說明書處理用過之電池

Notes on Assembly/Disassembly

Follow the items below to assemble/disassemble the device.

1. Disconnect the power plug to avoid any potential dangers during assembling/disassembling works.
2. If not specially instructed, reverse the order of disassembly to reinstall.
3. Ensure to use the right screw type (length, diameter, etc.) at the right position when assembling.
4. To keep electric conduction, binding screws with washers are used to attach the grounding wire and the varistor. Ensure to use the right screw type when assembling.
5. Unless it is specially needed, do not operate the device with some parts removed.
6. Never remove the paint-locked screws when disassembling.

Product Overview

Product Lineup

Host Machine

	LBP654Cdw / LBP654Cx
Print	Yes
Remote UI	Yes
2-sided printing	Yes
Control Panel	5 inch Touch Panel
NFC	Yes
Backup of counter	Yes
MEAP	-
Network	Yes
Wireless LAN	Yes

PDL

	LBP654Cdw / LBP654Cx
PS	Yes
PCL	Yes

Option

Name	Description
Cassette Feeding Module-AF1	550 sheets (80 g/m2) of paper can be placed
MiCARD Attachment Kit-B1	Attachment kit for MiCARD Reader Except KOR model
Barcode Printing Kit-E1	

Features

Middle Class A4/LTR Color Laser SFP

1. Improved Control Panel operability
   Improved operability by adopting the Large 5 inch Color Touch Panel.
2. Support for mobile print
   Printing from smartphones, tablets and PCs via an application such as Apple AirPrint, proprietary application, Google Cloud Print and Mopria Print becomes available.
3. Support for wireless LAN
   Communication via mobile device and wireless LAN becomes available by connecting a wireless LAN router to the network to which this machine is connected.
4. NFC (Near Field Communication)
   Printing can be performed by touching a mobile device where Canon PRINT Business is installed.

Specifications

Specifications of Host Machine

Item	Specification / Function
Device Installation	Desktop
Photoreceptor	OPC drum (φ24)
Light exposure method	Laser beam exposure
Charging method	Roller charging
Developing method	Contact development
Transfer method	Primary transfer: Sequential 4 colors transfer to Intermediate Transfer Belt Secondary transfer: 4-color batch transfer onto the transfer material by the Transfer Roller
Separation method	Curvature separation
Cassette paper feed	Simple separation retard
Drum cleaning method	Cleaning blade
Transfer cleaning method	Cleaning brush and roller
Fixing method	On-demand fixing
Paper delivery method	Face-down
Toner level sensor	Mounted
Toner type	Non-magnetic one-component toner
Toner supply method	All-in-one cartridge (drum + toner)
Toner save mode	N/A
Warm-up Time *1	13 seconds or less
Recovery Time *2	Approx. 6.1 seconds
Print resolution	600 x 600 dpi
First print time	Color: Approx. 8.6 seconds(A4), Approx. 8.5 seconds(LTR) B&W: Approx. 8.3 seconds(A4), Approx. 8.1 seconds(LTR)
Print Speed *3	At 1-sided printing: • Color/B&W: Approx. 27 sheets/min.(A4), Approx. 28 sheets/min.(LTR) At 2-sided printing: • Color/B&W: Approx. 21.9 sheets/min.(A4), Approx. 23.1 sheets/min.(LTR)
Available paper type for cassette	Thin paper, Recycled paper, Color paper, Plain paper, Heavy paper, Coated paper, Label, Envelope (Refer to “Paper type” on page 7)
Available paper type for Multi-purpose Tray	Thin paper, Recycled paper, Color paper, Plain paper, Heavy paper, Coated paper, Label, Envelope (Refer to “Paper type” on page 7)
Available paper size in cassette	A4, B5, A5, LGL, LTR, STMT, EXEC, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, FLS, AFLS, indLGL, K16, Postcard, Envelopes (COM10, Monarch, Nagagata 3, Yougatanaga 3, C5, DL), Custom Paper Size (Refer to “Paper size” on page 7)
Multi-purpose tray paper size	A4, B5, A5, LGL, LTR, STMT, EXEC, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, FLS, AFLS, indLGL, K16, Envelopes (COM10, Monarch, Nagagata 3, Yougatanaga 3, C5, DL), Custom Paper Size (Refer to “Paper size” on page 7)
Cassette capacity	Cassette: 250 sheets (60 to 90 g/m^2) Option: 550 sheets (60 to 90 g/m^2)
Multi-purpose Tray capacity	50 sheets (60 to 90 g/m^2)
Delivery tray stacking capacity *4	150 sheets (75 g/m^2)
Automatic 2-sided	Available (A4, B5, LGL, LTR, EXEC, FLS)
Memory capacity	1 GB
Sleep mode	Available
Allowable environmental temperature	10 to 30 deg C
Allowable humidity	20 to 80% in relative humidity (no condensation)
Power rating	Rated input voltage: 120 V system: 120 to 127 V (60Hz) 200 V system: 220 to 240 V (50/60Hz)

Item	Specification / Function
Maximum power consumption	1500 W or lower
Average power at operation	120 V : Approx. 480 W 230 V : Approx. 510 W
Average power at standby	120 V : Approx. 20.0 W 230 V : Approx. 17.6 W
Average power at sleep mode	Approx. 1.0 W
Power consumption at Main Power Switch OFF	0.3 W or lower
Dimensions (W x D x H)	476 × 469 × 379 mm
Weight (Excluding toner cartridges)	Approx. 21.0 kg

*1 : Warm-up time is an interval between when the machine is turned ON and when the main screen appears on the display. Warm-up time may vary depending on the use conditions and environment of the machine.
*2 : Time for recovery from sleep to standby.
*3 : The print speed may become lower depending on the settings such as output resolution, paper size, type, orientation, and number of sheets printed. In the case of 2-sided printing, 1 page on the front side and 1 page on the back side are output as 1 sheet.
*4 : The actual stack capacity varies depending on the site environment and the type of paper used.

Paper type

(Yes: Pickup possible -: Pickup not possible)

Type of paper		Paper settings in this machine	Standard Cassette/ Cassette Feeding Module-AF1 (option)	Multi-purpose Tray	Auto 2-sided printing
Thin paper	60 to 70 g/m2	Thin 1	Yes	Yes	Yes
	60 g/m2	Thin 2 *1	Yes	Yes	Yes
	52 to 59 g/m2	Thin 3	Yes	-	-
Recycled	60 to 75 g/m2	Recycled 1	Yes	Yes	Yes
	71 to 82 g/m2	Recycled 2	Yes	Yes	Yes
Color	71 to 82 g/m2	Color	Yes	Yes	Yes
Plain	71 to 82 g/m2	Plain 1	Yes	Yes	Yes
	83 to 90 g/m2	Plain 2	Yes	Yes	Yes
Heavy paper	91 to 119 g/m2	Heavy 1	Yes	Yes	Yes
	120 to 128 g/m2	Heavy 2	Yes	Yes	Yes
	129 to 163 g/m2	Heavy 3	Yes	Yes	Yes
Coated	100 to 120 g/m2	Coated 1	Yes	Yes	Yes
	121 to 150 g/m2	Coated 2	Yes	Yes	Yes
	151 to 200 g/m2	Coated 3	Yes	Yes	Yes
Label paper		Label paper	Yes	Yes	-
Envelope (Nagagata 3, Yougatanaga 3, C5)		Envelope 1	Yes	Yes	-
Envelope (COM10, Monarch, DL)		Envelope 2	Yes	Yes	-

*1: When the paper of 60 g/m2 is curled while <Thin 1> is set, select <Thin 2>.

Paper size

(Yes: Pickup possible -: Pickup not possible)

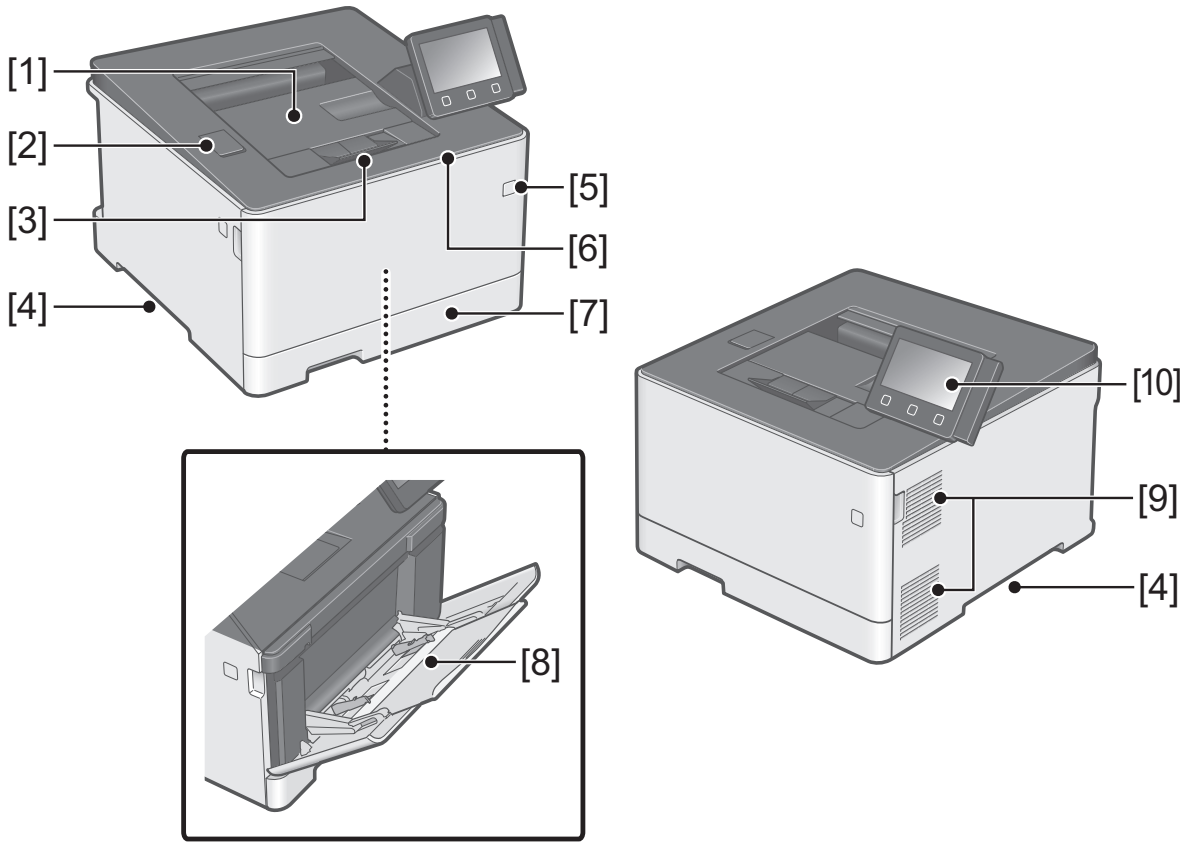
Paper size		Standard Cassette/ Cassette Feeding Module-AF1 (option)	Multi-purpose Tray	Auto 2-sided printing
A4	210.0 mm x 297.0 mm	Yes	Yes	Yes
B5	182.0 mm x 257.0 mm	Yes	Yes	Yes
A5	148.0 mm x 210.0 mm	Yes	Yes	-
LGL	215.9 mm x 355.6 mm	Yes	Yes	Yes
LTR	215.9 mm x 279.4 mm	Yes	Yes	Yes
STMT	139.7 mm x 215.9 mm	Yes	Yes	-
EXEC	184.2 mm x 266.7 mm	Yes	Yes	Yes
OFFICIO*4	215.9 mm x 317.5 mm	Yes	Yes	Yes
B-OFFICIO*4	216 mm x 355 mm	Yes	Yes	Yes
M-OFFICIO*4	216 mm x 341 mm	Yes	Yes	Yes
G-LTR*4	203.2 mm x 266.7 mm	Yes	Yes	Yes
G-LGL*4	203.2 mm x 330.2 mm	Yes	Yes	Yes
FLSC	215.9 mm x 330.2 mm	Yes	Yes	Yes
AFLS*4	206 mm x 338 mm	Yes	Yes	Yes
Indian LGL*4	215.0 mm x 345.0 mm	Yes	Yes	-
Envelope No.10 (COM10)	104.7 mm x 241.3 mm	Yes	Yes	-
Envelope Monarch	98.4 mm x 190.5 mm	Yes	Yes	-
Envelope C5	162.0 mm x 229.0 mm	Yes	Yes	-
Envelope DL	110.0 mm x 220.0 mm	Yes	Yes	-
Custom paper	-	Yes *1	Yes *2	Yes *3

*1: 100 × 148 mm to 215.9 × 355.6 mm
*2: 676.2 × 127 mm to 215.9 × 355.6 mm
*3: 176 × 250 mm to 215.9 × 355.6 mm
*4: Only when the user-defined size is configured on the driver

Parts Name

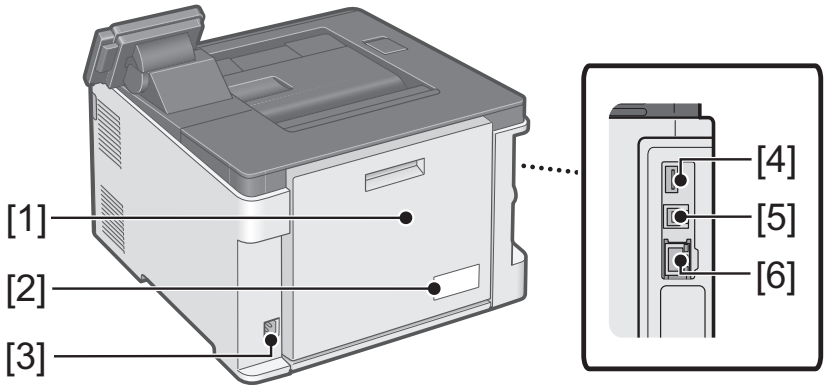
External view

■ Front side of the machine



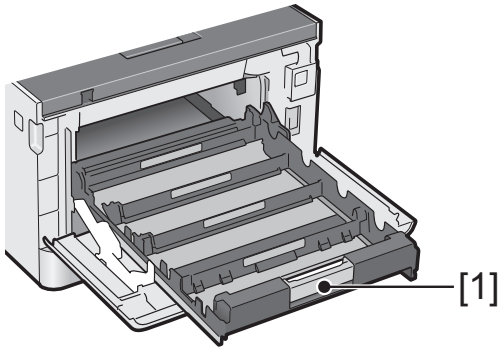
No.	Name	No.	Name
1	Delivery Tray	6	Front Cover
2	USB port (for USB device)	7	Pickup Cassette
3	Delivery Stopper	8	Multi-purpose Tray
4	Handle for carrying	9	Ventilation hole
5	Power Switch	10	Control Panel

■ Rear side of the machine



No.	Name
1	Rear Cover
2	Rating name plate label
3	Power Socket
4	USB port (for USB device)
5	USB port (for PC)
6	LAN Port

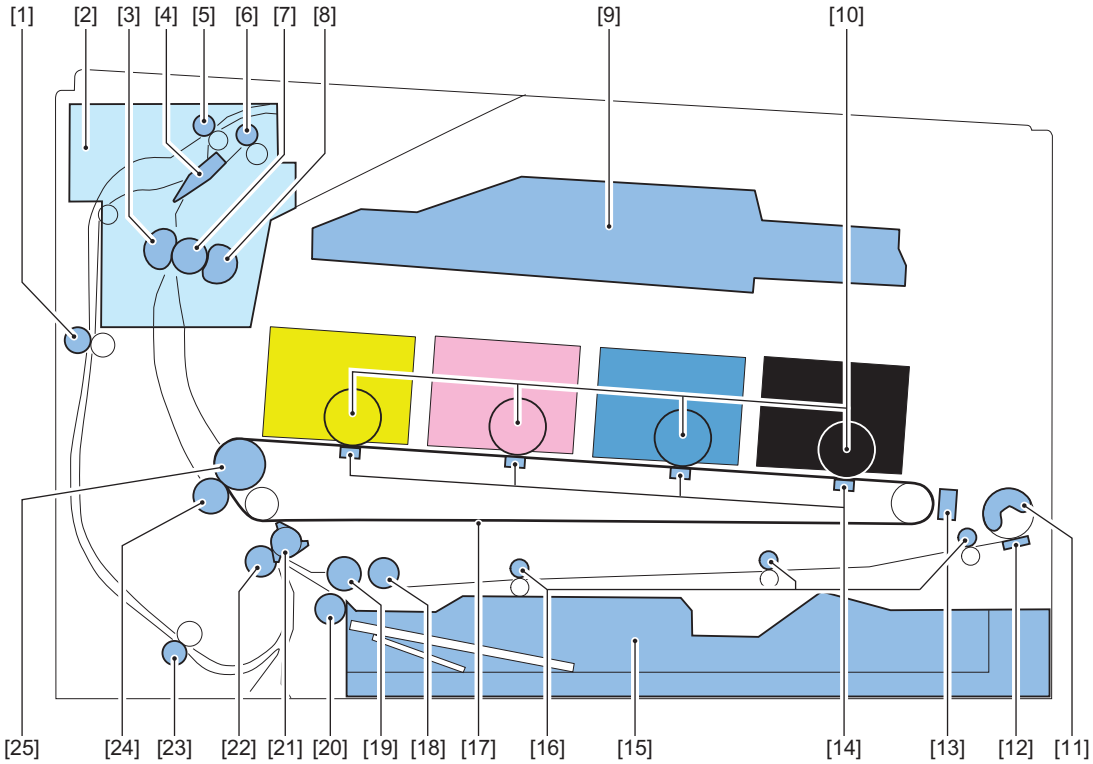
■ Inside of the host machine



No.	Name
1	Toner Cartridge Tray

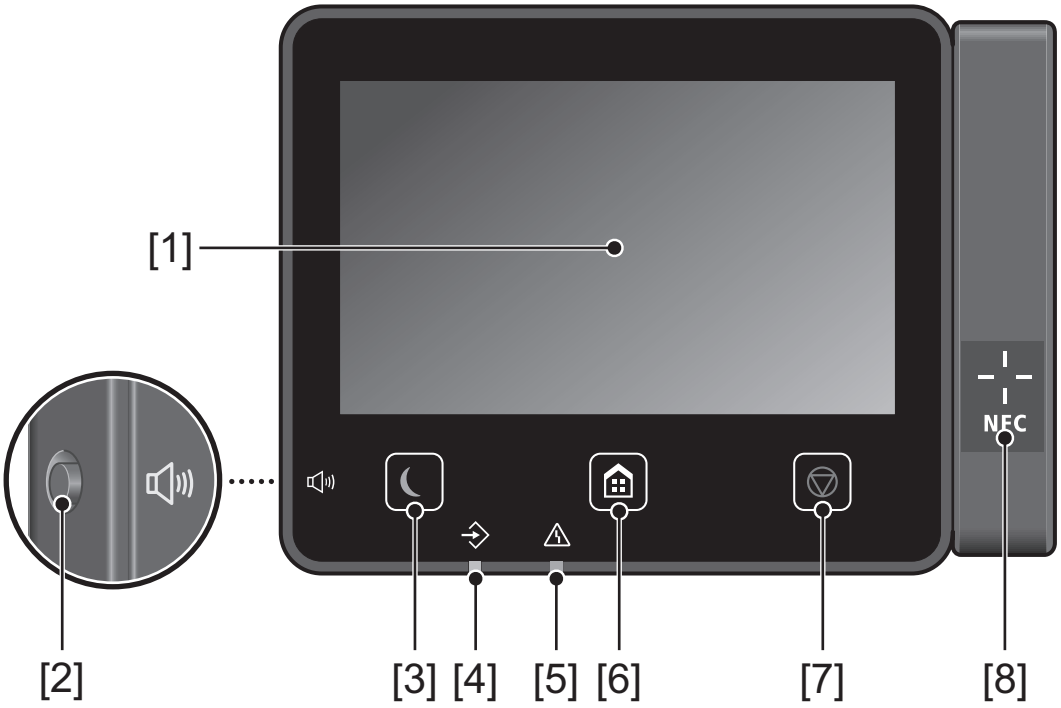
Cross Section View

■ Host machine



No.	Name	No.	Name
[1]	Duplex Feed Roller	[14]	Primary Transfer Brush
[2]	Fixing Assembly	[15]	Cassette
[3]	Pressure Film	[16]	Multi-purpose Tray Feed Roller
[4]	Duplex Flapper	[17]	ITB
[5]	Duplex Reverse Roller	[18]	Cassette Pickup Roller
[6]	Delivery Roller	[19]	Cassette Feed Roller
[7]	Fixing Roller	[20]	Cassette Separation Roller
[8]	Fixing Film	[21]	Registration Shutter
[9]	Laser Scanner Unit	[22]	Registration Roller
[10]	Photosensitive Drum	[23]	Duplex Re-pickup Roller
[11]	Multi-purpose Tray Pickup Roller	[24]	Secondary Transfer Roller
[12]	Multi-purpose Tray Separation Pad	[25]	ITB Drive Roller
[13]	Color Displacement/Density Sensor		

Control Panel



No.	Name
1	Display
2	Volume key
3	Energy Saver key
4	Data Lamp
5	Error Lamp
6	Home key
7	Stop key
8	NFC (Near Field Communication) mark

2 Technical Explanation (Device)

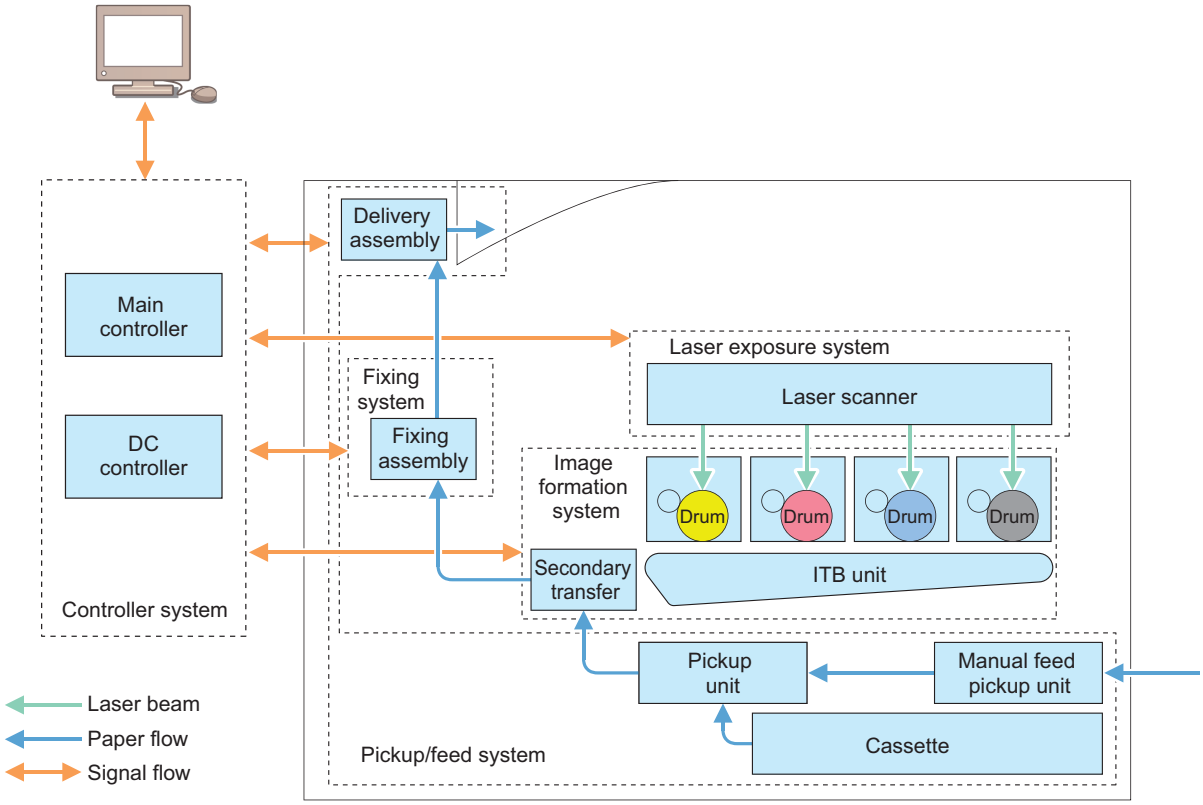
Basic Configuration

Functional Configuration

Description

This machine is roughly composed of the following five blocks.

- Laser Exposure System
- Controller System
- Image Formation System
- Pickup Feed System
- Fixing System



Laser Exposure System

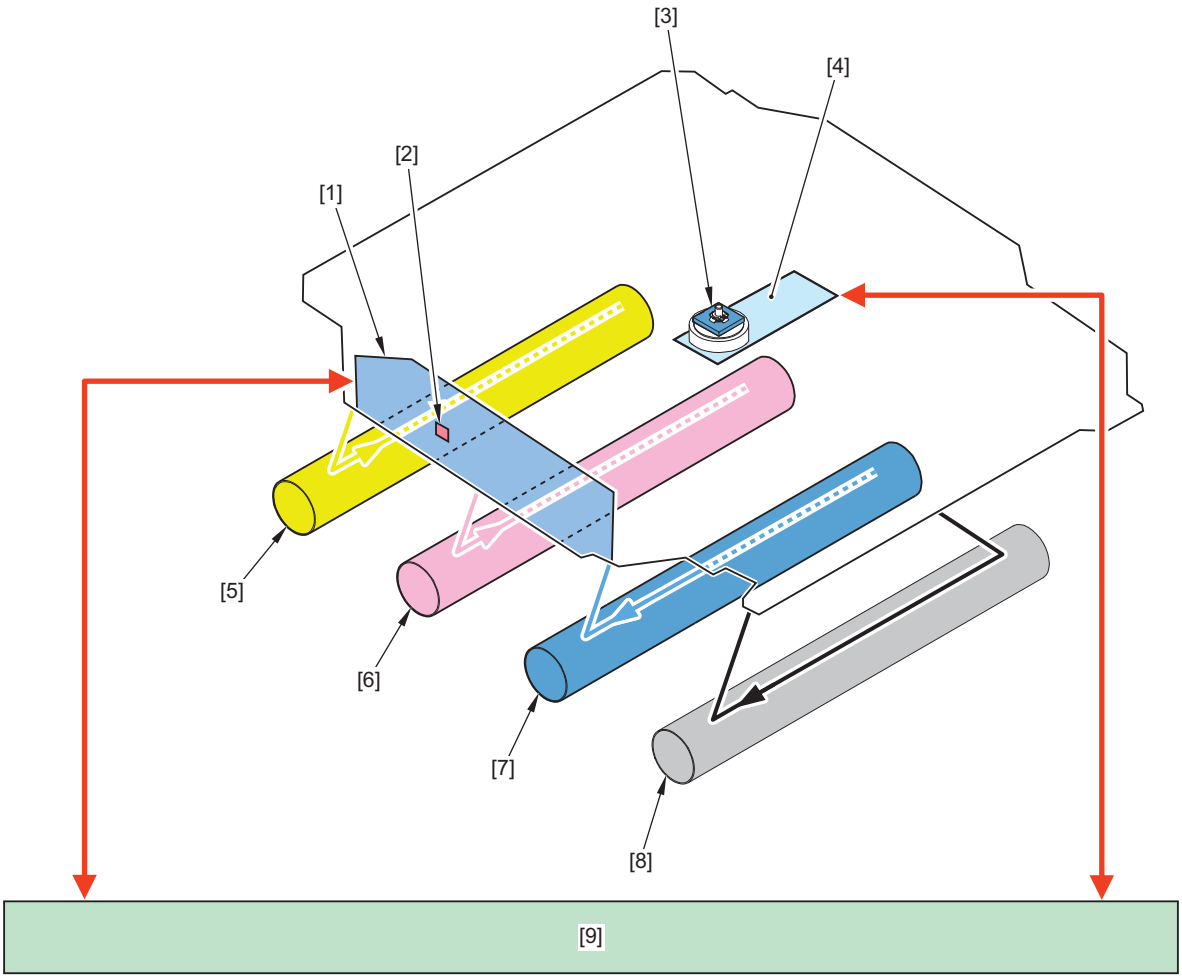
Functional Configuration

Overview

The Laser Exposure system irradiates the Photosensitive Drum with a laser to form a latent image on it according to the video signal sent from the Main Controller.

Description

The Laser Scanner Unit consists of the Laser Unit and the Scanner Motor Unit, and is controlled by the signal input from the DC Controller.



No.	Name	No.	Name
[1]	Laser Unit	[6]	Photosensitive Drum (M)
[2]	BD Sensor	[7]	Photosensitive Drum (C)
[3]	Scanner Mirror	[8]	Photosensitive Drum (Bk)
[4]	Scanner Motor Unit	[9]	DC Controller
[5]	Photosensitive Drum (Y)	-	-

Failure Detection

Overview

The DC Controller detects the following failures in the Laser Scanner Unit.

- Scanner area failure
- Scanner Motor startup failure

Description

Scanner area failure detection

If an error in any of the Scanner Motor, Laser Driver, or BD detection in the scanner area is detected, an error code is notified.

Scanner Motor startup failure detection

If the scanner does not start although a specified period of time has elapsed after the Scanner Motor is driven, an error code is notified.

Error Code

E100: Scanner area failure

- E100-0000: Yellow scanner area failure
- E100-0001: Magenta scanner area failure
- E100-0002: Cyan scanner area failure
- E100-0003: Black scanner area failure

E110: Scanner Motor startup failure

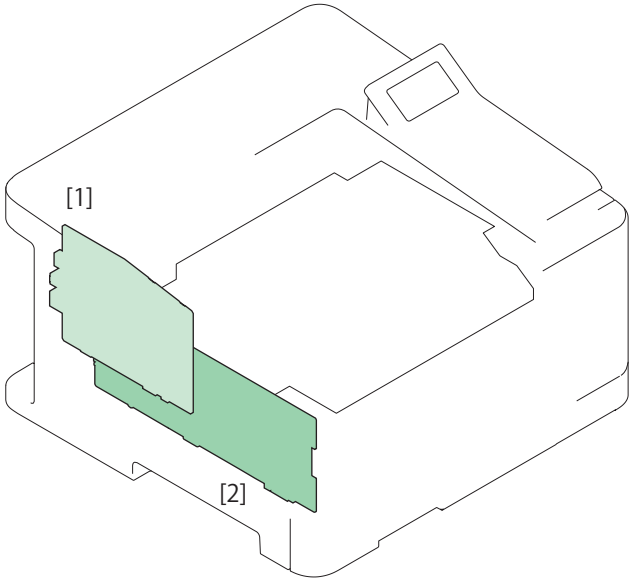
- E110-0000: Primary Pseudo BD correction failure

Controller System

Configuration/Function

Description

This product is mainly controlled by the main and DC controllers.

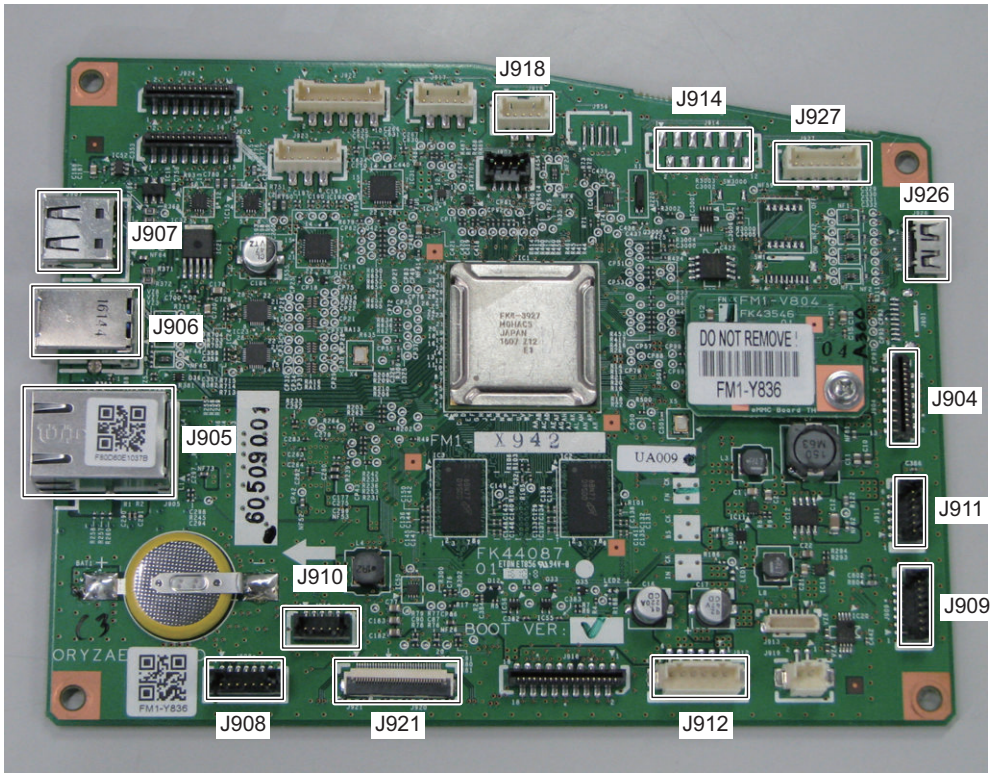


No.	Parts name	Role
[1]	Main Controller PCB	Provides controls on the system, image processing, network and maintain various setting values.
[2]	Engine Controller PCB *1	Provides controls on printer, laser, high-voltage PCBs, I/O, etc. and maintain setting values.

*1:The engine controller PCB consists of it by a high voltage power supply circuit and a DC controller circuit.

Main Controller PCB

Description



Jack	Function	Jack	Function
J904	Wireless LAN PCB I/F	J911	Memory PCB I/F
J905	LAN I/F	J912	Engine Controller PCB I/F
J906	USB TypeB	J914	5-line Control Panel PCB I/F
J907	USB TypeA	J918	USB 2.0 Relay PCB I/F
J908	CC-VI (OP)	J921	Engine Controller PCB I/F
J909	Serial No PCB I/F	J926	5-inch Touch Panel PCB I/F
J910	New card reader (OP)	J927	5-inch Touch Panel I/F

Motor Control

Overview

This machine uses motors for paper feed and image formation.

Description

Name	Symbol	Drive parts	Failure Detection
Pickup Motor	M1	Multi-purpose Tray Pickup Roller, Multi-purpose Tray Feed Roller, Cassette Pickup Roller, Cassette Feed Roller, Registration Roller, Duplex Feed Roller*, Duplex Re-pickup Roller*, and lifting up the cassette	None
Drum Motor	M2	Photosensitive Drum and ITB	Yes
Developing Motor	M3	Developing Roller and engagement/disengagement of the Developing Roller	Yes
Fixing Motor	M4	Fixing Roller, Delivery Roller, Duplex Reverse Roller*, and engagement/disengagement of the Pressure Film/Fixing Roller/Fixing Film Pressure	Yes
Scanner Motor	M10	Scanner Mirror	None

*: Duplex models only

Door Open Detection

Overview

This machine uses the Door Open Sensor to detect whether the door is opened or closed.

Description

Sensor name	Symbol	Role
Front Cover Sensor	SW1	To detect whether the Front Cover is opened or closed.
Rear Cover Sensor	(Inside the Engine Controller PCB)	To detect whether the Rear Cover is opened or closed.

When door open is detected by this sensor, the DC Controller stops drive of the motors and the solenoids.

Fan Control

Overview

This machine uses a fan for preventing temperature rising inside the machine and for cooling the delivered paper.

Description

Name	Sym-bol	Cooling area	Type	Speed
Power Supply Fan	FM1	Area around Low Voltage Power Supply	Suction	Variable (full speed/middle speed/low speed/ very low speed)
Cartridge Fan	FM2	Around the cartridge and Fixing Assembly	Suction	Variable (full speed/half speed)

Low-voltage Power Supply Control

Overview

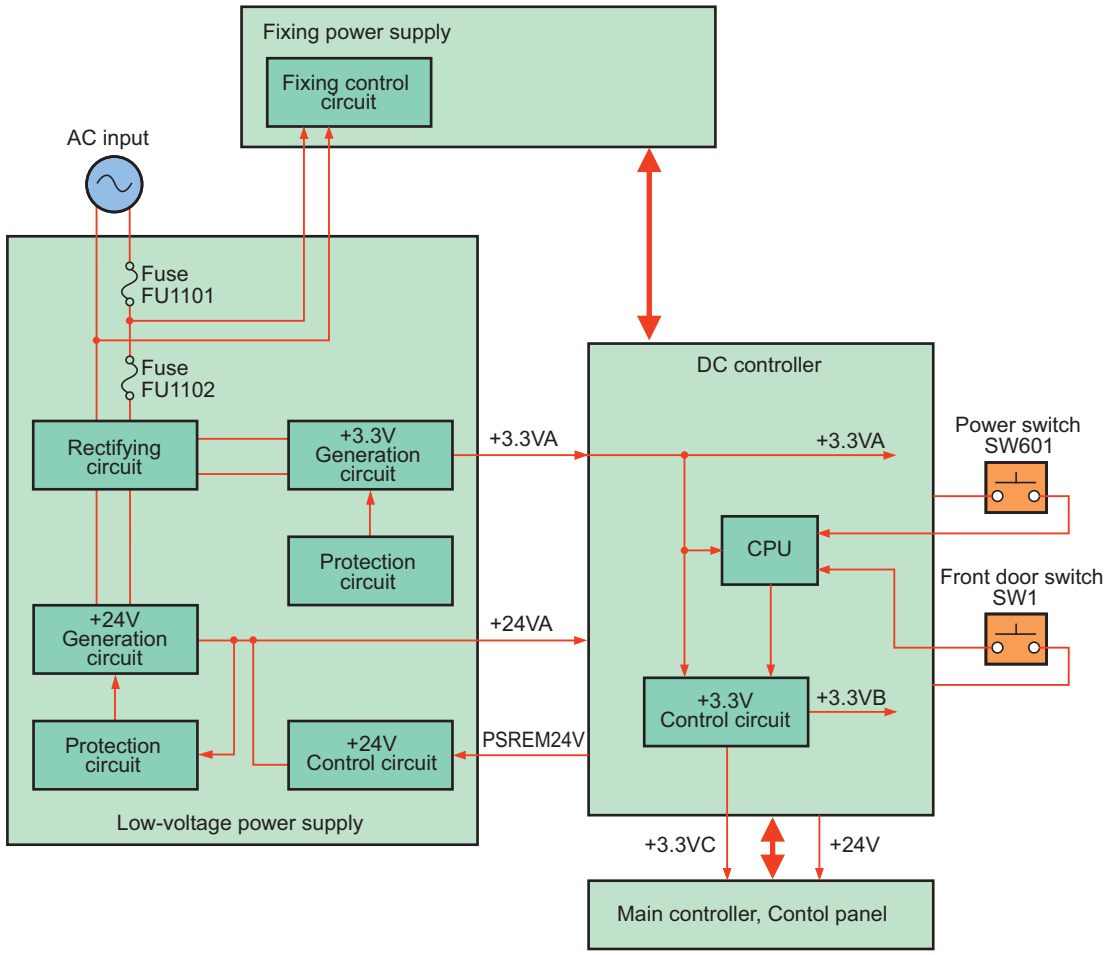
This circuit converts the AC voltage to DC power supply and provides it to each load.

Description

The following shows a block diagram of the low voltage power supply and fixing power supply .

- Low voltage power supply: Generates the DC power supply needed inside the printer.
- Fixing power supply: Provides AC power supply to the low voltage power supply and controls the fixing heater temperature of the Fixing Assembly.

The low voltage power supply starts to operate when the AC power supply is connected to the inlet. The AC power supply is converted to +24 V, which is the DC power supply required by the printer, and +3.3 V.



Protection Function

Overview

This machine has a protection function against overcurrent and overvoltage.

Description

If overcurrent or abnormal voltage occurs due to a trouble, the DC voltage is automatically cut off to prevent damage to the Power Supply PCBs.
When no DC voltage is output from the Low Voltage Power Supply Assembly, it is possible that the protection function has been activated. Therefore, turn OFF the Power Switch, disconnect the AC Power Supply Cord from the inlet, and then fix the trouble before turning ON the Power Switch again.

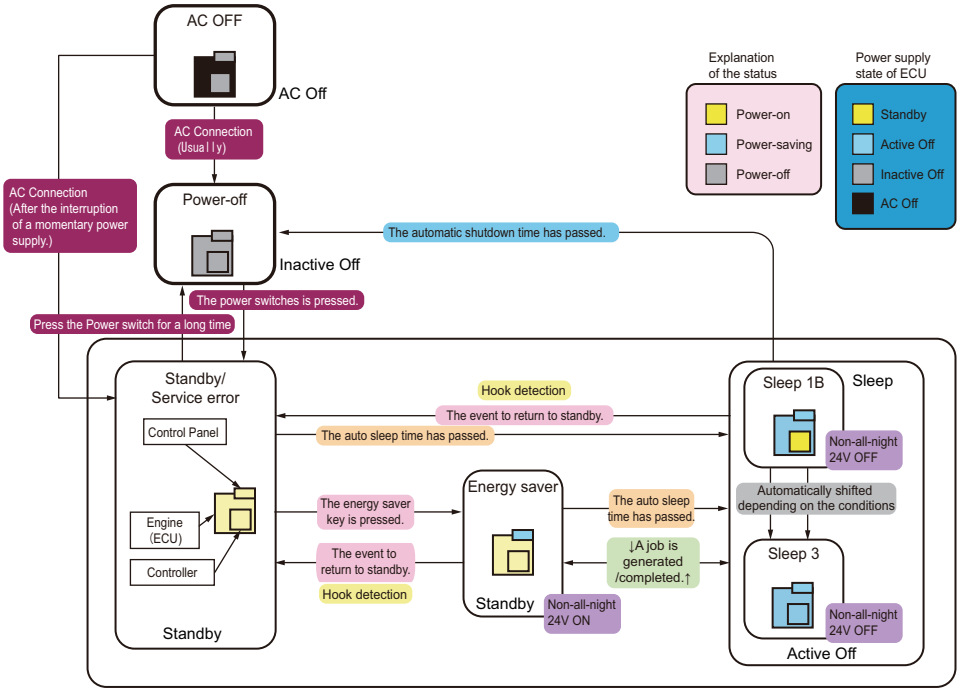
NOTE:
Leave the machine as it is for approx. 5 minutesafter disconnecting the cord from the inlet. There are cases where electric charge remains in the electrolytic capacitor on the primary side of the Power Supply PCB, and time for releasing the electric charge is needed.

Power-saving Mode

Overview

Power-saving mode is a function that reduces the printer power consumption.

Description



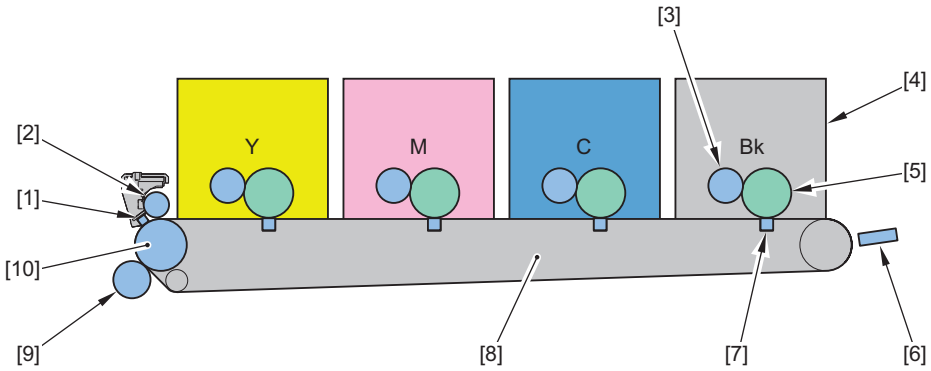
Engine (ECU) Power state	CNT All-night 3.3 V	CNT Non-all-night 24 V	ECU CPU power supply	Remarks
Standby	ON	ON	ON	Standby/Energy saving
Active Off	ON	OFF	ON	Sleep 1B/Sleep 3
Inactive Off	OFF	OFF	ON	AC applied

The low voltage power supply stops supplying power from the +24V generation circuit when it receives a power-saving transition mode signal (REM24V) from the DC Controller.

Image Formation System

Major Components

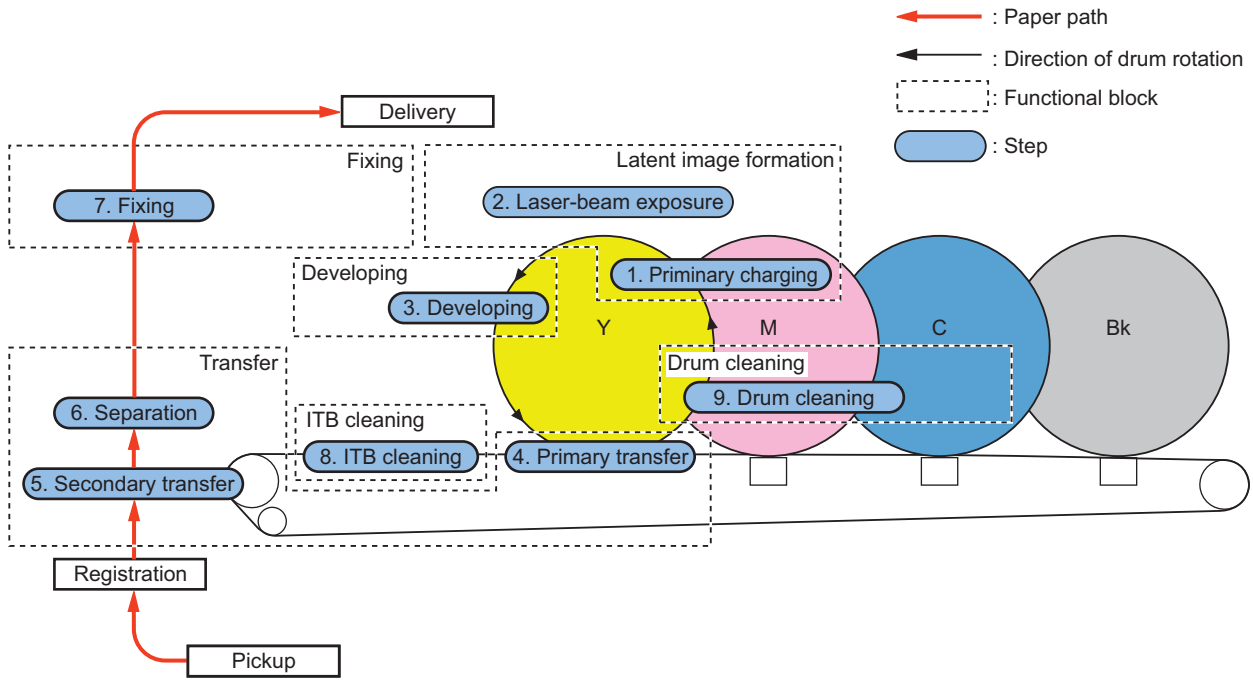
Description



No.	Name	No.	Name
[1]	ITB Cleaning Brush	[6]	Color Displacement/Density Sensor
[2]	ITB Cleaning Roller	[7]	Primary Transfer Pad
[3]	Developing Cylinder	[8]	ITB Unit
[4]	Toner Cartridge	[9]	Secondary Transfer Roller
[5]	Photosensitive Drum	[10]	ITB Drive Roller

Image Formation Process

Description



High Voltage Power Supply Control

Description

The High Voltage Power Supply applies high voltage biases to the following:

- Static Eliminator

- Primary Charging Roller (inside the cartridge)
- Developing Cylinder (inside the cartridge)
- Primary Transfer Pad
- Secondary Transfer Roller
- ITB Cleaning Assembly

The high voltage biases are generated by the DC Controller controlling the High Voltage Power Supply.

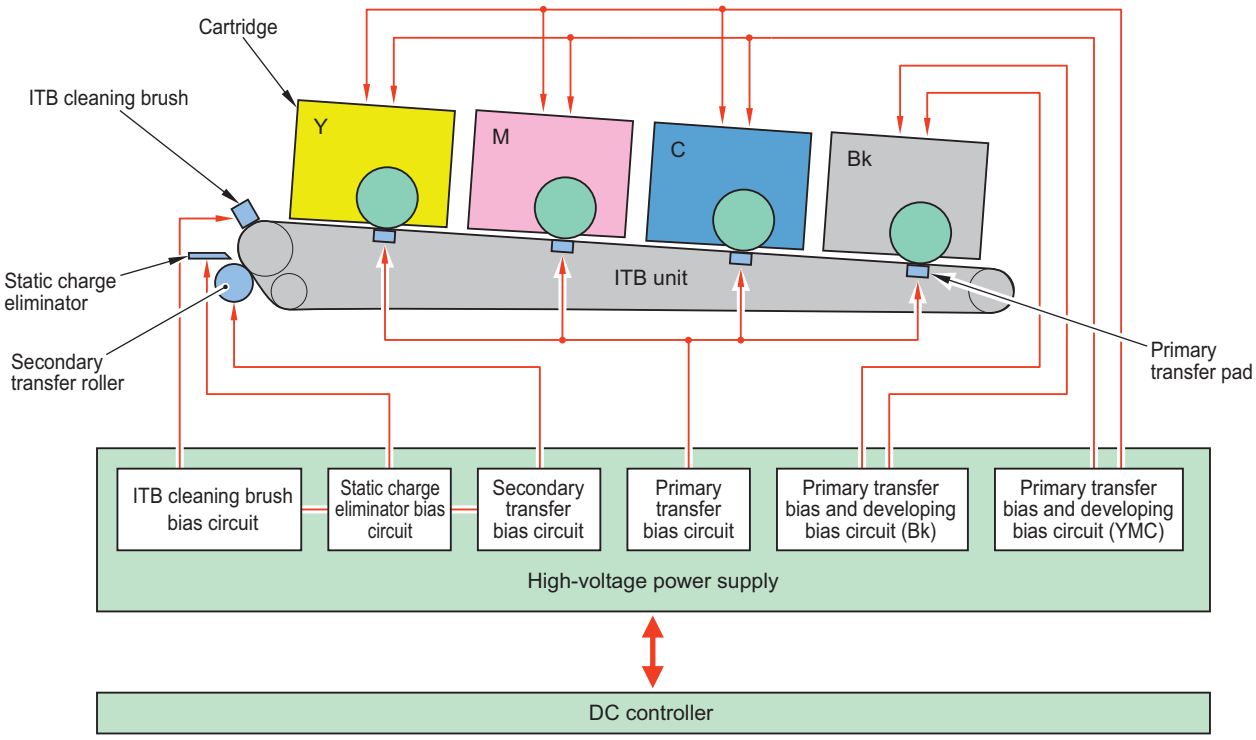
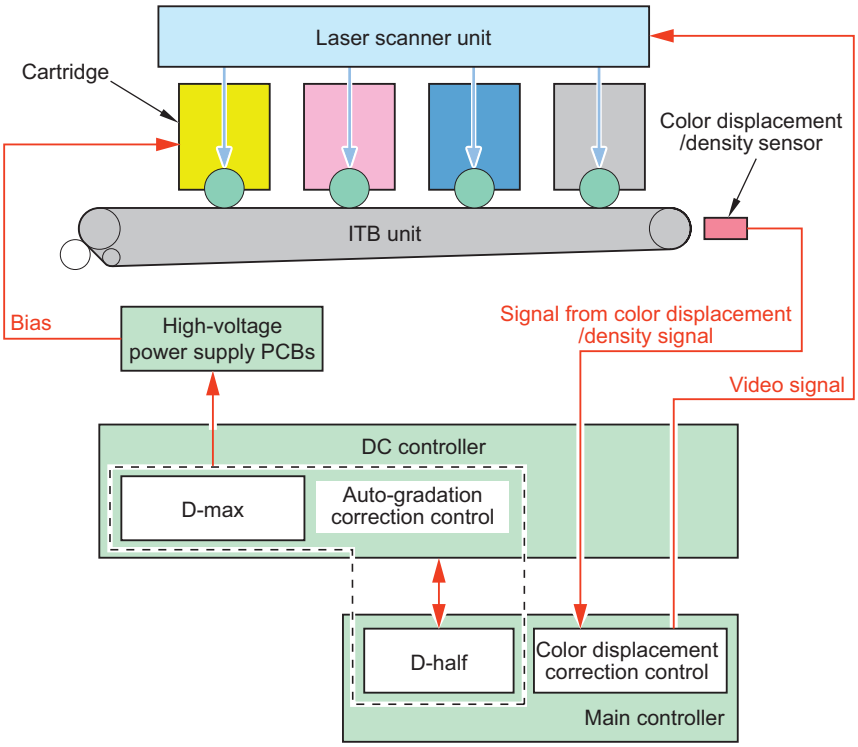


Image Stabilization Control

Overview

Image stabilization control is performed in order to prevent image failure due to change of the environment, deterioration of the Photosensitive Drum, deterioration of the toner, etc. and to ensure stable printing.

- Image Density Correction Control (D-max control)
- Image Gradation Correction Control (D-half control)
- Color Displacement Correction Control
- Auto Gradation Adjustment Control



Execution Condition/Timing

Correction controls are performed under the following conditions:

Execution timing	D-max	D-half	Color displacement correction
At power-on	Yes	Yes	Yes
When the Toner Cartridge is replaced	Yes	Yes	Yes
When the environment (temperature) changes	Yes	Yes	Yes
After printing the specified number of pages	Yes	Yes	Yes
After the specific period of time has passed	Yes	Yes	Yes
When recovering from sleep mode (8 hours or more)	Yes	Yes	-
When [Quick Adjust] is executed	Yes	Yes	-
When [Correct Print Color Mismatch] is executed	-	-	Yes

Description

Image Density Correction Control (D-max control)

It is performed to stabilize the image density of the printer.
The DC Controller corrects the primary charging bias and developing bias values.

Image Gradation Correction Control (D-half control)

It is performed to stabilize the image gradation of the printer.
The Main Controller performs gradation adjustment based on the measurement results of the halftone density performed by the DC Controller.

Color Displacement Correction Control

Color displacement that occurs due to the individual differences of the Laser Scanner Unit and Toner Cartridge is corrected.
The Main Controller performs the following color displacement corrections by controlling the video signal based on the color displacement information measured by the DC Controller.

- Write-start position in the horizontal scanning direction
- Horizontal scanning magnification ratio
- Write-start position in the vertical scanning direction

Auto Gradation Adjustment Control

It is performed to stabilize the gradation density characteristics of the image.

Item	Description	Test pattern	
		Number of output sheets	Type
Quick Adjust	Gradation adjustment is performed by D-half Control without outputting a test pattern.	-	-

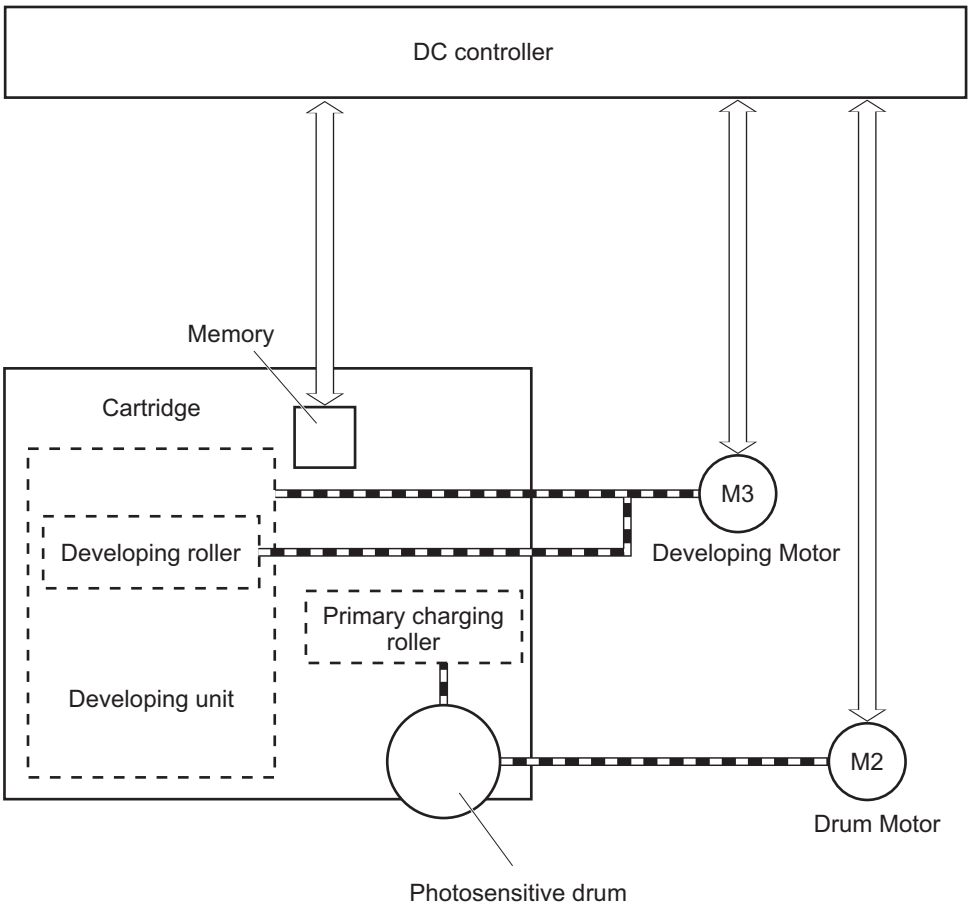
Additional Functions Mode/Menu

- Menu > Adjustment/Maintenance > Adjust Image Quality > Auto Adjust Gradation > Quick Adjust
- Menu > Adjustment/Maintenance > Adjust Image Quality > Correct Print Color Mismatch

Cartridge

Description

The cartridge of this machine has the function to form a visible image on the Photosensitive Drum with toner.
There are 4 types: yellow, magenta, cyan, and black, and all of them have the same structure.
The cartridge of this machine consists of the Photosensitive Drum, Developing Unit, Primary Charging Roller, Memory, etc.
The DC Controller rotates the Drum Motor, and drives the Primary Charging Roller. It also rotates the Developing Motor, and drives the Developing Roller.
The DC Controller detects the toner level by monitoring the toner level detection signal.



■ Memory

Description

This machine detects/records the cartridge usage status, etc. by reading/writing data stored in the memory by the DC Controller.
If the memory cannot be detected, "Cartridge Communication Error. A counterfeit or non-Canon cartridge may be in use." is displayed.

■ Cartridge Detection

Execution Condition/Timing

- At power-on
- When the Front Cover is closed

Description

The DC Controller detects whether a cartridge is installed according to the change in primary charging current. The DC Controller notifies the Main Controller of the absence of a cartridge if it judges there is no cartridge.

Display on the Control Panel:
Toner Cartridge Not Inserted

■ Cartridge Life Detection

Description

The DC Controller notifies the Main Controller when cartridge consumption reaches the specified value.
Upon reception of the notification the Main Controller displays a warning or a message that the cartridge has reached the end of its life.

	Warning display*2	End of life display*4, *5
Toner level*1	Differs depending on the setting*3	0%
Detected to (location)	Memory	Memory
Message (machine operation)	Prepare cartridge.	End of Cartridge Lifetime

*1: Select the following to check the remaining toner level.
- Status Monitor > Device Information > Cartridge Information

*2: Whether to display or hide warnings can be specified in the menu.
*3: The threshold value to display a warning can be specified in the menu.
*4: The operation when the cartridge has reached the end of life can be specified in service mode.
*5: The reference value of cartridge life (Photosensitive Drum, Developing Unit, and Waste Toner) can be specified in service mode.

Service Mode

- Setting of the behavior when the cartridge reaches the end of its estimated life
  COPIER > OPTION > FNC-SW > CRG-PROC
- Setting of the reference values for replacement of the Photosensitive Drum, Developing Assembly, and Waste Toner (Bk)
  COPIER > OPTION > FNC-SW > CRGLF-K
- Setting of the reference values for replacement of the Photosensitive Drum, Developing Assembly, and Waste Toner (Y/M/C)
  COPIER > OPTION > FNC-SW > CRGLF-CL
- ON/OFF of display of the screen for setting the threshold value for preparation of the cartridge
  COPIER > OPTION > DSPLY-SW > CRGLW-LV

Additional Functions Mode/Menu

- Setting of whether to display or hide warnings
  Menu > Preferences > Display Settings > Display Timing for Cartridge Prep. Notif.
- Setting of the threshold value to display a warning
  Menu > Preferences > Display Settings > Display Timing for Cartridge Prep. Notif. > Custom

■ Developing Cylinder Engagement/Disengagement Control

Overview

The DC Controller engages/disengages the Developing Cylinder in the Toner Cartridge with/from the Photosensitive Drum.

Execution Condition/Timing

The Developing Cylinder is engaged or disengaged depending on the state of this machine.

State of this machine	Y/M/C	Bk
Power Supply Off/Standby	Disengagement	
B&W Print	Disengagement	Engagement
Full Color Print	Engagement	

Description

In accordance with the specified print mode (full color or B&W), only the Developing Cylinder(s) necessary for the mode is engaged with the Photosensitive Drum.
The Developing Cylinders are engaged only when needed, and this prevents deterioration of the Photosensitive Drum and ensures the maximum life.

For engagement/disengagement of the Developing Cylinders, the DC Controller drives the Developing Disengagement Solenoid (Bk) (SL2)/Developing Disengagement Solenoid (Color) (SL3) while the Developing Motor (M3) is driving to change the orientation of the Engagement/Disengagement Cam.
The DC Controller detects the current state using the Developing Disengagement Switch (Bk) (SW3)/Developing Disengagement Switch (Color) (SW2), and determines the state (engaged or disengaged) of the Developing Cylinders on the basis of the amount of rotation of the Developing Motor after the Developing Disengagement Solenoid starts to be driven.

Error Code

- E015-0000: Error in Developing Disengagement Motor

Pickup Feed System

Overview

Overview

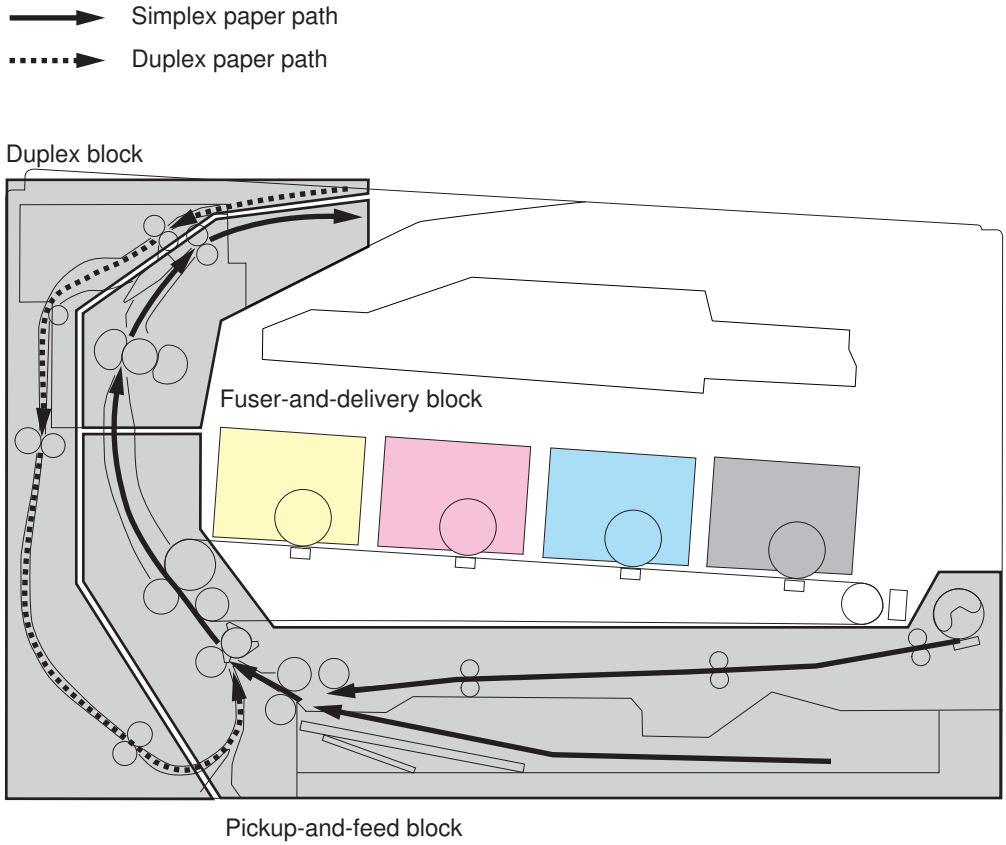
The pickup, feed, and delivery systems are controlled by the DC Controller.
The DC Controller controls the blocks in the pickup, feed, and delivery systems to pickup, feed, and deliver paper inside the machine.

Description

The pickup, feed, and delivery systems consist of the following three blocks.

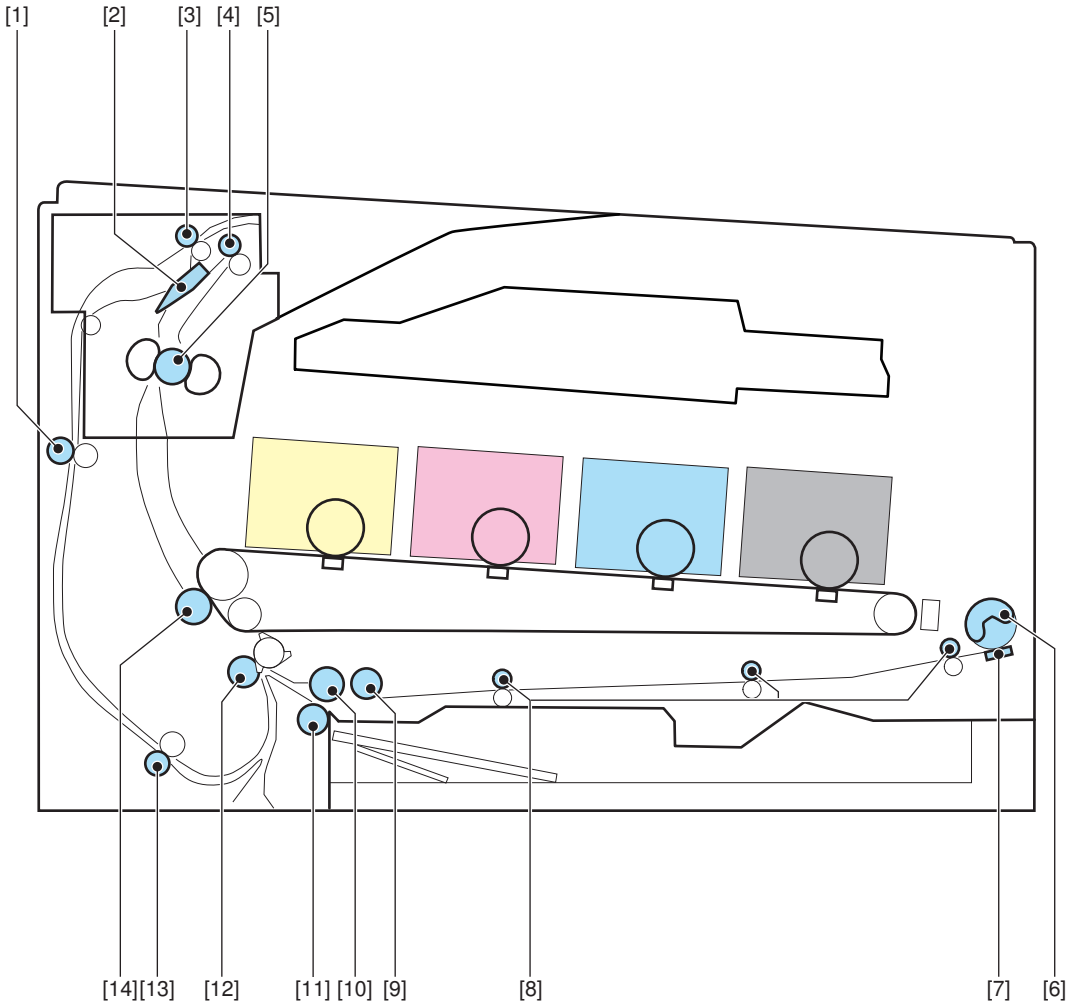
- Pickup/Feed: From each pickup slot to the inlet of the Fixing Assembly
- Fixing/Delivery: From the Fixing Assembly to the delivery outlet
- Duplex*: From the Duplex Reverse Assembly to the Duplex Re-pickup Assembly

*: Duplex models only



Parts Configuration

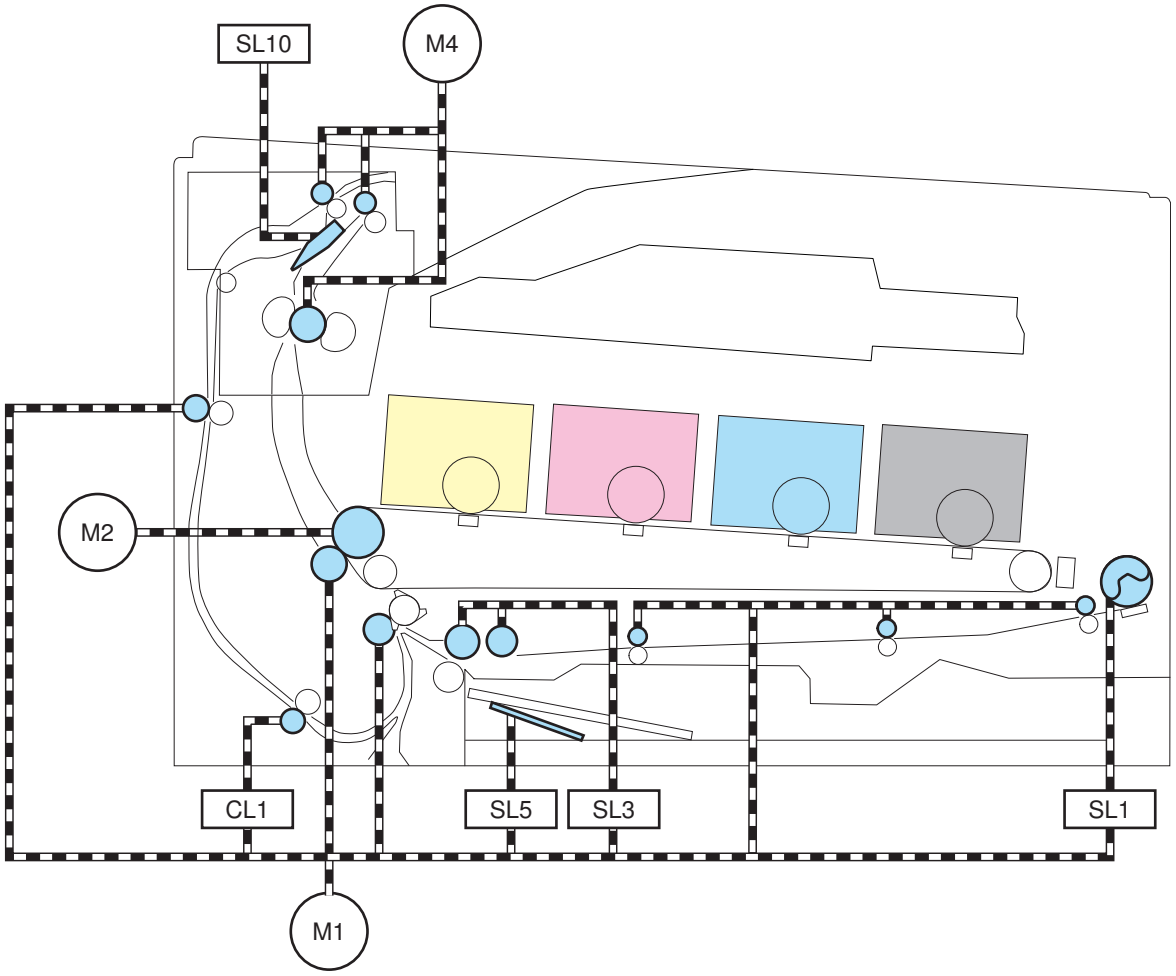
Description



No.	Name	No.	Name
[1]	Duplex Feed Roller	[8]	Multi-purpose Tray Feed Roller
[2]	Duplex Flapper	[9]	Pickup Roller
[3]	Duplex Reverse Roller	[10]	Feed Roller
[4]	Delivery Roller	[11]	Separation Roller
[5]	Fixing Roller	[12]	Registration Roller
[6]	Multi-purpose Tray Pickup Roller	[13]	Duplex Re-pickup Roller
[7]	Multi-purpose Tray Separation Pad	[14]	Secondary Transfer Roller

Drive Configuration

Description

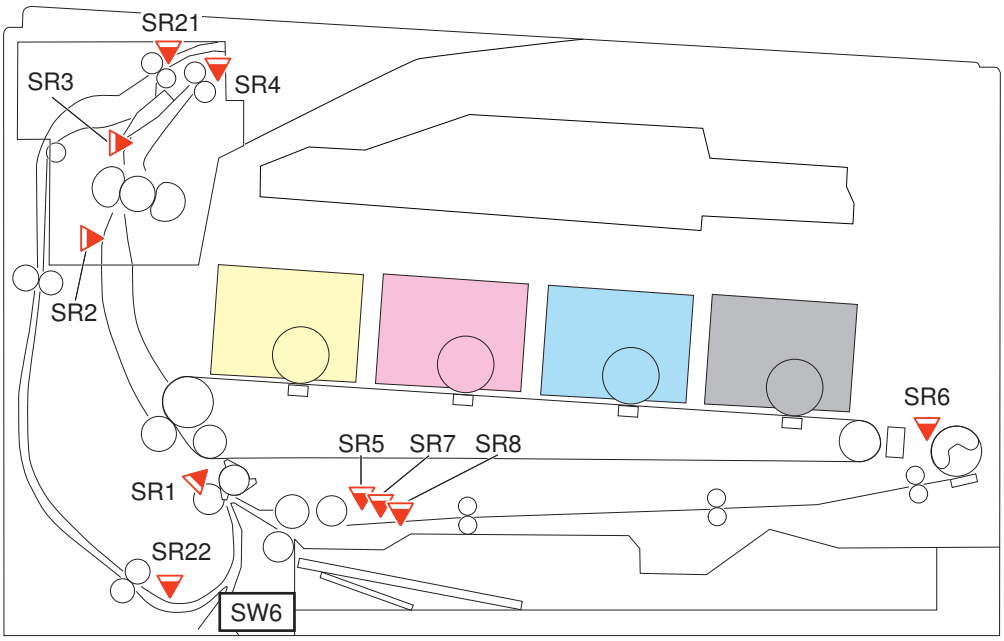


Sym-bol	Name	Sym-bol	Name
M1	Pickup Motor	SL1	Multi-purpose Tray Pickup Solenoid
M2	Drum Motor	SL3	Cassette Pickup Solenoid
M4	Fixing Motor	SL5	Lifter Solenoid
CL1	Duplex Re-pickup Clutch*	SL10	Duplex Reverse Solenoid*

*: Duplex models only

Layout of Sensors

Description



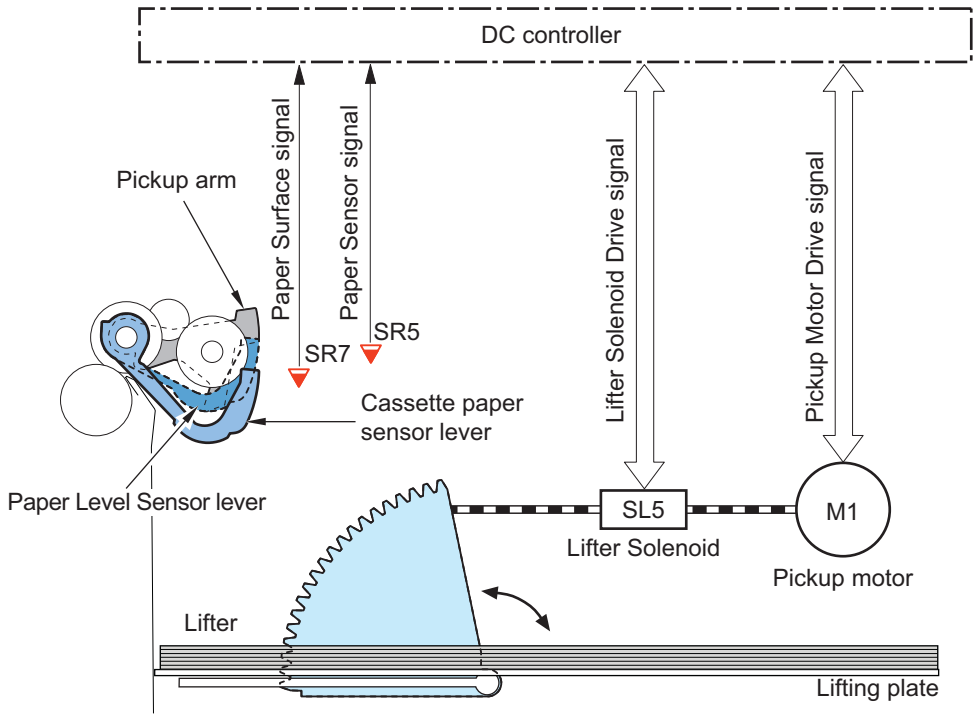
Sym-bol	Name	Symbol	Name
SW6	Cassette Switch	SR6	Multi-purpose Tray Paper Sensor
SR1	Registration Sensor	SR7	Cassette Paper Surface Sensor
SR2	Loop Sensor	SR8	Lifter Sensor
SR3	Fixing Delivery Sensor	SR21	Duplex Reverse Sensor*
SR4	Delivery Tray Sensor	SR22	Duplex Re-pickup Sensor*
SR5	Cassette Paper Sensor		

*: Duplex models only

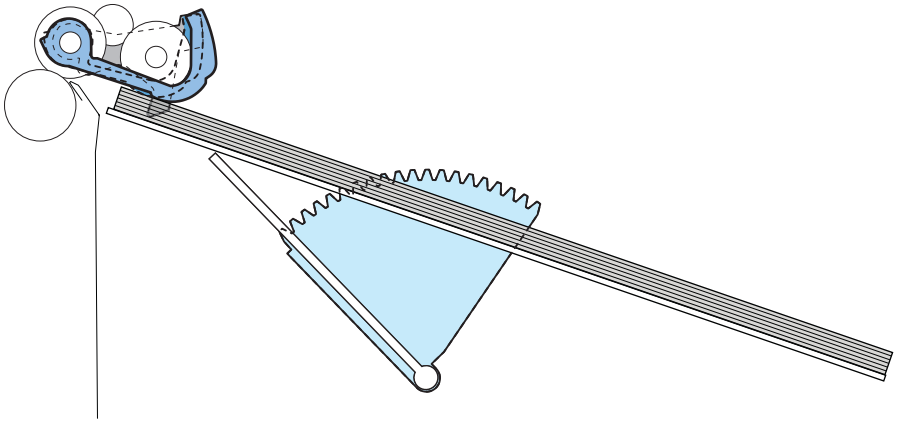
Lifter Control

Description

Paper inside a cassette is lifted up by the Lifting Plate.
The Lifting Plate is lifted by driving the Pickup Motor (M1) and Lifter Solenoid (SL5).
When the paper surface reaches the position of the Pickup Roller, the Cassette Paper Surface Sensor (SR7) is turned ON to detect that the paper has reached the pickup position.
When the Lifting Plate is rising, the Pickup Motor (M1) and Lifter Solenoid (SL5) are controlled to keep the paper surface steady so that pickup can be performed stably.



<Before lift-up operation>



<After lift-up operation>

There are 2 types of lift-up operation: initial lift-up operation and lift-up operation during printing.

1. Initial lift-up operation
   When the power is turned ON or a cassette is inserted, the Pickup Motor (M1) and Lifter Solenoid (SL5) are driven to lift up the Lifting Plate to the position for detection if the Cassette Paper Surface Sensor (SR7) does not detect the paper surface.
2. Lift-up operation during printing
   This operation is performed if the paper surface is lowered a certain amount by the pickup operation.
   If the Cassette Paper Surface Sensor (SR7) detects that there is no paper during printing, the Pickup Motor (M1) and Lifter Solenoid (SL5) are driven to lift up the Lifting Plate to the pickup position.

Error Code

- E015-0001: Cassette 1 lift-up error
- E015-0002: Cassette 2 lift-up error

Cassette Detection

Description

Presence of the cassette is detected using the Cassette Switch (SW6).
The cassette detection flag of the cassette is detected by the Cassette Detection Switch in the host machine.

Cassette Pickup Control

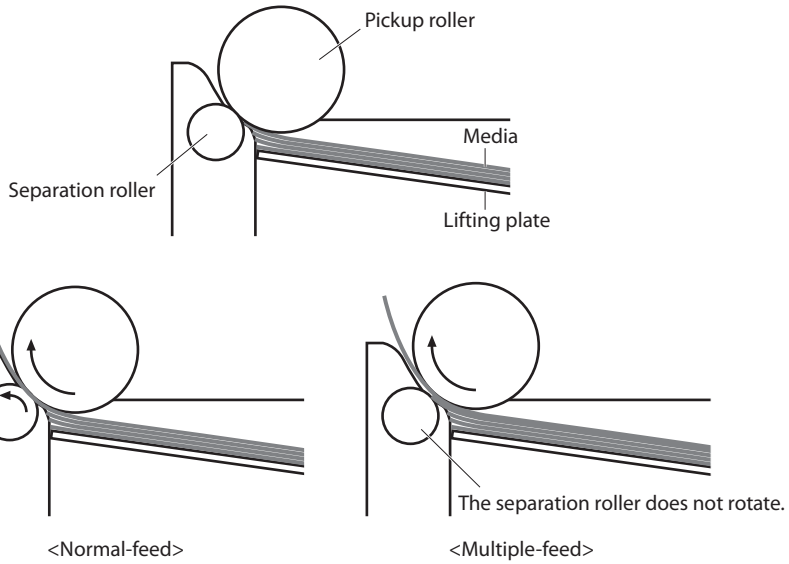
Description

The DC Controller rotates the Pickup Roller by rotating the Pickup Motor (M1).
The Pickup Arm is lifted and lowered to feed the paper by rotating the Pickup Cam with the Pickup Solenoid (SL3).

Double Feed Prevention Mechanism

This machine employs the Separation Roller method for double feed prevention.
The Separation Roller method of this machine is a method that prevents paper double feeds by using the Separation Roller without drive.
The Separation Roller is driven and rotated by the Pickup Roller.

- At normal time
  The Separation Roller is driven by the Pickup Roller drive via paper. This causes the Separation Roller to rotate in the feed direction.
- During Double Feed
  Since the friction force between sheets of paper becomes weaker when there are multiple sheets of paper, the Pickup Roller drive force transmitted to the Separation Roller becomes extremely weak. Since force suppressing rotation is applied to the Separation Roller of this machine, this mechanism does not allow rotation by the weak drive force transmitted from the Pickup Roller during double feed. The Separation Rollers therefore do not rotate and do not pickup double feed paper.

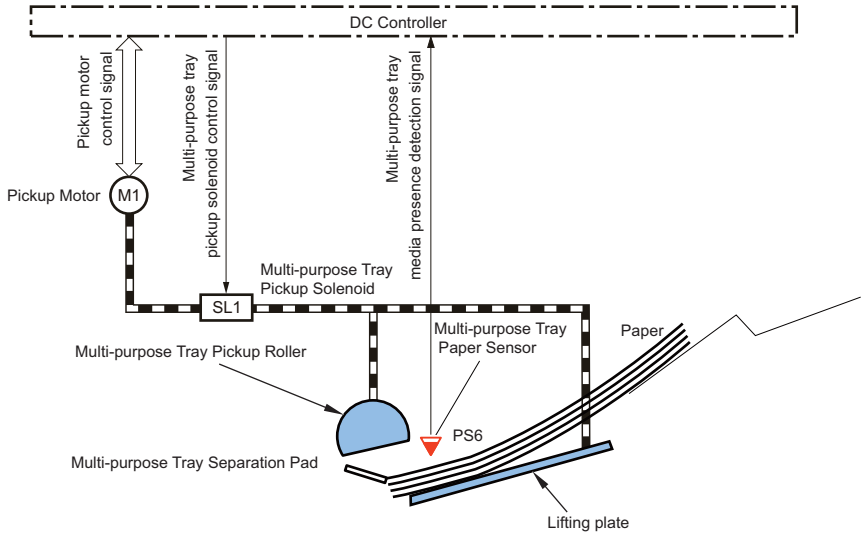


Multi-purpose Tray Pickup Control

Description

The Multi-purpose Tray pickup feeds paper from the Multi-purpose Tray one sheet at a time into the machine.
The following describes the operation of the Multi-purpose Tray pickup.

1. When a print command is input from the Main Controller, the DC Controller rotates the Pickup Motor (M1).
2. When the DC Controller turns ON the Multi-purpose Tray Pickup Solenoid (SL1), the Multi-purpose Tray Pickup Roller rotates and paper is picked up.
3. After double feed paper is removed by the Multi-purpose Tray Separation Pad, paper is fed into the machine. Note that the presence of paper on the Multi-purpose Tray is detected by the Multi-purpose Tray Paper Sensor (PS6), and printing is not performed if there is no paper.

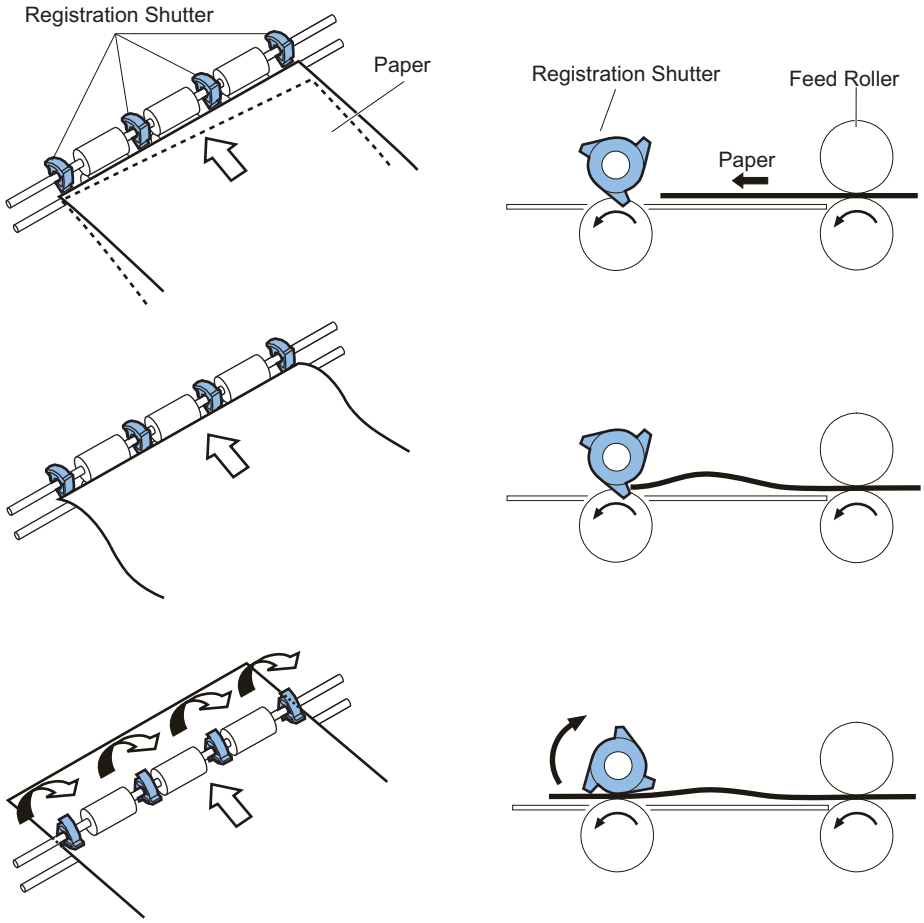


Skew Correction

Description

This machine can correct paper skew without lowering throughput.
Skew is corrected as follows.

1. The paper leading edge pushes against the Registration Shutter to align the leading edge of the paper.
2. The trailing edge of the paper is fed and slack is generated at the leading edge of the paper.
3. When the trailing edge is fed even further, the paper leading edge for which slack was generated pushes up the Registration Shutter and then the paper is fed to the Registration Roller while the paper leading edge is aligned.



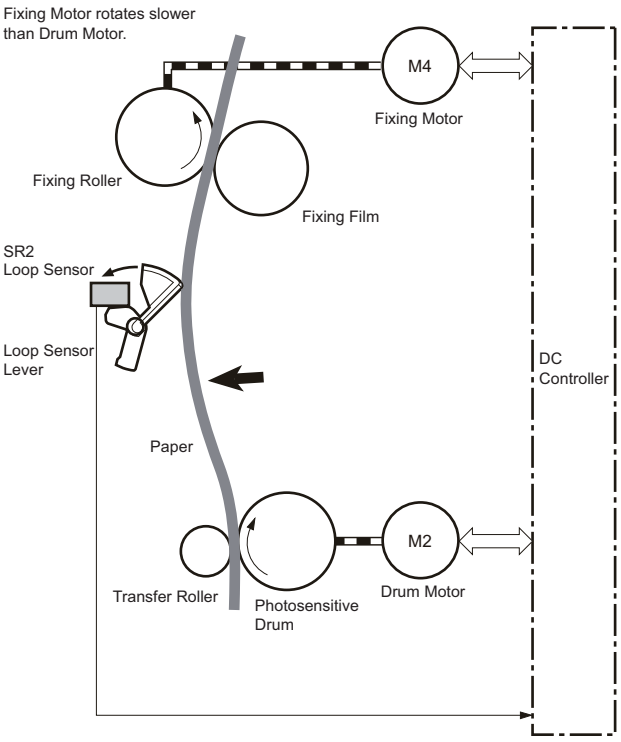
Arch Control

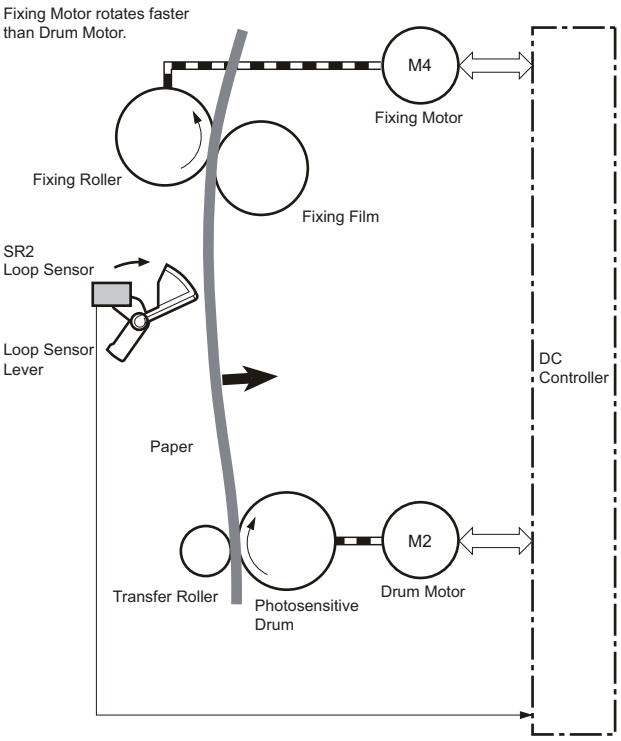
Description

Arch control keeps the appropriate slack on paper to prevent image failure and feed failure.

- If the rotation speed of the Fixing Motor is slower than the rotation speed of the Drum Motor, the slack on the paper becomes larger.
- If the rotation speed of the Fixing Motor is faster than the rotation speed of the Drum Motor, the slack on the paper becomes smaller.

The DC Controller detects the slack on paper by the Loop Sensor (SR2), and controls the rotation speed of the Fixing Motor.

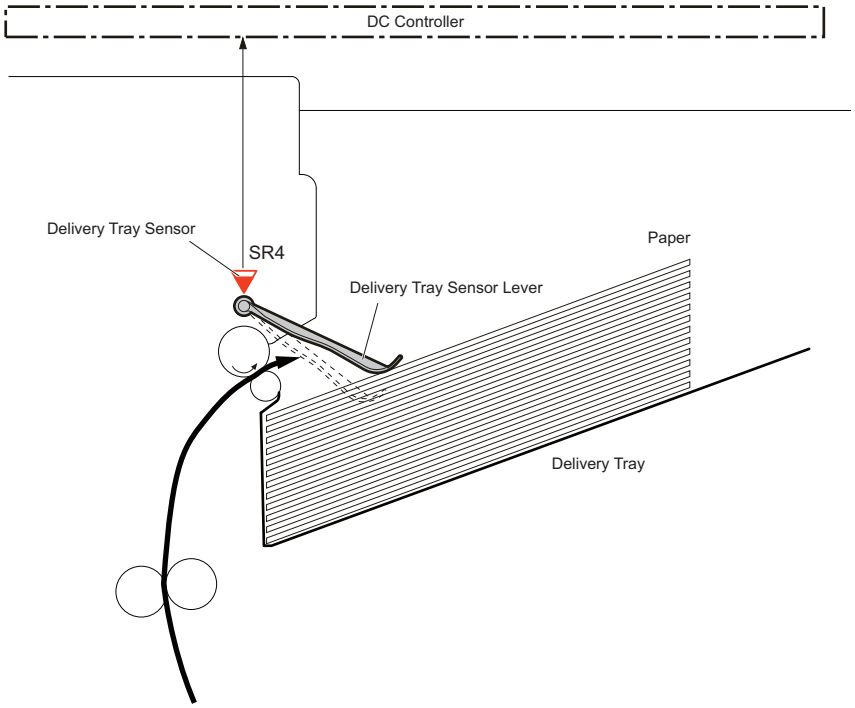




Delivery Tray Full Detection

Description

The DC Controller detects paper full in the Delivery Tray using the Delivery Tray Sensor (SR4).
The DC Controller judges that the Delivery Tray is full and notifies the Main Controller when the Delivery Tray Sensor detects paper for a specified period of time during printing.



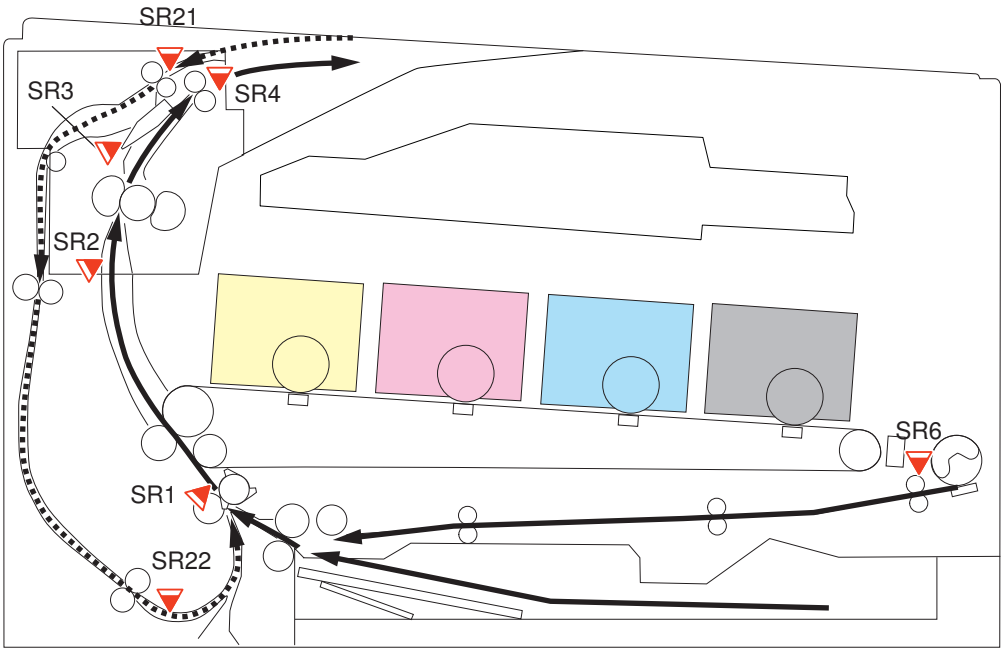
Jam Detection

Description

The sensors are provided at the locations shown below to detect the presence of print paper and whether the print paper is being fed correctly.

Simplex paper path

Duplex paper path



Occurrence of a jam is judged by whether paper is in the sensor area at the timings stored in the DC Controller.
When the DC Controller judges that a jam has occurred, the printing operation is stopped and the jam is notified to the Main Controller at the same time.
The following shows the jams that are detected.

Jam name	Details
Pickup delay jam 1	When the Registration Sensor (SR5) fails to detect the leading edge of paper after the start of image formation and before the start of re-pickup
Pickup delay jam 2	When the Multi-purpose Tray Paper Sensor (SR6) fails to detect the leading edge of paper within a specified period of time after the start of pickup from the Multi-purpose Tray
Pickup Stationary Jam	When the Registration Sensor (SR5) fails to detect the trailing edge of paper within a specified period of time after the start of re-pickup
Fixing delivery delay jam	When the Fixing Delivery Sensor (SR3) fails to detect the leading edge of paper within a specified period of time after the start of re-pickup
Fixing delivery stationary jam	When the Fixing Delivery Sensor (SR3) fails to detect the trailing edge of paper within a specified period of time after the Registration Sensor (SR5) detects the trailing edge of paper
Internal stationary jam	When one of the following sensors detects presence of paper at power-on, door close, or before/after print operation • Registration Sensor (SR5) • Fixing Delivery Sensor (SR3) • Delivery Sensor (SR4)
Door Open Jam	When one of the sensors detects presence of paper when door open is detected during printing
Wrapping jam	When the Fixing Delivery Sensor (SR3) turns OFF after the Fixing Delivery Sensor (SR3) detects the trailing edge of paper and before detection of a fixing delivery stationary jam is started
Duplex Re-pickup Assembly Jam	At 2-sided print, the paper was reversed, but the Duplex Re-pickup Sensor (SR22) failed to detect the leading edge of paper within a specified period of time.
Delivery Delay Jam	When the Delivery Sensor (SR4) fails to detect the leading edge of paper within a specified period of time after the Fixing Delivery Sensor (SR3) detects the trailing edge of paper
Delivery Stationary Jam	When the Delivery Sensor (SR4) fails to detect the trailing edge of paper within a specified period of time after the Delivery Sensor (SR4) detects the leading edge of paper

Fixing System

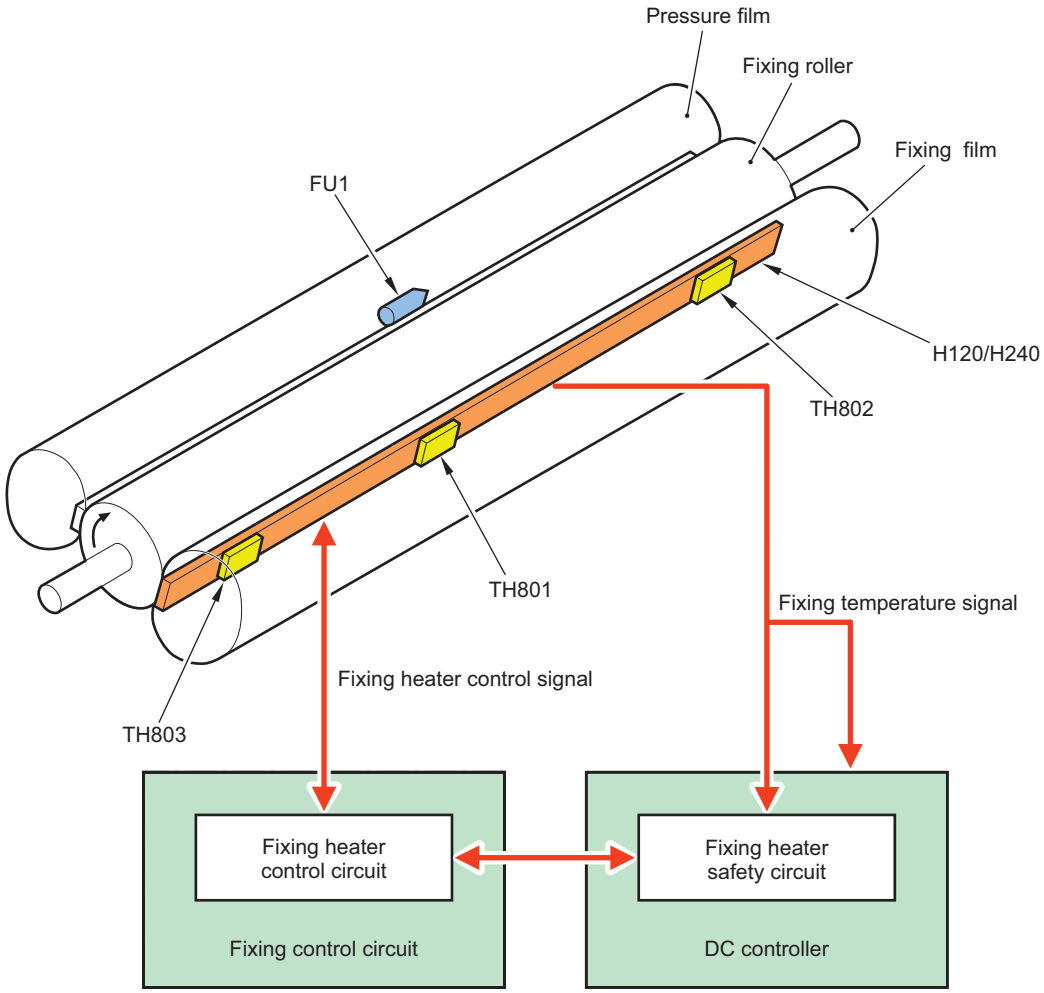
Functional Configuration

Overview

The fixing system forms a permanent image by melting the toner on the paper using pressure and heat.

Description

The fixing control circuit controls the temperature of the Fixing Assembly.
The Fixing Assembly of this machine uses the on-demand fixing method.



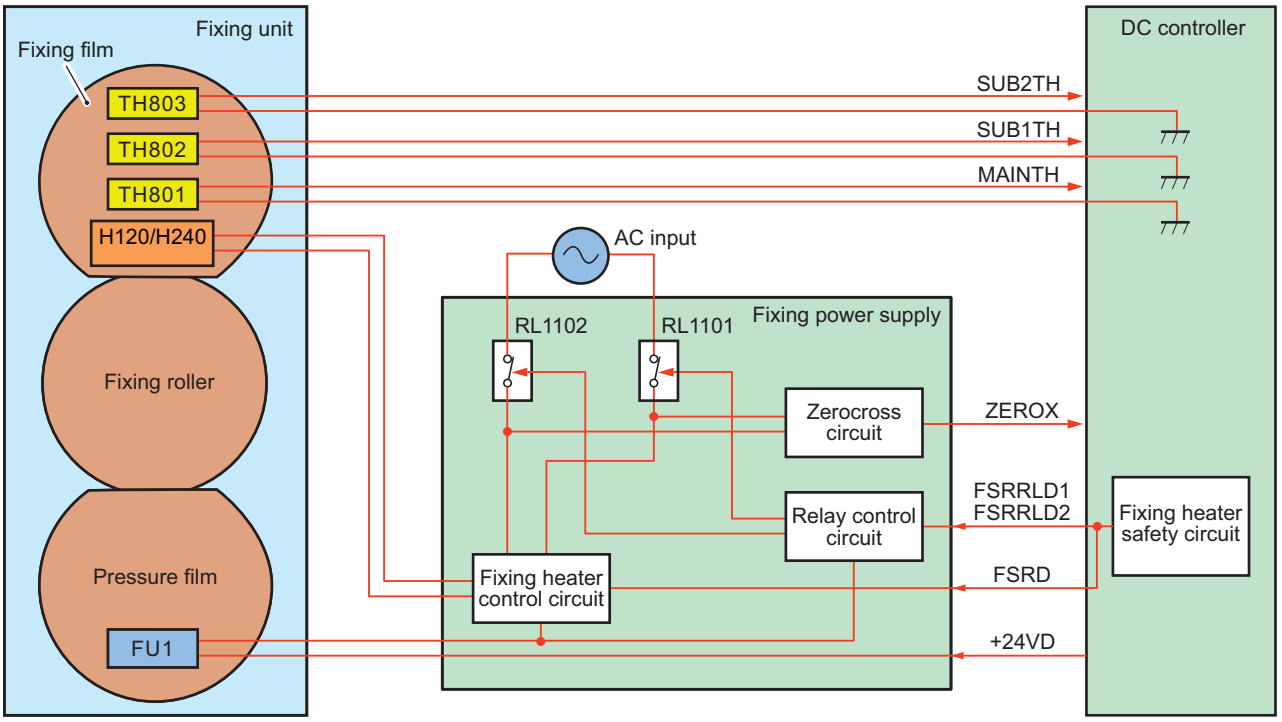
Symbol	Parts name
H120	Fixing Heater (120 V)
H240	Fixing Heater (240 V)
TH801	Main Thermistor
TH802	Sub Thermistor 1
TH803	Sub Thermistor 2
FU1	Temperature Fuse

Temperature control of the Fixing Assembly which consists of these parts is performed by the Fixing Heater control circuit and Fixing Heater safety circuit according to the command of the DC Controller.

Fixing Temperature Control

Overview

This control circuit controls the temperature such that the Fixing Heater reaches the target temperature.



Description

The DC Controller monitors the fixing temperature detection signal and outputs a fixing control signal according to the detected temperature. The fixing control circuit controls the Fixing Heater on the basis of this signal, and controls the temperature of the Fixing Heater to the target value.

Protection Function

Overview

This machine has a function to detect abnormal temperature rising in the Fixing Assembly and cut off the power supply to the Fixing Heater.

Description

This machine has the following three protection functions to prevent abnormal temperature rising in the Fixing Heater.

- DC Controller
- Fixing Heater safety circuit
- Temperature Fuse

The following describes the details.

DC Controller

The DC Controller monitors the thermistor temperature of the Fixing Heater (Center). When it exceeds the specified temperature, it is judged that the temperature of the Fixing Assembly is abnormally high, and the fixing control signal (FSRD) output is stopped, the relay is turned OFF, and the power supply to the heater is turned OFF.

Fixing Heater safety circuit

The Fixing Heater safety circuit monitors the thermistor temperature of the Fixing Heater (Center). When it exceeds the specified temperature, it is judged that the temperature of the Fixing Assembly is abnormally high, and the relay is turned OFF and the power supply to the heater is turned OFF.

Temperature Fuse

If the temperature of the Fixing Heater rises abnormally and the temperature of the Fixing Fuse exceeds the specified temperature, the Temperature Fuse opens and the power supply to the heater turns OFF.

Fixing Assembly Failure Detection

Overview

When the machine is under the following conditions, the DC Controller shuts down the power supply to the Fixing Assembly and notifies an error.

- Startup failure
- Abnormal high temperature failure
- Abnormal low temperature failure

Description

Fixing Assembly startup failure

An error code is notified if the Fixing Assembly does not reach a certain temperature within a specified period of time.

Abnormal high temperature failure

An error code is notified if an abnormally high temperature is detected in the Fixing Assembly.

Abnormal low temperature failure

An error code is notified if an abnormally low temperature is detected in the Fixing Assembly.

Error Code

E000: Startup failure
- E000-0000: Fixing Assembly startup failure

E001: Abnormal high temperature failure
- E001-0001: Abnormal high temperature of Fixing Assembly

E003: Abnormal low temperature failure
- E003-0001: Abnormal low temperature of Fixing Assembly

3 Technical Explanation (System)

Overview of System Management

This chapter describes information for service technicians on the system of this machine.
Although this chapter contains some information described in the User's Guide, for details on the functions for users, refer to the e-Manual.

Version Upgrade

Function Overview

The following firmware upgrade methods are available with this device.

Version upgrade using User Support Tool (UST).

Upgrade the firmware of the device using UST
Open the file for UST version upgrade on a PC connected with the device and upgrade the firmware.
Since the host machine and the PC are connected using a USB cable, version upgrades can be performed in an environment where a network is not available.

Version upgrade via Internet

Access the dedicated server, and download and upgrade the firmware.
Provided that Internet connection is available, the system automatically configures the connection destination setting and executes processing such as download and version upgrade.

Version upgrade using a USB flash drive

Upgrade the firmware of this machine using a USB flash drive.
Connect a USB flash drive where the firmware is stored to the device, and update the firmware in service mode.
Version upgrades can be performed in an environment where a PC or network is not available.

Version upgrade by replacing the PCB

Version upgrade by replacing the existing PCB with a PCB where the latest firmware is installed

Version upgrade using Local CDS

Use iW EMC/iW MC and DFU plug-in to download firmware from Local CDS and upgrade the host machine.

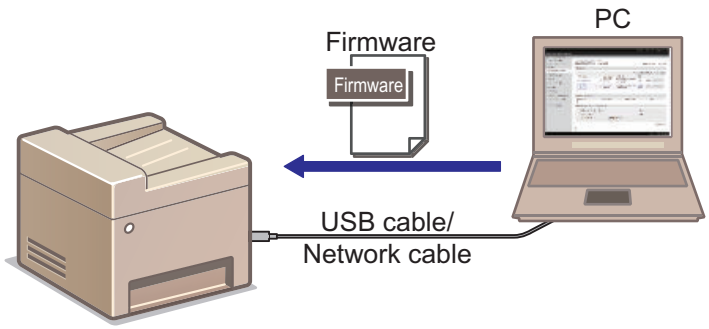
NOTE:
When using Local CDS to upgrade it, refer to the manual/material of iW EMC/iW MC DFU plug-in.

CAUTION:
A message appears when an attempt is made to upgrade a host machine to which specified firmware has been applied.
This is a precaution not to use wrong firmware to upgrade a host machine to which specified firmware has been applied.
See the following regarding the combination of whether the message will be displayed:

Type of firmware applied to the host machine	Firmware to upgrade	
	General firmware	Specified firmware
General firmware	No message	No message
Specified firmware	Message displayed	Message displayed

Version Upgrade Using UST

UST is included in the firmware for the machine that can be downloaded from the website of CINC. Firmware is downloaded as a zip file and a folder containing UST is extracted by decompressing the file.
When executing UST on the PC connected to the machine with a USB Cable, the firmware can be upgraded by downloading it from the PC to the machine. For the detailed procedure, refer to "User Support Tool Operation Guide" stored in the decompressed folder. "User Support Tool Operation Guide" is also available on the website of CINC.



Version Upgrade via Internet

Connect to the Internet using the network function of the device, and download and upgrade the latest firmware from the server. If the device is in an environment where Internet connection is available, firmware versions can be upgraded only by operation from the menu without using PC.

■ Prerequisite

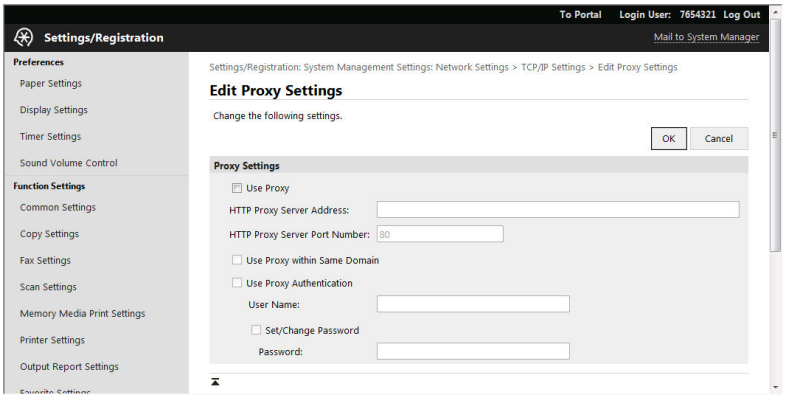
In order to perform version upgrade of the device via Internet, the following conditions must be met.

There should be no other jobs being executed.

Firmware cannot be upgraded while there is a job being executed. If there is a job being executed, wait for completion of the job and then perform the work.

The device should be able to be connected to the external network.

If connection is not available because, for example, there is a proxy server, follow the e-Manual to configure the proxy server settings and enable connection to the external network.



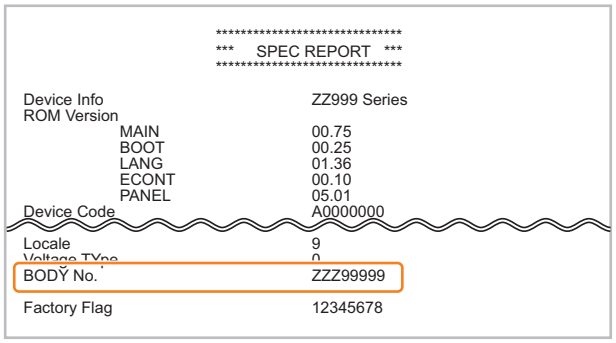
The serial number of the host machine should be shown on the Main Controller PCB.

Whether or not the serial number of the host machine is shown on the Main Controller PCB can be checked from the Control Panel or SPEC REPORT.

Procedure to check from SPEC REPORT

1. Execute the following service mode to print SPEC REPORT.
   - COPIER > FUNCTION > MISC-P> SPEC

2. Check if the serial number (3 alphabetical characters + 5-digit number) is shown in [BODY No.] of the printed SPEC REPORT.



■ Procedure for Upgrading the Firmware via Internet

1. **Select the following menu to upgrade the firmware via Internet:**
   - [Management Settings] > [Remote UI Settings/Update Firmware] > [Update Firmware] > [Via Internet] > [Yes]

   When the upgrading of firmware is completed, the machine automatically restarts.
2. **Select the following menu, and check that the firmware has been correctly upgraded:**
   - [Management Settings] > [Remote UI Settings/Update Firmware] > [Update Firmware] > [Version Information]

CAUTION:
This function does not support the operations from remote UI. ([Update Firmware] does not exist in the [System Management Settings] menu of the remote UI.)

■ Messages

The message displayed on the device operation panel is as follows.

No.	Error message	The timing of occurrence	Remedy
1	Job in progress... Wait a moment, then try again.	If there is a job being executed:	1. Wait until the job is completed. 2. Cancel the job.
2	Cannot check the firmware version. (Server communication error.)	Network error	1. Check whether the device can be connected to the external network. 2. Check whether the proxy setting has been made (in case of access via a proxy server).
3	Cannot download the firmware. (Error during download.)		1. Check whether the device can be connected to the external network. 2. Check whether the proxy setting has been made (in case of access via a proxy server). 3. Check that the serial number of the host machine is shown on the Main Controller PCB.
4	***DOWNLOAD MODE*** NETWORK AVAILABLE IP ADRESS IP address of the machine PRESS STOP KEY TO EXIT	If update (writing) of the firmware has ended in failure:	1. Update the firmware again using UST.
5	***DOWNLOAD MODE*** FAILED TO UPDATE		
6	***DOWNLOAD MODE*** UPDATE IS COMPLETE	If the update of the firmware is successful	-

Version Upgrade Using USB

Connect a USB flash drive where the firmware is stored to this machine, and update the firmware in service mode.

■ Prerequisite

In order to perform version upgrade of the machine using a USB flash drive, the following conditions must be met.

There should be no other jobs being executed.

Firmware cannot be upgraded while there is a job being executed. If there is a job being executed, wait for completion of the job and then perform the work.

■ Procedure for Upgrading the Firmware Using a USB Flash Drive

1. **Connect a USB flash drive where the firmware is stored to this machine.**
2. **Execute one of the following service modes.**
   - COPIER > FUNCTION > SYSTEM > DOWNLOAD
   - COPIER > FUNCTION > SYSTEM > DOWNLOAD_FORCE

NOTE:
If you want to apply only firmware that is newer than the firmware currently applied in the machine, execute DOWNLOAD. If you want to apply all the firmware contained in the USB flash drive regardless of whether it is newer or older, execute DOWNLOAD_FORCE.

3. **The signature data of the downloaded file is verified, and download instruction information is written to the designated area of the flash memory only if the verification result is correct.**
4. **The machine is automatically restarted.**
5. **When the upgrading of firmware is completed, the machine automatically restarts.**

Setting Information Export/Import Function (DCM)

Overview

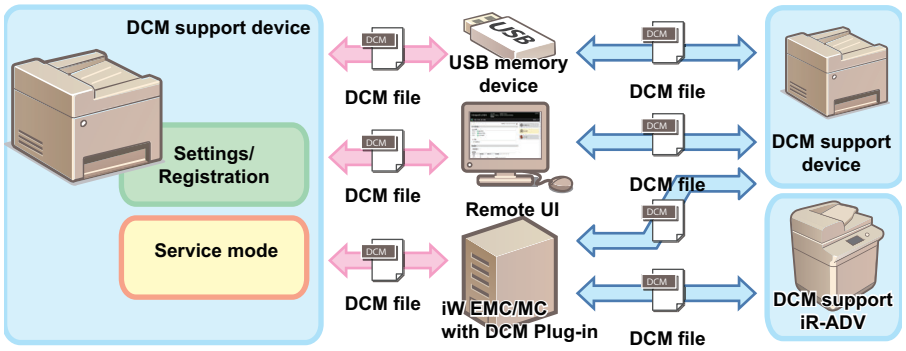
Various data is stored in the storage inside the device.
Depending on the works to be done such as replacing parts, this data needs to be backed up and restored.
There are some ways to back up and restore data, and the appropriate one should be used depending on the purpose and storage destination.
This section describes the procedure for backing up and restoring service mode setting values.
For the procedure for backing up and restoring other information, refer to the e-Manual.

■ Function Overview

This machine has a setting information export/import function (hereinafter referred to as DCM (Device Configuration Management) function) which exports/imports the machine's setting value information as a file. The file exported/imported using the DCM function is called a DCM file, and the target setting information is as follows:

- Setting information of the menu ([Settings/Registration] menu)
- Service mode setting information
- Address Book

The DCM file is exported to a USB flash drive or PC local disk from the Control Panel or remote UI.
The exported DCM file can be returned to the original device or imported to a different device.
When the file is returned to the original device, this can be used as a function to back up the settings, and when the file is imported to a different device, this can be used as a function to copy setting information.
Data can also be imported to or exported from an iR-ADV machine by using iW EMC/MC DCM Plug-in.
In the case of the setting value backup function before implementation of the DCM function, an exported file could be imported only to the same device, but the DCM function enables import of an exported file to a different device.



Conceptual diagram

NOTE:
In order to export or import setting information using DCM, it is necessary that the device supports DCM.

■ Backup/Restoration for Service Technicians

Backup and Restoration from the Menu ([Settings/Registration] Menu)

Setting information can be backed up and restored from the Control Panel of the device or from the menu ([Settings/Registration] menu) of remote UI.
Although the menu ([Settings/Registration] menu) is for users, the service mode settings information can be backed up and restored from the Import/Export function by changing the service mode setting.
The service mode settings information can be backed up and restored only by accessing from the remote UI [Settings/Registration] menu.

Backup/Restoration Using Service Mode

Some of the functions in service mode can be used to backup and restore data.
Setting value information and service counter (DC-CON) values can be backed up and restored.

■ Combination of Information Exported/Imported by DCM, Means, and Storage Locations

A DCM file is exported and imported using the Control Panel, remote UI, or the iW EMC server, depending on the situation of the site.
The information exported/imported differs depending on the means.
Combinations of them are shown in the following table.

Menu used	Operation	Information exported			Save destination
		Setting values of menu options	Address book*1	Service mode setting values	
[Settings/Registration] menu	Control panel	Yes (fixed)*2	Yes (fixed)*2	No	USB flash drive
	Remote UI	Yes	Yes	With conditions*3	USB flash drive
Service mode	Control panel	No	No	Yes	USB flash drive / Storage in the host machine
	Remote UI	No	No	Yes	PC local disk

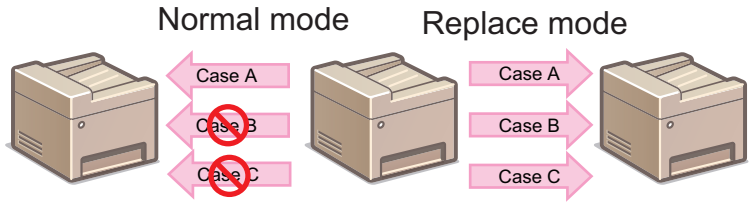
■ Compatibility of Data

The following table shows compatibility of data in the case where the device from which the data is exported and the device to which the data is imported differ in model and/or serial number.
For items that are imported in Cases A, B, and C, refer to "List of Items Which Can Be Imported" on page 53.

Model	Serial number	Import process
Same	Same	Items corresponding to Case A are imported.*4
Same	Different*5	Items corresponding to Case B are imported.*4
Different	Different*5	Items corresponding to Case C are imported.*6
Different	Same	The file is judged to be invalid, and the process ends with an error.

■ Replacement Mode

When this function is used for migrating the setting data upon replacement of a device, some of the data cannot be migrated depending on the model to which the data is migrated.
When this function is used in normal mode, data that is applicable to either Case B (of different serial number) or Case C (of different mode) cannot be imported.
When replacement mode of the device to which the data is imported is enabled, data can be forcibly migrated even to a device of a different serial number or even between different models.



1. Models without address books are excluded. In the case of a fax option model without SEND function, address books are exported only if a fax option is connected with the device.

*2. When the [Settings/ Registration] menu is used from the Control Panel, both the setting menu information and the address book are imported/exported. It is not possible to export/import only either of them.
Information which is not included in the data to be imported is not imported.

*3. Service mode is added to the data to be exported only when service mode COPIER > OPTION > USER > SMD-EXPT is set.
For information on items that are imported, refer to "List of Items Which Can Be Imported" on page 53.

*4. If the firmware version at the time of import differs from that at the time of export, predetermined corrective processing may be performed.

*5. If a serial number is missing, the serial numbers are judged to be mismatched.

*6. Predetermined corrective processing may be performed.

The following shows the procedure to turn ON replacement mode of the device to which the data is imported:

1. **Set the following service mode setting value to "1":**
   - COPIER > OPTION > USER > RPL-IMP

NOTE:
Refer to “List of Items Which Can Be Imported” on page 53 for the target data of replacement mode.

CAUTION:
Since replacement mode is not lifted automatically, the setting value of the foregoing service mode needs to be changed back to "0" to return to normal mode.

Import/Export Procedure from [Settings/Registration] of Remote UI

This section describes the procedure for backing up and restoring service mode setting information by using the [Import/Export] function in the [Settings/Registration] menu of Remote UI.

CAUTION:
- The service mode setting information can be backed up and restored only from the [Settings/Registration] menu on Remote UI, and the operation cannot be performed from the [Settings/Registration] menu on the Control Panel.
- In the case of backing up and restoring only the setting information of the [Settings/Registration] menu or the address book, refer to the procedure described in the e-Manual.

■ Limitations

The following limitations exist when backing up and restoring the service mode settings information from the [Settings/Registrations] menu of remote UI.

A job must not be accepted during an import/export processing.

Except for the calibration requested by the engine, a job is not allowed to be accepted during a processing. In addition, import/export must not be performed during execution of a job.

Firmware must not be updated during an import/export processing.

Fax cannot be received while firmware is updated during a processing. In addition, import/export must not be performed also during firmware update.

Power must not be turned off during an import/export processing.

If power discontinuity occurs during an import processing, a rollback processing is not performed, therefore the settings imported up to that point are reflected while the rest of the settings remain as-is.
When power discontinuity occurs during an export processing, export is not executed.

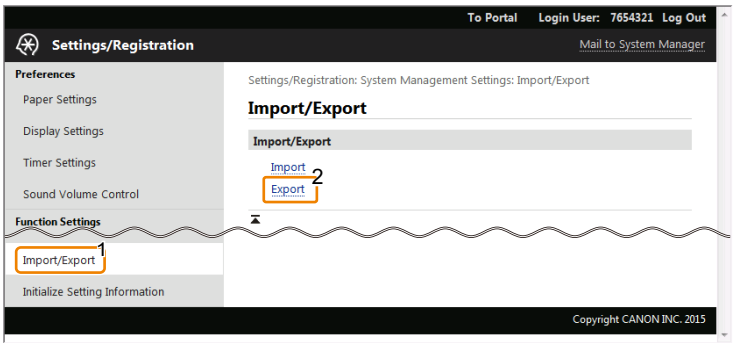
■ Procedure for Export from Remote UI ([System Management Settings] Menu)

Service mode setting information can be exported from the [System Management Settings] menu by setting the following service mode setting value to "1".

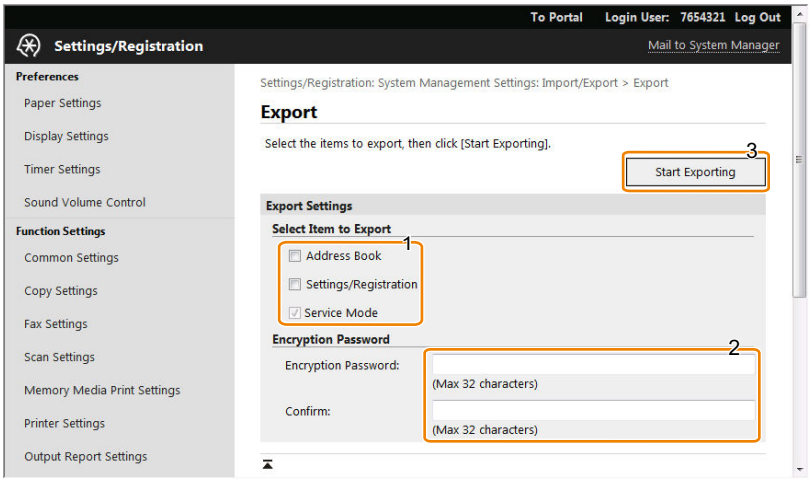
1. **Enter service mode, and set the following item to "1".**
   - COPIER > OPTION > USER > SMD-EXPT

NOTE:
The [SMD-EXPT] setting can be configured either from the Control Panel or from the remote UI.

2. **Exit service mode, start remote UI, log in as a system administrator, and then select the following item:**
   - [Settings/Registration] > [Import/Export] > [Export]



3. **After confirming that [Service Mode] is displayed/selected in [Select Item to Export], enter the password and click [Start Exporting].**



Address Book

Select the check box to export the address book data.

Settings/Registration

Select this check box to import the menu option data.

Encryption password

Enter 32 or less numeric characters set when the file was exported.

4. **The file download dialog box will appear. Save the file to any location.**
5. **Enter service mode, and set the following item to "0".**
   - COPIER > OPTION > USER > SMD-EXPT

CAUTION:
Since the screen of export function can also be accessed by the user, be sure to disable the [SMD-EXPT] setting (setting value: 0).

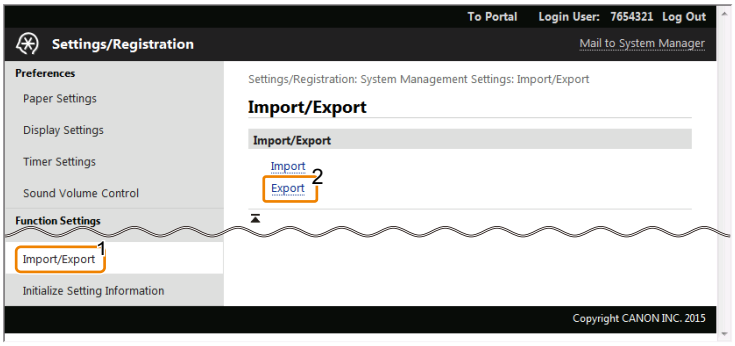
■ Procedure for Import from Remote UI ([System Management Settings] Menu)

Import the service mode setting information file that was exported in the previous procedure.

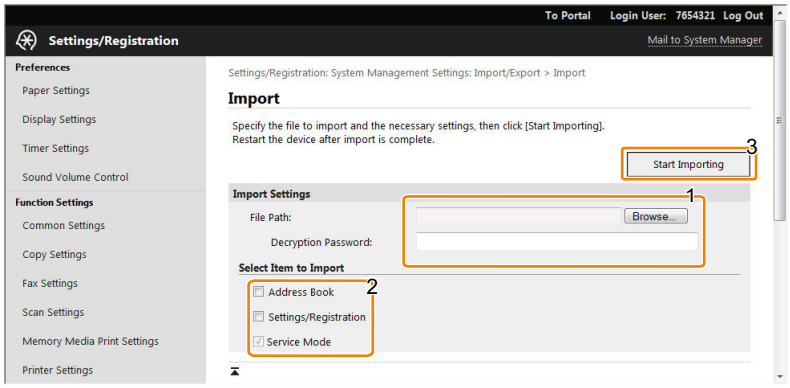
1. **Enter service mode, and set the following item to "1".**
   - COPIER > OPTION > USER > SMD-EXPT

NOTE:
The [SMD-EXPT] setting can be configured either from the Control Panel or from the remote UI.

2. **Exit service mode, start remote UI, log in as a system administrator, and then select the following item:**
   - [Settings/Registration] > [Import/Export] > [Import]



3. **Configure the import settings, and click [Start Importing].**
   Entering the password and clicking [Start Importing] imports the menu option data.



[Browse...] button

Click to select the file to import.

Decryption password

Enter 32 or less numeric characters set when the file was exported.

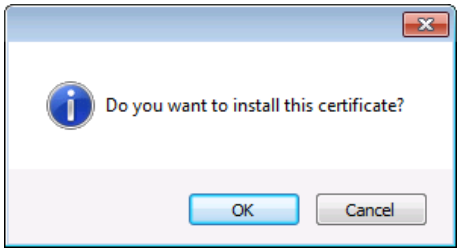
Address Book

Select the check box to import the address book data.

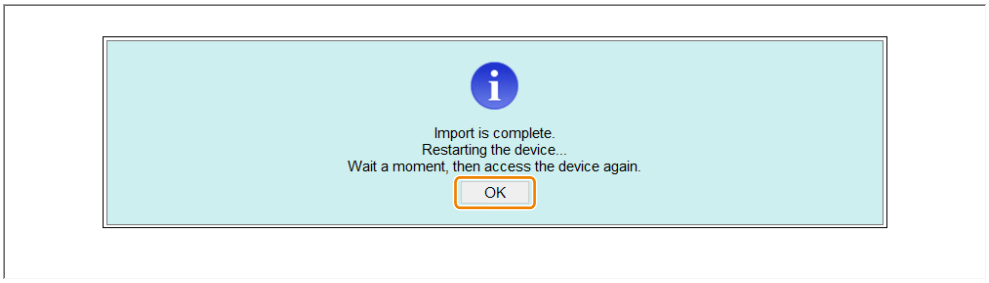
Settings/Registration

Select this check box to import the menu option data.

4. **Click [OK] when a dialog box confirming whether you want to execute the import process is displayed.**



5. **When a message indicating completion of the processing appears, click [OK].**



6. **Restart this machine, enter service mode, and confirm that the setting information is reflected. This completes the procedure for importing a setting information file.**
7. **Enter service mode, and set the following item to "0".**
   - COPIER > OPRION > USER > SMD-EXPT

CAUTION:
Since the screen of export function can also be accessed by the user, be sure to disable the [SMD-EXPT] setting (setting value: 0).

Procedure for Exporting/Importing Service Mode Setting Information

Service mode setting information can be backed up and restored by using service mode functions. The backup file can be saved to a USB flash drive or a storage in the machine.

Backup/restoration to a USB flash drive

COPIER > FUNCTION >SYSTEM > EXPORT
COPIER > FUNCTION >SYSTEM > IMPORT

Backup/restoration to a storage in the machine

COPIER > FUNCTION >SYSTEM > SAVE-SM
COPIER > FUNCTION >SYSTEM > RSTR-SM

	Backup/restoration to a USB flash drive	Backup/restoration to a storage in the machine
Storage destination	USB flash drive	Storage in the machine
Number of files saved	Depends on the capacity of the USB flash drive	One
Duplication of the setting values for other machines	Possible	Not possible

■ Procedure for Exporting to a USB Flash Drive

Use the service mode function to save the service mode setting information to a USB flash drive.
This operation can be performed both from the Control Panel and remote UI.
The following USB flash drives can be used for export/import.
- USB flash drive in FAT 16 format (storage capacity: 2 GB)
- USB flash drive in FAT 32 format (storage capacity: 32 GB)

Note that the descriptions in parenthesis in the procedure are the descriptions in the case of remote UI.

1. **Connect the USB flash drive to the USB Memory Port.**
2. **Enter service mode, and execute the following service mode.**
   - COPIER > FUNCTION > SYSTEM > EXPORT

CAUTION:
Even if the service mode is executed without connecting a USB flash drive, an error is not displayed.
It looks as if the process has been completed successfully, but the file has not been exported to anywhere.
For the reason shown above, be sure to check before execution that a USB flash drive is connected.

3. **The message displayed during the process will disappear. When the display has returned to the original state, remove the USB flash drive.**
4. **Check that a setting information file (service.dcm) exists in the directory directly under the root of the USB flash drive.**
   This completes the export of a setting information file.

■ Procedure for Import from USB Flash Drive

1. **Save the setting information file (service.dcm) to be imported to directly under the root of the USB flash drive.**
2. **Connect the USB flash drive to the USB Memory Port.**

3. **Enter service mode, and execute the following service mode.**
   - COPIER > FUNCTION > SYSTEM > IMPORT
4. **The message displayed during the process will disappear. When the display has returned to the original state, remove the USB flash drive.**
5. **Restart this machine, enter service mode, and confirm that the setting information is reflected.**
   This completes the the import of a setting information file.

■ Backup Procedure to the Storage in the Machine

Use the service mode function to back up the service mode setting information to the storage in the machine.
This operation can be performed both from the Control Panel and remote UI.
The setting information that can be saved in the machine's storage is only one.

1. **Enter service mode, and execute the following service mode.**
   - COPIER > FUNCTION > SYSTEM > SAVE-SM
2. **Backup process is complete after checking that the message displayed during the process disappears and the display returns to the original state.**

■ Procedure for Restoration from Internal Storage

Restore the service mode setting information that has been backed up to the storage in the machine in the previous procedure.

1. **Enter service mode, and execute the following service mode.**
   - COPIER > FUNCTION > SYSTEM > RSTR-SM
2. **Restoration process is complete after checking that the message displayed during the process disappears and the display returns to the original state.**

List of Items Which Can Be Imported

The following shows the items to be imported for this model.
Note that the setting values are not imported in cases such as below:

- Items which are originally not included in a DCM file (e.g.:"Settings/Registration Basic Information" of a DCM file exported using service mode)
- Not included in the import coverage (Cases A to C)
- There are no options and functions related to setting values

The import coverage shown in the table below is as shown below. Those that are not described here cannot be imported.

Import coverage	Description
Case A: The same machine	Import to the same machine (for backup and restoration, etc.)
Case B: The same model	Import to a different machine of the same model (the same series)
Case C: Different model	Import to a different machine of a different model (a different series)

■ Service Mode Settings

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
COPIER	ADJUST	FEED-ADJ	ADJ-MFY	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-MFX	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-MFYR	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-MFXR	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C1Y	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C1X	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C1YR	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C1XR	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C2Y	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C2X	Yes	-	-
COPIER	ADJUST	FEED-ADJ	ADJ-C2YR	Yes	-	-

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
COPIER	ADJUST	FEED-ADJ	ADJ-C2XR	Yes	-	-
COPIER	ADJUST	VIFADJ	DEV-HV-Y	Yes	-	-
COPIER	ADJUST	VIFADJ	DEV-HV-M	Yes	-	-
COPIER	ADJUST	VIFADJ	DEV-HV-C	Yes	-	-
COPIER	ADJUST	VIFADJ	DEV-HV-K	Yes	-	-
COPIER	ADJUST	VIFADJ	TR1-HV-Y	Yes	-	-
COPIER	ADJUST	VIFADJ	TR1-HV-M	Yes	-	-
COPIER	ADJUST	VIFADJ	TR1-HV-C	Yes	-	-
COPIER	ADJUST	VIFADJ	TR1-HV-K	Yes	-	-
COPIER	ADJUST	VIFADJ	TR2SF-HV	Yes	-	-
COPIER	ADJUST	VIFADJ	TR2BK-HV	Yes	-	-
COPIER	ADJUST	VIFADJ	ICL-HV	Yes	-	-
COPIER	ADJUST	VIFADJ	FU-TMP	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-Y0	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-M0	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-C0	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-K0	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-Y1	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-M1	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-C1	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-K1	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-Y2	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-M2	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-C2	Yes	-	-
COPIER	ADJUST	SCNR	SUB-S-K2	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-Y0	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-M0	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-C0	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-K0	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-Y1	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-M1	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-C1	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-K1	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-Y2	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-M2	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-C2	Yes	-	-
COPIER	ADJUST	SCNR	MAI-S-K2	Yes	-	-
COPIER	FUNCTION	VIFFNC	SMEAR-PV	Yes	-	-
COPIER	FUNCTION	VIFFNC	FEED-IMP	Yes	-	-
COPIER	FUNCTION	VIFFNC	FOG-PV	Yes	-	-
COPIER	FUNCTION	VIFFNC	ICL-IMP	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL14159	Yes	Yes	Yes
COPIER	FUNCTION	SPLMAN	SPL37510	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL65677	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL68676	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL68677	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL25607	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL93822	Yes	Yes	Yes
COPIER	FUNCTION	SPLMAN	SPL78788	Yes	Yes	Yes
COPIER	FUNCTION	SPLMAN	SPL71100 *1	Yes	-	-
COPIER	FUNCTION	SPLMAN	SPL00171	Yes	Yes	Yes

*1. FAX model only

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
COPIER	FUNCTION	SPLMAN	SPL80100	Yes	Yes	Yes
COPIER	FUNCTION	SPLMAN	SPL84194	Yes	Yes	Yes
COPIER	FUNCTION	INSTALL	ERDS	Yes	Yes	Yes
COPIER	FUNCTION	INSTALL	RGW-PORT	Yes	Yes	Yes
COPIER	OPTION	BODY	MIBCOUNT	Yes	Yes	Yes
COPIER	OPTION	BODY	NS-CMD5	Yes	-	-
COPIER	OPTION	BODY	NS-PLN	Yes	-	-
COPIER	OPTION	BODY	NS-LGN	Yes	-	-
COPIER	OPTION	BODY	SLPMODE	Yes	Yes	Yes
COPIER	OPTION	BODY	SDTM-DSP	Yes	Yes	Yes
COPIER	OPTION	FNC-SW	IMGCNTPR	Yes	Yes	Yes
COPIER	OPTION	FNC-SW	LCDSFLG	Yes	Yes	Yes
COPIER	OPTION	FNC-SW	CRG-PROC	Yes	Yes	-
COPIER	OPTION	FNC-SW	CRGLF-K	Yes	Yes	-
COPIER	OPTION	FNC-SW	CRGLF-CL	Yes	Yes	-
COPIER	OPTION	DSPLY-SW	CRGLW-LV	Yes	Yes	Yes
COPIER	OPTION	IMG-MCON	TMIC-BK	Yes	-	-
COPIER	OPTION	IMG-MCON	TMIC-CMY	Yes	-	-
COPIER	OPTION	USER	CTCHKDSP	Yes	-	-
COPIER	OPTION	USER	TNRB-SW	Yes	-	-
COPIER	OPTION	USER	SMD-EXPT	Yes	-	-
COPIER	OPTION	USER	ACC-SLP	Yes	Yes	Yes
Fax	SSSW	SW01 *1	-	Yes	-	-
Fax	SSSW	SW02 *1	-	Yes	-	-
Fax	SSSW	SW03 *1	-	Yes	-	-
Fax	SSSW	SW04 *1	-	Yes	-	-
Fax	SSSW	SW05 *1	-	Yes	-	-
Fax	SSSW	SW06 *1	-	Yes	-	-
Fax	SSSW	SW07 *1	-	Yes	-	-
Fax	SSSW	SW08 *1	-	Yes	-	-
Fax	SSSW	SW09 *1	-	Yes	-	-
Fax	SSSW	SW10 *1	-	Yes	-	-
Fax	SSSW	SW11 *1	-	Yes	-	-
Fax	SSSW	SW12 *1	-	Yes	-	-
Fax	SSSW	SW13 *1	-	Yes	-	-
Fax	SSSW	SW14 *1	-	Yes	-	-
Fax	SSSW	SW15 *1	-	Yes	-	-
Fax	SSSW	SW16 *1	-	Yes	-	-
Fax	SSSW	SW17 *1	-	Yes	-	-
Fax	SSSW	SW18 *1	-	Yes	-	-
Fax	SSSW	SW19 *1	-	Yes	-	-
Fax	SSSW	SW20 *1	-	Yes	-	-
Fax	SSSW	SW21 *1	-	Yes	-	-
Fax	SSSW	SW22 *1	-	Yes	-	-
Fax	SSSW	SW23 *1	-	Yes	-	-
Fax	SSSW	SW24 *1	-	Yes	-	-
Fax	SSSW	SW25 *1	-	Yes	-	-
Fax	SSSW	SW26 *1	-	Yes	-	-
Fax	SSSW	SW27 *1	-	Yes	-	-

*1. FAX model only

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
Fax	SSSW	SW28 *1	-	Yes	-	-
Fax	SSSW	SW29 *1	-	Yes	-	-
Fax	SSSW	SW30 *1	-	Yes	-	-
Fax	SSSW	SW31 *1	-	Yes	-	-
Fax	SSSW	SW32 *1	-	Yes	-	-
Fax	MENU	005 *1	-	Yes	-	-
Fax	MENU	006 *1	-	Yes	-	-
Fax	MENU	007 *1	-	Yes	-	-
Fax	MENU	008 *1	-	Yes	-	-
Fax	MENU	009 *1	-	Yes	-	-
Fax	MENU	010 *1	-	Yes	-	-
Fax	NUM	002 *1	-	Yes	-	-
Fax	NUM	003 *1	-	Yes	-	-
Fax	NUM	004 *1	-	Yes	-	-
Fax	NUM	005 *1	-	Yes	-	-
Fax	NUM	006 *1	-	Yes	-	-
Fax	NUM	008 *1	-	Yes	-	-
Fax	NUM	010 *1	-	Yes	-	-
Fax	NUM	011 *1	-	Yes	-	-
Fax	NUM	012 *1	-	Yes	-	-
Fax	NUM	013 *1	-	Yes	-	-
Fax	NUM	015 *1	-	Yes	-	-
Fax	NUM	016 *1	-	Yes	-	-
Fax	NUM	017 *1	-	Yes	-	-
Fax	NUM	018 *1	-	Yes	-	-
Fax	NUM	019 *1	-	Yes	-	-
Fax	NUM	020 *1	-	Yes	-	-
Fax	NUM	021 *1	-	Yes	-	-
Fax	NUM	022 *1	-	Yes	-	-
Fax	NUM	023 *1	-	Yes	-	-
Fax	NUM	024 *1	-	Yes	-	-
Fax	NUM	025 *1	-	Yes	-	-
Fax	NUM	026 *1	-	Yes	-	-
Fax	NUM	027 *1	-	Yes	-	-
Fax	NUM	029 *1	-	Yes	-	-
Fax	NUM	049 *1	-	Yes	-	-
Fax	NUM	051 *1	-	Yes	-	-
Fax	NUM	053 *1	-	Yes	-	-
Fax	NUM	054 *1	-	Yes	-	-
Fax	NCU	TONE	001 *1	Yes	-	-
Fax	NCU	TONE	002 *1	Yes	-	-
Fax	NCU	PULSE	FORM *1	Yes	-	-
Fax	NCU	PULSE	001 *1	Yes	-	-
Fax	NCU	PULSE	002 *1	Yes	-	-
Fax	NCU	PULSE	003 *1	Yes	-	-
Fax	NCU	PULSE	004 *1	Yes	-	-
Fax	NCU	DIALTONE	BIT *1	Yes	-	-

*1. FAX model only

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
Fax	NCU	DIALTONE	001 *1	Yes	-	-
Fax	NCU	DIALTONE	002 *1	Yes	-	-
Fax	NCU	DIALTONE	003 *1	Yes	-	-
Fax	NCU	DIALTONE	004 *1	Yes	-	-
Fax	NCU	DIALTONE	005 *1	Yes	-	-
Fax	NCU	DIALTONE	006 *1	Yes	-	-
Fax	NCU	DIALTONE	007 *1	Yes	-	-
Fax	NCU	DIALTONE	008 *1	Yes	-	-
Fax	NCU	2ND DLTN	BIT *1	Yes	-	-
Fax	NCU	2ND DLTN	001 *1	Yes	-	-
Fax	NCU	2ND DLTN	002 *1	Yes	-	-
Fax	NCU	2ND DLTN	003 *1	Yes	-	-
Fax	NCU	2ND DLTN	004 *1	Yes	-	-
Fax	NCU	2ND DLTN	005 *1	Yes	-	-
Fax	NCU	2ND DLTN	006 *1	Yes	-	-
Fax	NCU	2ND DLTN	007 *1	Yes	-	-
Fax	NCU	2ND DLTN	008 *1	Yes	-	-
Fax	NCU	BUSTONE0	BIT *1	Yes	-	-
Fax	NCU	BUSTONE0	001 *1	Yes	-	-
Fax	NCU	BUSTONE0	002 *1	Yes	-	-
Fax	NCU	BUSTONE0	003 *1	Yes	-	-
Fax	NCU	BUSTONE0	004 *1	Yes	-	-
Fax	NCU	BUSTONE0	005 *1	Yes	-	-
Fax	NCU	BUSTONE0	006 *1	Yes	-	-
Fax	NCU	BUSTONE0	007 *1	Yes	-	-
Fax	NCU	BUSTONE0	008 *1	Yes	-	-
Fax	NCU	BUSTONE1	BIT *1	Yes	-	-
Fax	NCU	BUSTONE1	001 *1	Yes	-	-
Fax	NCU	BUSTONE1	002 *1	Yes	-	-
Fax	NCU	BUSTONE1	003 *1	Yes	-	-
Fax	NCU	BUSTONE1	004 *1	Yes	-	-
Fax	NCU	BUSTONE1	005 *1	Yes	-	-
Fax	NCU	BUSTONE1	006 *1	Yes	-	-
Fax	NCU	BUSTONE1	007 *1	Yes	-	-
Fax	NCU	BUSTONE1	008 *1	Yes	-	-
Fax	NCU	REORDRTN	BIT *1	Yes	-	-
Fax	NCU	REORDRTN	001 *1	Yes	-	-
Fax	NCU	REORDRTN	002 *1	Yes	-	-
Fax	NCU	REORDRTN	003 *1	Yes	-	-
Fax	NCU	REORDRTN	004 *1	Yes	-	-
Fax	NCU	REORDRTN	005 *1	Yes	-	-
Fax	NCU	REORDRTN	006 *1	Yes	-	-
Fax	NCU	REORDRTN	007 *1	Yes	-	-
Fax	NCU	REORDRTN	008 *1	Yes	-	-
Fax	NCU	AUTO RX	001 *1	Yes	-	-
Fax	NCU	AUTO RX	002 *1	Yes	-	-
Fax	NCU	AUTO RX	003 *1	Yes	-	-

*1. FAX model only

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
Fax	NCU	AUTO RX	004 *1	Yes	-	-
Fax	NCU	AUTO RX	005 *1	Yes	-	-
Fax	NCU	AUTO RX	006 *1	Yes	-	-
Fax	NCU	AUTO RX	007 *1	Yes	-	-
Fax	NCU	AUTO RX	008 *1	Yes	-	-
Fax	NCU	AUTO RX	009 *1	Yes	-	-
Fax	NCU	CNGDTCT	001 *1	Yes	-	-
Fax	NCU	CNGDTCT	002 *1	Yes	-	-
Fax	NCU	CNGDTCT	006 *1	Yes	-	-
Fax	NCU	CNGDTCT	007 *1	Yes	-	-
Fax	NCU	CNGDTCT	008 *1	Yes	-	-
Fax	NCU	CNGDTCT	009 *1	Yes	-	-
Fax	NCU	CNGDTCT	011 *1	Yes	-	-
Fax	NCU	CNGDTCT	012 *1	Yes	-	-
Fax	NCU	SPECIALB	SW01 *1	Yes	-	-
Fax	NCU	SPECIALB	SW02 *1	Yes	-	-
Fax	NCU	SPECIALB	SW03 *1	Yes	-	-
Fax	NCU	SPECIALB	SW04 *1	Yes	-	-
Fax	NCU	SPECIALB	SW05 *1	Yes	-	-
Fax	NCU	SPECIALB	SW06 *1	Yes	-	-
Fax	NCU	SPECIALB	SW07 *1	Yes	-	-
Fax	NCU	SPECIALB	SW08 *1	Yes	-	-
Fax	NCU	SPECIALB	SW09 *1	Yes	-	-
Fax	NCU	SPECIALB	SW10 *1	Yes	-	-
Fax	NCU	SPECIALB	SW11 *1	Yes	-	-
Fax	NCU	SPECIALB	SW12 *1	Yes	-	-
Fax	NCU	SPECIALB	SW13 *1	Yes	-	-
Fax	NCU	SPECIALB	SW14 *1	Yes	-	-
Fax	NCU	SPECIALB	SW15 *1	Yes	-	-
Fax	NCU	SPECIALB	SW16 *1	Yes	-	-
Fax	NCU	SPECIALB	SW17 *1	Yes	-	-
Fax	NCU	SPECIALB	SW18 *1	Yes	-	-
Fax	NCU	SPECIALB	SW19 *1	Yes	-	-
Fax	NCU	SPECIALB	SW20 *1	Yes	-	-
Fax	NCU	SPECIALB	SW21 *1	Yes	-	-
Fax	NCU	SPECIALB	SW22 *1	Yes	-	-
Fax	NCU	SPECIALB	SW23 *1	Yes	-	-
Fax	NCU	SPECIALB	SW24 *1	Yes	-	-
Fax	NCU	SPECIALB	SW25 *1	Yes	-	-
Fax	NCU	SPECIALB	SW26 *1	Yes	-	-
Fax	NCU	SPECIALB	SW27 *1	Yes	-	-
Fax	NCU	SPECIALB	SW28 *1	Yes	-	-
Fax	NCU	SPECIALB	SW29 *1	Yes	-	-
Fax	NCU	SPECIALB	SW30 *1	Yes	-	-
Fax	NCU	SPECIALN	004 *1	Yes	-	-
Fax	NCU	SPECIALN	005 *1	Yes	-	-
Fax	NCU	SPECIALN	006 *1	Yes	-	-

*1. FAX model only

Initial screen	Main item	Intermediate item	Sub item	Case A	Case B	Case C
Fax	NCU	SPECIALN	007 *1	Yes	-	-
Fax	NCU	SPECIALN	008 *1	Yes	-	-
Fax	NCU	SPECIALN	009 *1	Yes	-	-
Fax	NCU	SPECIALN	011 *1	Yes	-	-
Fax	NCU	SPECIALN	012 *1	Yes	-	-
Fax	NCU	SPECIALN	013 *1	Yes	-	-
Fax	NCU	SPECIALN	014 *1	Yes	-	-
Fax	NCU	SPECIALN	015 *1	Yes	-	-
Fax	NCU	SPECIALN	016 *1	Yes	-	-
Fax	NCU	SPECIALN	017 *1	Yes	-	-
Fax	NCU	SPECIALN	019 *1	Yes	-	-
Fax	NCU	SPECIALN	020 *1	Yes	-	-
Fax	NCU	SPECIALN	024 *1	Yes	-	-
Fax	NCU	SPECIALN	025 *1	Yes	-	-
Fax	NCU	SPECIALN	026 *1	Yes	-	-
Fax	NCU	SPECIALN	027 *1	Yes	-	-
Fax	NCU	SPECIALN	030 *1	Yes	-	-
Fax	NCU	SPECIALN	040 *1	Yes	-	-
Fax	NCU	SPECIALN	041 *1	Yes	-	-
Fax	NCU	SPECIALN	042 *1	Yes	-	-
Fax	NCU	SPECIALN	044 *1	Yes	-	-
Fax	NCU	SPECIALN	045 *1	Yes	-	-
Fax	NCU	SPECIALN	046 *1	Yes	-	-
Fax	NCU	SPECIALN	047 *1	Yes	-	-
Fax	NCU	SPECIALN	048 *1	Yes	-	-
Fax	NCU	SPECIALN	065 *1	Yes	-	-
Fax	NCU	SPECIALN	066 *1	Yes	-	-
Fax	NCU	RKEY	001 *1	Yes	-	-
Fax	NCU	RKEY	002 *1	Yes	-	-
Fax	NCU	PBXDIALT	BIT *1	Yes	-	-
Fax	NCU	PBXDIALT	001 *1	Yes	-	-
Fax	NCU	PBXDIALT	002 *1	Yes	-	-
Fax	NCU	PBXDIALT	003 *1	Yes	-	-
Fax	NCU	PBXDIALT	004 *1	Yes	-	-
Fax	NCU	PBXDIALT	005 *1	Yes	-	-
Fax	NCU	PBXDIALT	006 *1	Yes	-	-
Fax	NCU	PBXDIALT	007 *1	Yes	-	-
Fax	NCU	PBXDIALT	008 *1	Yes	-	-
Fax	NCU	PBXBUSYT	BIT *1	Yes	-	-
Fax	NCU	PBXBUSYT	001 *1	Yes	-	-
Fax	NCU	PBXBUSYT	002 *1	Yes	-	-
Fax	NCU	PBXBUSYT	003 *1	Yes	-	-
Fax	NCU	PBXBUSYT	004 *1	Yes	-	-
Fax	NCU	PBXBUSYT	005 *1	Yes	-	-
Fax	NCU	PBXBUSYT	006 *1	Yes	-	-
Fax	NCU	PBXBUSYT	007 *1	Yes	-	-
Fax	NCU	PBXBUSYT	008 *1	Yes	-	-

*1. FAX model only

Monitoring Function (e-Maintenance/imageWARE Remote)

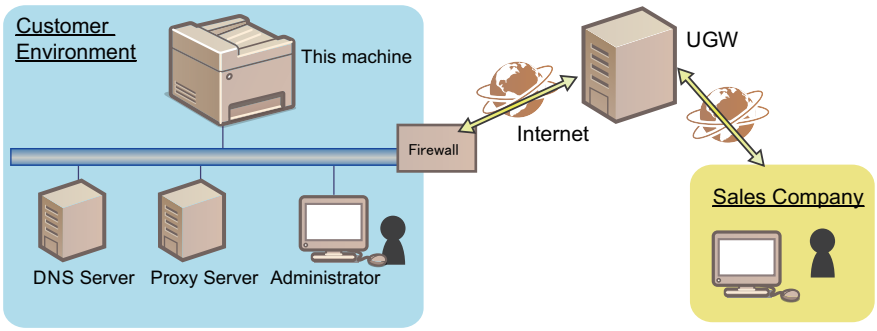
Overview of System

■ Function Overview

E-RDS (Embedded RDS) is a monitoring program that runs on the host machine. When the monitoring option is enabled by making the setting on this machine, information such as the status change of the machine, counter information, and failure information are collected. The collected device information is sent to a remote maintenance server called UGW (Universal Gateway Server) via Internet.
The information to be monitored is:

- Billing counter
- Parts counter
- ROM version
- Service call error log
- Jam log
- Alarm log
- Change of status (such as status of consumables)

Since the information shown above is customer information, HTTPS/ SOAP protocol is used for communication between the UGW server and the host machine to improve security.



■ Features

E-RDS is embedded in the network module of the device, and the front-end module of the e-Maintenance/ imageWARE Remote system is realized without requiring hardware besides the device.

■ Main Functions

Functional category	Sub category	Description
Communication Test	Test	By executing the following service mode, E-RDS communicates with UGW, retrieves schedule information, and establish communication. COPIER > FUNCTION > INSTALL > COM-TEST
Transmission of counters	Billing/all resources/parts/ mode-by-mode counters	E-RDS Periodically send billing/all resources/parts/mode-by-mode counters to the server.
Transmission of event logs	Service call/alarm/jam log	Each time a service call, alarm, or jam log occurs, the error log is sent to the server. Having alarm log or not is different by a model.
Data transmission	ROM version / Device configuration	E-RDS periodically sends the firmware information of the device to UGW. E-RDS sends the device configuration information only when there is any change in the configuration.
	E-RDS Debug log	Debug logs of E-RDS are stored in E-RDS, and they are sent to UGW only when they exceed a specific size.
	Sublog transmission	When E-RDS catches the sublog transmission of a message designation than UGW, send data such as device Sublogs and DCON logs to the server.
Operation instruction	Operation check	E-RDS contacts UGW to check if there is processing to be executed next, and receives the following instructions if any. • Linkage with CDS • Sublog transmission

Servicing Notes

- After clearing the Main Controller PCB, initialization of the E-RDS setting (ERDS-DAT) and a communication test (COM-TEST) need to be performed. If this work is omitted, an error may occur when counters are sent to UGW.
  After replacing the Main Controller PCB, all the settings need to be reconfigured.
- Do not change the values of the following service modes unless otherwise instructed.
  If they are changed, a communication error will occur with UGW.
  - Port number of UGW
    [COPIER] > [FUNCTION] > [INSTALL] > [RGW-PORT]
    Default: 443
- If the e-Maintenance/imageWARE Remote contract of the device becomes invalid, be sure to turn OFF the E-RDS setting (E-RDS: 0).
- When the E-RDS function is enabled, a communication test can be performed from [Check Counter] of the Control Panel of the host machine. *1
  When conducting a communication test from [Check Counter], pay attention to the following points:
  - During a communication test, do not take any actions such as pressing a key. Actions are not accepted until the communication test is completed (actions are ignored).
  - When a communication test is being conducted from service mode or from [Check Counter], do not conduct a communication test from the other. This operation is not guaranteed.

Setting Procedure

■ Preparation

Since this function communicates with the UGW server, it is necessary to connect to the external network.
Check the following items, and make the settings if not yet set.

- IP address settings
- DNS server settings
- Proxy server settings*2
- Installation of CA certificate (arbitrary *3)

CAUTION:
- Obtain the information on the network environment from the system administrator of the user.
- When having changed the network settings, turn OF and then ON the main power of the machine.

■ Procedure for Setting E-RDS

1. **In the following service mode, select the following service mode to initialize the E-RDS setting values:**
   - COPIER > FUNCTION > CLEAR > ERDS-DAT

NOTE:
This operation initializes the E-RDS settings to factory setting values.
For the setting values to be initialized, see the section of“Setting values and data to be initialized” on page 62 .

2. **Enable the E-RDS function in the following service mode, and perform a communication test.**
   1. Select the following item:
      - COPIER > FUNCTION > INSTALL > ERDS

*1. The user can perform a communication test or browse the result of communication test.
If the communication results in failure, an error code (hexadecimal number, 8 digit) is displayed on the Control Panel.*

2. If authentication is necessary, make the settings of the authentication information as well.

3. When using a certificate other than those pre-installed in the device

2. Enter [1] from the keyboard, and press [Apply].

CAUTION:
The following settings i.e. RGW-PORT in Service mode must not be change unless there are specific instructions to do so. Changing these values will cause error in communication with UGW.

When the E-RDS function is enabled, the function to communicate with UGW is enabled.

3. **Select [COM-TEST] and then touch [Yes].**
   If the communication is successful, "OK" is displayed. If "NG" is displayed, check the network settings and USW server address (URL).

CAUTION:
The communication results with UGW can be distinguished by referring to the COM-LOG. By performing the communication test with UGW, E-RDS acquires schedule information and starts monitoring and meter reads operation.

Maintenace

■ Initializing E-RDS settings

It is possible to clear the FLASH data of E-RDS and change the E-RDS setting back to the default value.

● Initialization procedure

Follow the procedure shown below to initialize E-RDS.

1. **Enter service mode as a system administrator user.**
2. **Select the following service mode, and press [OK] to execute.**
   - COPIER > Function > CLEAR > ERDS-DAT

● Setting values and data to be initialized

The following E-RDS settings, internal data, and Alarm filtering information are initialized.

- COPIER > FUNCTION > INSTALL > ERDS
- COPIER > FUNCTION > INSTALL > RGW-PORT
- COPIER > FUNCTION > INSTALL > COM-LOG

CAUTION:
If a certificate other than the CA certificate at the time of shipment has been installed, initializing the E-RDS setting will not change the settings back to those at the time of shipment. To change the certificate back to the CA certificate at the time of shipment, delete the certificate (install the CA certificate at the time of shipment) after initializing the E-RDS settings.

■ Report Output of Communication Error Log (COM-LOG)

A report of communication error log information on five affairs can be output.

● Report output procedure

1. **Select the following service mode, and press [Yes].**
   - COPIER > FUNCTION > MISC-P > ERDS-LOG

```
12/09 2015 10:14AM
                              ****************************
                              *** E-RDS-COM-LOG***
                              ****************************

No.01      DATE      12/09 2015          TIME 03:21 AM      CODE 05000003
   Information   SUSPEND: Communication test is not performed.

No.02      DATE      12/09 2015          TIME 03:21 AM      CODE 00000000
   Information   SUSPEND: mode changed.

No.03      DATE      12/09 2015          TIME 03:18 AM      CODE 05000003
   Information   SUSPEND: Communication test is not performed.

No.04      DATE      12/09 2015          TIME 03:18 AM      CODE 00000000
   Information   SUSPEND: mode changed.

No.05      DATE      12/09 2015          TIME 01:56 AM      CODE 05000003
   Information   SUSPEND: Communication test is not performed.
```

Output sample

4 Periodical Service

Periodically Replaced Parts

This machine does not have any periodically replaced parts.

Consumable Parts

This machine does not have any consumable parts.

Periodical Services

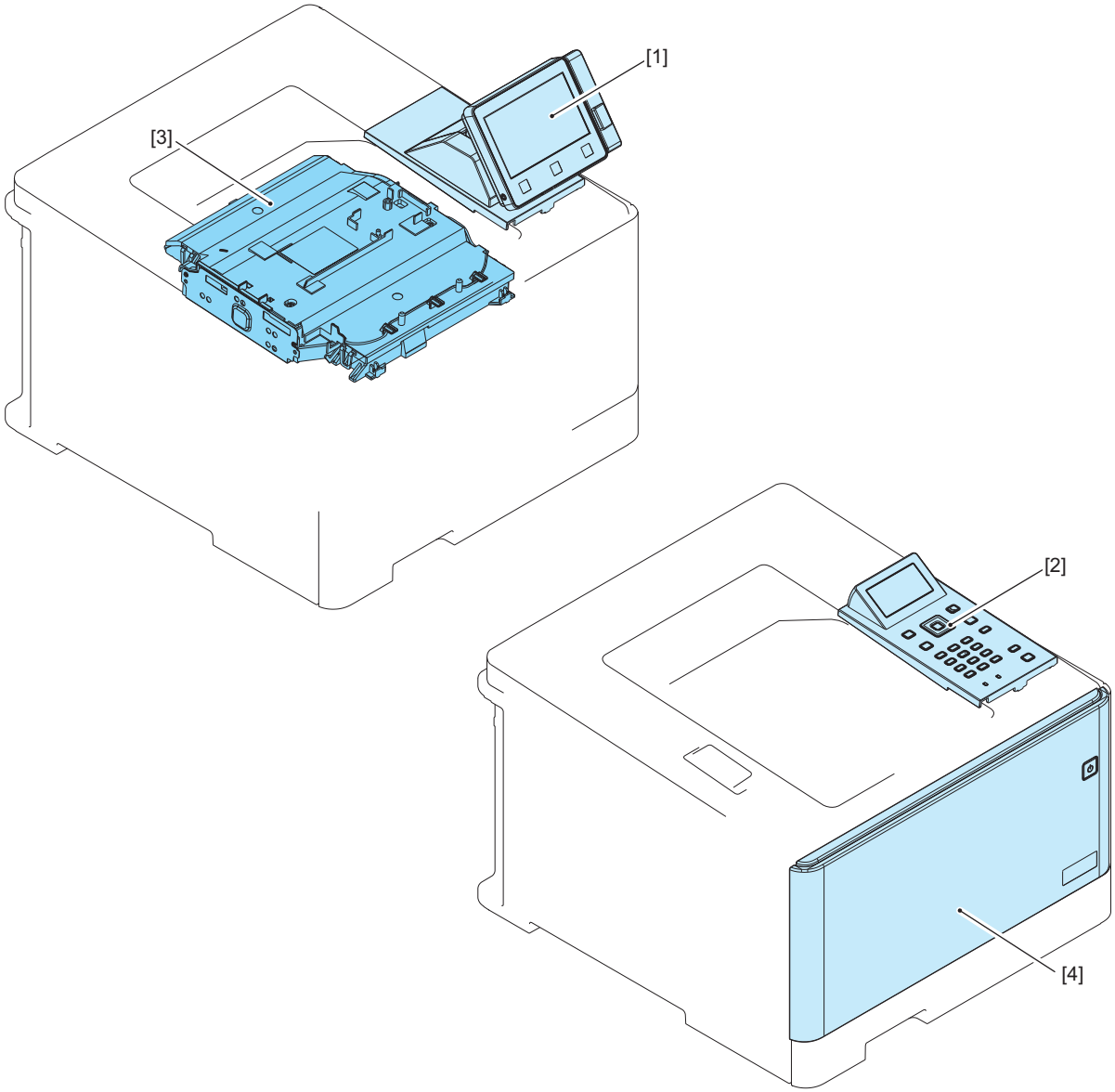
This machine does not require any periodical service.

5 Parts Replacement and Cleaning

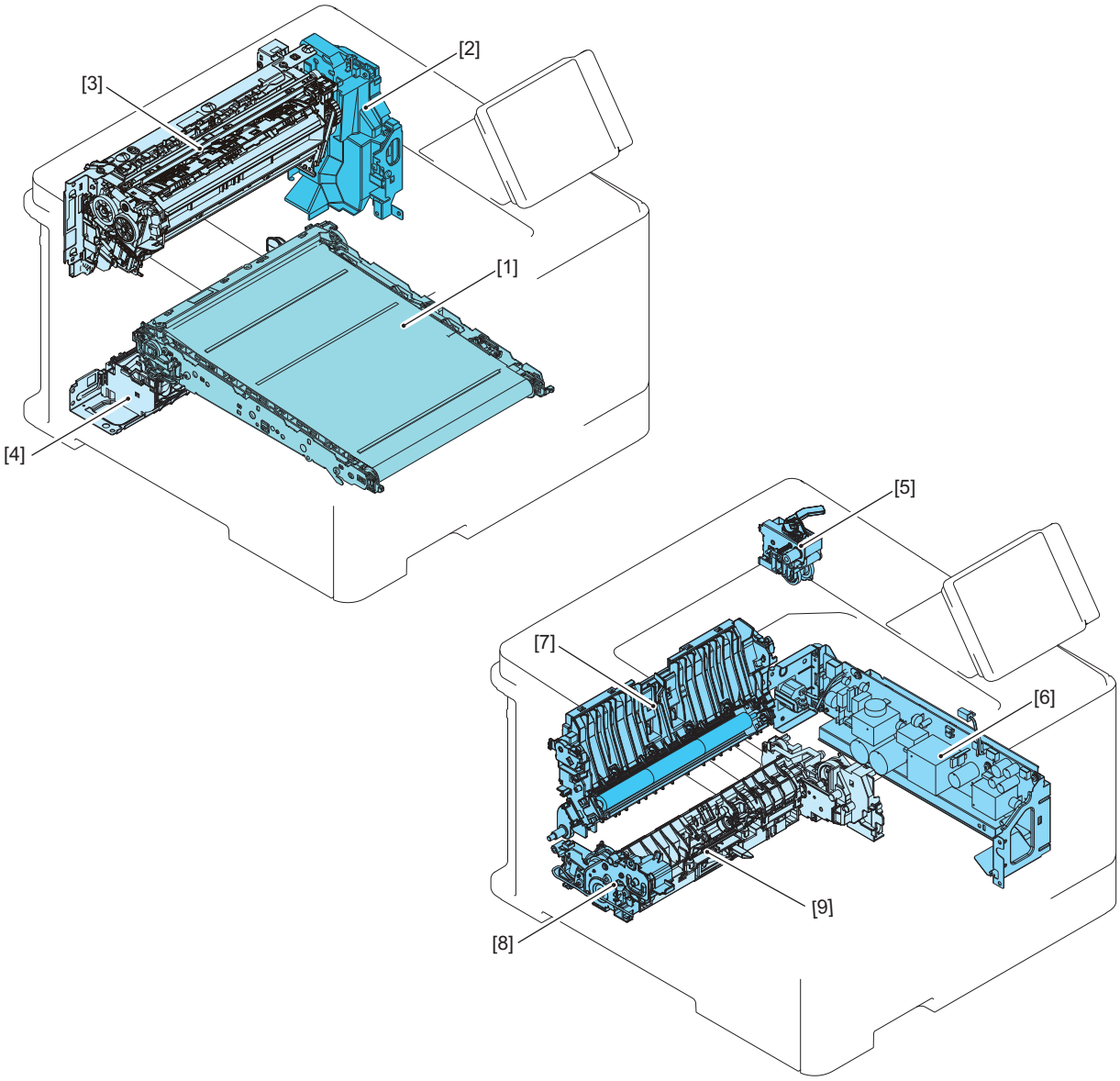
List of Parts

Major Units

■ Host Machine



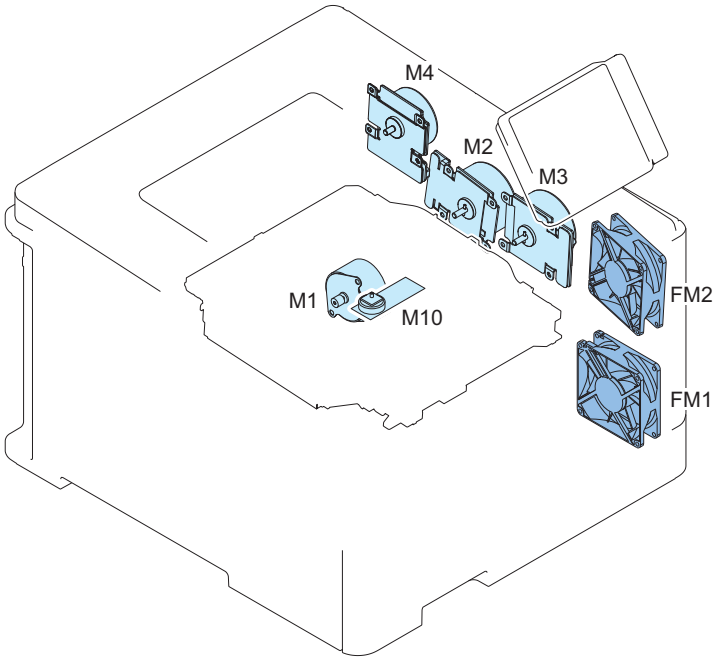
No.	Name
[1]	Control Panel Unit
[2]	5-line Control Panel Unit
[3]	Laser Scanner Unit
[4]	Cartridge Cover



No.	Name
[1]	ITB Unit
[2]	Fixing Power Supply Unit
[3]	Fixing Assembly
[4]	Re-Pickup Unit
[5]	Duplex Reverse Drive Unit
[6]	Low Voltage Power Supply Unit
[7]	Secondary Transfer Feed Unit
[8]	Lifter Drive Unit
[9]	Cassette Pickup Unit

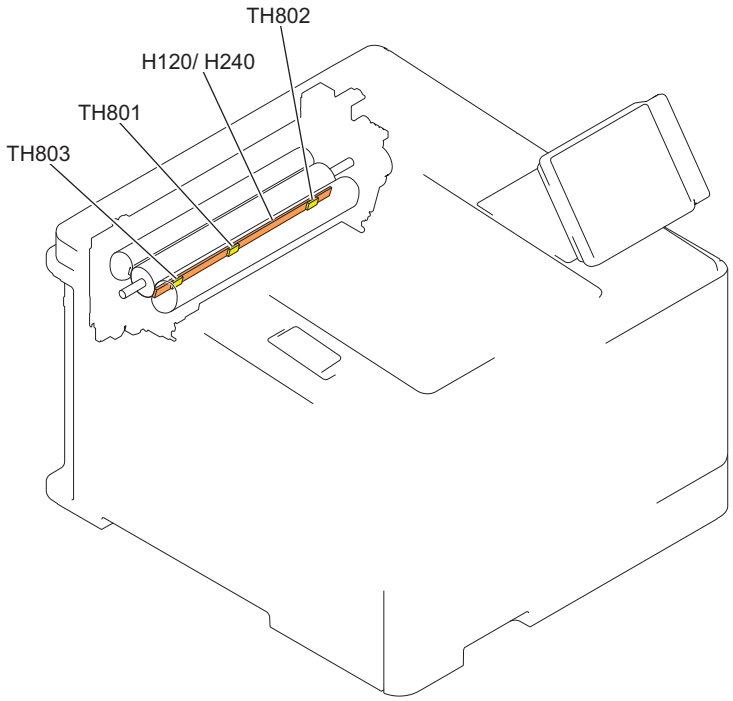
Layout Drawing of Electrical Components

■ Motor/Fan



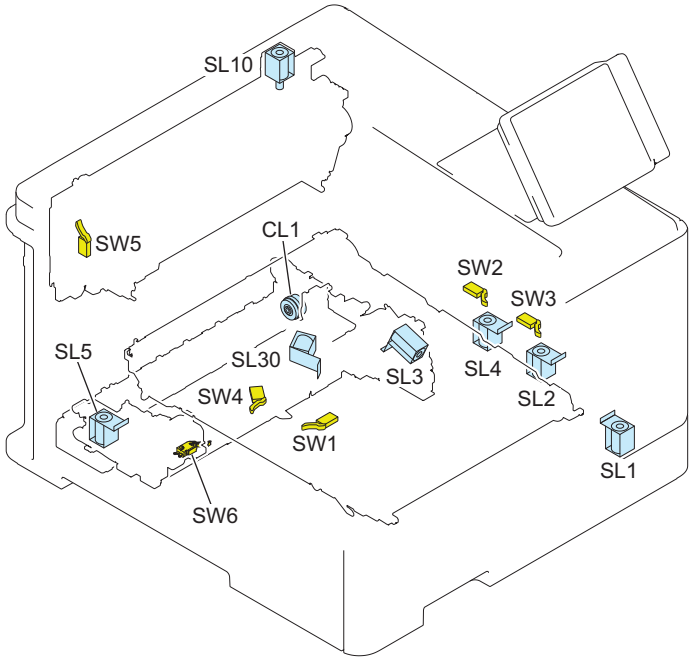
Electric code	Name
M1	Pickup Motor
M2	Drum Motor
M3	Developing Motor
M4	Fixing Motor
M10	Scanner Motor
FM1	Power Supply Fan
FM2	Cartridge Fan

■ Heater



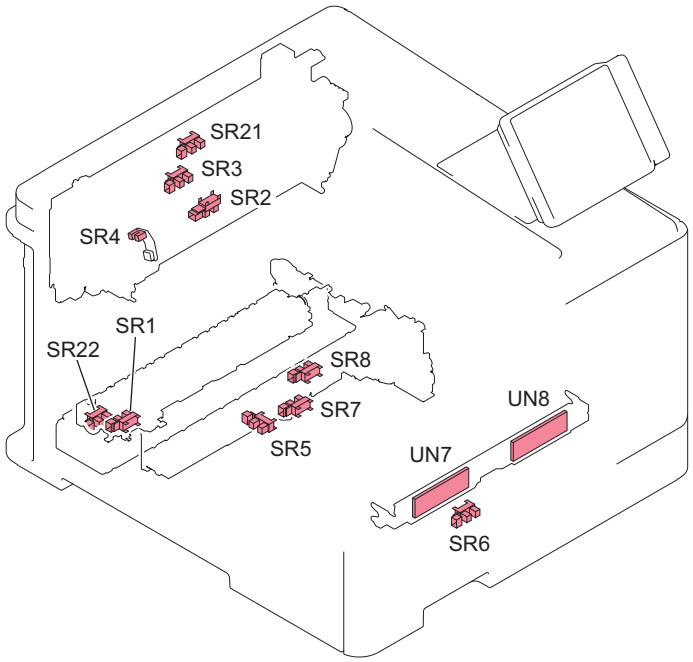
Electric code	Name
H120 H240	Heater (120V) Heater (240V)
TH801	Main Thermistor
TH802	Sub Thermistor 1
TH803	Sub Thermistor 2

■ Switch/Solenoid/Clutch



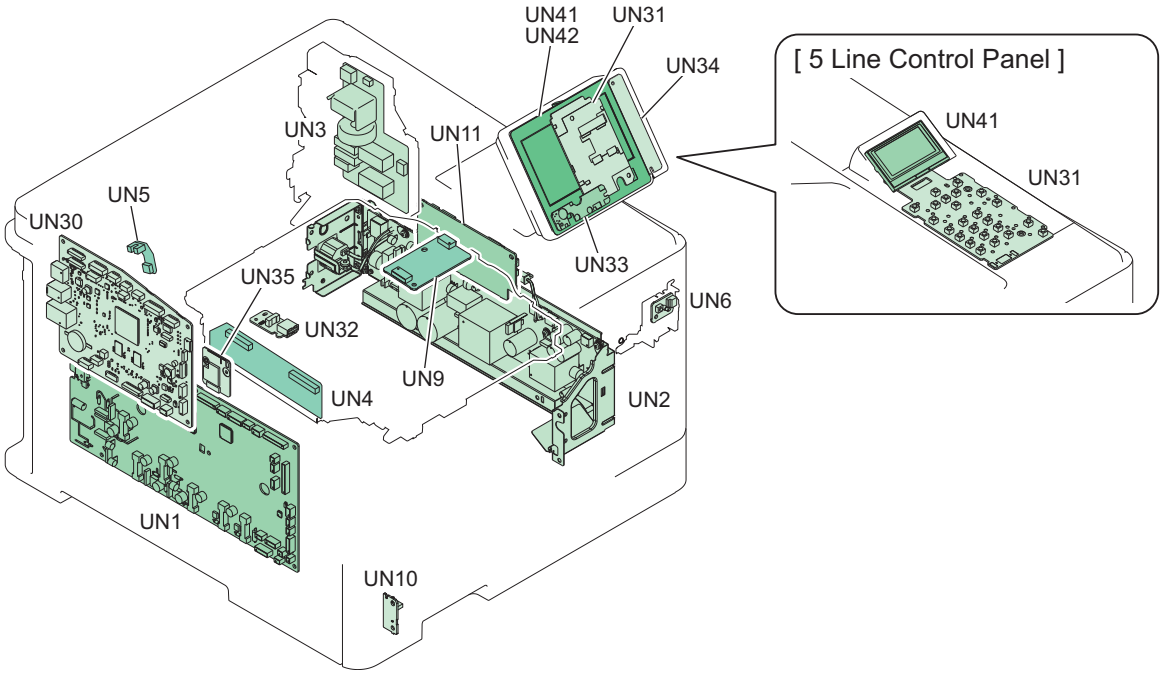
Electric code	Name
CL1	Duplex Re-pickup Clutch
SL1	MP Tray Pickup Solenoid
SL2	Developing Disengagement Solenoid (Bk)
SL3	Cassette Pickup Solenoid
SL4	Developing Disengagement Solenoid (Color)
SL5	Lifter Solenoid
SL10	Duplex Reverse Solenoid
SL30	Primary Transfer Disengagement Solenoid
SW1	Front Door Switch
SW2	Developing Disengagement Switch (Color)
SW3	Developing Disengagement Switch (Bk)
SW4	Primary Transfer Disengagement Switch
SW5	Fixing Pressure Release Switch
SW6	Cassette Switch

■ Sensor



Electric code	Name
SR1	Registration Sensor
SR2	Arch Sensor
SR3	Fixing Delivery Sensor
SR4	Delivery Tray Full Sensor
SR5	Cassette Paper Sensor
SR6	MP Tray Paper Sensor
SR7	Cassette Paper Surface Sensor
SR8	Lifter Sensor
SR21	Duplex Reverse Sensor
SR22	Duplex Re-pickup Sensor
UN7	Density Sensor
UN8	Color Displacement Sensor

■ PCB



Electric code	Name
UN1	Engine Controller PCB
UN2	Low Voltage Power Supply Unit
UN3	Fixing Power Supply PCB
UN4	Laser Driver PCB
UN5	Delivery Tray Full Sensor PCB
UN6	Laser Driver PCB
UN9	Memory Relay PCB
UN10	Environment Sensor PCB
UN11	Driver PCB
UN30	Main Controller PCB
UN31	Touch Panel Main PCB
UN32	USB PCB
UN33	Panel LED PCB
UN34	Panel NFC PCB
UN35	Wireless LAN PCB
UN41	LCD
UN42	Touch Panel

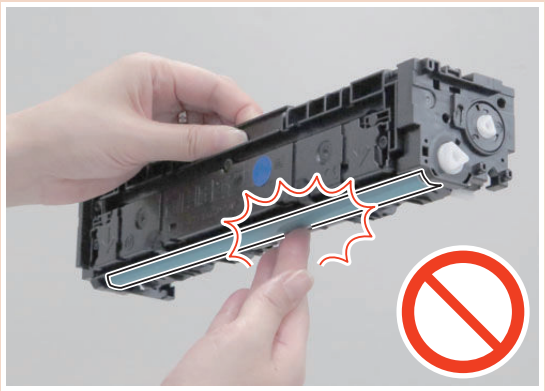
External Cover System

Removing the Toner Cartridge

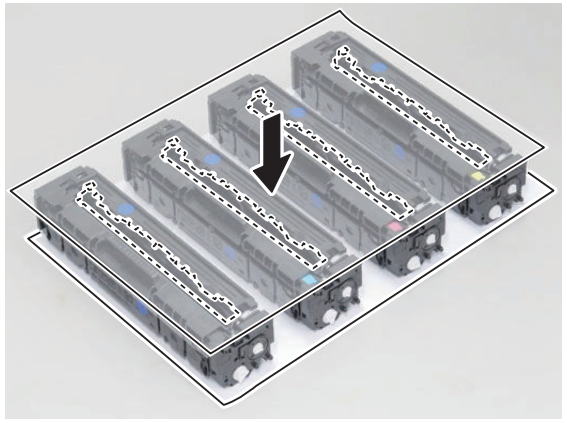
■ Procedure

CAUTION:

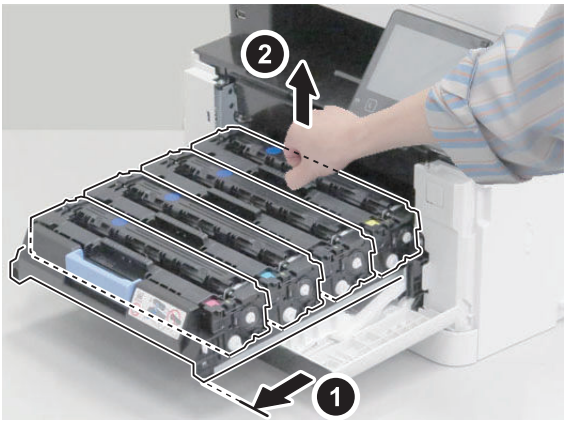
- Be careful not to damage the Photosensitive Drum.



- Be sure to cover the drums with paper to block light.



1. **Pull out the Cartridge Tray, and remove the Toner Cartridges (Y, M, C, and Bk).**



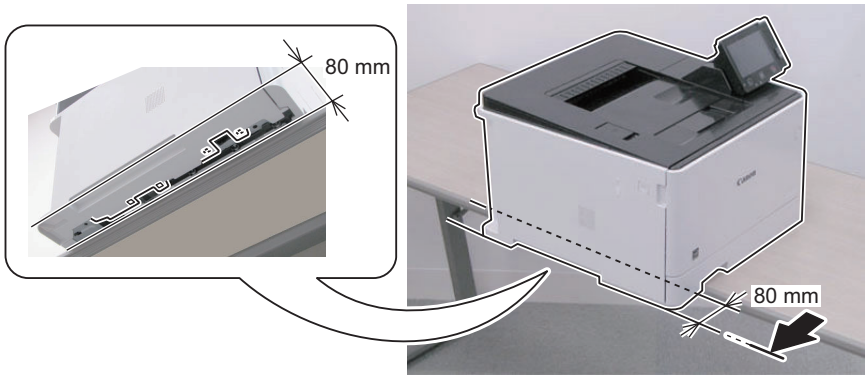
Removing the Left Cover

■ Preparation

1. “Removing the Toner Cartridge” on page 75

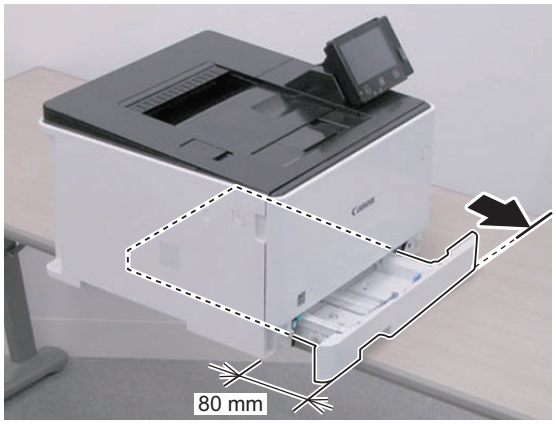
■ Procedure

1. **Shift the host machine by approximately 80 mm from the working table to release the claws on the bottom of the Left Cover.**

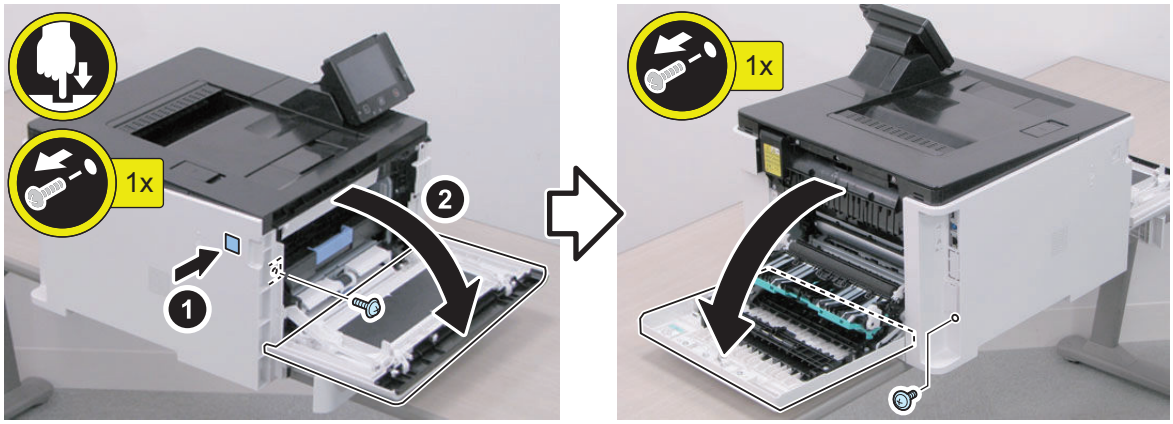


2. **Pull out the cassette by approximately 80 mm.**

⚠ CAUTION:
Do not completely pull out the cassette, as doing so will disturb the balance of the product and may cause it to fall down.

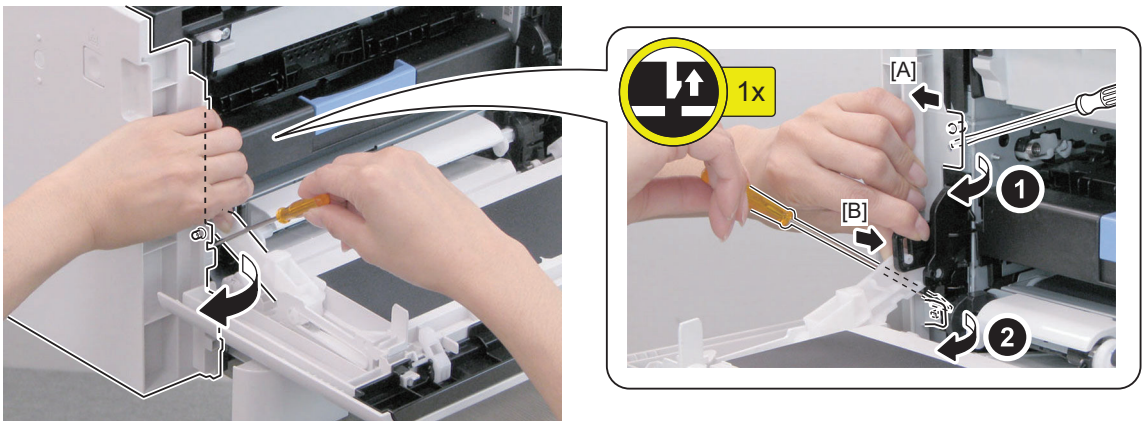


3. **Open the Cartridge Cover and the Rear Cover Unit, and remove the screws.**

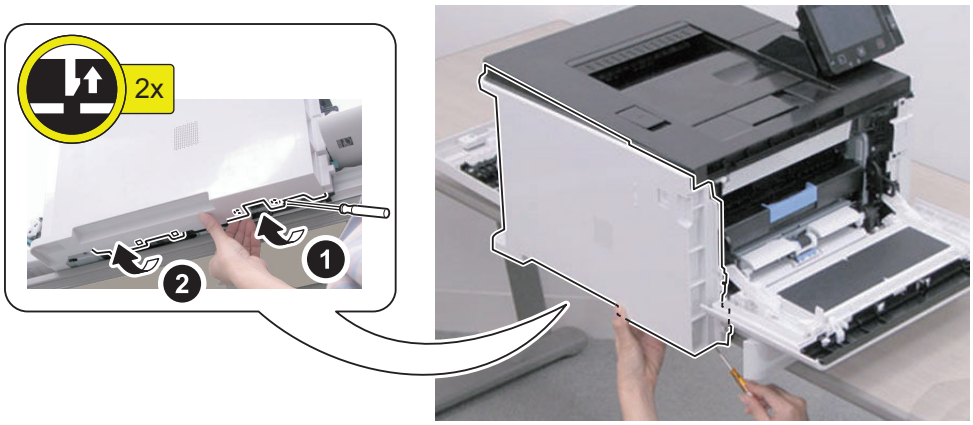


4. **Free the bosses and the claw on the front side.**

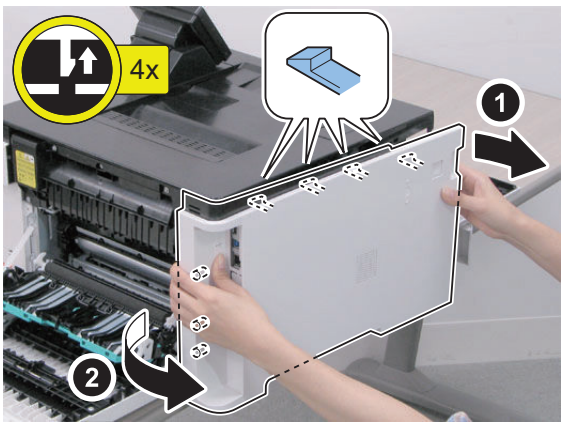
NOTE:
- Be sure to remove it while holding the joint because the Cartridge Cover Retainer comes off easily.
- The boss can be freed easily by pulling the Left Cover in the [A] direction and pulling the Cartridge Cover Retainer in the [B] direction.



5. **Release the claws while opening the Left Cover in the direction of the arrow.**



6. **Free the bosses and claws, and remove the Left Cover.**



7. **Shift the host machine back to the center of the working table to prevent it from falling down.**

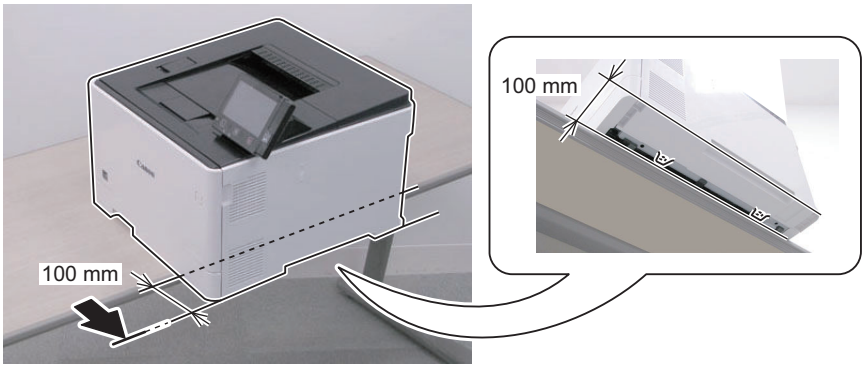
Removing the Right Cover

■ Preparation

1. **"Removing the Toner Cartridge" on page 75**

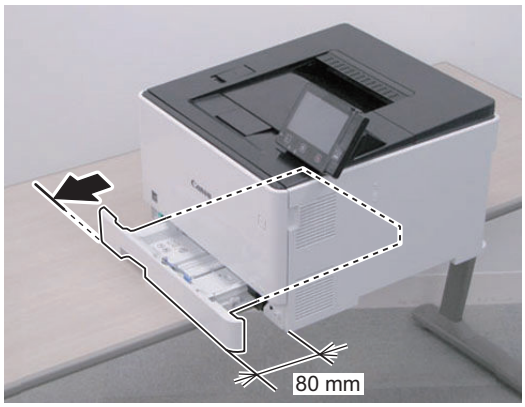
■ Procedure

1. **Shift the host machine by approximately 100 mm from the working table to release the claws on the bottom of the Right Cover.**

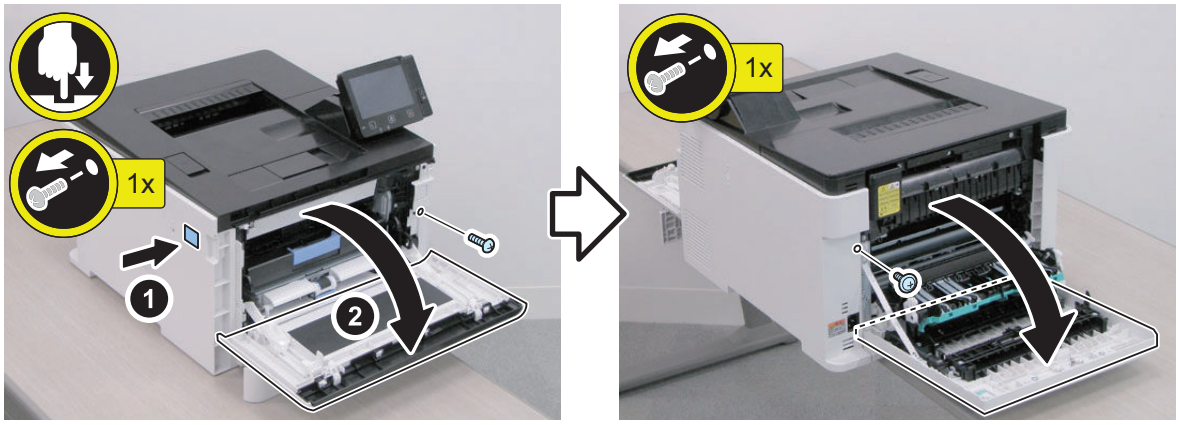


2. **Pull out the cassette by approximately 80 mm.**

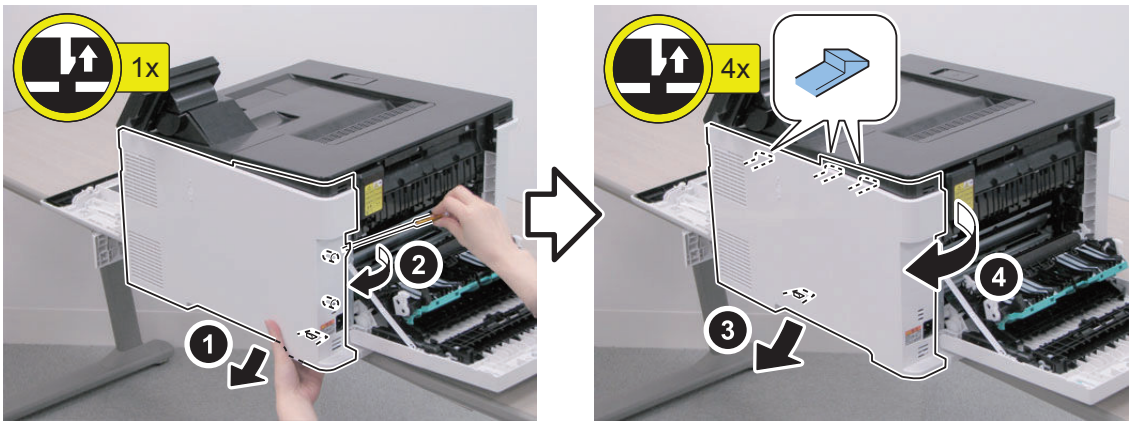
⚠ CAUTION:
Do not completely pull out the cassette, as doing so will disturb the balance of the product and may cause it to fall down.



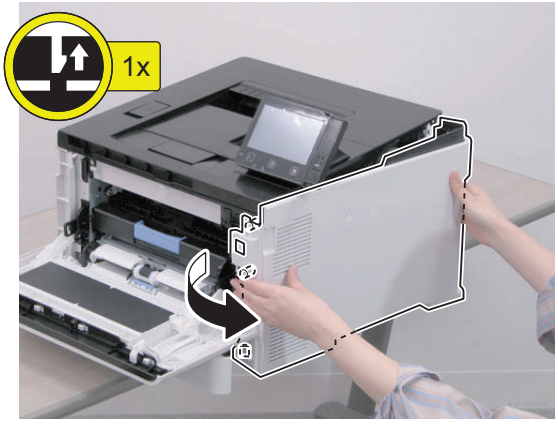
3. **Open the Cartridge Cover and the Rear Cover Unit, and remove the screws.**



4. **Release the claws while opening the Right Cover in the direction of the arrow.**



5. **Free the bosses and claw, and remove the Right Cover.**



6. **Shift the host machine back to the center of the working table to prevent it from falling down.**

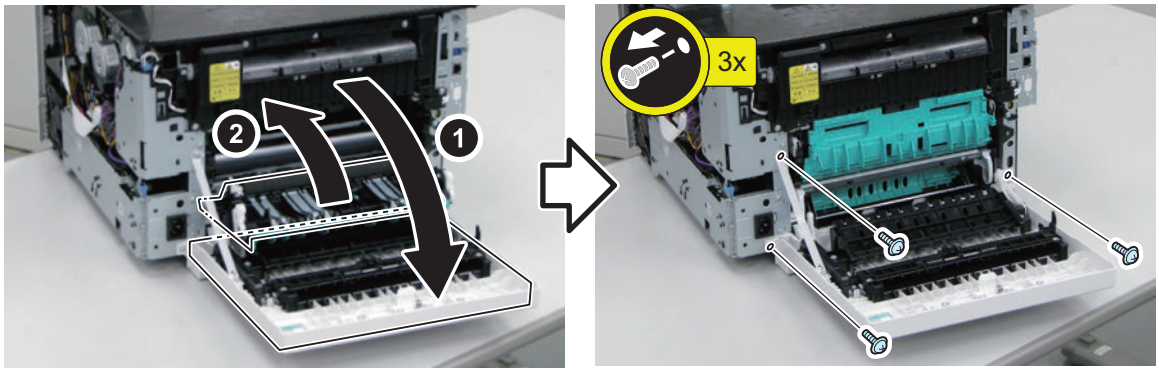
Removing the Rear Cover Unit

■ Preparation

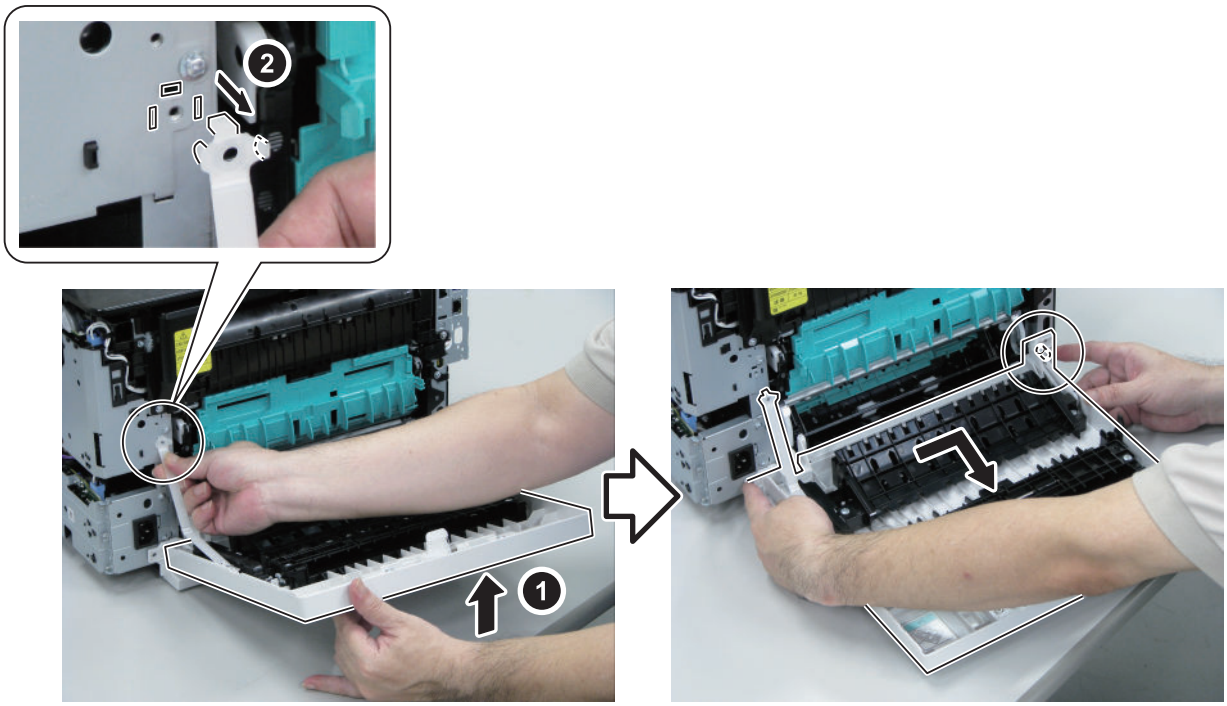
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78

■ Procedure

1. **Open the Rear Cover Unit, and close the Secondary Transfer Unit.**



2. **Remove the Rear Cover Unit.**



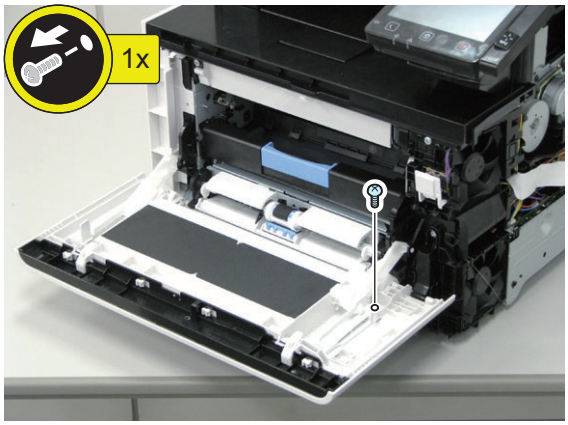
Removing the Cartridge Cover

■ Preparation

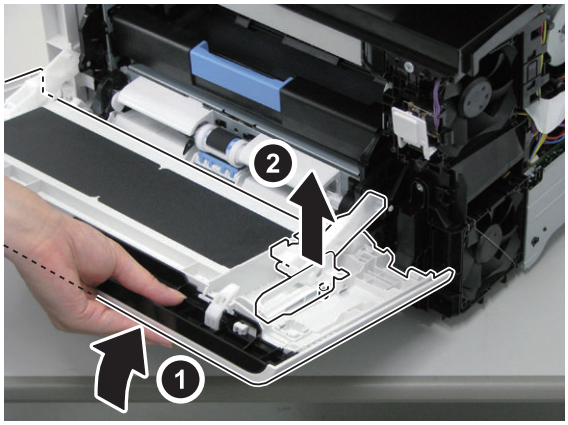
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Right Cover” on page 78

■ Procedure

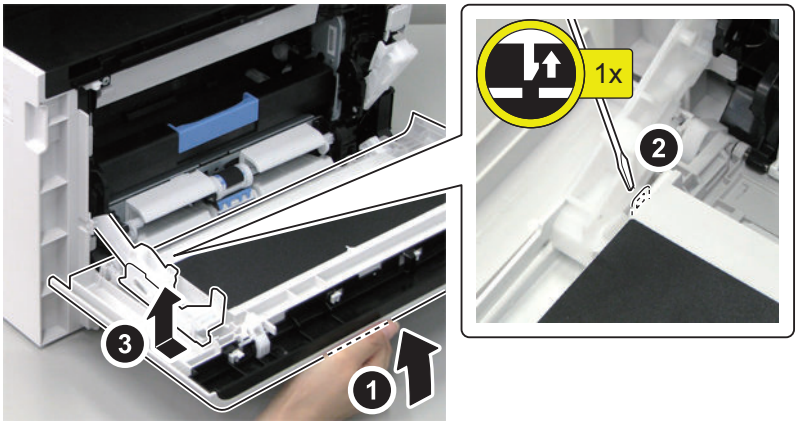
1. **Open the Cartridge Cover.**
2. **Remove the screw.**



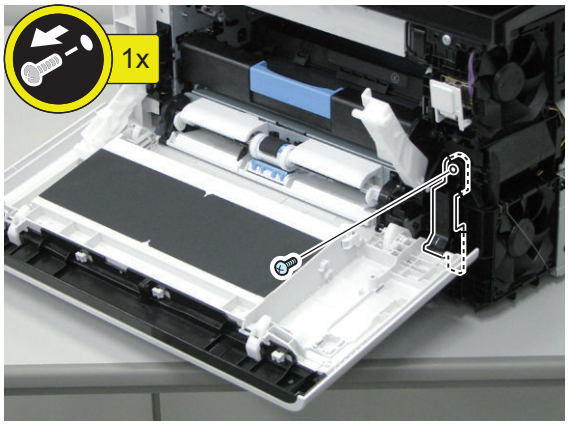
3. **Release the Cartridge Cover Retainer on the right side.**

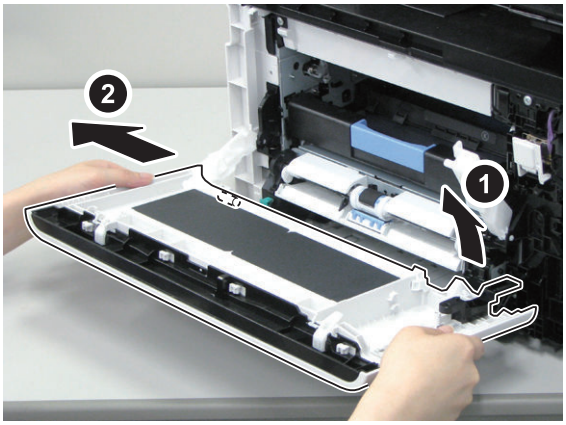


4. **Release the Cartridge Cover Retainer on the left side.**



5. **Remove the Cartridge Cover.**





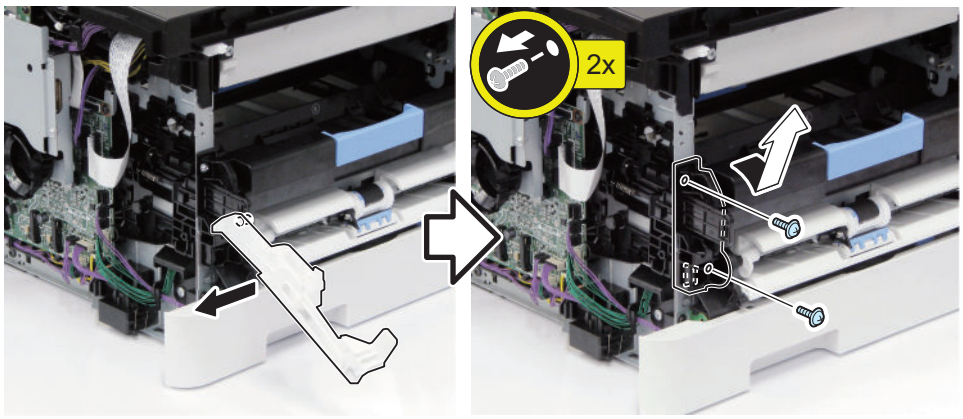
Removing the Cartridge Tray

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**
3. **“Removing the Cartridge Cover ” on page 80**
4. **“Removing the Left Cover” on page 76**

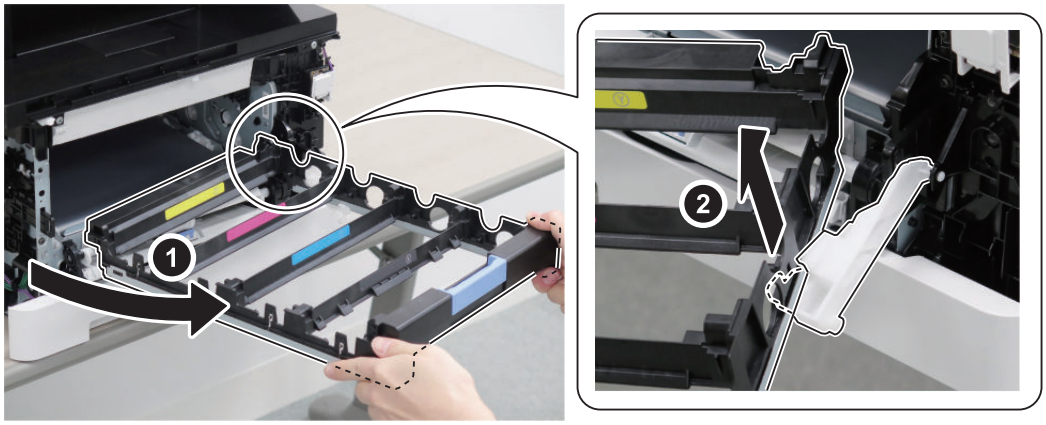
■ Procedure

1. **Remove the white Front Door Arm on the left side, and remove the Arm Support Block on the left side.**

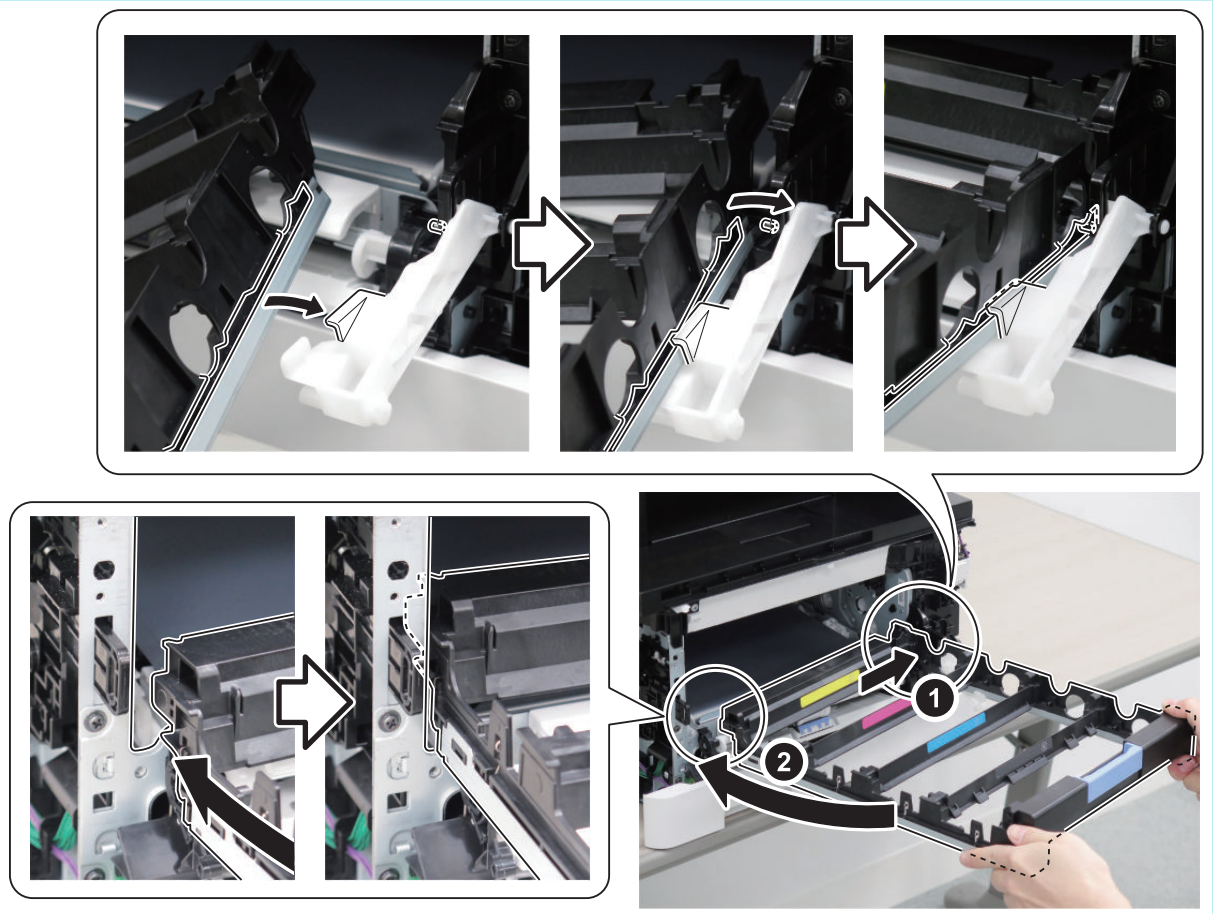


2. **Pull out the Cartridge Tray.**

3. **Remove the guide from the pin while lifting up the left side of the tray. Also remove the guide from the pin on the right side. Since the Cartridge Tray is still in the groove of the white guide on the right side, turn the tray counterclockwise to remove it from the white guide.**



NOTE:
When installing the Cartridge Tray, first make the pin on the right side enter the groove on the tray. Next, insert the tray under the black pin on the left side, and insert it in all the way along the tray guide on the bottom.



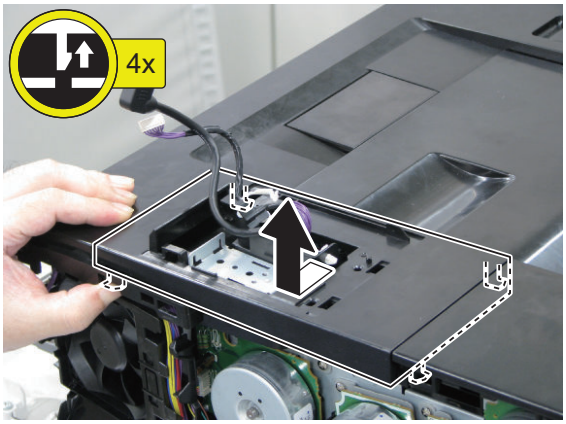
Removing the Control Panel Lower Cover

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Right Cover” on page 78
3. “Removing the Control Panel Unit” on page 92

■ Procedure

1. **Remove the Control Panel Lower Cover.**



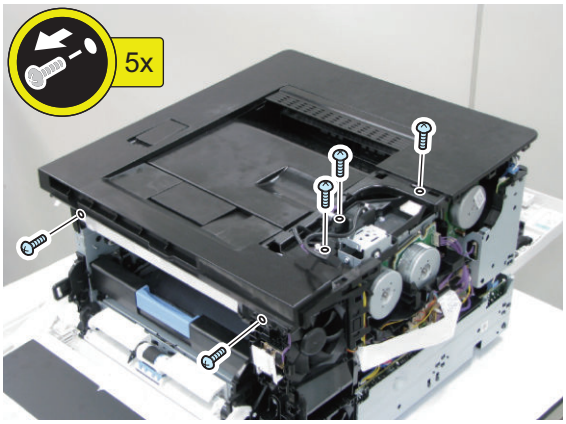
Removing the Upper Cover Unit

■ Preparation

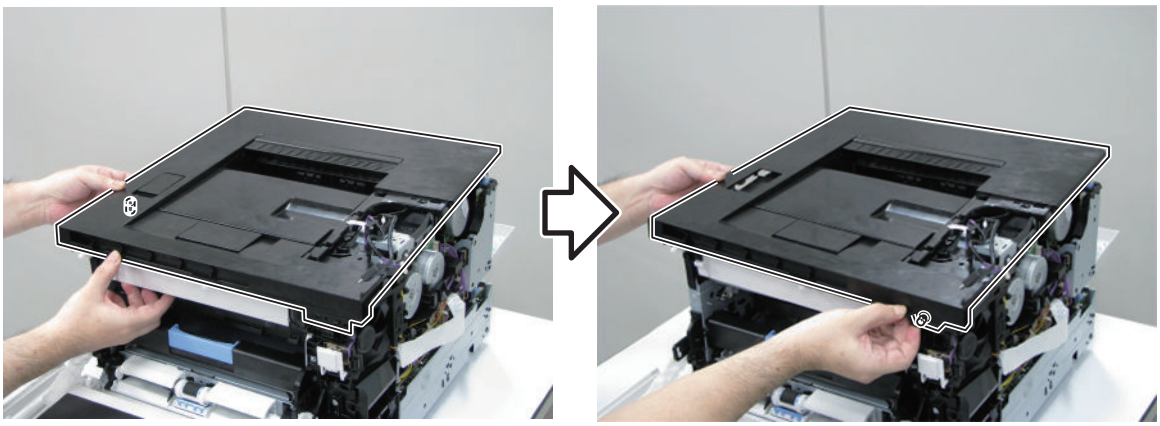
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78
4. “Removing the Control Panel Unit” on page 92
5. “Removing the Control Panel Lower Cover” on page 84

■ Procedure

1. **Remove the screw.**



2. **Remove the screws.**



3. **Remove the Upper Right Front Cover.**

Controller System

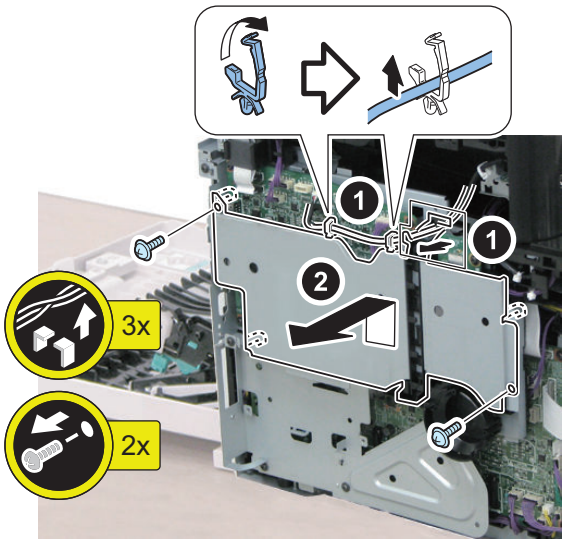
Removing the Controller Cover

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76

■ Procedure

1. **Remove the Controller Cover.**



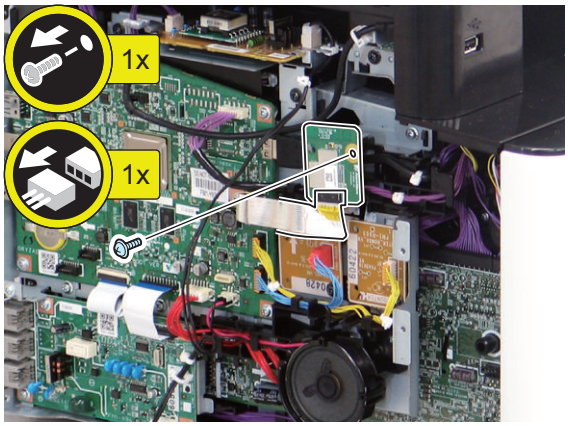
Removing the Wireless LAN PCB (Wi-Fi model only)

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Controller Cover ” on page 87

■ Procedure

1. **Remove the Wireless LAN PCB.**



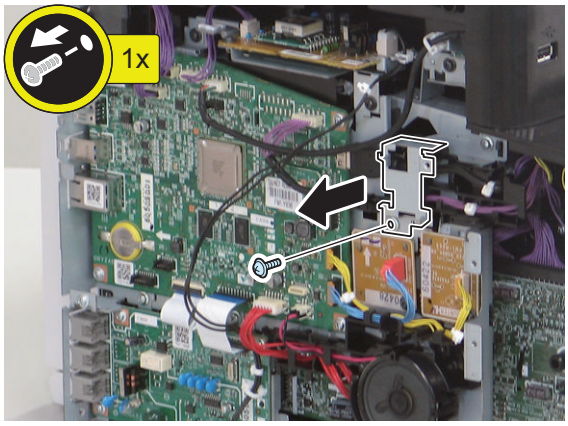
Removing the Wireless LAN Support Plate (Wi-Fi model only)

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Controller Cover ” on page 87
4. “Removing the Wireless LAN PCB (Wi-Fi model only)” on page 87

■ Procedure

1. **Remove the Wireless LAN Support Plate.**



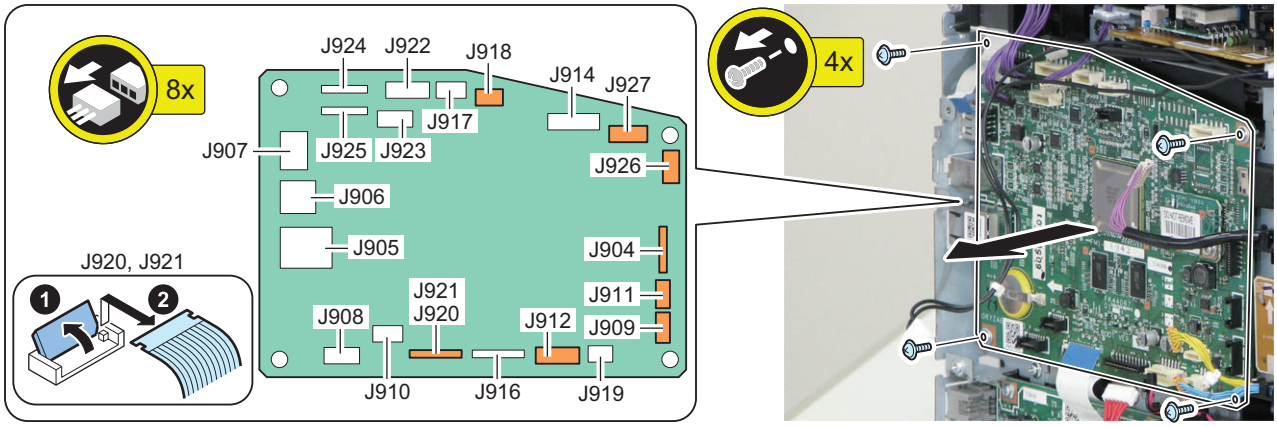
Removing the Main Controller PCB

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Controller Cover ” on page 87

■ Procedure

1. **Disconnect all connectors from the Main Controller PCB and then remove the PCB.**
   <LBP654Cdw>
   <LBP654Cx>



2. **Actions after replacement:** “After Replacing the Main Controller PCB” on page 137

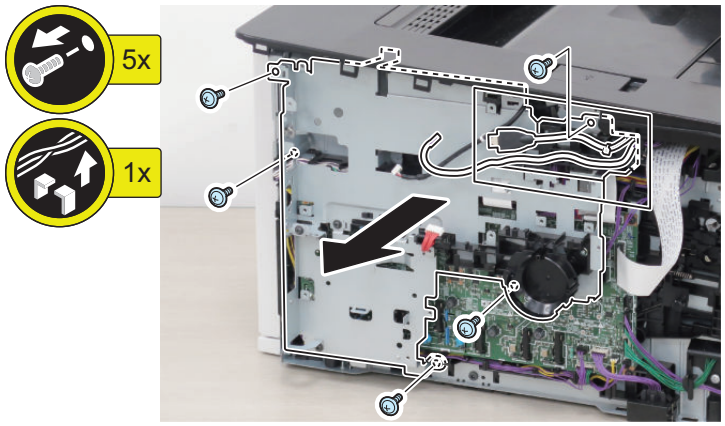
Removing the Main Controller Support Plate

■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Controller Cover ” on page 87
4. “Removing the Main Controller PCB” on page 88
5. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88

■ Procedure

1. **Remove the Main Controller Support Plate.**



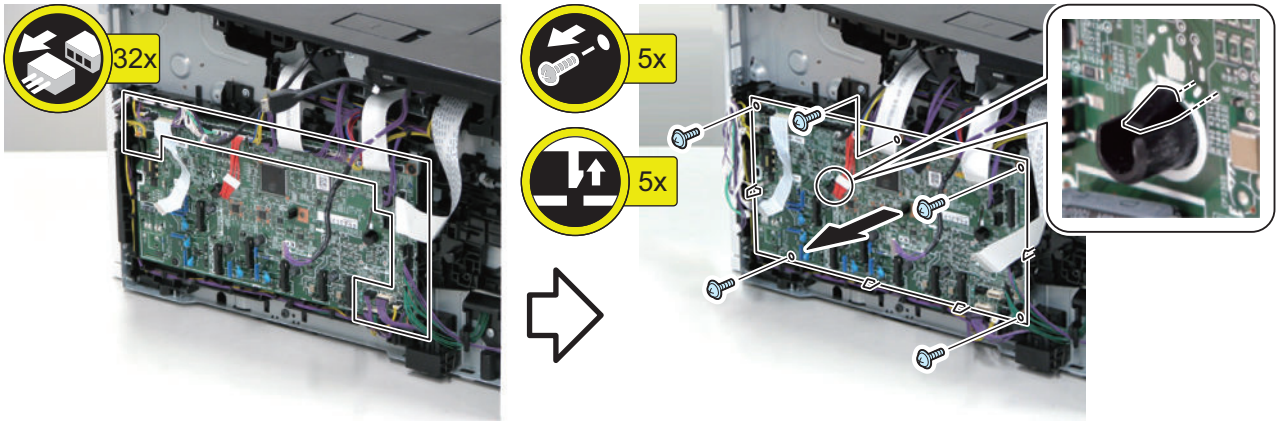
Removing the Engine Controller PCB

■ Preparation

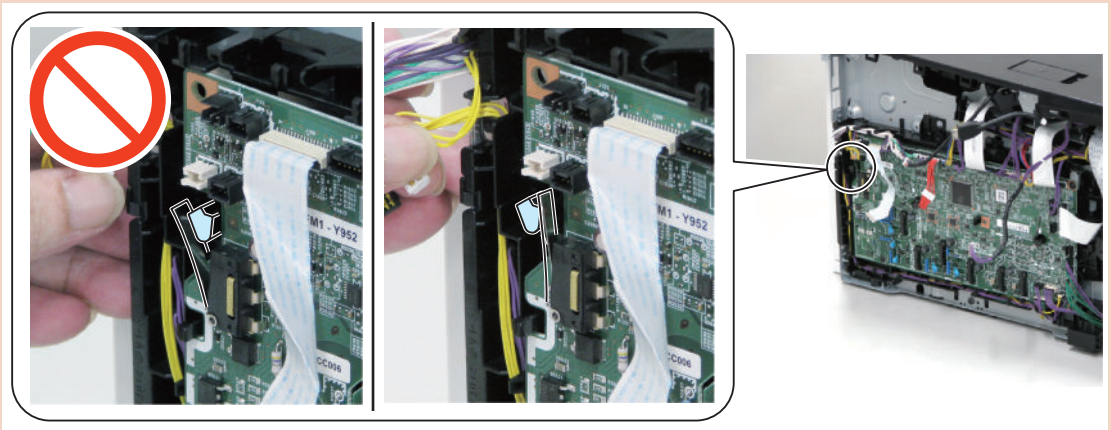
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Controller Cover ” on page 87
4. “Removing the Main Controller PCB” on page 88
5. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
6. “Removing the Main Controller Support Plate” on page 89

■ Procedure

1. **Remove the Engine Controller PCB.**



CAUTION:
When installing it, be sure that the flag of the microswitch is in the correct position.



2. **Actions after replacement:** **“After Replacing the Engine Controller PCB” on page 136**

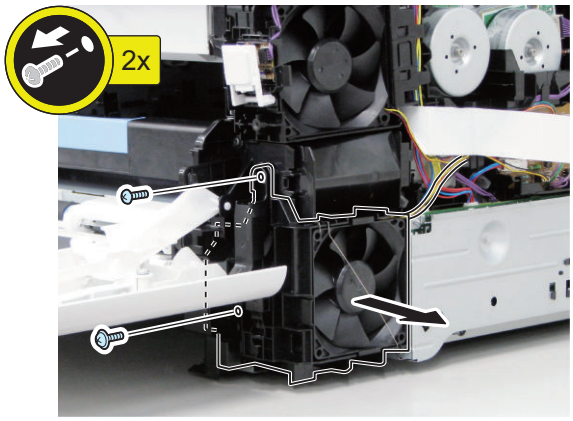
Removing the Low Voltage Power Supply Unit

■ Preparation

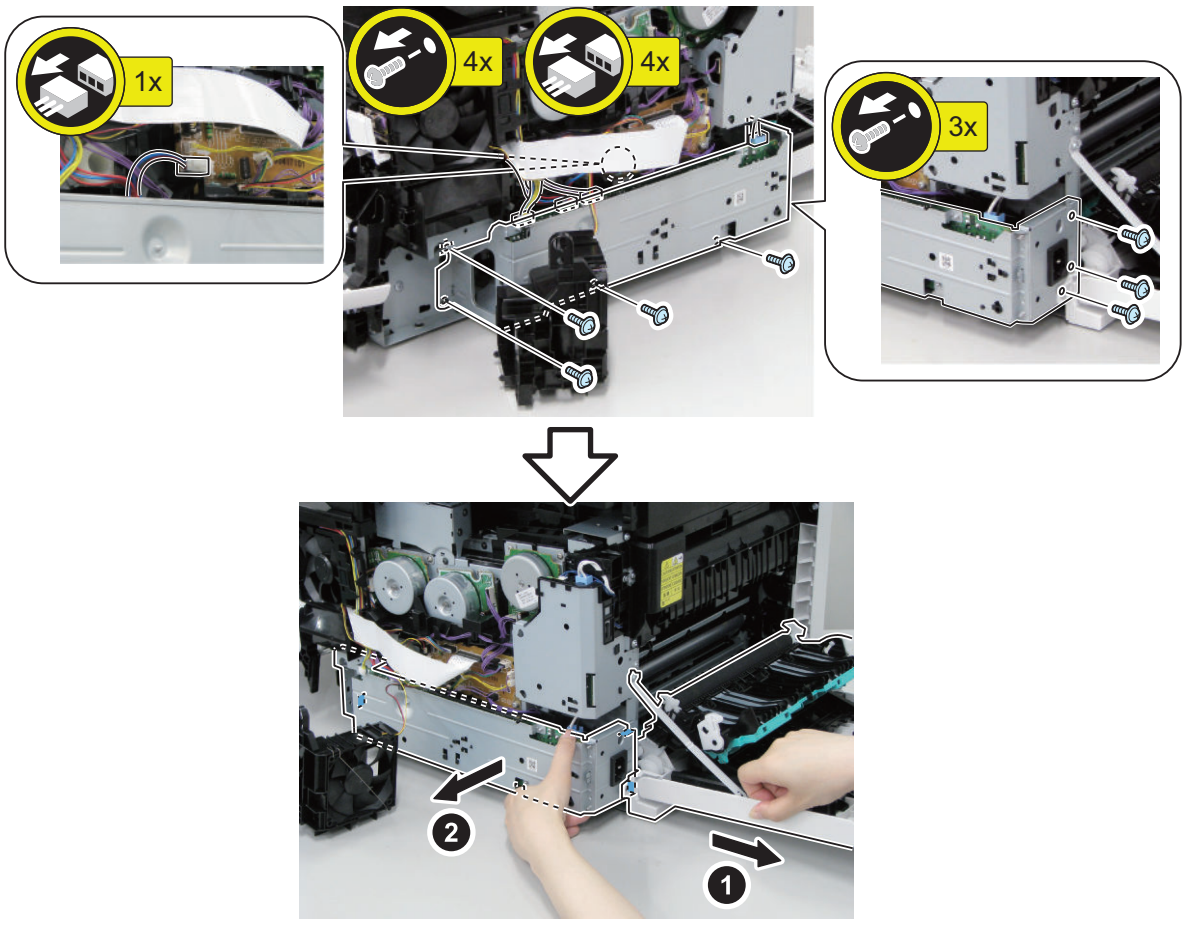
1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**

■ Procedure

1. **Remove the Power Supply Fan Unit.**



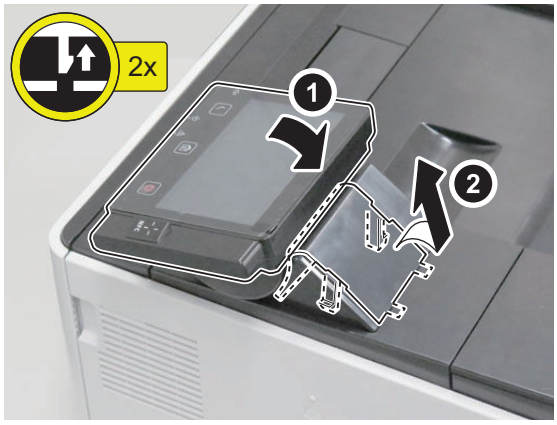
2. **Remove the Low Voltage Power Supply Unit.**



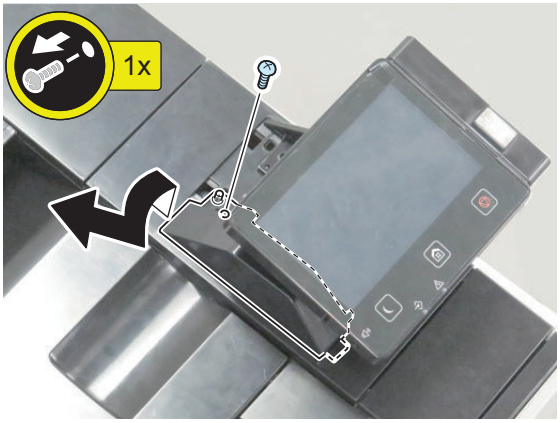
Removing the Control Panel Unit

■ Procedure

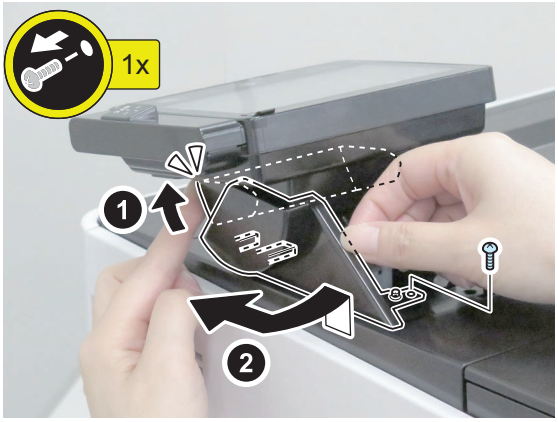
1. **Remove the Panel Arm Cover (Middle).**



2. **Remove the Panel Arm Left Cover.**

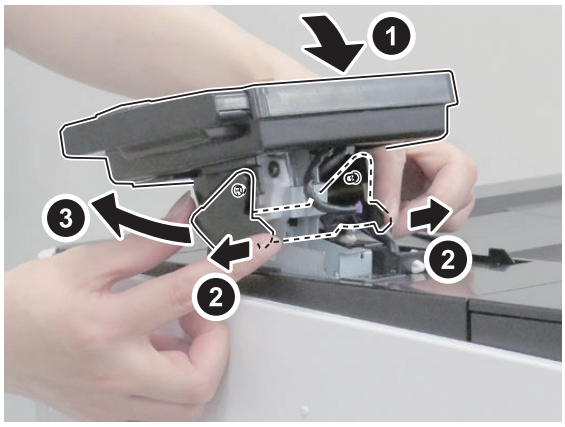


3. **Remove the Panel Arm Right Cover.**

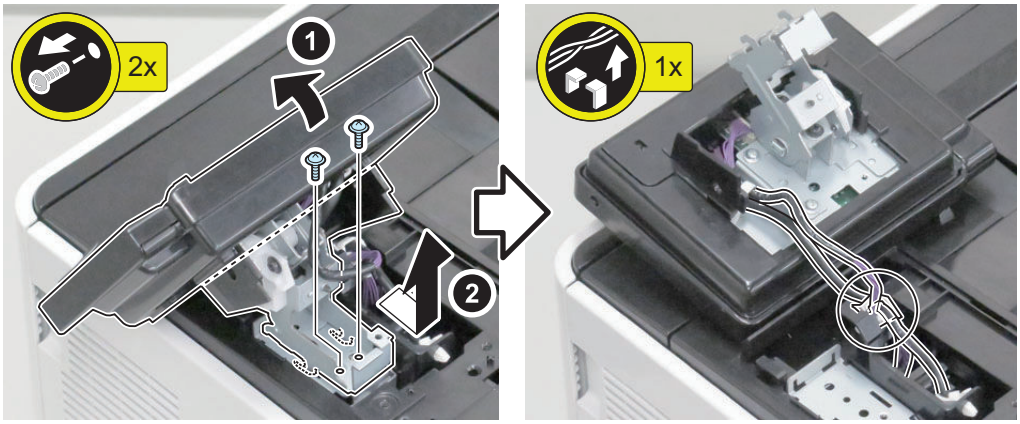


4. **Remove the Panel Rear Upper Cover.**

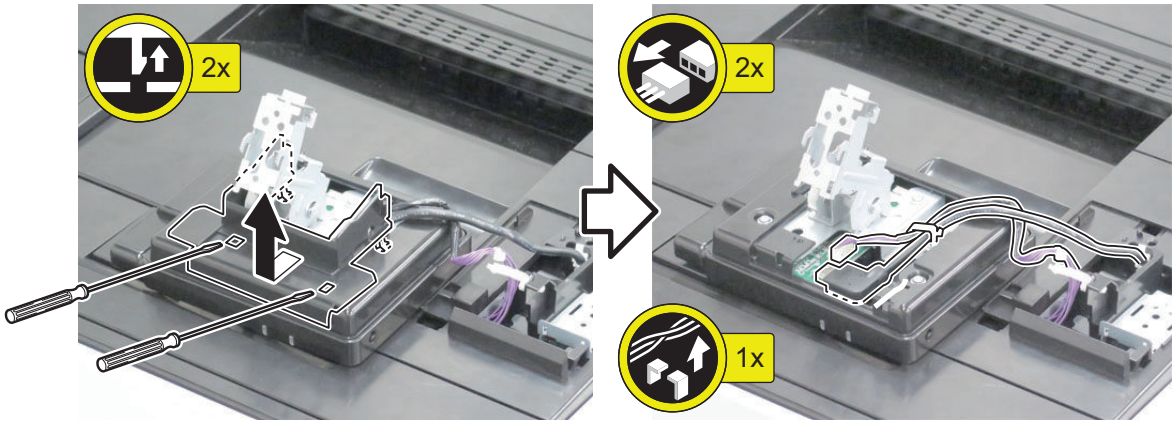
5. **Remove the Panel Front Lower Cover.**



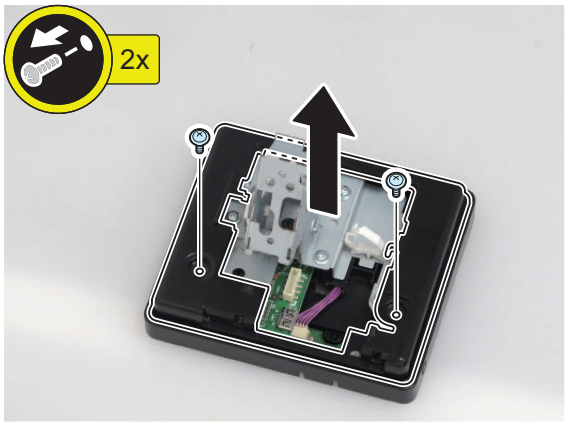
6. **Remove the Control Panel.**



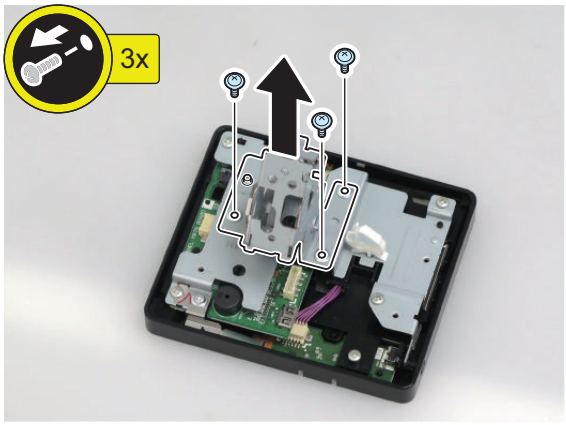
7. **Remove the Panel Rear Lower Cover. Disconnect the connector and HDMI Cable, and free the harness from the Wire Saddle.**



8. **Remove the Panel Rear Cover.**



9. **Remove the Hinge Unit.**



10. **Actions after replacement:** **“After Replacing the Control Panel” on page 136**

Removing the USB PCB

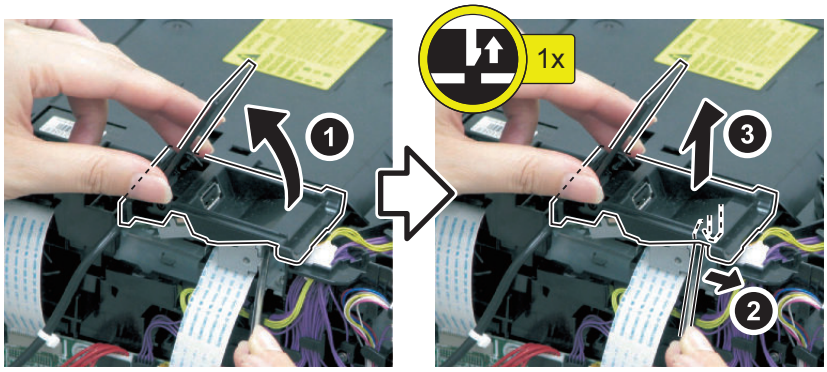
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**
4. **“Removing the Control Panel Unit” on page 92**

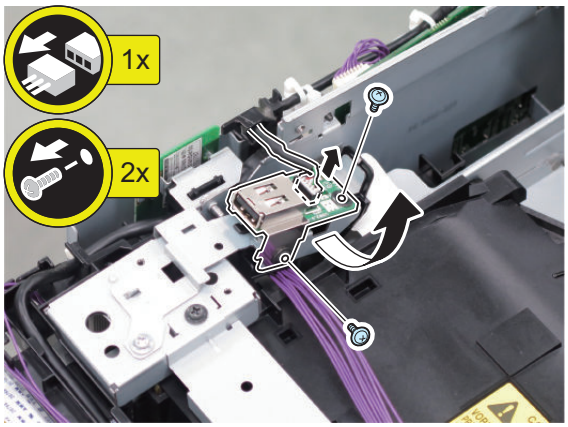
5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85

■ Procedure

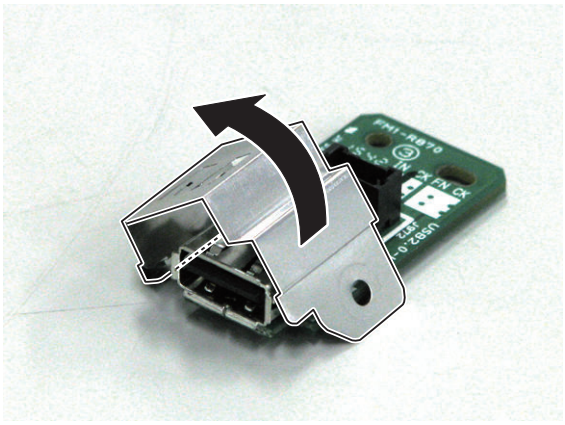
1. **Remove the USB Cover.**



2. **Remove the USB PCB Unit.**



3. **Remove the USB Connector Cover.**



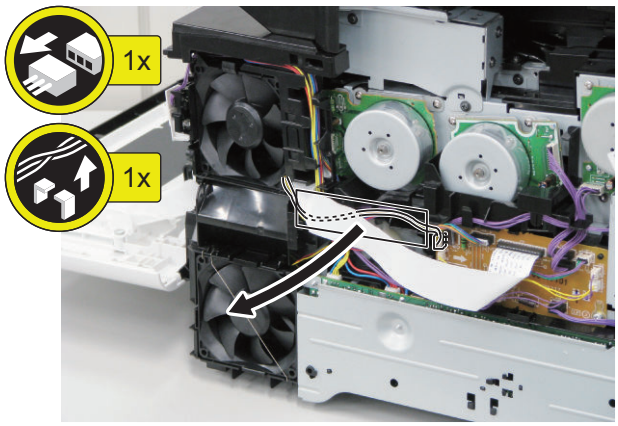
Removing the Cartridge Fan

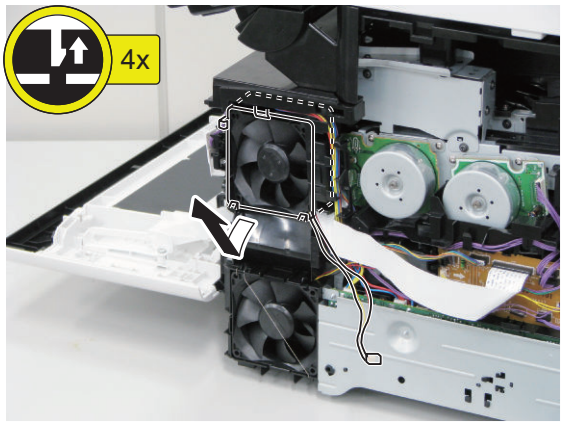
■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Right Cover” on page 78

■ Procedure

1. **Remove the Cartridge Fan.**





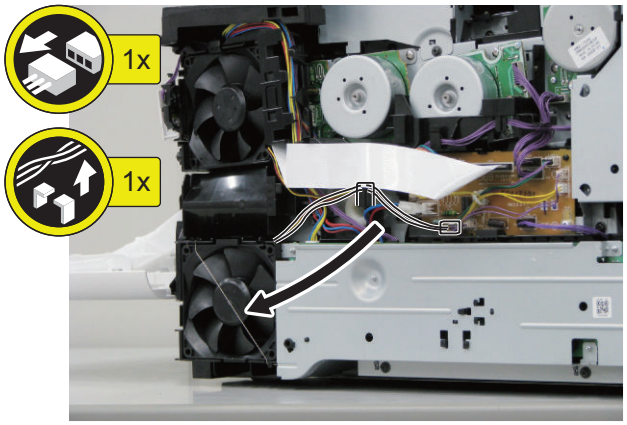
Removing the Power Supply Fan

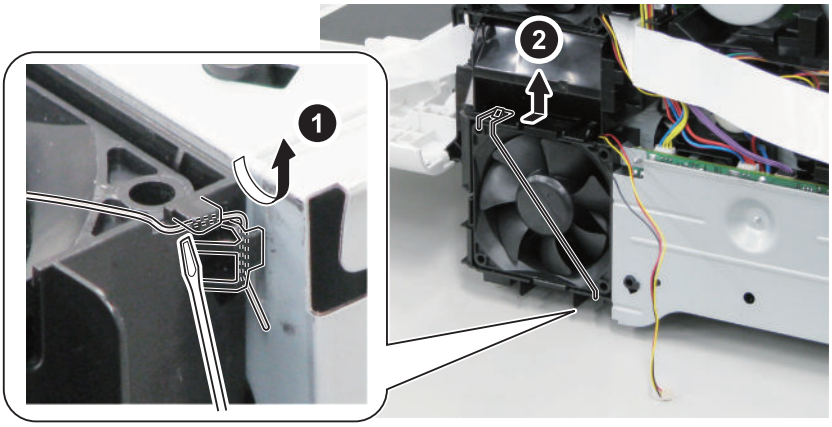
■ Preparation

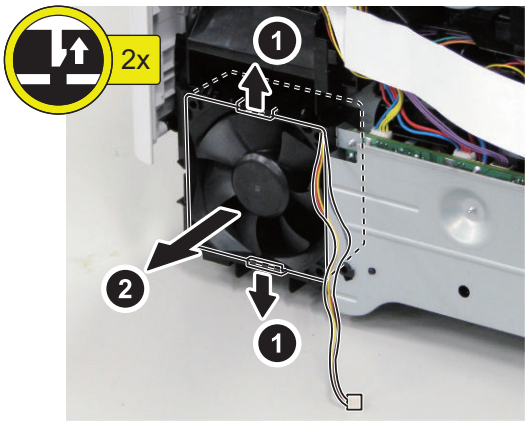
1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**

■ Procedure

1. **Remove the Power Supply Fan.**







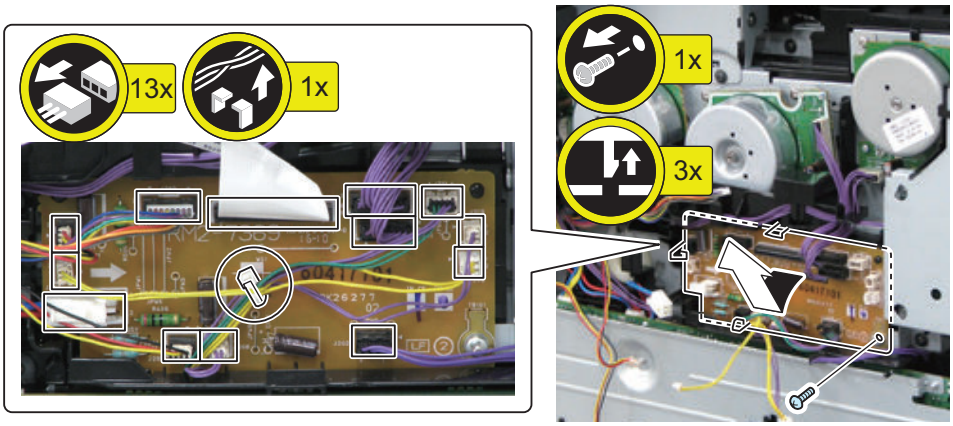
Removing the Driver PCB

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**

■ Procedure

1. **Remove the Driver PCB.**



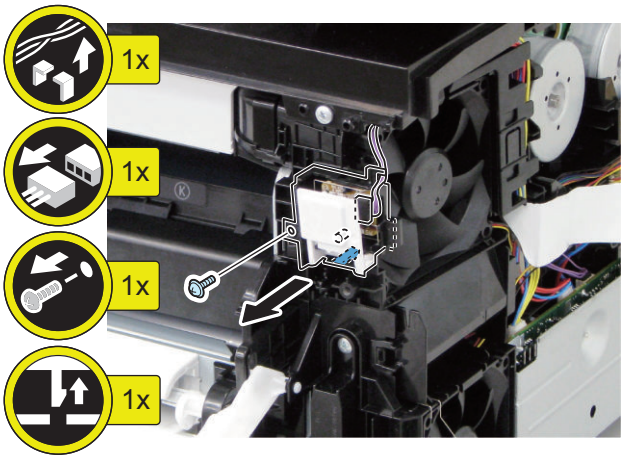
Removing the Power Switch Unit

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**

■ Procedure

1. **Remove the Power Switch Unit.**



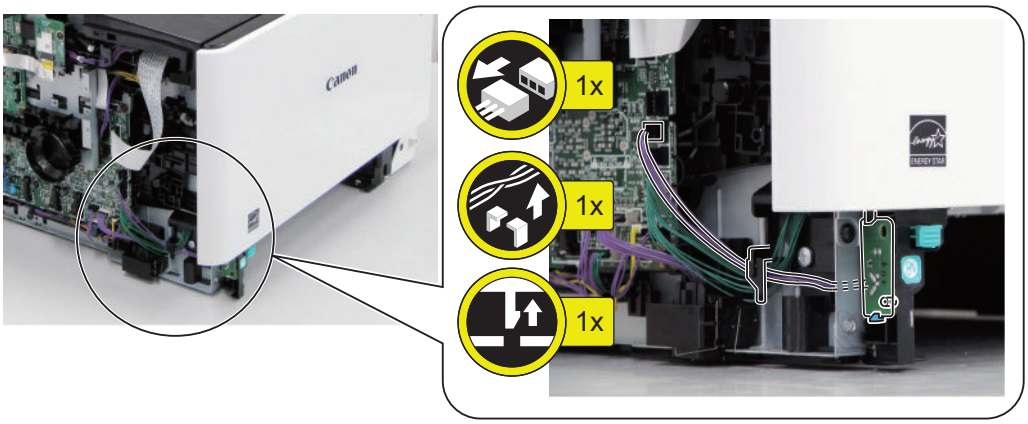
Removing the Environment Sensor

■ Preparation

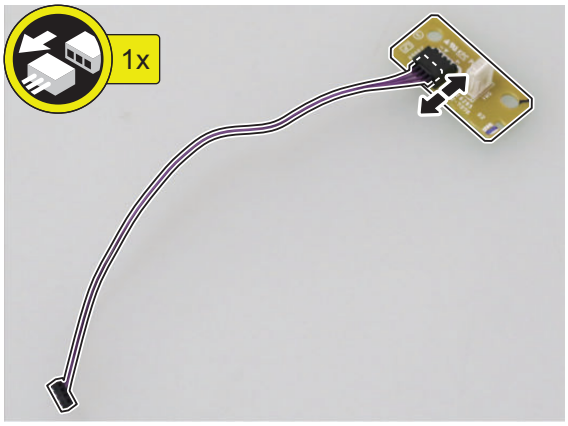
1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**

■ Procedure

1. **Remove the Environment Sensor.**



2. **Remove the Harness.**



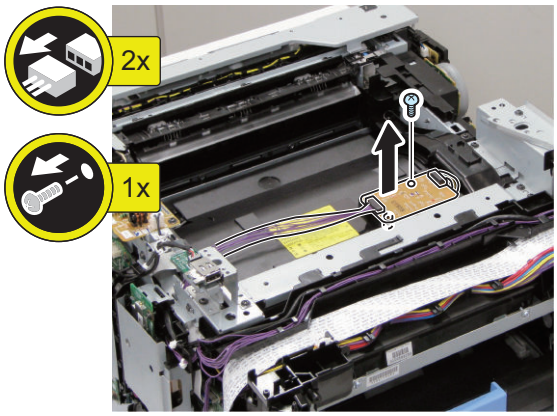
Removing the Memory Relay PCB

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**
3. **“Removing the Left Cover” on page 76**
4. **“Removing the Control Panel Unit” on page 92**
5. **“Removing the Control Panel Lower Cover” on page 84**
6. **“Removing the Upper Cover Unit ” on page 85**

■ Procedure

1. **Remove the Memory Relay PCB.**



Laser Exposure System

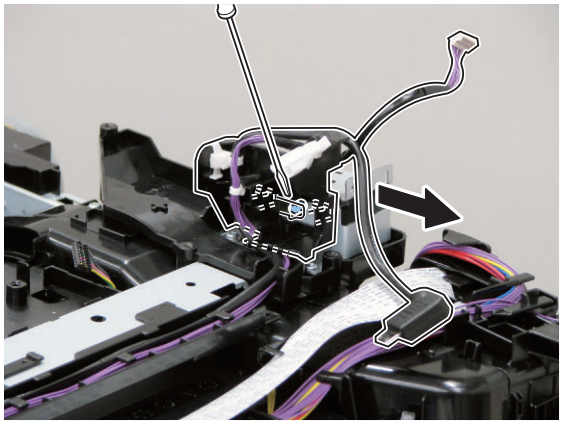
Removing the Laser Scanner Unit

■ Preparation

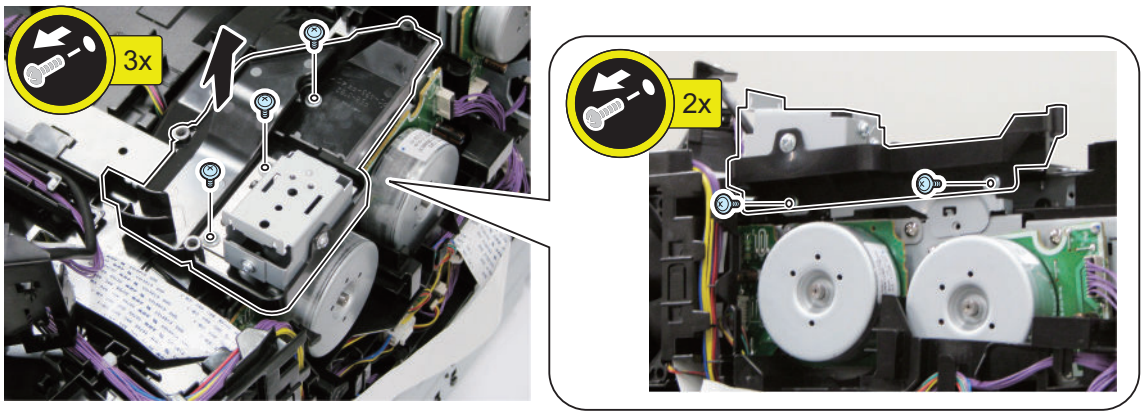
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78
4. “Removing the Control Panel Unit” on page 92
5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85
7. “Removing the Controller Cover ” on page 87
8. “Removing the Main Controller PCB” on page 88
9. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
10. “Removing the Main Controller Support Plate” on page 89
11. “Removing the USB PCB” on page 94

■ Procedure

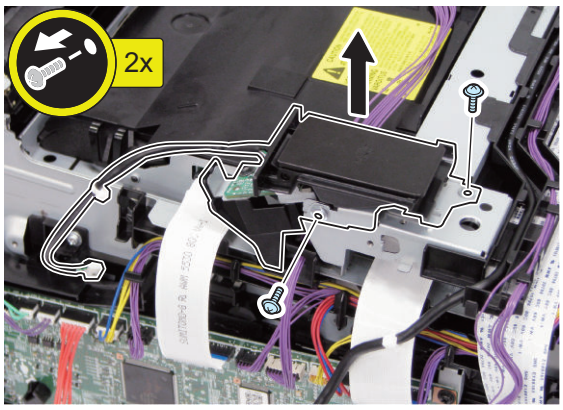
1. **Remove the Harness Guide.**



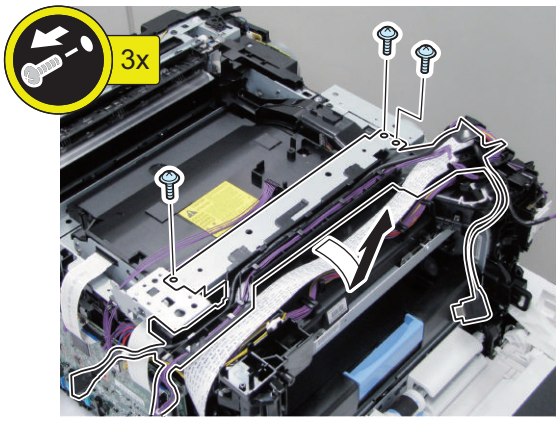
2. **Remove the Touch Panel Mounting Base.**



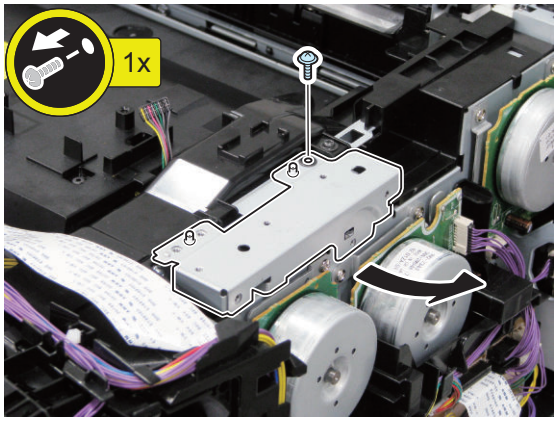
3. **Remove the USB Mounting Base.**



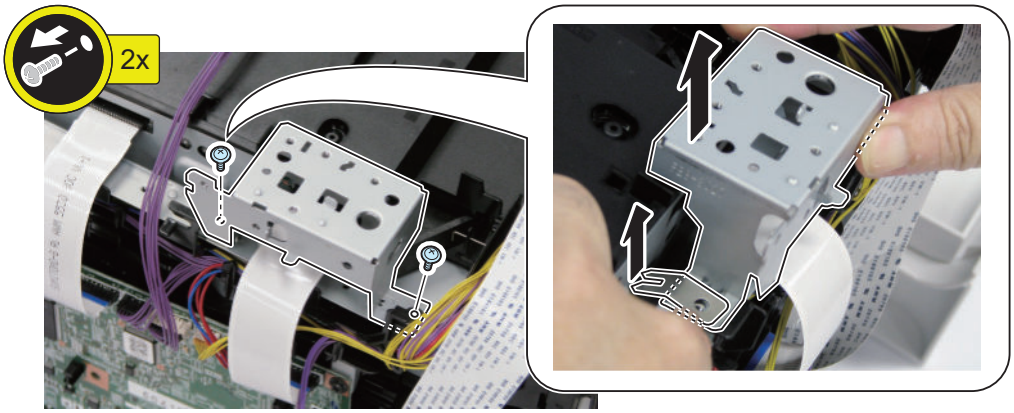
4. **Remove the Laser Unit Upper Plate.**



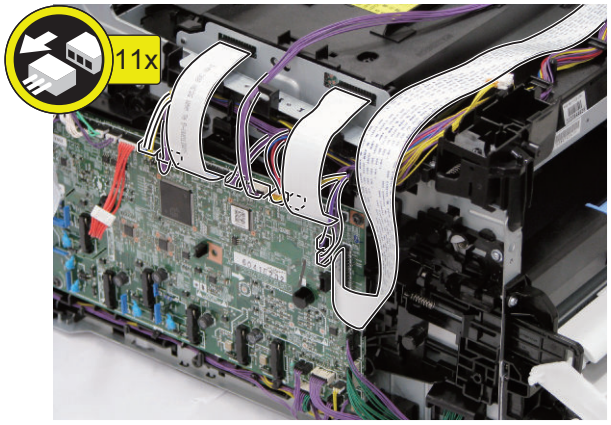
5. **Remove the plate.**



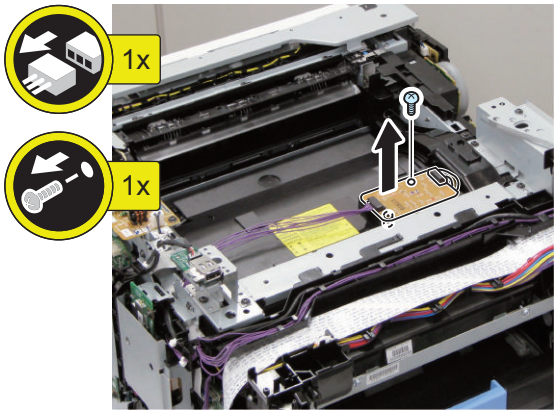
6. **Remove the USB Mounting Plate.**



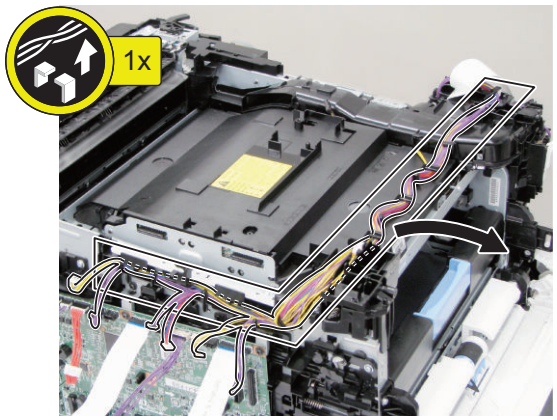
7. **Disconnect the connector.**



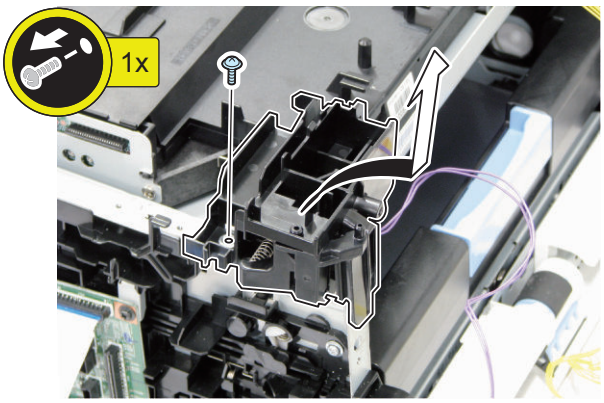
8. **Remove the Memory Relay PCB.**



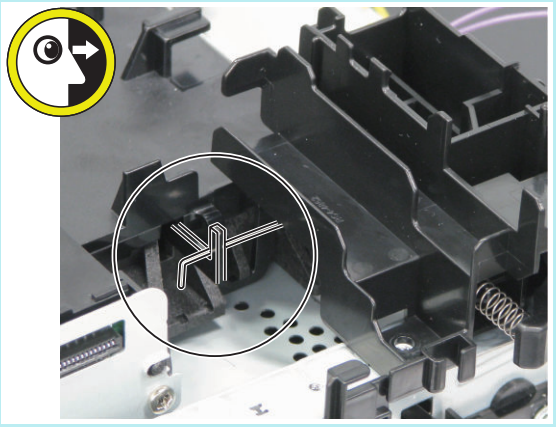
9. **Free the harness.**



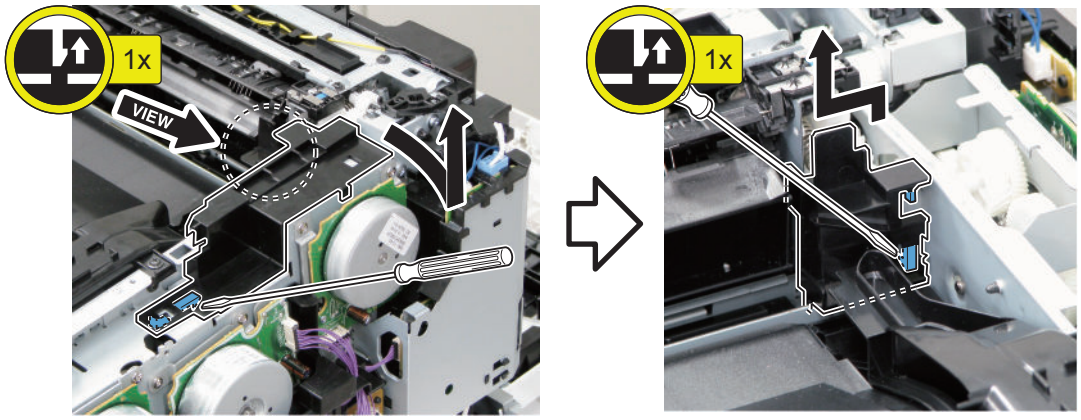
10. Remove the Laser Shutter Open/Close Detection Unit.



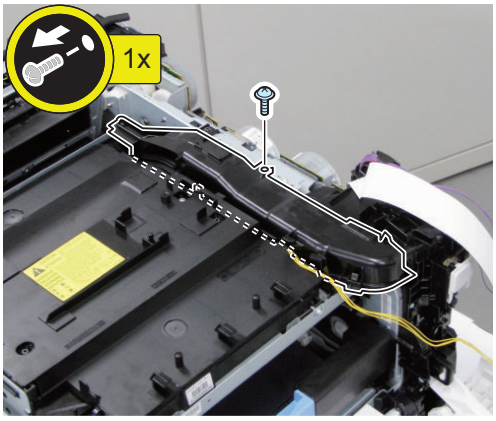
NOTE:
When installing it, be sure that the L-shaped wire is placed on the Shutter Lever of the Laser Unit.

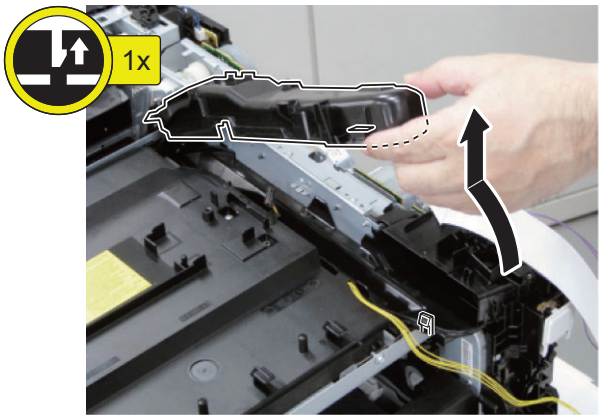


11. Remove the Gear Cover and then remove the Cover under the Gear Cover.

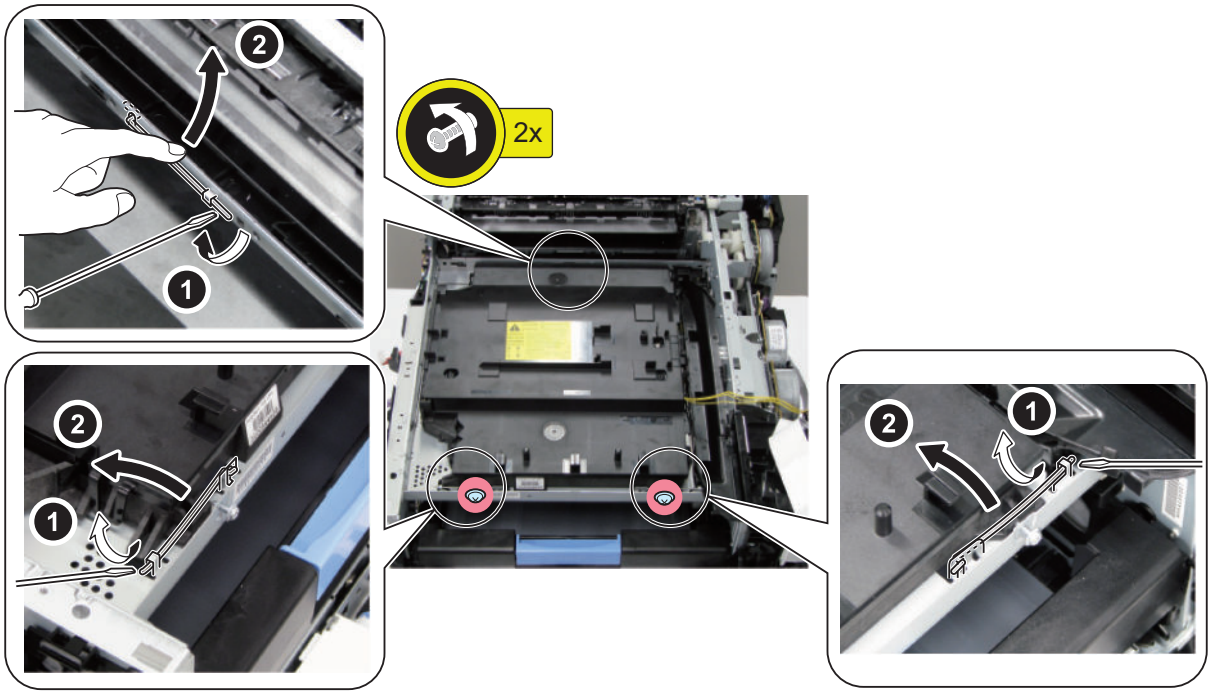


12. Remove the Duct Cover.

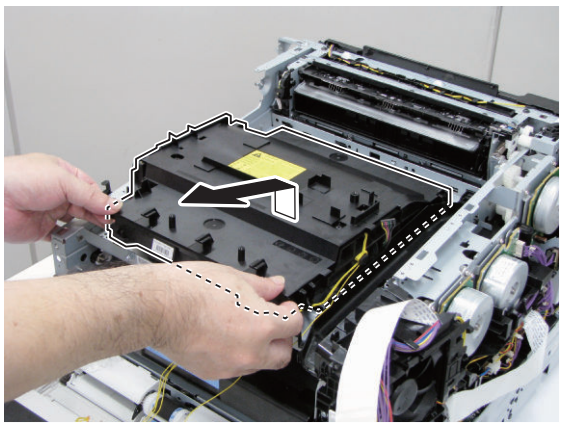




13. Loosen the screws, and remove the Laser Scanner Unit Fixation Pins.

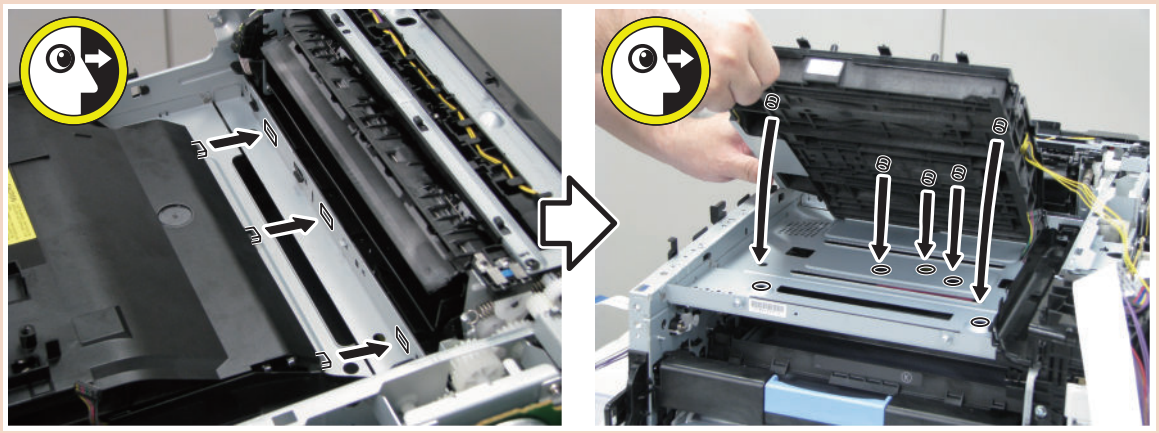


14. Remove the Laser Scanner Unit.



CAUTION:
Points to Note at Installation

- Insert the bosses into the positioning holes, and check that the Laser Unit is correctly positioned.
- Be sure that the Laser Unit is properly pushed down and secured with the 3 Fixation Pins. Also be sure that the Fixation Pins are securely fitted and will not come off.



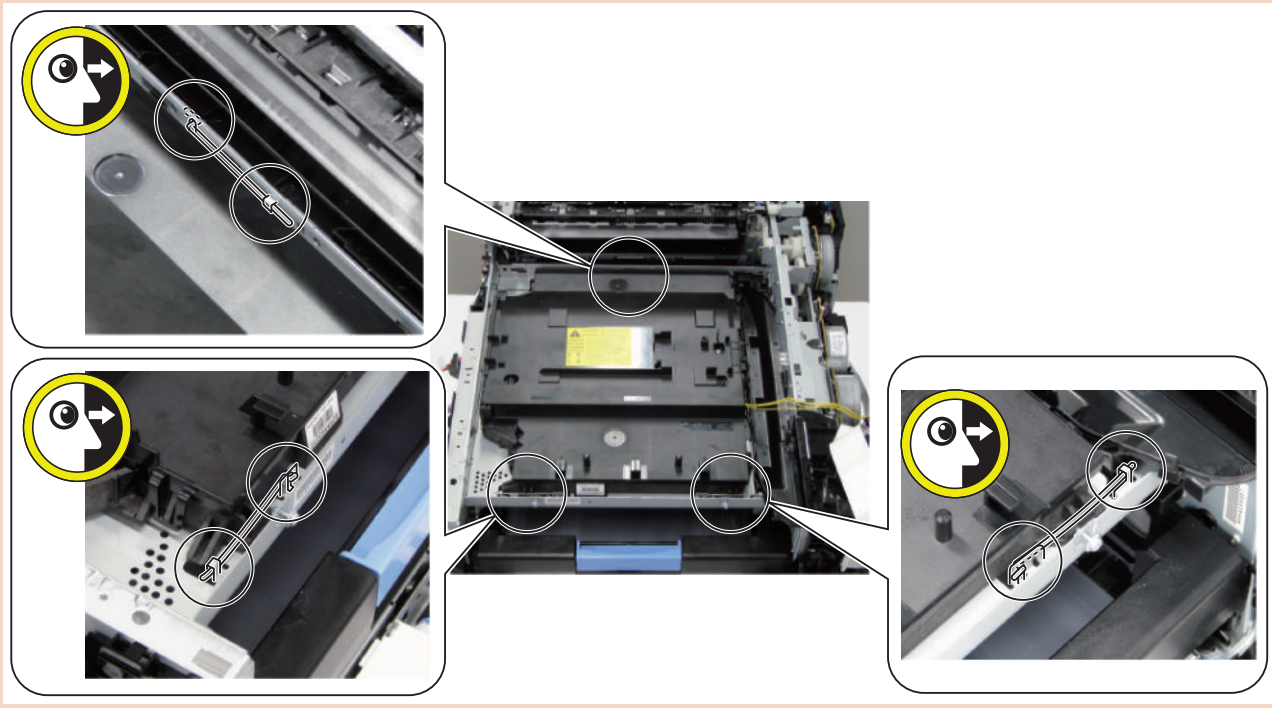


Image Formation System

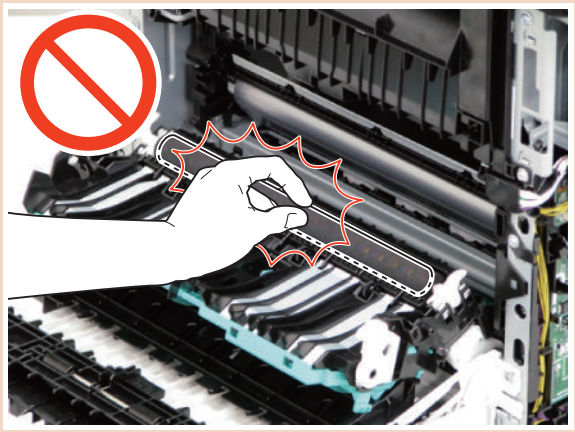
Removing the Secondary Transfer Roller

■ Preparation

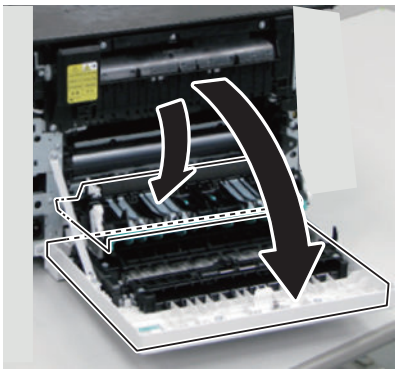
1. “Removing the Toner Cartridge” on page 75

■ Procedure

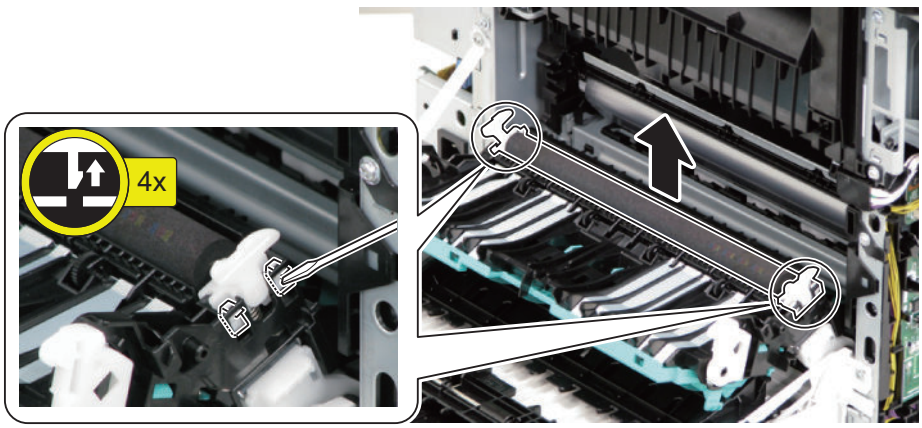
CAUTION:
Do not touch the surface of the Secondary Transfer Roller.



1. **Open the Rear Cover Unit and the Secondary Transfer Feed Unit.**



2. **Remove the Secondary Transfer Roller.**



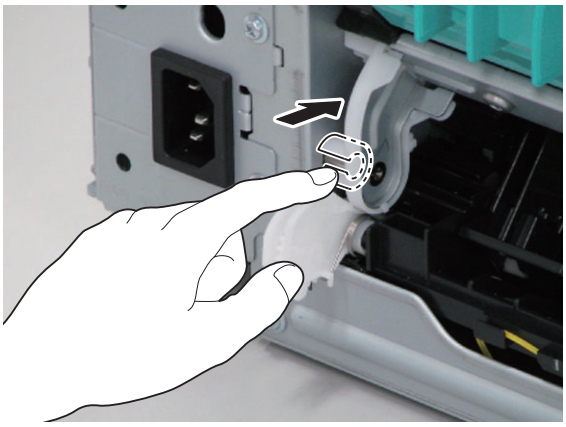
Removing the Secondary Transfer Feed Unit

■ Preparation

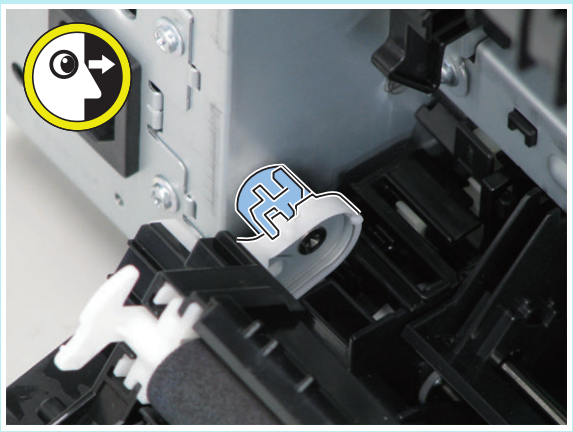
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78
4. “Removing the Rear Cover Unit” on page 80

■ Procedure

1. **Remove the Shaft Spacer on the rear left side.**

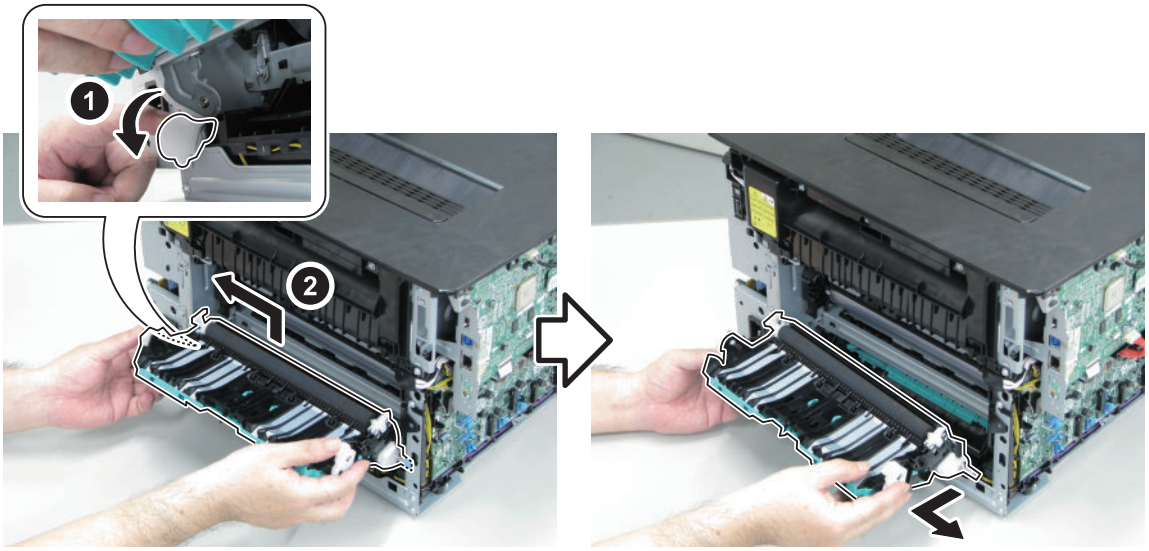


NOTE:
When installing the Shaft Spacer, install it with the Secondary Transfer Feed Unit opened. Be sure to check the installation position of the stopper.



2. **Open the Secondary Transfer Feed Unit, and then remove the Secondary Transfer Feed Unit.**

NOTE:
Remove the Secondary Transfer Feed Unit by lifting the whole unit and moving it to the left while pushing down the gear on the left with a finger so that the gear does not interfere with the unit.



Removing the ITB Unit

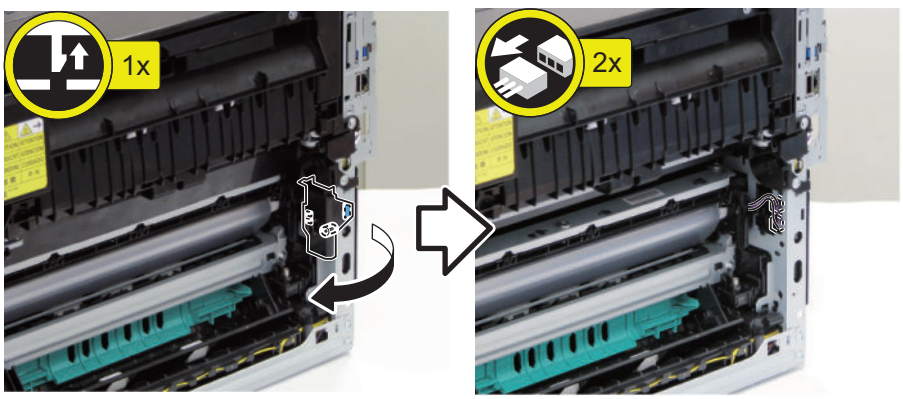
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**
4. **“Removing the Rear Cover Unit” on page 80**
5. **“Removing the Secondary Transfer Feed Unit” on page 108**

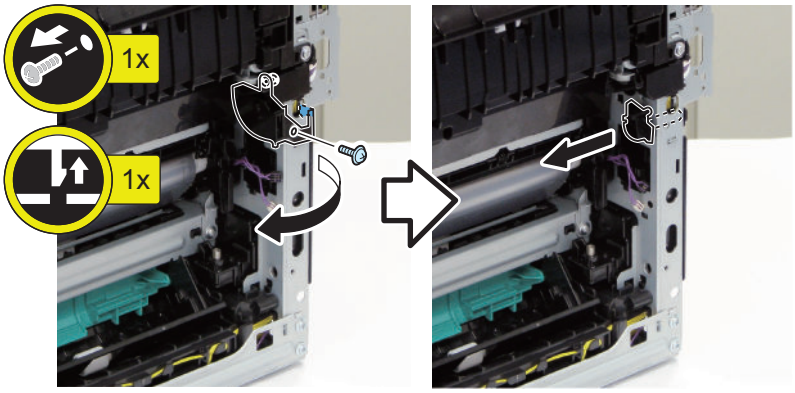
■ Procedure

CAUTION:
- **Place the ITB Unit on a sheet of paper.**
- **Be sure not to damage or touch the ITB Unit.**

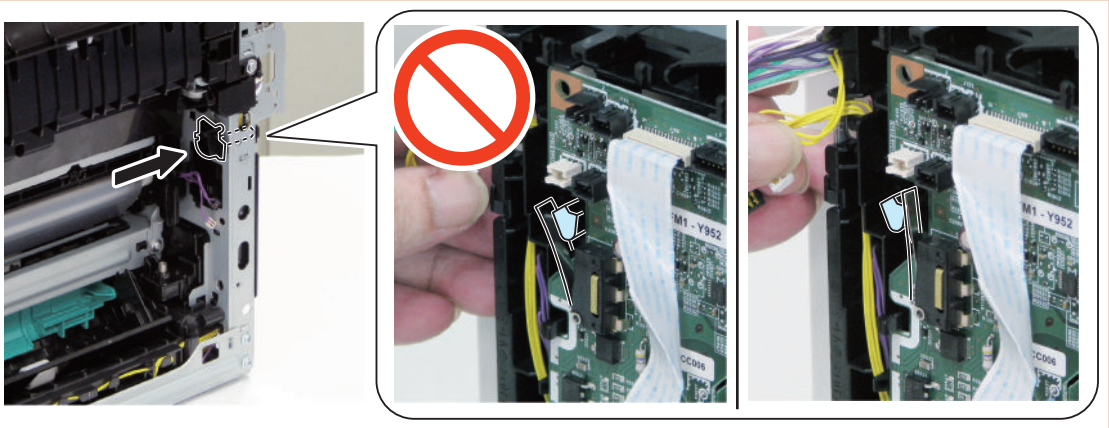
1. **Remove the Connector Cover on the rear right side of the host machine, and disconnect the connectors.**



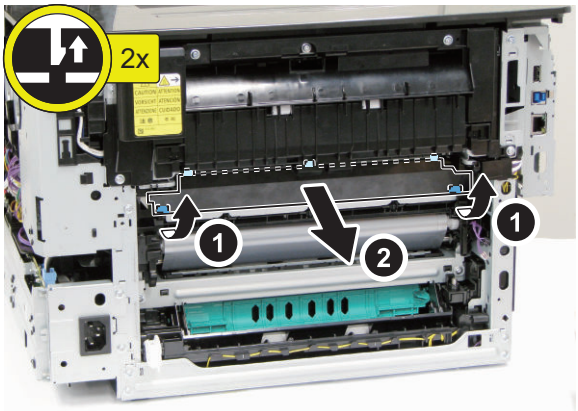
2. **Remove the Rear Door Open/Close Detection Flag.**



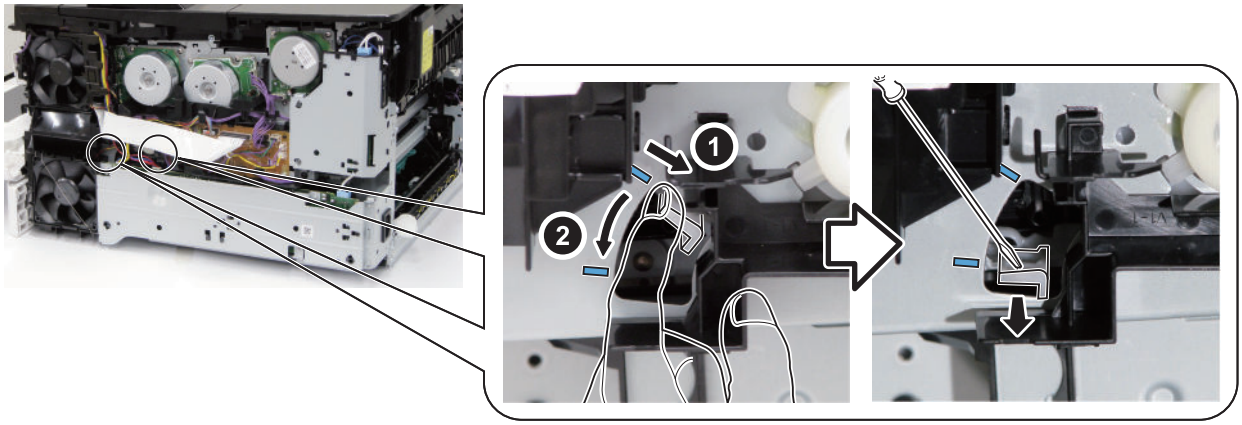
CAUTION:
When installing the Rear Door Open/Close Detection Flag, install it to the position where it pushes the lever of the microswitch.



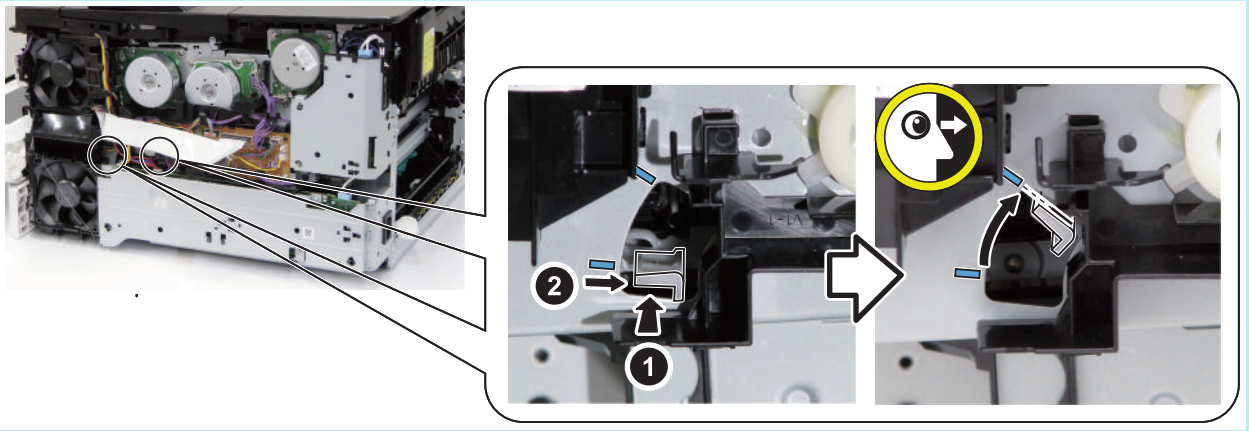
3. **Remove the ITB Unit Upper Cover from the rear of the host machine.**



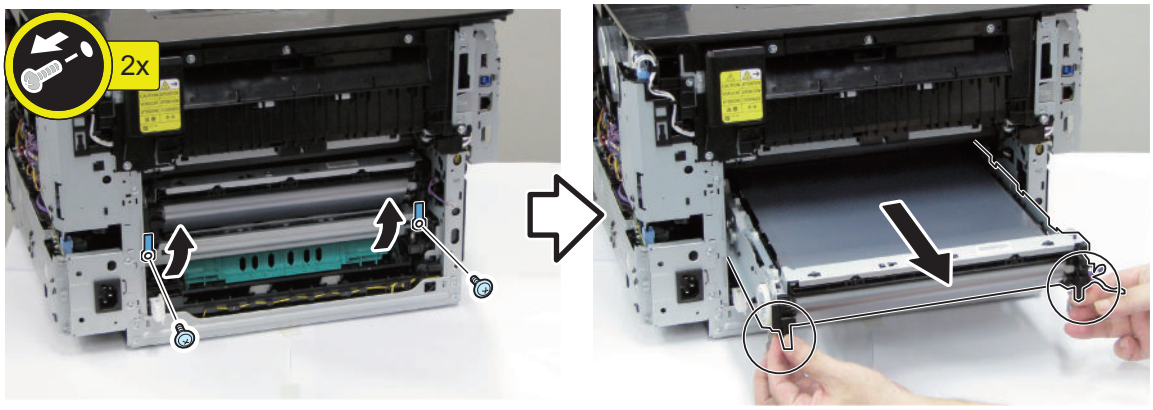
4. **While releasing the lock of the 2 white levers by pushing them respectively to the direction of the arrow 1, move them to the mark 2. Then pull out the levers toward the front until they stop.**



NOTE:
For installation, while pushing the two levers respectively toward the rear and then to the direction of the arrow 2, move them to the position of the upper mark.



5. **Remove the screws, and pull out the ITB Unit while holding the 2 levers on the left and right sides.**



6. **Actions after replacement:** **“After Replacing the ITB Unit” on page 136**

Removing the Color Displacement Density Sensor Unit

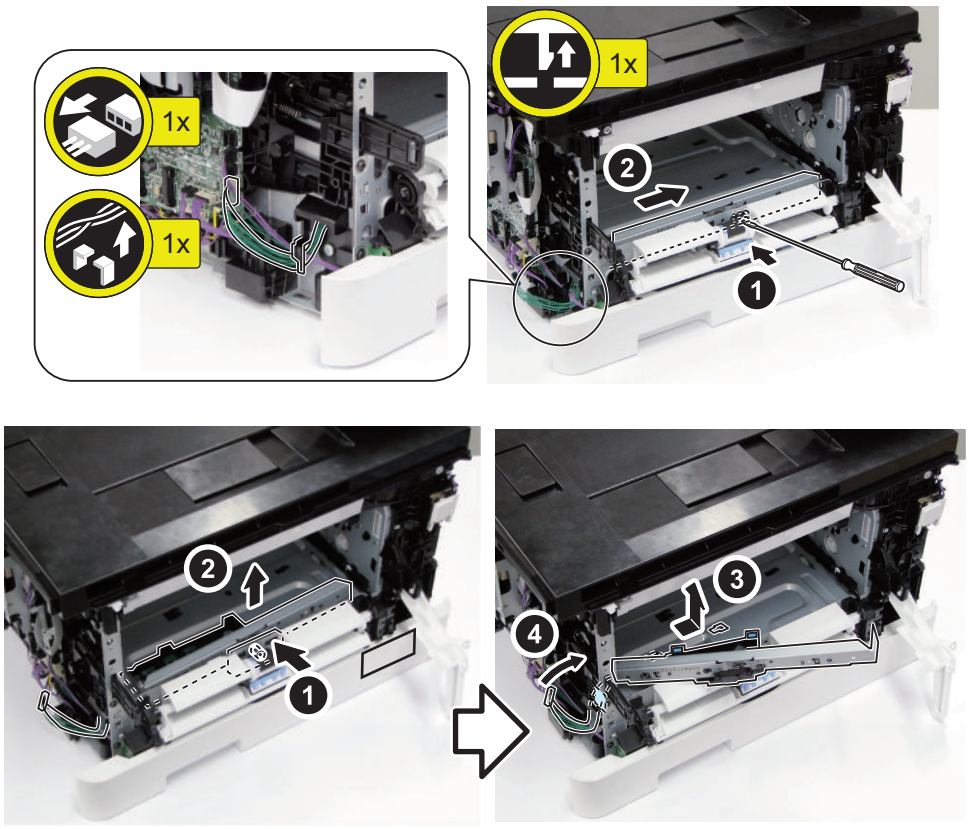
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**

3. “Removing the Right Cover” on page 78
4. “Removing the Rear Cover Unit” on page 80
5. “Removing the Secondary Transfer Feed Unit” on page 108
6. “Removing the ITB Unit” on page 109
7. “Removing the Cartridge Cover ” on page 80

■ Procedure

1. **Remove the Color Displacement Density Sensor Unit.**



2. **Actions after replacement:** “After Replacing the Color Displacement Density Sensor Unit” on page 136

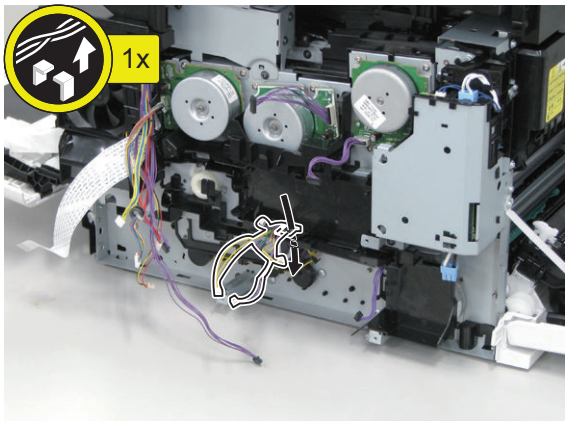
Removing the Developing Motor

■ Preparation

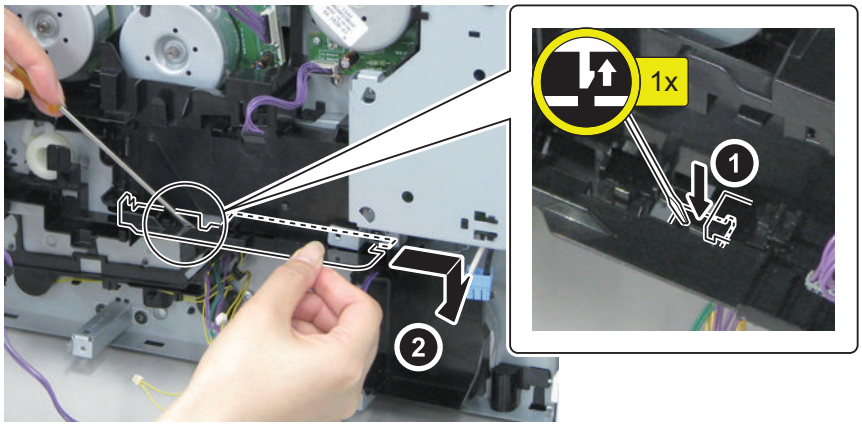
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Right Cover” on page 78
3. “Removing the Low Voltage Power Supply Unit” on page 90
4. “Removing the Driver PCB” on page 97

■ Procedure

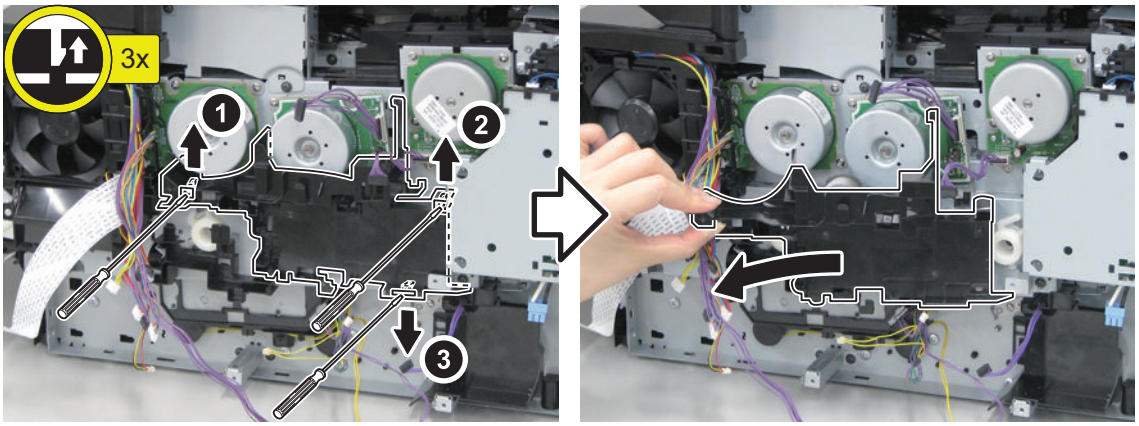
1. **Free the harness.**



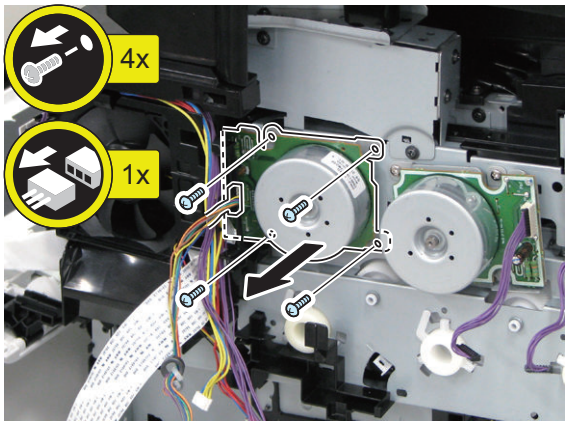
2. **Remove the PCB Guide.**



3. **Remove the PCB Holder.**



4. **Remove the Developing Motor.**



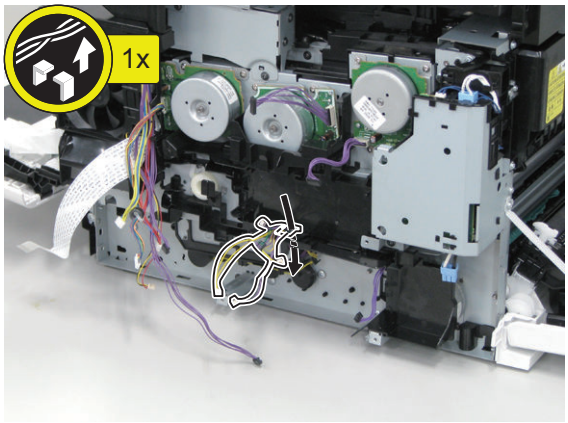
Removing the Drum Motor

■ Preparation

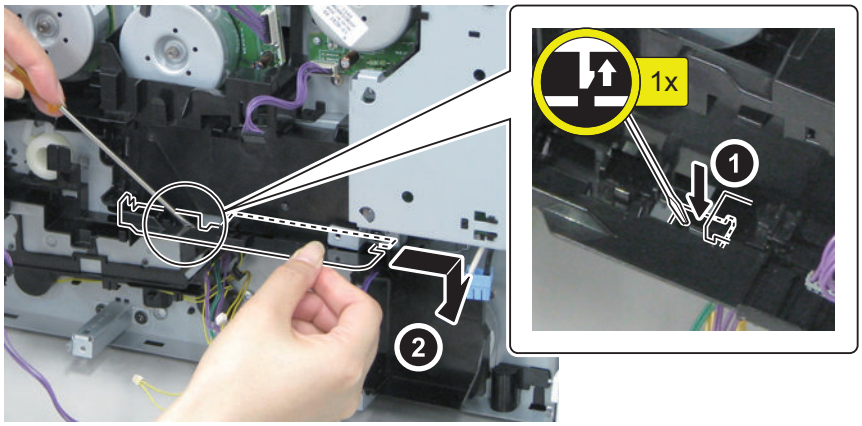
1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**
3. **“Removing the Low Voltage Power Supply Unit” on page 90**
4. **“Removing the Driver PCB” on page 97**

■ Procedure

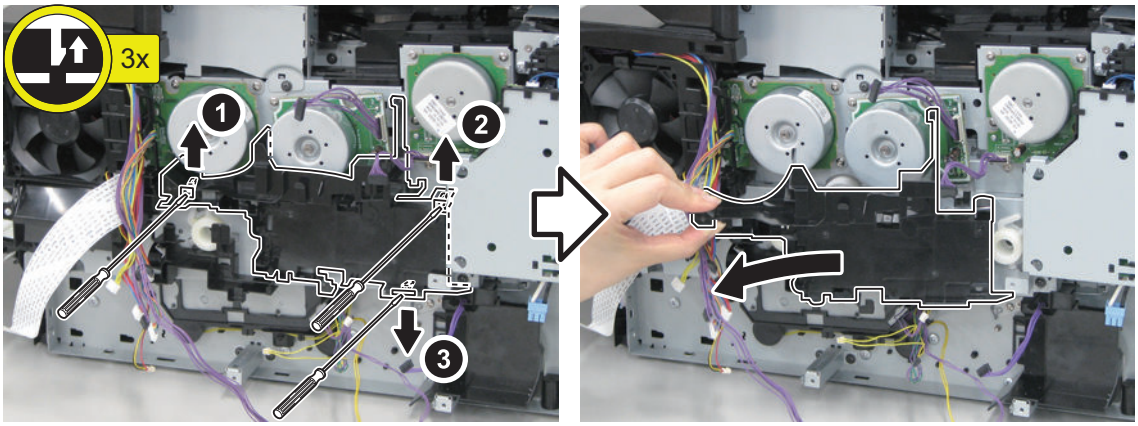
1. **Free the harness.**



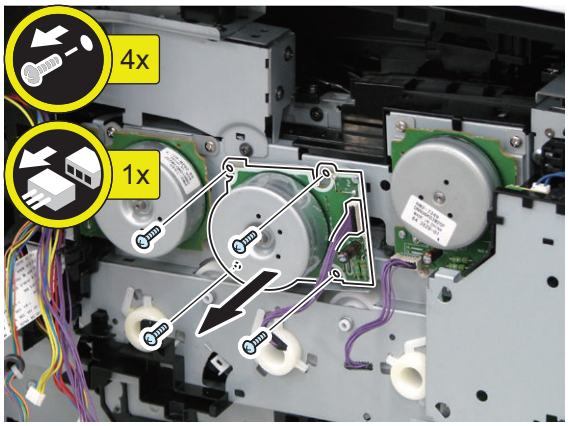
2. **Remove the PCB Guide.**



3. **Remove the PCB Holder.**



4. **Remove the Drum Motor.**



Fixing System

Removing the Fixing Assembly

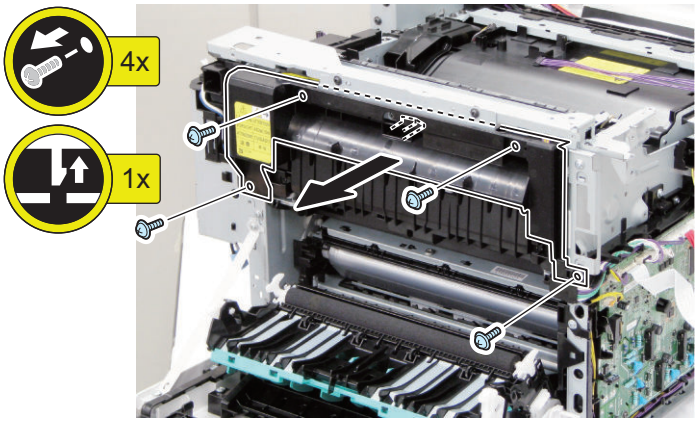
■ Preparation

1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78
4. “Removing the Control Panel Unit” on page 92
5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85
7. “Removing the Controller Cover ” on page 87
8. “Removing the Main Controller PCB” on page 88
9. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
10. “Removing the Main Controller Support Plate” on page 89

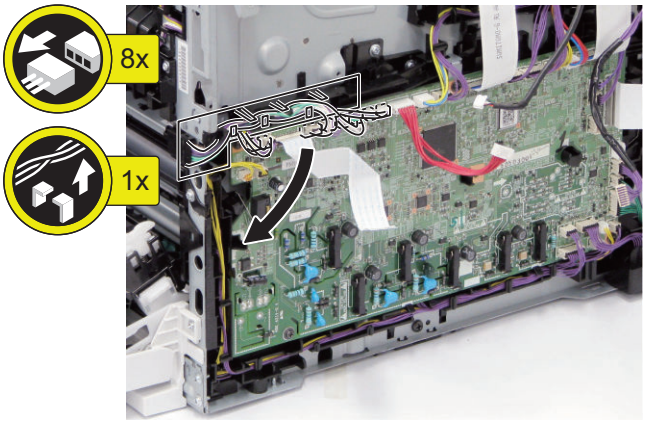
■ Procedure

CAUTION:
Since the Fixing Assembly is hot immediately after the power is turned OFF, give it time to cool down before removing it.

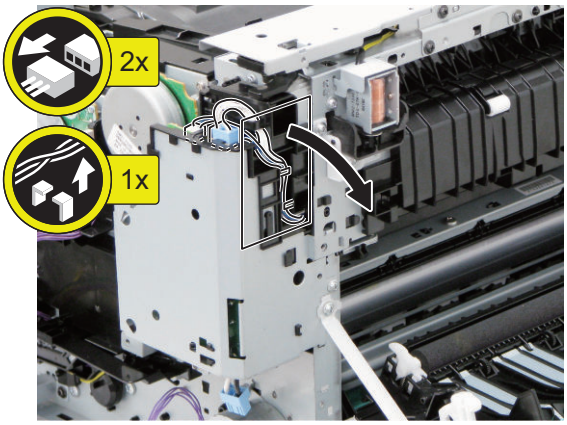
1. **Remove the Rear Upper Unit Plate.**



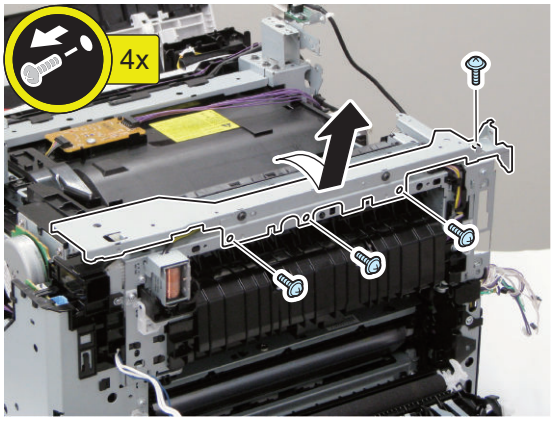
2. **Free the harness.**



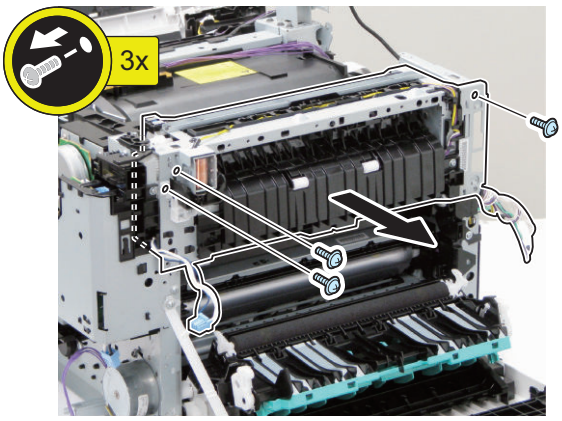
3. **Disconnect the connectors and free the harness.**



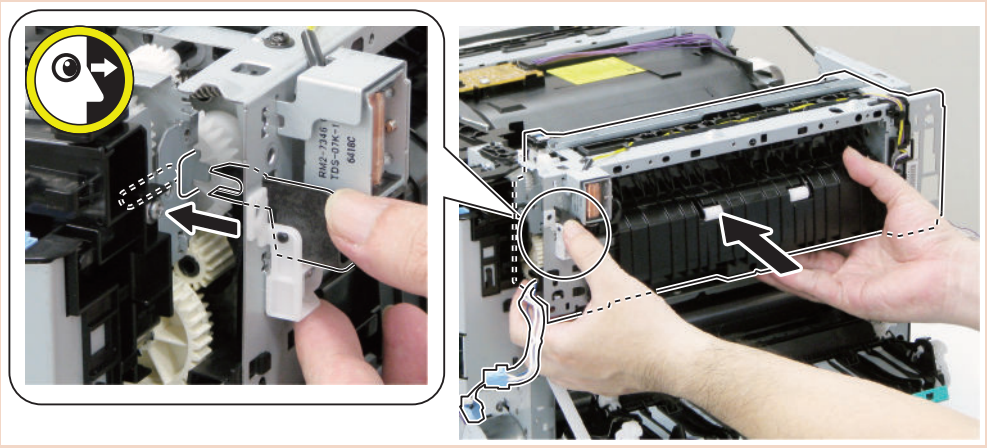
4. **Remove the Rear Upper Plate.**



5. **Remove the Fixing Assembly.**



CAUTION:
When installing it, be careful not to let the Reverse Lever come in contact with the frame of the printer. Also be careful not to let it slip under the Reverse Stopper of the Reverse Drive Assembly.



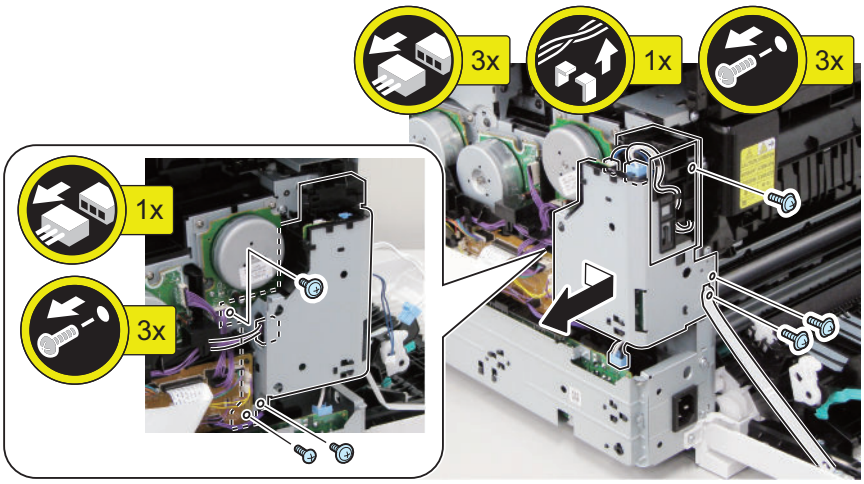
Removing the Fixing Power Supply Unit

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**

■ Procedure

1. **Remove the Fixing Power Supply Unit.**



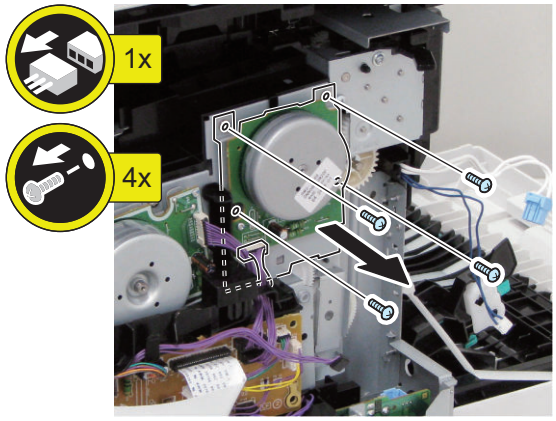
Removing the Fixing Motor

■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Right Cover” on page 78**
3. **“Removing the Fixing Power Supply Unit” on page 118**

■ Procedure

1. **Remove the Fixing Motor.**



Pickup Feed Delivery System

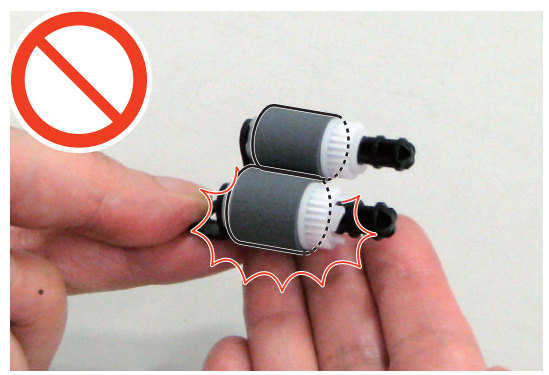
Removing the Cassette Pickup Roller/Feed Roller Unit

■ Preparation

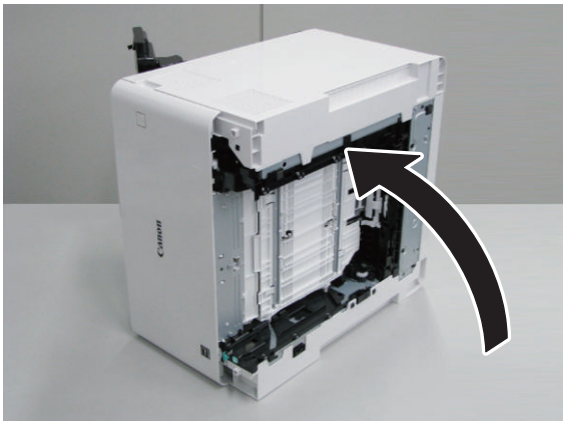
1. “Removing the Toner Cartridge” on page 75

■ Procedure

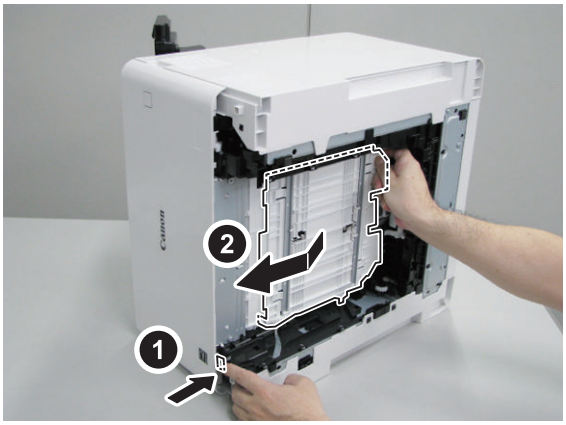
CAUTION:
Be sure not to touch the surface of the Cassette Pickup Roller and the surface of the Feed Roller.



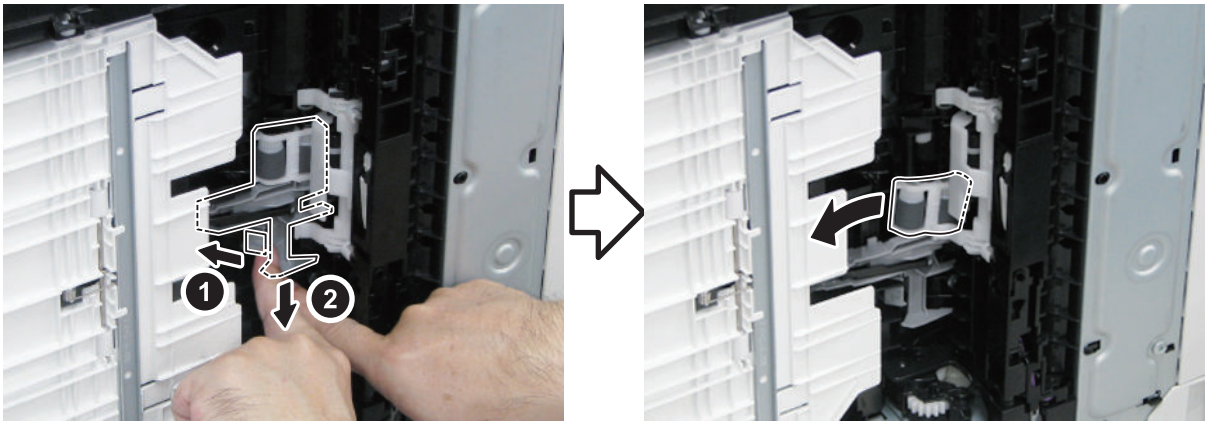
1. **Pull out the cassette, and stand the host machine with its left side down.**



2. **Move the Multi-purpose Tray Feed Guide in the direction of the arrow (2).**



3. **Push the lever, move the Roller Retainer to the direction of the arrow, and remove the Pickup Roller and the Feed Roller.**



Removing the Cassette Separation Roller Unit

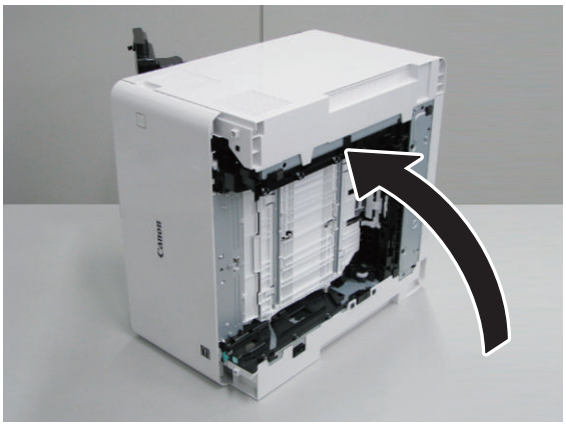
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**

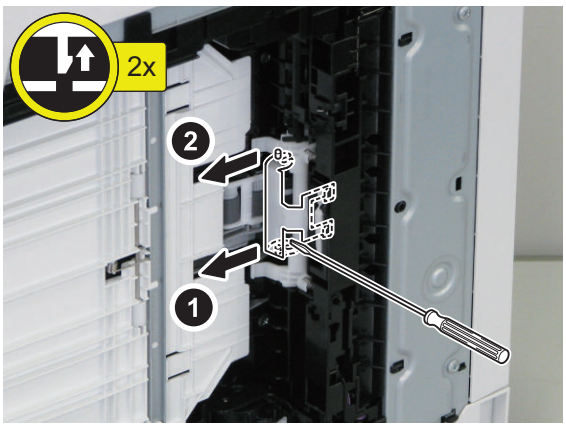
■ Procedure

CAUTION:
Be sure not to touch the surface of the Separation Roller.

1. **Pull out the cassette, and stand the host machine with its left side down.**



2. **Remove the Separation Roller Guide.**



3. **Remove the Separation Roller.**

NOTE:
When installing the Separation Roller, be sure to properly fit the D-cut.

Removing the Duplex Reverse Drive Unit

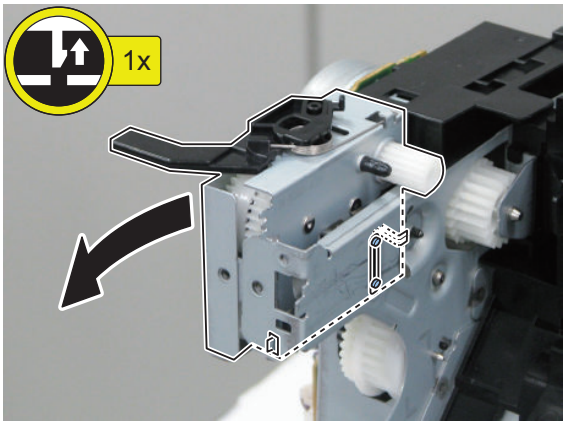
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**
4. **“Removing the Control Panel Unit” on page 92**

5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85
7. “Removing the Controller Cover ” on page 87
8. “Removing the Main Controller PCB” on page 88
9. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
10. “Removing the Main Controller Support Plate” on page 89
11. “Removing the Fixing Assembly” on page 116
12. “Removing the Fixing Power Supply Unit” on page 118

■ Procedure

1. **Remove the Duplex Reverse Drive Unit.**



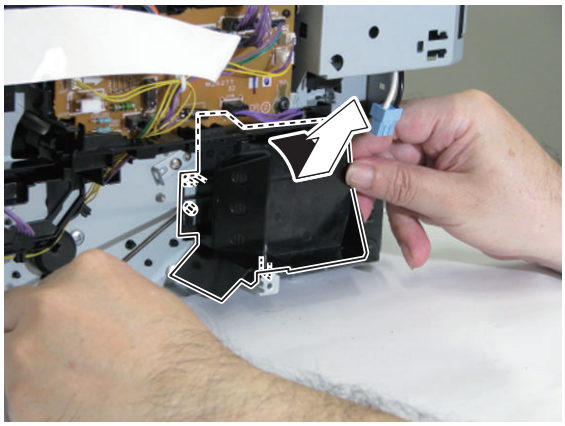
Removing the Pickup Motor

■ Preparation

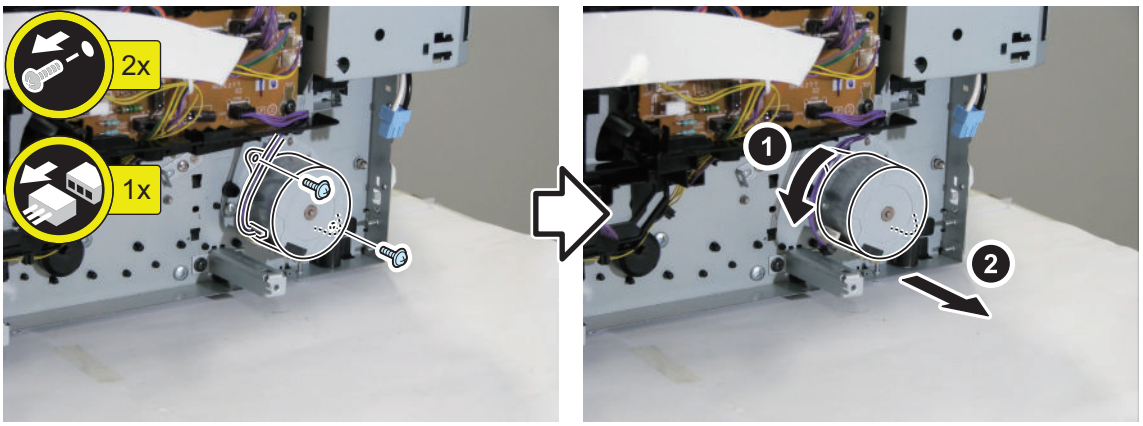
1. “Removing the Left Cover” on page 76
2. “Removing the Right Cover” on page 78
3. “Removing the Low Voltage Power Supply Unit” on page 90

■ Procedure

1. **Remove the cover.**



2. **Remove the Pickup Motor.**



Removing the Re-Pickup Unit

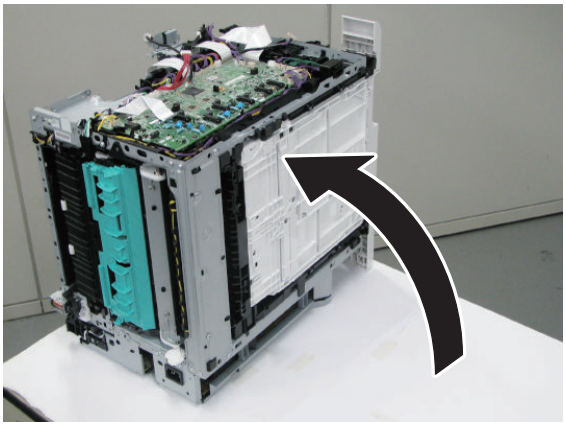
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**
4. **“Removing the Rear Cover Unit” on page 80**
5. **“Removing the Controller Cover ” on page 87**
6. **“Removing the Main Controller PCB” on page 88**
7. **“Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88**
8. **“Removing the Main Controller Support Plate” on page 89**

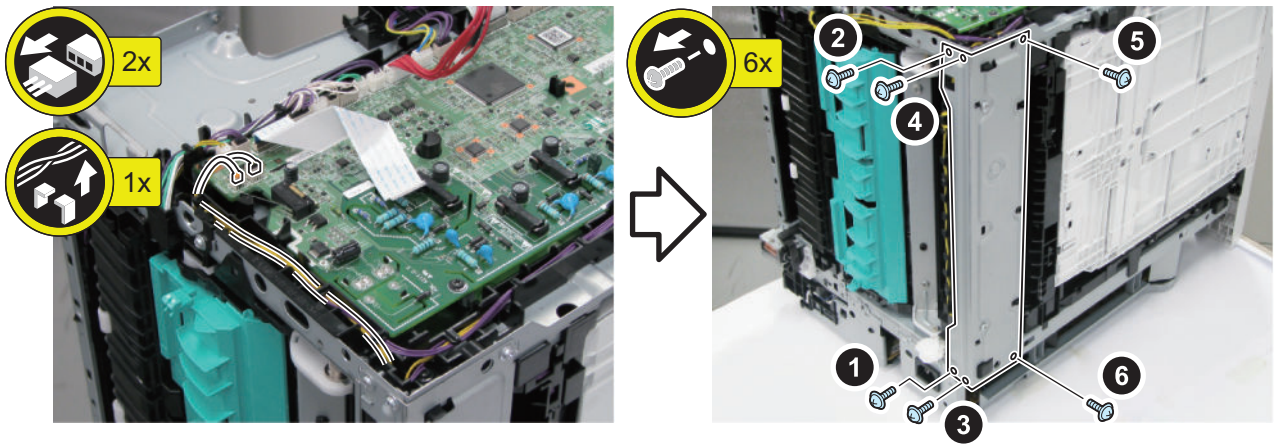
■ Procedure

1. **Stand the host machine with its right side down.**

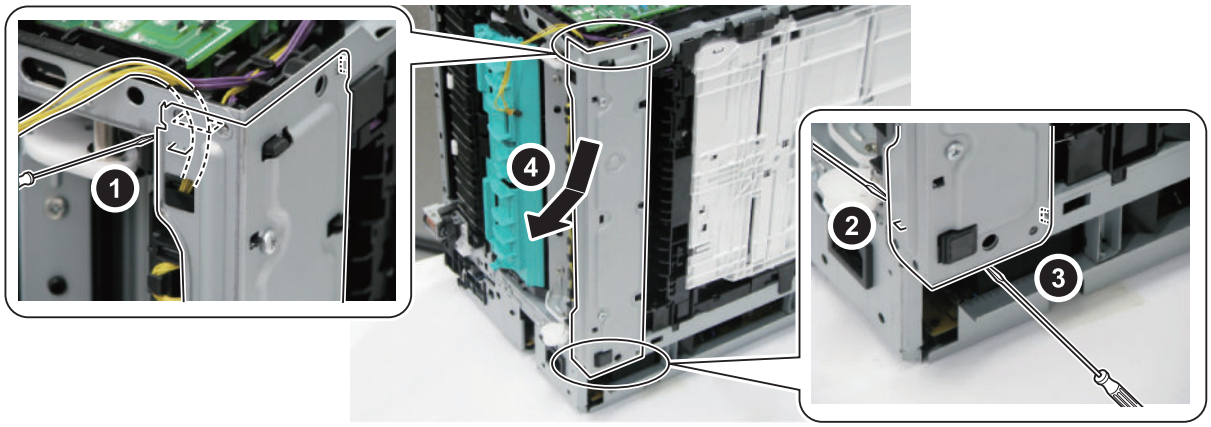
CAUTION:
Be careful not to damage the Control Panel and parts.



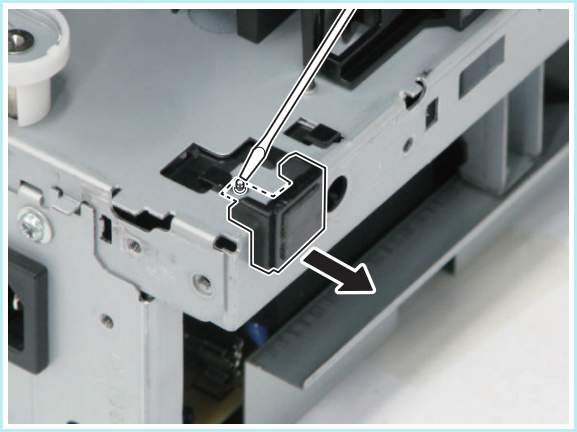
2. **Disconnect the connectors and remove the screws. Be sure to remove the screws in the order from 1 to 6.**



3. **Remove the Re-Pickup Unit.**



NOTE:
At installation,
- By removing the block with rubber from the bottom of the host machine, the Re-Pickup Unit can be installed easily.
- Tighten the screws in the order they were removed.



Removing the Lifter Drive Unit

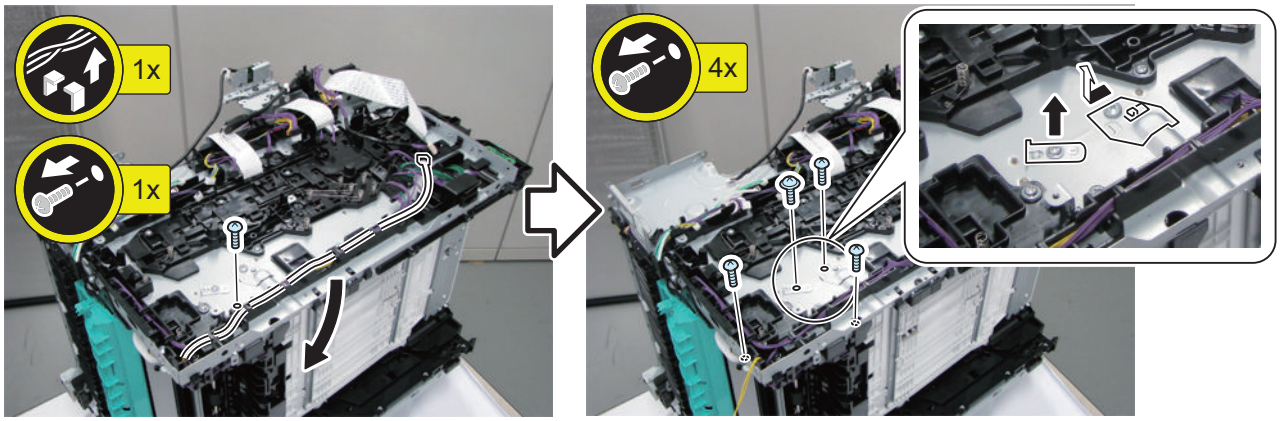
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**

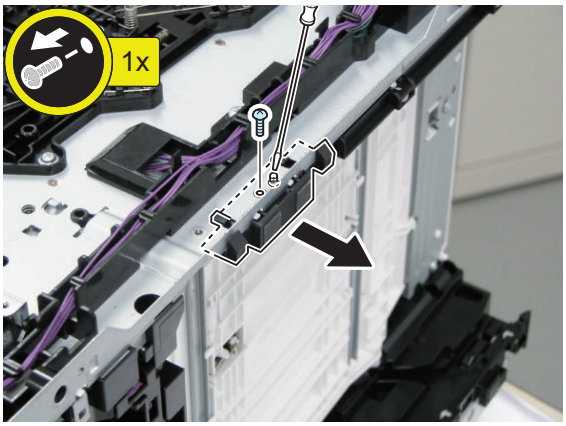
4. “Removing the Control Panel Unit” on page 92
5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85
7. “Removing the Rear Cover Unit” on page 80
8. “Removing the Controller Cover ” on page 87
9. “Removing the Main Controller PCB” on page 88
10. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
11. “Removing the Main Controller Support Plate” on page 89
12. “Removing the Engine Controller PCB” on page 89
13. Pull out the cassette.
14. “Removing the Re-Pickup Unit” on page 124

■ Procedure

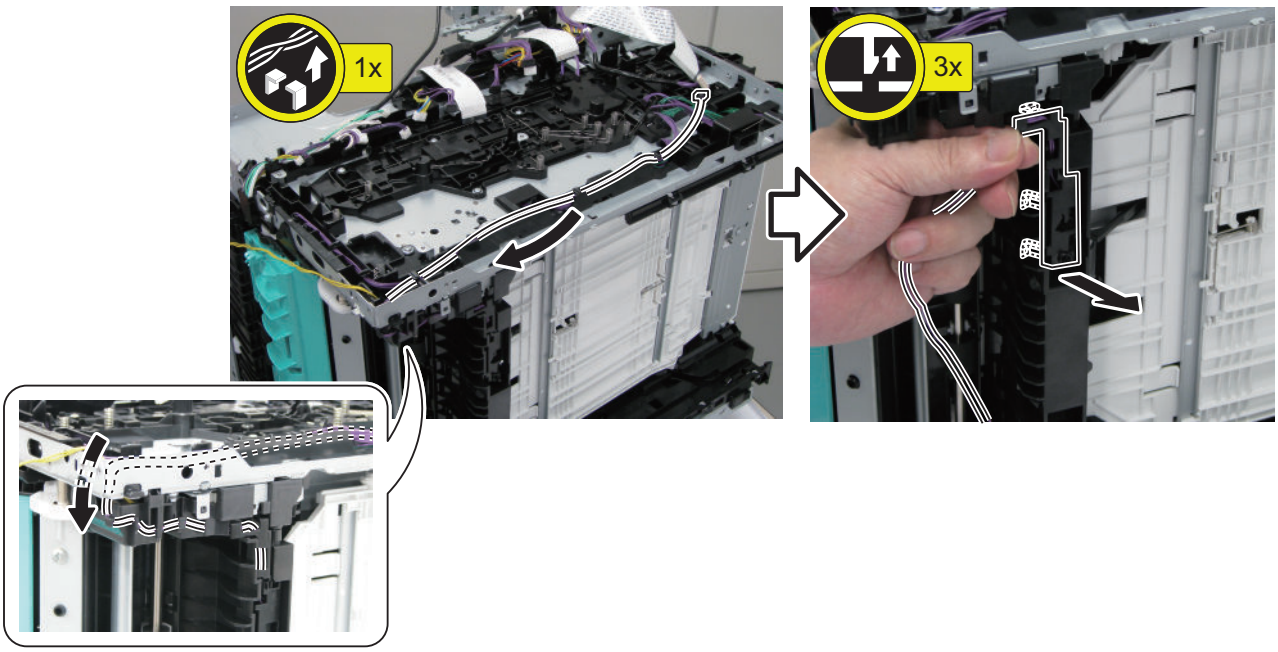
1. Free the harness, and remove the screws, Shaft Cover, and shaft.



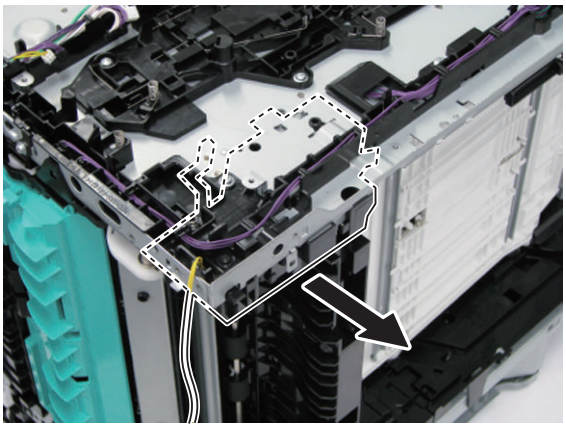
2. Remove the block with rubber.



3. **Remove the Cassette Detection Switch.**



4. **Remove the Lifter Drive Unit.**



Removing the Cassette Pickup Unit

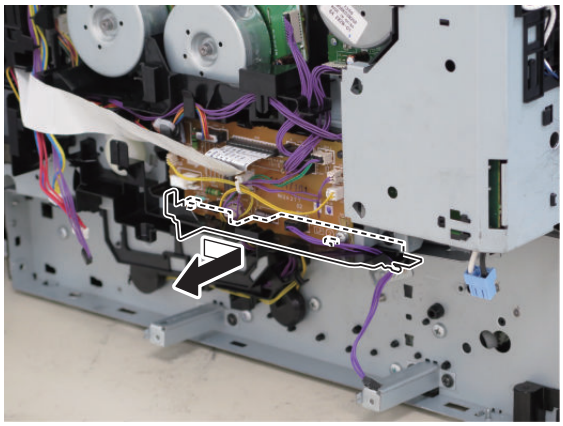
■ Preparation

1. **“Removing the Toner Cartridge” on page 75**
2. **“Removing the Left Cover” on page 76**
3. **“Removing the Right Cover” on page 78**
4. **“Removing the Rear Cover Unit” on page 80**
5. **“Removing the Controller Cover ” on page 87**
6. **“Removing the Main Controller PCB” on page 88**
7. **“Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88**
8. **“Removing the Main Controller Support Plate” on page 89**
9. **“Removing the Engine Controller PCB” on page 89**
10. **Pull out the cassette.**
11. **“Removing the Low Voltage Power Supply Unit” on page 90**

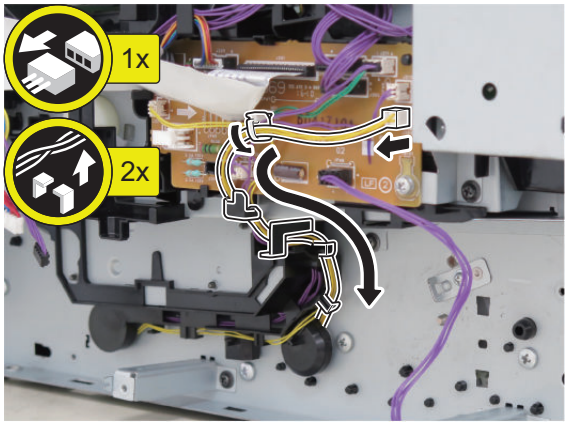
12. “Removing the Re-Pickup Unit” on page 124
13. “Removing the Lifter Drive Unit” on page 125
14. “Removing the Pickup Motor” on page 123

■ Procedure

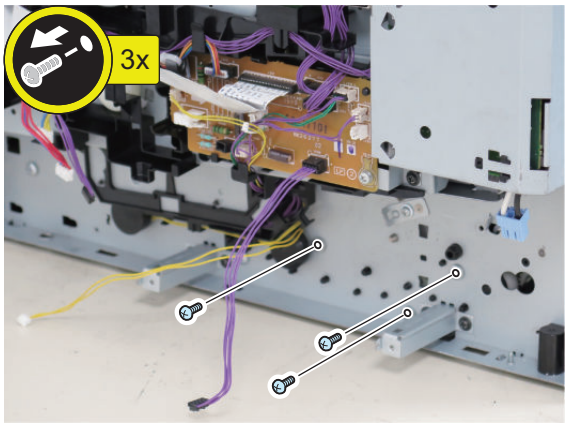
1. **Remove the harness guide.**



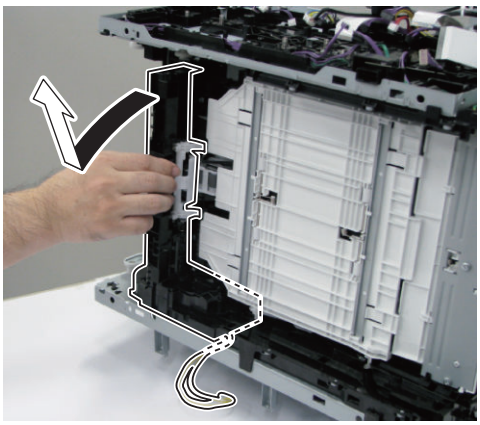
2. **Remove the connector and harness.**



3. **Remove the screws.**



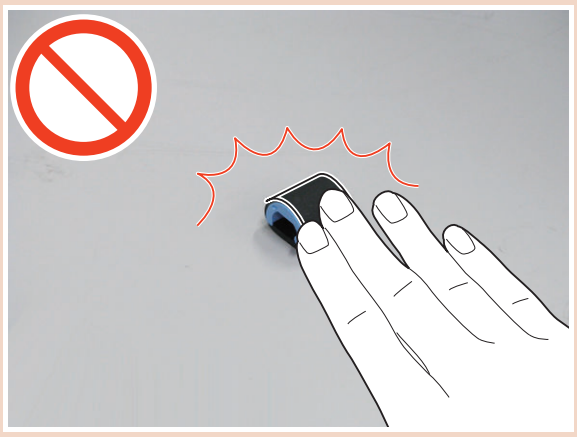
4. **Stand the host machine with its right side down, and remove the Cassette Pickup Unit.**



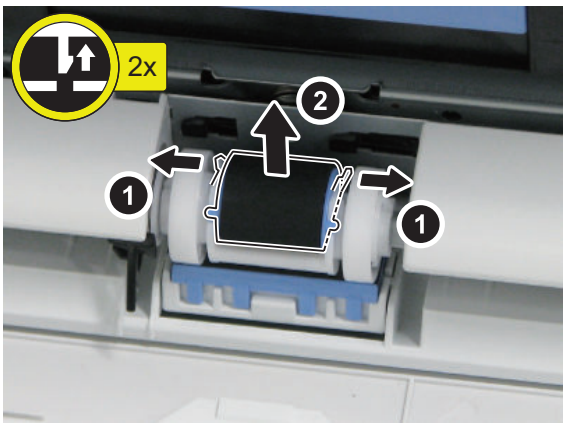
Removing the Multi-purpose Tray Pickup Roller

■ Procedure

CAUTION:
Be sure not to touch the surface of the Multi-purpose Tray Pickup Roller.



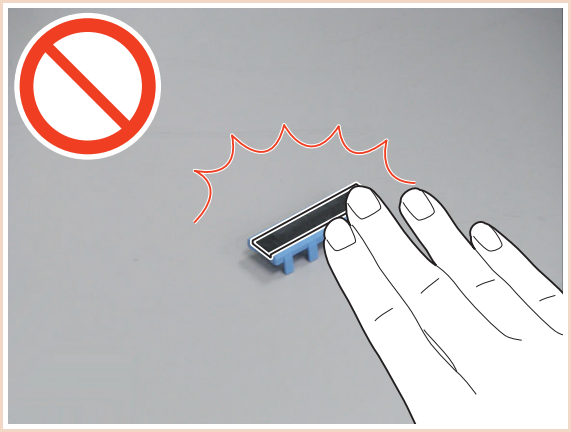
1. **Open the Cartridge Cover.**
2. **Remove the Multi-purpose Tray Pickup Roller.**



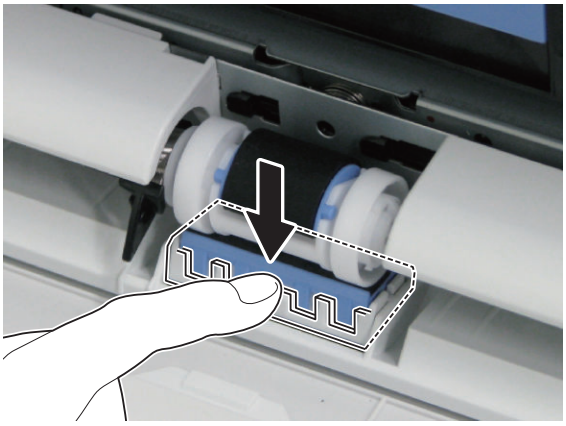
Removing the Multi-purpose Tray Separation Pad

■ Procedure

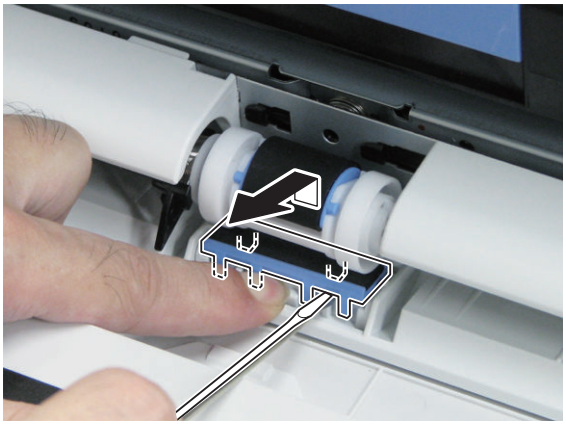
CAUTION:
Be sure not to touch the surface of the Multi-purpose Tray Separation Pad.



1. **Open the Cartridge Cover.**
2. **Lower the Multi-purpose Tray Separation Pad.**



3. **Remove the Multi-purpose Tray Separation Pad.**



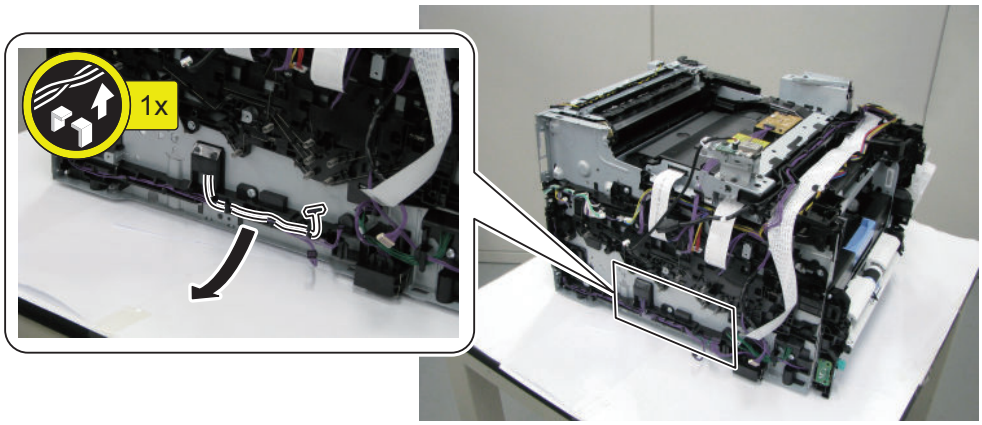
Removing the Registration Unit

■ Preparation

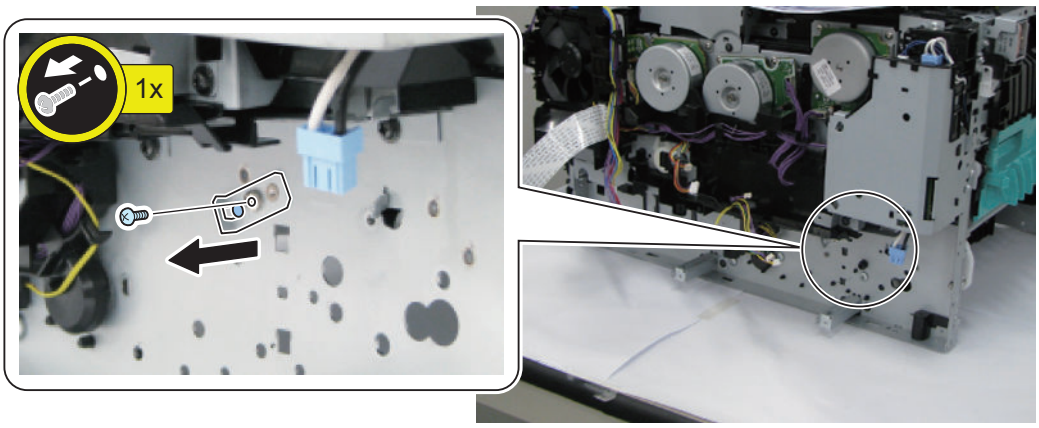
1. “Removing the Toner Cartridge” on page 75
2. “Removing the Left Cover” on page 76
3. “Removing the Right Cover” on page 78
4. “Removing the Control Panel Unit” on page 92
5. “Removing the Control Panel Lower Cover” on page 84
6. “Removing the Upper Cover Unit ” on page 85
7. “Removing the Rear Cover Unit” on page 80
8. “Removing the Controller Cover ” on page 87
9. “Removing the Main Controller PCB” on page 88
10. “Removing the Wireless LAN Support Plate (Wi-Fi model only)” on page 88
11. “Removing the Main Controller Support Plate” on page 89
12. “Removing the Engine Controller PCB” on page 89
13. “Removing the Low Voltage Power Supply Unit” on page 90
14. “Removing the Re-Pickup Unit” on page 124
15. “Removing the Lifter Drive Unit” on page 125
16. “Removing the Pickup Motor” on page 123
17. “Removing the Cassette Pickup Unit” on page 127

■ Procedure

1. **Free the harness.**

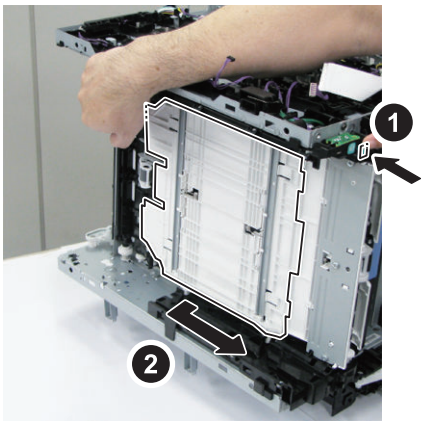


2. **Remove the shaft.**

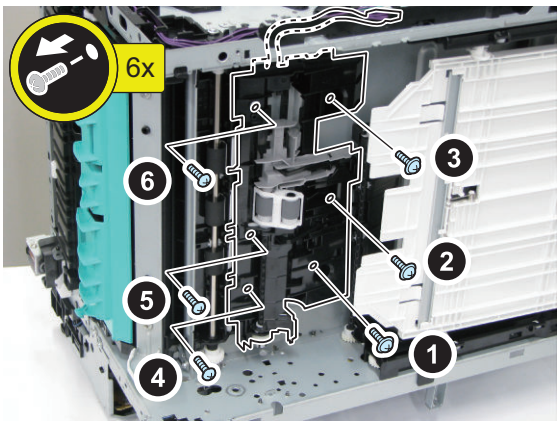


3. **Stand the host machine with its right side down.**

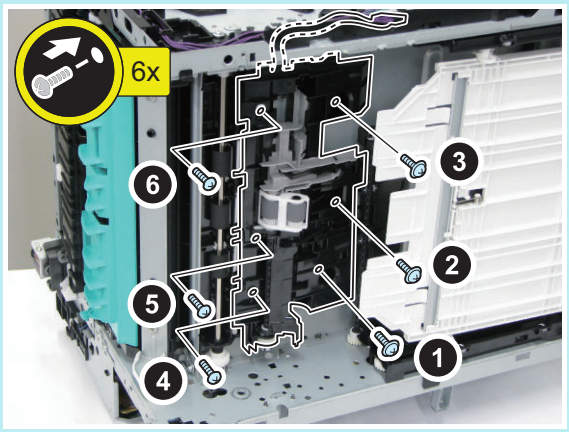
4. **Move the Multi-purpose Tray Feed Guide in the direction of the arrow (2).**



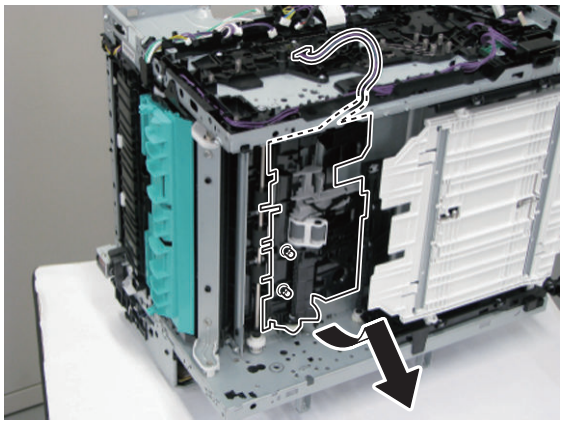
5. **Remove the screws in the order of numbers in the illustration.**



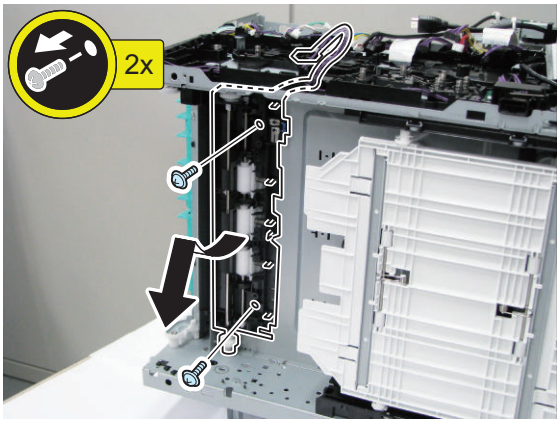
NOTE:
When installing it, tighten the screws in the order of numbers in the illustration.



6. **Remove the Feed Front Guide and the Feed Rear Guide together.**



7. **Remove the Registration Unit.**



Adjustment

Adjustment at Parts Replacement

After Replacing the Control Panel

1. **Execute the following service mode to adjust the coordinate position on the touch panel.**
   - COPIER > ADJUST > PANEL > TOUCHCHK
2. **Check that the service mode setting value is "1" in the following service mode.**
   - COPIER > ADJUST > PANEL > TOUCH-R

CAUTION:
When the value is not "1" in the above service mode, re-adjust the coordinate position on the touch panel.

After Replacing the ITB Unit

1. **Perform the following**
   - Adjustment / Maintenance > > Adjust Image Quality > Quick Adjust

After Replacing the Color Displacement Density Sensor Unit

1. **Perform the following**
   - Adjustment / Maintenance > > Adjust Image Quality > Quick Adjust

Engine Controller PCB

■ Before Replacing the Engine Controller PCB

The setting values stored in the Engine Controller PCB NVRAM can be backed up to the Main Controller PCB NVRAM.
The setting values can be backed up by performing the following method.
- SERVICE MODE > COPIER > FUNCTION > VIFFNC > STOR-DCN

Turn OFF and then ON the power.

CAUTION:
Perform backup immediately before replacing the Engine Controller PCB.

■ After Replacing the Engine Controller PCB

The setting values of the NVRAM on the Engine Controller PCB are stored in the NVRAM on the Main Controller PCB as a backup.
The setting values can be restored by performing the following method.
- SERVICE MODE > COPIER > FUNCTION > VIFFNC > RSTR-DCN

Turn OFF and then ON the power.

Main Controller PCB

■ Before Replacing the Main Controller PCB

The following setting values are recorded in the Main Controller PCB. When the Main Controller PCB is replaced, these setting values are all returned to the default unless they are restored.
- User mode setting values
- Service mode setting values

These setting values can be restored by performing backup by either of the following methods.
Refer to the Backup List for the details of items that are backed up.“Backup Data List” on page 217
- SERVICE MODE > COPIER > FUNCTION > SYSTEM > EXPORT

- Menu> Management Settings > Data Management > Import/Export > Export
- RUI > Settings/Registration > Management Settings > Data Management > Import/Export > Export

CAUTION:
Perform backup immediately before replacing the Main Controller PCB.

■ After Replacing the Main Controller PCB

1. **Restore the data in the same way as that of backup. Refer to the Backup List for the setting values that are restored.**
   Refer to the Backup List for the details of items that are backed up.“Backup Data List” on page 217
   - SERVICE MODE > COPIER > FUNCTION > SYSTEM > IMPORT
   - Menu > Management Settings > Import/Export > Export
   - RUI > Settings/Registration > Management Settings > Import/Export > Export.

   Update firmware as necessary.

CAUTION:
Be sure to restore the data after replacing the Main Controller PCB.

2. **Correct coordinate position of Touch Panel in the following service mode.**
   - COPIER > ADJUST > PANEL > TOUCHCHK

7 Troubleshooting

Test Print

Engine Test Print

This machine has an engine test print function to check whether the printer engine is operating normally.

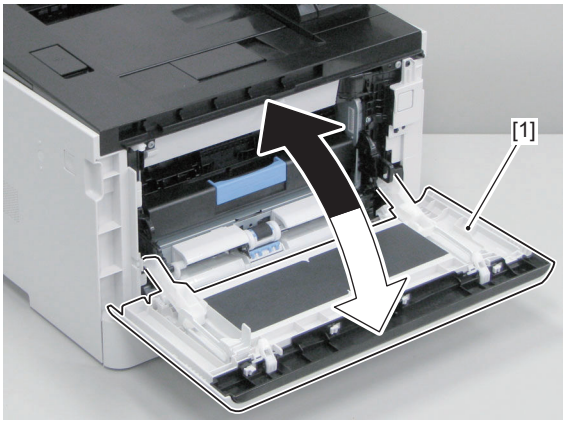
NOTE:
In the case of engine test print, a test print can be performed by using only the Engine Controller.

There are two types of engine test print: 1-sided print and 2-sided print*.
*: Duplex models only

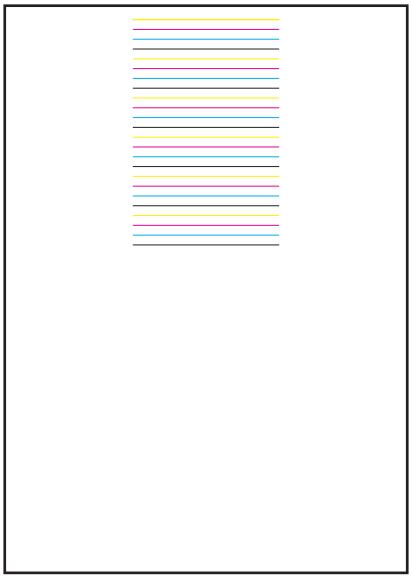
1. **Load A4/LTR paper in the Pickup Tray or Multi-purpose Tray Pickup Tray.**
2. **While the machine is in the standby mode, open and close the Front Cover [1] for the predetermined number of times in a row.**

CAUTION:
Be sure to perform the next cycle of open/close within 1.5 seconds after the last cycle of open/close.

- In case of 1-sided print
  4 times
- In case of 2-sided print
  5 times or more



3. **An engine test print is executed, and the test pattern as shown below is printed on one side or both sides of a sheet of paper.**



Controller test print

The following test print types are available with this machine, and you can check for failure of an image with a circle 'Yes' described in the image check items in the table below. When no failure is found in the test print in normal output mode, it can be caused in PDL input or Reader.
The image of the test print is generated by the Main Controller PCB.

PG TYPE	TYPE Pattern	Image check items													
		Gradation	Fogging	Transfer Fault	Black line (Color line)	White line	Uneven Density	Uneven Density at the Front / Rea	Right Angle	Straight Lines	Color displacement	Color	Ghost	Density	White spots
0-1	For R&D use														
2	Color chart											Yes			
3	For R&D use														
4	Rainbow chart (vertical scanning direction, A4)										Yes				
5	Rainbow chart (horizontal scanning direction, A4)										Yes				
6	Color grid (A4)								Yes	Yes	Yes				
7	Rainbow chart (vertical scanning direction, LTR/LGL)										Yes				
8	Rainbow chart (horizontal scanning direction, LTR/LGL)										Yes				
9	Color grid (LTR/LGL)								Yes	Yes	Yes				
10	16 gradations	Yes	Yes			Yes		Yes							
11	17 gradations of Y/M/C/Bk/R/G/B	Yes													
12	Halftone			Yes	Yes	Yes	Yes	Yes							

PG TYPE	TYPE Pattern	Image check items													
		Gra-dation	Fog-ging	Trans fer Fault	Black line (Color line)	White line	Un-even Den-sity	Un-even Den-sity at the Front / Rea	Right Angle	Straig ht Lines	Color dis-place-ment	Color	Ghost	Den-sity	White spots
13	For checking ghost due to transfer failure												Yes		
14	For checking the density patch							Yes						Yes	
15	For checking transfer				Yes	Yes		Yes							
20	For R&D use														
21	For checking de-veloping perform-ance (white spots)	Yes													Yes
22	For checking res-olution				Yes	Yes	Yes								
23	For checking banding image				Yes	Yes	Yes								
24	4 colors (land-scape)			Yes	Yes	Yes		Yes							
25	4 colors (portrait)			Yes	Yes	Yes	Yes								
26	For calibrating color difference between the front and back sides with DADF (1-path model)														

Follow the procedure shown below to output the test print.

1. **Select the following service mode.**
   TESTMODE > PRINT > PG-TYPE
2. **Enter the type number of the test print using the numeric keypad, and press the [Apply] key.**

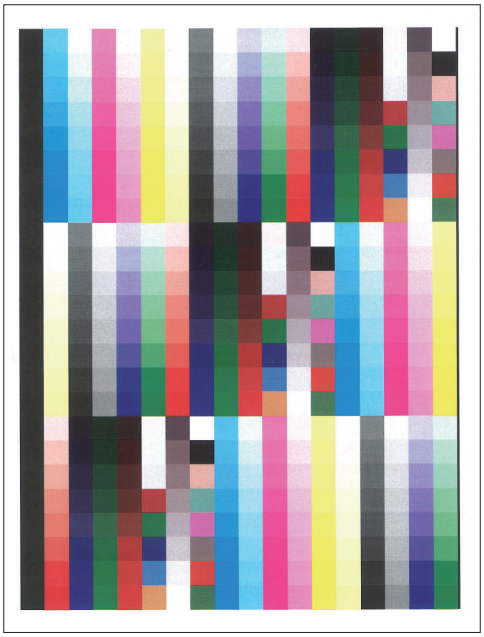
NOTE:
If necessary, change the settings for test print in the following service mode.
If the settings are not changed, a test print will be executed with the initial values of service mode settings.

- Setting of the number of output sheets:
  TESTMODE > PRINT > COUNT
- Setting of 1-sided/2-sided printing:
  TESTMODE > PRINT > PHASE
- Setting of the image formation method:
  TESTMODE > PRINT > MODE
- Setting of the image correction table:
  TESTMODE > PRINT > THRU
- Setting of ON/OFF of the laser scanning interpolation process:
  TESTMODE > PRINT > NRKE
- Setting of ON/OFF of the test print interpolation process:
  TESTMODE > PRINT > BLND
- Setting of the paper source used when outputting a test print:
  TESTMODE > PRINT > FEED

3. **Execute the following service mode to output a test print.**
   TESTMODE > PRINT > START

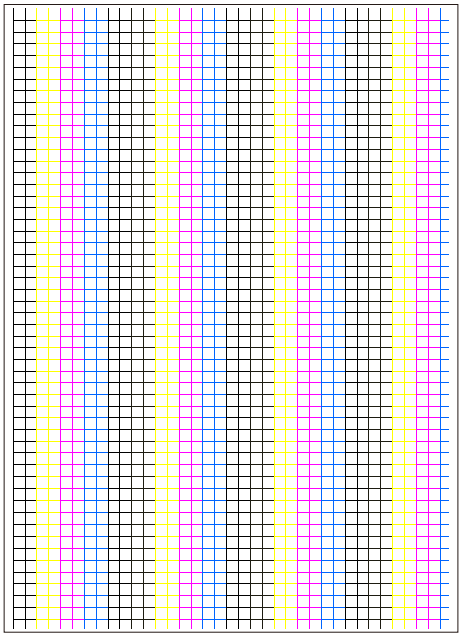
■ How to use the test print

● Color chart (TYPE=2)



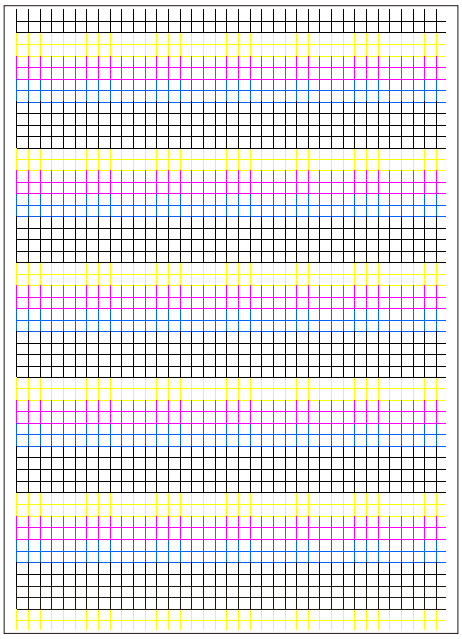
Check item	Checking method	Assumed cause
Color	Check the color.	Cartridge error Soiling on the Color Displacement/Density Sensor ITB Unit error

● Rainbow chart (vertical scanning direction) (TYPE=4, TYPE=7)



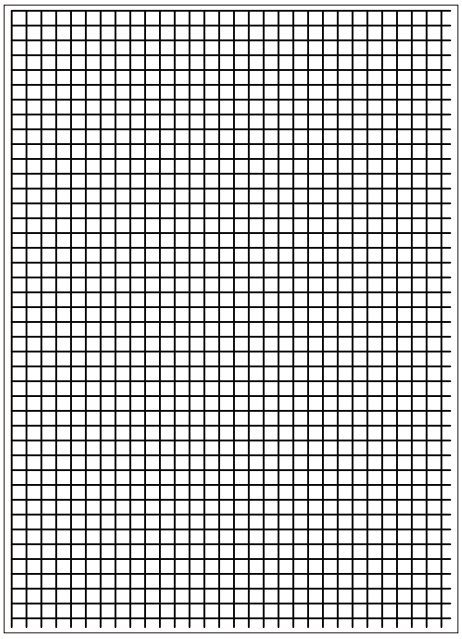
Check item	Checking method	Assumed cause
Color displacement	Output the PG after performing color displacement correction, and check the displacement for each color in the feed direction.	Soiling on the Color Displacement/Density Sensor Cartridge error ITB Unit error Main Drive Unit error

● Rainbow chart (horizontal scanning direction) (TYPE=5, TYPE=8)



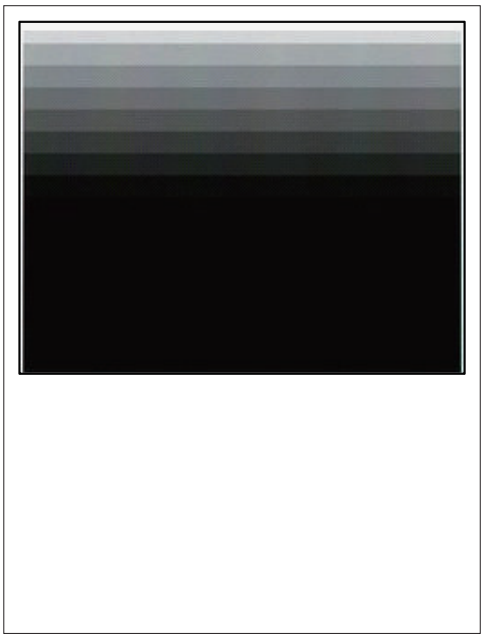
Check item	Checking method	Assumed cause
Color displacement	Output the PG after performing color displacement correction, and check the displacement for each color in the shaft direction.	Soiling on the Color Displacement/Density Sensor Cartridge error ITB Unit error Laser Scanner Unit error Main Controller PCB error

● Color grid (TYPE=6, TYPE=9)



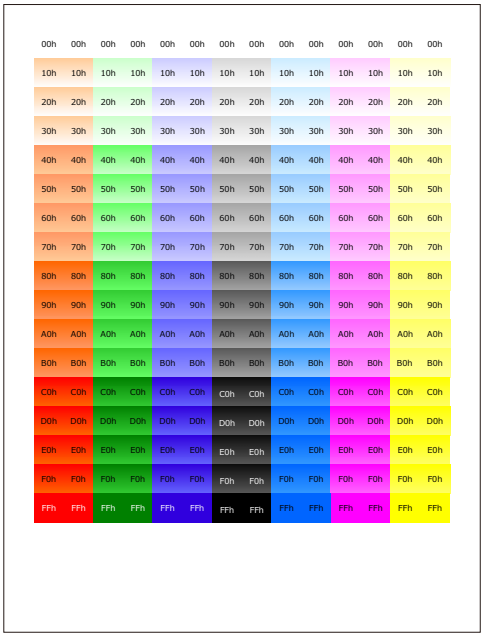
Check item	Checking method	Assumed cause
Color displacement	Check that there is no displacement between the lines of the respective colors.	Laser Scanner Unit error ITB Unit error Soiling on the Registration Sensor Secondary Transfer Roller error Main Drive Unit (drum rotation) error
Right angle accuracy and linearity	Check that there is nothing wrong with the right angle accuracy and linearity between the lines of the respective colors.	Laser Scanner Unit error Registration Roller error Secondary Transfer Roller error

• 16 gradations (TYPE=10)



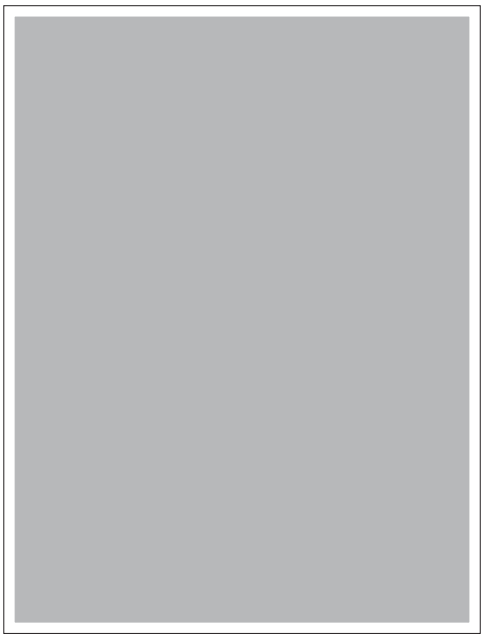
Check item	Checking method	Assumed cause
Gradation	Check that the 16 density gradations are recognizable.	Photosensitive Drum error Laser Scanner Unit error
Fogging	Check whether fogging appears only in the blank area.	Photosensitive Drum error Laser Scanner Unit error
White line	Check the entire image for any white line.	Photosensitive Drum error Laser Scanner Unit error
Uneven density between the front and rear	Check for any uneven density between the rear and front sides.	Photosensitive Drum error Laser Scanner Unit error Soiling on the laser light path

• 17 gradations of Y/M/C/Bk/R/G/B (TYPE=11)



Check item	Checking method	Assumed cause
Gradation	Check that the 16 density gradations are recognizable.	Photosensitive Drum error Laser Scanner Unit error

● Halftone (TYPE=12)

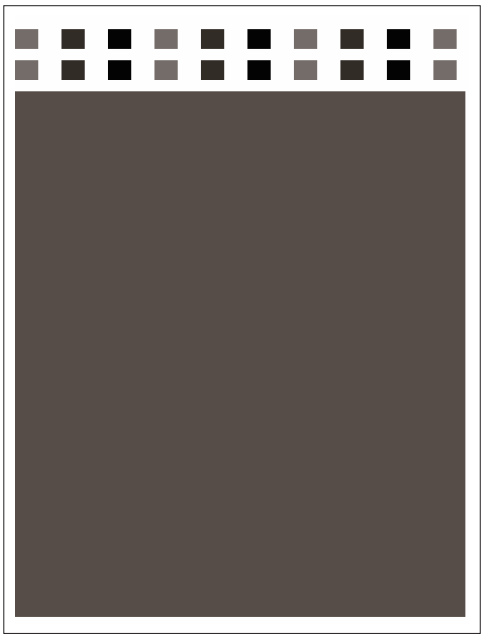


NOTE:
Various settings can be configured in the following service mode.

- Output of each developing color:
  TESTMODE > PRINT > SW-Y
  TESTMODE > PRINT > SW-M
  TESTMODE > PRINT > SW-C
  TESTMODE > PRINT > SW-K
- Print density setting:
  TESTMODE > PRINT > DENS-Y
  TESTMODE > PRINT > DENS-M
  TESTMODE > PRINT > DENS-C
  TESTMODE > PRINT > DENS-K

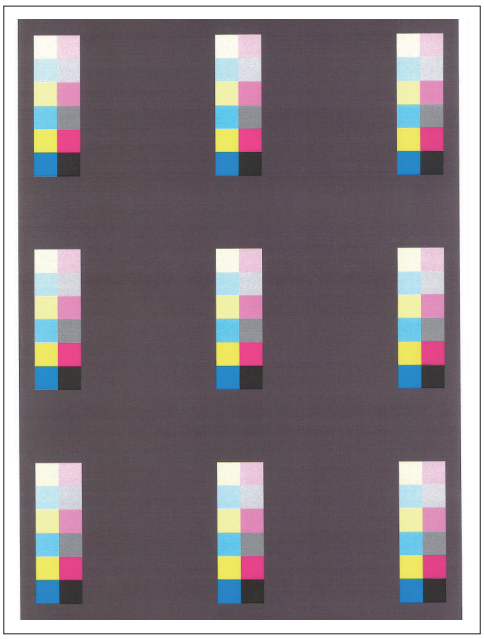
Check item	Checking method	Assumed cause
Transfer failure	Check the entire image for any transfer failure.	ITB error (scratches or soiling) Primary Transfer Pad error (scratches or soiling) Secondary Transfer Roller error (scratches or soiling)
Black line (colored line)	Check the entire image for any black line.	Scratches on the Photosensitive Drum
White line	Check the entire image for any white line.	ITB Unit error Secondary Transfer Roller error Soiling on the laser light path
Uneven density at regular intervals	Check the entire image for any uneven density at regular intervals.	Photosensitive Drum error
Uneven density	Check the entire image for any uneven density.	Soiling on the Dustproof Glas Deterioration of the ITB

• For checking ghost due to transfer failure (TYPE=13)



Check item	Checking method	Assumed cause
Ghost	Check the degree of ghosting (area where the density is too high or low) in halftone areas.	Cartridge error ITB Unit error

• For checking the density patch (TYPE=14)



Check item	Checking method	Assumed cause
Density	Check the density of each patch after calibration.	Cartridge error ITB Unit error Secondary Transfer Roller error Soiling on the Color Displacement/Density Sensor
Uneven density	Check the difference in density among patches.	Cartridge error ITB Unit error

• For checking transfer (TYPE=15)

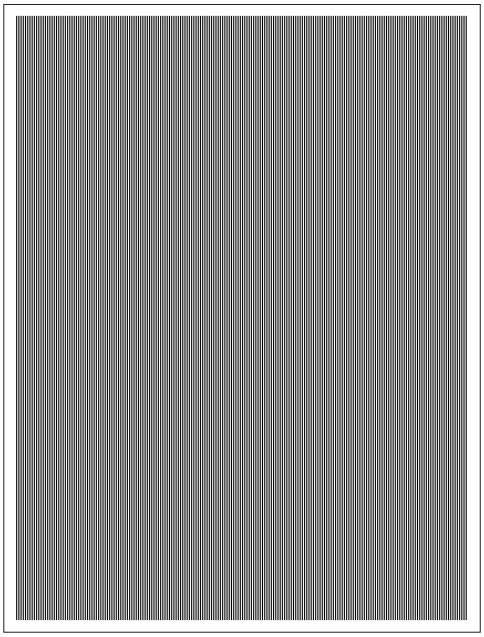
Check item	Checking method	Assumed cause
Uneven density	Check that there is no uneven density in the solid area of each color.	Laser Scanner Unit error Cartridge error Primary Transfer Pad error
Black line (colored line)	Check that there is no black line (colored line) in the solid area of each color.	Scratches on the Photosensitive Drum Soiling on the Primary Charging Roller
White line	Check that there is no white line in the solid area of each color.	ITB Unit error Secondary Transfer Roller error Soiling on the laser light path

• For checking developing performance (white spots) (TYPE=21)

Check item	Checking method	Assumed cause
Gradation	Check the gradation performance.	Cartridge error Soiling on the Color Displacement/Density Sensor ITB Unit error

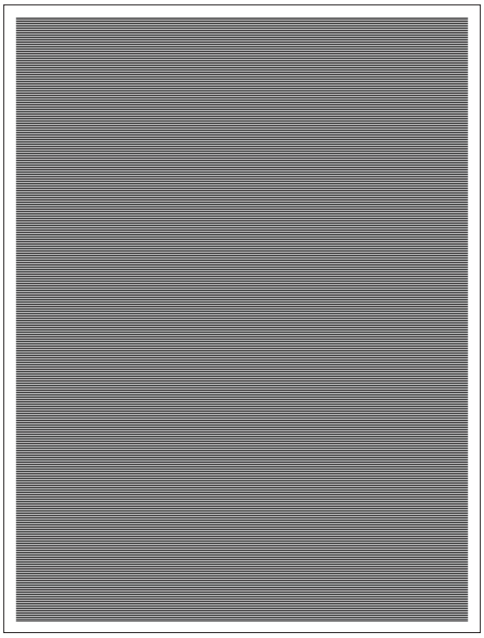
Check item	Checking method	Assumed cause
White spots	White spots near the solid patches in halftone patches just before and after the solid patches	Cartridge error

● For checking resolution (TYPE=22)



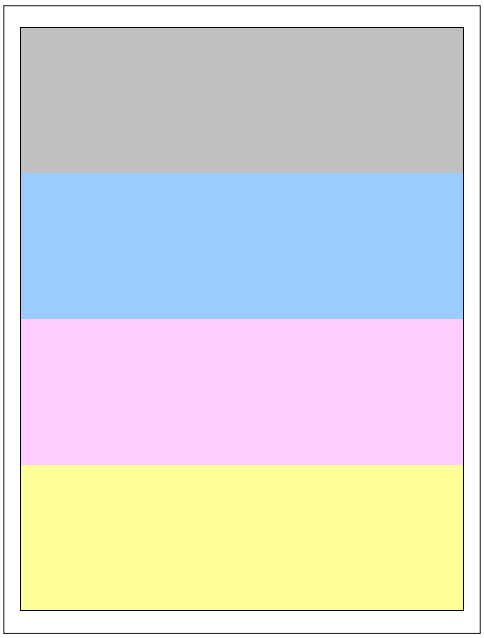
Check item	Checking method	Assumed cause
Line	Check the position and interval.	Laser Scanner Unit error Main Controller PCB error

● For checking banding image (TYPE=23)



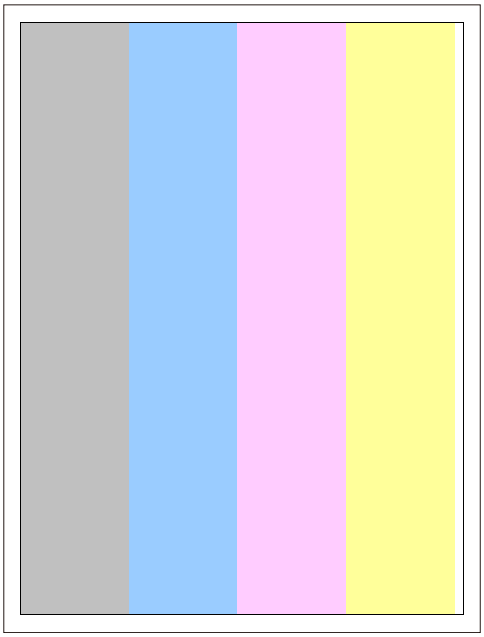
Check item	Checking method	Assumed cause
Line	Check the position and interval.	Cartridge error Main Drive Unit error ITB Unit error Fixing Assembly error Error in the feed path Paper slip at paper pickup

● 4 colors (landscape) (TYPE=24)



Check item	Checking method	Assumed cause
Line	Check the position of the line, and check whether the line occurs in all colors.	**If it occurs only in a single color:** Cartridge error Laser Scanner Unit error ITB Unit error **If it occurs in all colors:** ITB Unit error Secondary Transfer Roller error Fixing Assembly error

● 4 colors (portrait) (TYPE=25)

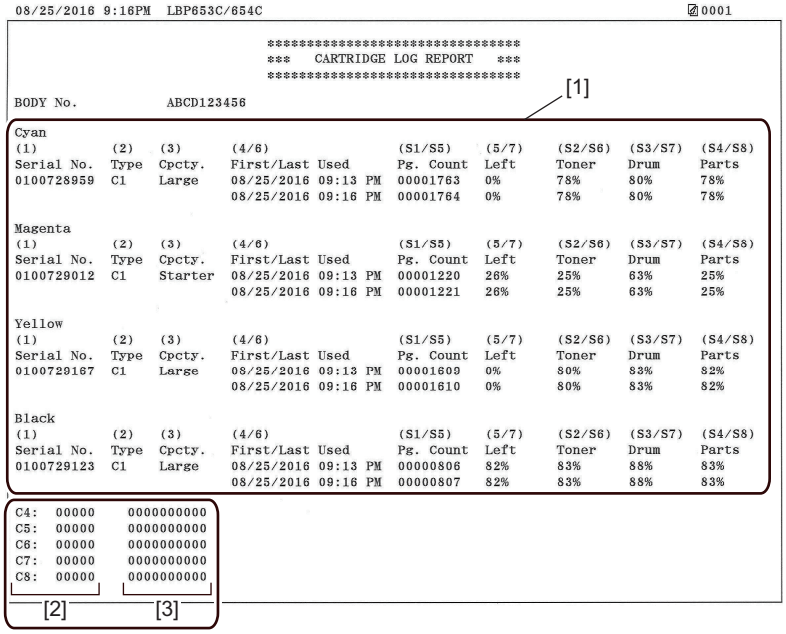


Check item	Checking method	Assumed cause
Line	Check the position of the line, and check whether the line occurs in all colors.	**If it occurs only in a single color:** Cartridge error Laser Scanner Unit error ITB Unit error **If it occurs in all colors:** ITB Unit error Secondary Transfer Roller error Fixing Assembly error

Cartridge Log Report

Logs such as history of cartridge replacement are output as a report.
There are two types of cartridge log reports; one for users and one for service technicians.

CAUTION:
Do not provide users with the cartridge log report for service technicians because it contains detailed information that is not disclosed to end users.



No.	Description
[1]	Replacement logs
[2]	Cartridge type: The number of times a non-genuine cartridge has been detected
[3]	Non-genuine cartridge page count

NOTE:
In addition to output as a report, cartridge logs can also be displayed on the remote UI service mode screen (for service technicians) or remote UI screen (for users).

- To display cartridge logs (for service technicians):
  SERVICE REPORT > CRG-LOG
- To display cartridge logs (for users)
  Status Monitor/Cancel > Cartridge Log

Output method

Execute the following service mode to output a cartridge log report for service technicians.

- To output a report on cartridge replacement history:
  COPIER > FUNCTION > MISC-P > CRG-LOG

NOTE:
- To output a cartridge log report (for users)
  Menu > Output Reports > Print List > Cartridge Log Report

Replacement logs

The record of replacement and usage of cartridges will be printed.

CAUTION:
Just after the cartridge has been replaced with a genuine cartridge or when a non-genuine cartridge is used, accurate information cannot be obtained and a random or approximate value may be printed. The remaining lives of some of the parts are not supported depending on the model.

Item	Description	Remarks
(1) Serial No.	Serial number of the cartridge	
(2) Type	Cartridge type	• C1: Genuine • C2 to C8: Non-genuine • C0: Unknown
(3) Cpcty.	Cartridge capacity	Displayed in accordance with the toner fill-up amount
(4/6) First/Last Used	The date and time it was installed/last used	
(S1/S5) Pg. Count *	Cartridge page count (when it was installed/last used)	00000000 to 9999999
(5/7) Left	The amount remaining in the cartridge (when it was installed/last used)	0 to 100 % (New cartridge: 100%)
(S2/S6) Toner *	The remaining life of the toner (when it was installed/last used)	-128 to 100 % (New: 100%, Indefinite: -%)
(S3/S7) Drum *	The remaining life of the drum (when it was installed/last used)	-128 to 100 % (New: 100%, Indefinite: -%)
(S4/S8) Parts *	The remaining life of the Developing Assembly (when it was installed/last used)	-128 to 100 % (New: 100%, Indefinite: -%)

*: S1 to S8 are printed only on reports for service technicians.

Number of detections of non-genuine cartridge / Page count of non-genuine cartridge

When a non-genuine cartridge is installed, it is classified as a cartridge type C2 to C8 according to the reason for judging it non-genuine, and the number of detections of each type and the number of pages printed with the cartridge installed are recorded.

Reason for judging it non-genuine	Cartridge type		Description
	Report for users*	Report for service	
OEM	C3	C5	The number of detections of an OEM cartridge, and the number of pages printed
Communication error	C2	C4	The number of detections of a cartridge without memory and the number of pages printed
Refill	C3	C6	The number of detections of a cartridge prepared by refilling toner into a genuine cartridge, and the number of pages printed
Copied memory	C3	C7	The number of detections of a cartridge prepared by refilling toner into a genuine cartridge and copying the contents of a normal memory, and the number of pages printed
Authentication failed	C2	C8	The number of detections of a cartridge that cannot be authenticated, and the number of pages printed

*: Only C2 and C3 are displayed. The total count of the values of the reasons for judging the cartridge non-genuine is displayed.

Troubleshooting Items

Recurring faulty image

Overview

Foreign matters or lines on rollers along the paper feed path may cause faulty images in the vertical scanning direction.

Field Remedy

See the roller pitches listed in the tables below to clean and/or replace the corresponding parts.

CAUTION:
Since the Primary Charging Roller, Photosensitive Drum, and Developing Roller are located inside the cartridge and cannot be cleaned, replace the cartridge.

Roller pitch	Parts
Approx. 44 mm	Registration Roller
Approx. 50 mm	Secondary Transfer Roller
Approx. 19 mm	Primary Charging Roller
Approx. 63 mm	Photosensitive Drum
Approx. 31 mm	Developing Roller
Approx. 57 mm	Fixing Firm
Approx. 57 mm	Pressure Roller

Confirming nip width

Overview

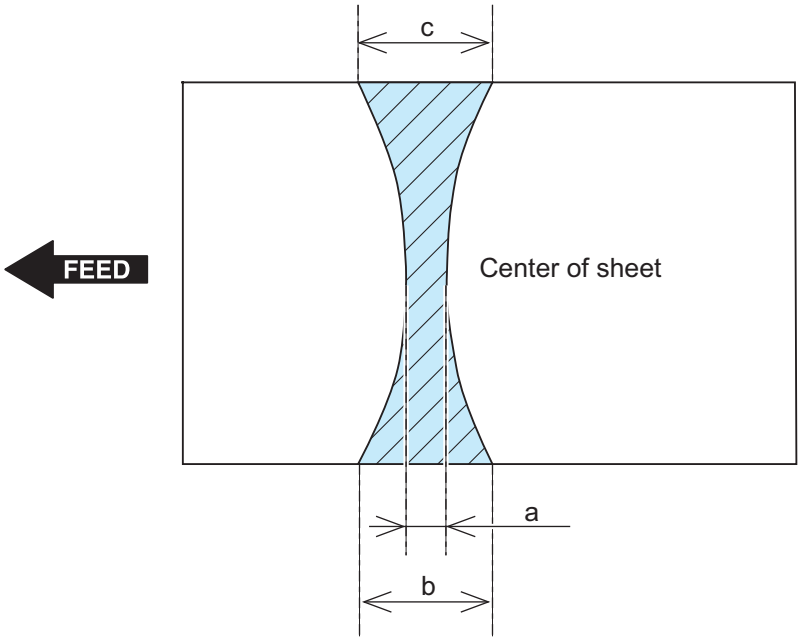
Although the nip width of the Fixing Assembly cannot be adjusted with this machine, it can be checked.
By checking the nip width when fixing failure occurs, it is possible to judge whether there is a problem with the Fixing Assembly.

Field Remedy

Check the nip width of the Fixing Assembly by the following procedure.

1. **Print a solid black image on an A4/LTR size paper using the cartridge of this machine and bring it to the customer site.**
2. **Load the solid black printed paper with its printing side facing down in a cassette of the machine.**
3. **Use an external device to print a solid white image.**
4. **Open the Front Cover after approx. 25 seconds, leave it for 10 seconds or more, and then take out the printed paper.**

5. **Measure the widths of the glossy part of the toner on the printed paper, and check that they are within the range as follows.**
   - Center (a): 6.0 to 7.0 mm
   - Edge (b) and (c): 6.0 to 7.0 mm each
   - Difference between left and right (| b - c |): 1.0 mm or less



Debug Log

Function Overview

The debug log is a log that analyzes the program behavior of the machine to enable developers to identify problems.
This machine is embedded with a function that compiles the log of the behavior of each software module as debug log and outputs it as integrated log for analyzing problems.
Be sure to collect the debug log when the Support Dept. of sales company so instructs.
Note that there is no need for service technicians to check the content of collected debug log.

Cases in which collection of debug log is effective

Collection of debug log is effective in the following cases:

- Neither the Support Dept. of sales company nor CINC can reproduce the trouble that occurred at the customer site
- When the error frequency is low
- When the failure is suspected to be due to firmware rather than a mechanical/electrical failure.

CAUTION:
If the procedure for reproducing the failure is clear and the Support Dept. of sales company and CINC can reproduce it, collection of debug log is not necessary.

Conditions for collecting logs

Conditions for not being able to collect logs

In the following cases, the procedure for obtaining logs is not required because logs cannot be obtained.

- Service mode screen cannot be accessed
- The machine cannot recognize a USB flash drive
- No USB port is installed in the machine (when the model has only a copy function)

What is necessary to collect logs

A USB flash drive that satisfies the following conditions is required to obtain the debug logs of the machine:

- Formatted in FAT 16/FAT32
- There is a free space of approx. 100MB.
- Can be recognized by the machine

Collection procedure

The following shows the procedure for collecting the debug log from the Control Panel.

1. **Connect a USB flash drive to the machine. In the case of a model having a USB connector on a side of the Control Panel, be sure to connect the USB flash drive to the Control Panel. In the case of a model having a USB connector only on the rear side, connect the USB flash drive to the USB connector on the rear side.**

CAUTION:
In the case of a model having a USB connector on the Control Panel, if the USB flash drive is connected to the USB connector on the rear side, debug logs are not transferred to the USB flash drive.

2. **Execute the following service mode from the Control Panel or Remote UI.**
   - COPIER > FUNCTION > SYSTEM > LOGWRITE

   "Executing..." is displayed while log collection is executed. When it is completed, the screen shows the service mode screen again.
3. **Execute the following service mode from the Control Panel or Remote UI.**
   - COPIER > FUNCTION > SYSTEM > LOG2USB

   "Executing..." is displayed while log collection is executed. When it is completed, the screen shows the service mode screen again.

4. **Remove the USB flash drive by the correct procedure.**

   Connect the USB flash drive to the PC, and check that the log file shown below has been saved.

   - Output by LOGWRITE: SUBLOG.TXT
   - Output by LOG2USB: SUBLOG_yyyymmdd.HHMMSS_xxx.gz (the file may be divided into multiple files)

Error/Jam/Alarm

Overview

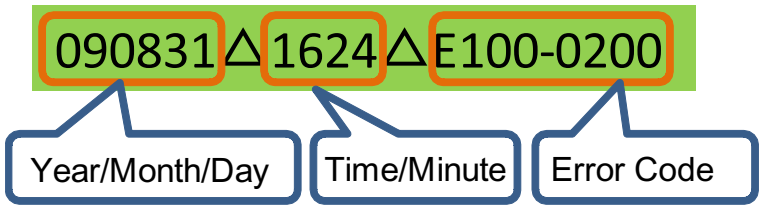
This section describes the error codes that are displayed when failure has occurred.

Code type	Description	Reference
Error Code	This code is displayed when a failure caused by the host machine has occurred.	List of Error Codes
Jam code	This code is displayed when a jam has occurred.	List of Jam Codes
Alarm Code	This code is displayed when the machine's function has been partially lost.	List of Alarm Codes

Error/Jam/Alarm Log indication

Error log

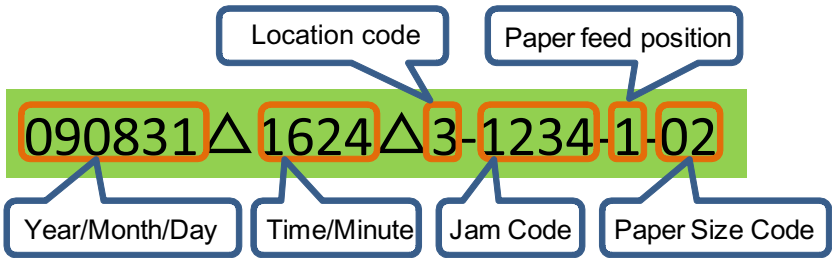
Service Mode > COPIER > DISPLAY > ERR



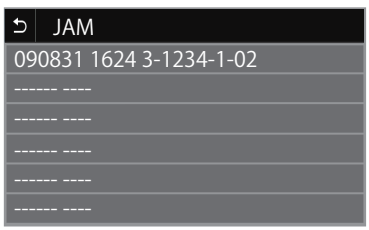
Indication example

Jam log

Service Mode > COPIER > DISPLAY > JAM

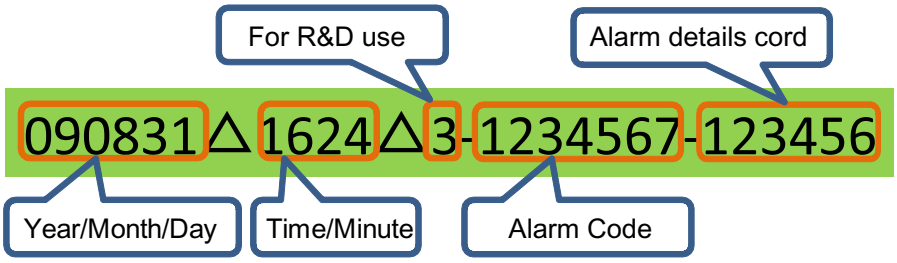


Indication example

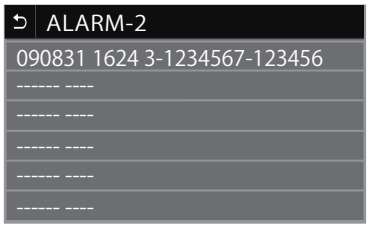


Alarm log

Service Mode > COPIER > DISPLAY > ALARM-2, ALARM-3

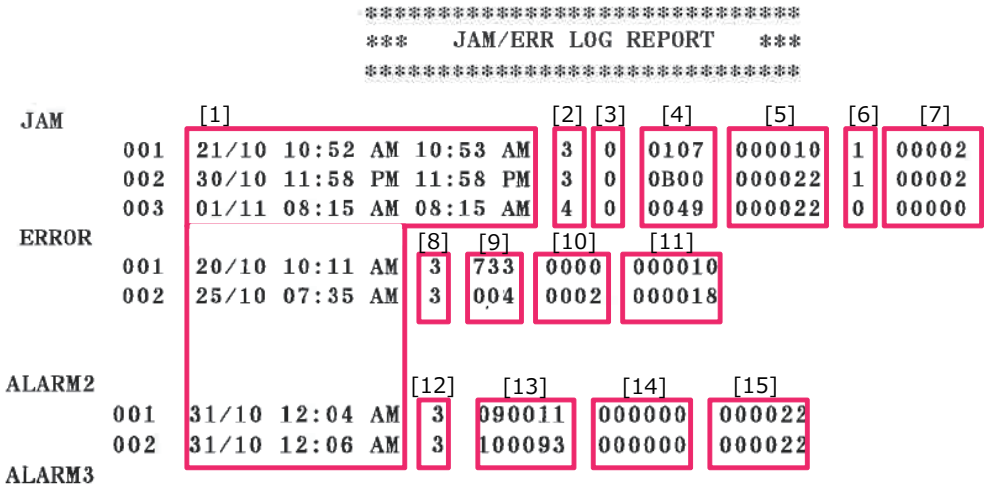


Indication example



JAM/ERR LOG REPORT

Output procedure of the JAM/ERR LOG REPORT
Service Mode > COPIER> FUNCTION> MISC-P > ERR-LOG
The explanation of mention contents



No.	Item
1	Day/Month Time/Minute
2	Location code
3	Not Used (for R&D)
4	Jam code
5	Total counter
6	Paper feed position
7	Paper size
8	Location code
9	Error code
10	Error details code
11	Total counter
12	Alarm level
13	Alarm code

No.	Item
14	Alarm details code
15	Total counter

Location Code

The jam codes of this machine contain information on the location.
The location information is displayed in a single digit and has the meaning shown below:

Device	Location code
Host machine	3

Pickup Position Code

When a jam occurs, the pickup location is indicated with the following pickup position code.

Pickup position	Pickup position code
Pickup from Multi-purpose Tray	0
Cassette 1	1
Option cassette	2
At duplex printing	7

Error Code

Error Code Details

E000-0000---	**Error in temperature rising of Fixing Assembly**
Detection Description	Temperature of the Fixing Assembly did not reach a certain temperature within the specified period of time.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E001-0000---	**Abnormal high temperature of Fixing Assembly**
Detection Description	It was detected that the temperature of the Fixing Assembly was abnormally high.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E001-0001---	**Abnormal high temperature of Fixing Assembly**
Detection Description	It was detected that the temperature of the Fixing Assembly (Sub Thermistor) was abnormally high.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E003-0000---	**Abnormal low temperature of Fixing Assembly**
Detection Description	It was detected that the temperature of the Fixing Assembly was abnormally low.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E003-0001---	**It was detected that the temperature of the Fixing Assembly (Sub Thermistor) was abnormally low.**
Detection Description	It was detected that the temperature of the Fixing Assembly (Sub Thermistor) was abnormally low.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E004-0000---	**Error in fixing power supply drive circuit**
Detection Description	The zero cross signal was not detected for the specified period of time or more.
Remedy	1. Check the connector connection between the Fixing Assembly and the Engine Controller PCB. 2. Replace the Fixing Assembly. 3. Replace the Engine Controller PCB.
E012-0000---	**Black Drum Motor error**
Detection Description	An error in the initial operation of the Drum Motor was detected.
Remedy	1. Reconnect the connector of the Main Motor. 2. Replace the Engine Controller PCB.
E012-0001---	**Black Drum Motor error**
Detection Description	Rotation error of the Drum Motor was detected.
Remedy	1. Reconnect the connector of the Main Motor. 2. Replace the Engine Controller PCB.
E014-0000---	**Error in startup of the Main Motor**
Detection Description	Revolution of the Main Motor did not reach the specified value.
Remedy	1. Check the connector connection between the Main Motor and the Engine Controller PCB. 2. Replace the Main Motor. 3. Replace the Engine Controller PCB.

E014-0001---	Error in startup of the Main Motor
Detection Description	Revolution of the Main Motor was out of the specified range.
Remedy	1. Check the connector connection between the Main Motor and the Engine Controller PCB. 2. Replace the Main Motor. 3. Replace the Engine Controller PCB.

E015-0000---	Error in Developing Disengagement Motor
Detection Description	The engine detected an error in the Developing Disengagement Motor.
Remedy	1. Check the harnesses/connectors connecting the Developing Disengagement Switch, the Developing Disengagement Solenoid and the Engine Controller PCB. 2. Check that the Developing Disengagement Switch is properly installed. 3. Replace the Developing Disengagement Switch. 4. Replace the Developing Disengagement Solenoid. 5. Replace the Engine Controller PCB.

E015-0001---	Cassette 1 lift-up error
Detection Description	After lift-up of the Lifting Plate of the cassette of the host machine started, ON status of the Lifter Sensor of the cassette of the host machine was not detected within the specified period of time.
Remedy	1. While the cassette of the host machine is removed, turn ON the power and insert the cassette, then check the operation sound of the motor. When there is operation sound of the motor, check if the Lifting Plate has been lifted up. When the Lifting Plate has been lifted up: 1-1. Check that the Lifter Sensor of the cassette of the host machine is properly installed. 1-2. Check the harness/connector between the Engine Controller PCB and the Lifter Sensor. 1-3. Replace the Lifter Sensor.1-4. Replace the Engine Controller PCB. When the Lifting Plate has not been lifted up: 2-1. Check the condition of the gear at the host machine side (missing teeth, swing). 2-2. Check the harness/connector between the Engine Controller PCB and the Lifter Solenoid of the cassette of the host machine. 2-3. Replace the Lifter Solenoid. 2-4. Replace the Pickup Motor of the cassette of the host machine. 2-5. Replace the Driver PCB. 2-6. Replace the Engine Controller PCB. When there is no operation sound of the motor, check the followings: 3-1. Check the harness/connector between the Engine Controller PCB and the Pickup Motor of the cassette of the host machine. 3-2. Check the condition of the gear at the host machine side (missing teeth, swing). 3-3. Check the Pickup Motor. 3-4. Replace the Driver PCB. 3-5. Replace the Engine Controller PCB.

E015-0002---	Cassette 2 lift-up error
Detection Description	After lift-up of the Lifting Plate of the 1-Cassette Unit started, ON status of the Lifter Sensor of the 1-Cassette Unit was not detected within the specified period of time.
Remedy	1. While the cassette of the 1-Cassette Unit is removed, turn ON the power and insert the cassette, then check the operation sound of the motor. When there is operation sound of the motor, check if the Lifting Plate has been lifted up. When the Lifting Plate has been lifted up: 1-1. Check that the Lifter Sensor of the Cassette Unit is properly installed. 1-2. Check the harness/connector between the Engine Controller PCB and the Lifter Sensor. 1-3. Replace the Lifter Sensor. 1-4. Replace the Cassette Feeder Driver PCB. 1-5. Replace the Engine Controller PCB. When the Lifting Plate has not been lifted up: 2-1. Check the condition of the gear of the Cassette Unit (missing teeth, swing). 2-2. Check the harness/connector between the Engine Controller PCB and the Lifter Solenoid of the Cassette Unit. 2-3. Replace the Lifter Solenoid. 2-4. Replace the Pickup Motor of the Cassette Unit. 2-5. Replace the Cassette Feeder Driver PCB. 2-6. Replace the Engine Controller PCB. When there is no operation sound of the motor, check the followings: 3-1. Check the harness/connector between the Engine Controller PCB and the Pickup Motor of the Cassette Unit. 3-2. Check the condition of the gear at the Cassette Unit side (missing teeth, swing). 3-3. Replace the Pickup Motor. 3-4. Replace the Cassette Feeder Driver PCB. 3-5. Replace the Engine Controller PCB.

E020-0000---	Density Sensor error
Detection Description	An error in the Density Sensor was detected.
Remedy	1. Check the remaining toner level. 2. Replace the Toner Cartridge. 3. Check the harness/connector between the Color Displacement/Density Sensor and the Engine Controller PCB. 4. Replace the Color Displacement/Density Sensor. 5. Replace the ITB. 6. Replace the Engine Controller PCB.

E021-1000---	Yellow Developing Motor rotation error
Detection Description	It was judged that the Developing Motor did not rotate.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-1001---	Magenta Developing Motor rotation error
Detection Description	It was judged that the Developing Motor did not rotate.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-1002---	Cyan Developing Motor rotation error
Detection Description	It was judged that the Developing Motor did not rotate.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-1003---	Black Developing Motor rotation error
Detection Description	It was judged that the Developing Motor did not rotate.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-2000---	Error in startup of the Yellow Developing Motor
Detection Description	Revolution of the Developing Motor did not reach the specified value.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-2001---	Error in startup of the Magenta Developing Motor
Detection Description	Revolution of the Developing Motor did not reach the specified value.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-2002---	Error in startup of the Cyan Developing Motor
Detection Description	Revolution of the Developing Motor did not reach the specified value.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E021-2003---	Error in startup of the Black Developing Motor
Detection Description	Revolution of the Developing Motor did not reach the specified value.
Remedy	1. Check the harness/connector between the Developing Motor and the Engine Controller PCB. 2. Replace the Developing Motor. 3. Replace the Driver PCB. 4. Replace the Engine Controller PCB.

E052-0000---	Duplex Feed Unit absent error
Detection Description	Connection of the Duplex Feed Unit was not correct.
Remedy	1. Reinstall the Duplex Feed Unit.

E066-0000---	Environment Sensor error
Detection Description	An error in the Environment Sensor was detected.
Remedy	1. Check the harness/connection of the Environment Sensor and the Engine Controller PCB. 2. Replace the Environment Sensor. 3. Replace the Engine Controller PCB.

E078-0000---	Primary transfer disengagement mechanism error
Detection Description	Primary transfer disengagement mechanism did not work properly.
Remedy	1. Check the harnesses/connectors connecting the Primary Transfer Disengagement Switch, the Primary Transfer Disengagement Solenoid and the Engine Controller PCB. 2. Replace the Primary Transfer Disengagement Switch. 3. Replace the Primary Transfer Disengagement Solenoid. 4. Replace the Engine Controller PCB.

E100-0000---	Yellow scanner area failure
Detection Description	Error in the Scanner Motor, Laser Unit, or BD detection in the yellow scanner area
Remedy	1. Check the harness/FFC/connector between the Laser Unit and the Engine Controller PCB. 2. Replace the FFC. 3. Replace the Laser Unit. 4. Replace the Engine Controller PCB.

E100-0001---	Magenta scanner area failure
Detection Description	Error in the Scanner Motor, Laser Unit, or BD detection in the magenta scanner area
Remedy	1. Check the harness/FFC/connector between the Laser Unit and the Engine Controller PCB. 2. Replace the FFC. 3. Replace the Laser Unit. 4. Replace the Engine Controller PCB.

E100-0002---	Cyan scanner area failure
Detection Description	Error in the Scanner Motor, Laser Unit, or BD detection in the cyan scanner area
Remedy	1. Check the harness/FFC/connector between the Laser Unit and the Engine Controller PCB. 2. Replace the FFC. 3. Replace the Laser Unit. 4. Replace the Engine Controller PCB.

E100-0003---	Black scanner area failure
Detection Description	Error in the Scanner Motor, Laser Unit, or BD detection in the black scanner area
Remedy	1. Check the harness/FFC/connector between the Laser Unit and the Engine Controller PCB. 2. Replace the FFC. 3. Replace the Laser Unit. 4. Replace the Engine Controller PCB.

E110-0000---	Primary pseudo BD correction error
Detection Description	The scanner failed to be Ready within 3 seconds after start of pseudo BD control.
Remedy	1. Check that the engine test print is properly printed. 2. Check the FFC between the Main Controller PCB and the Engine Controller PCB. 3. Replace the Main Controller PCB.

E194-0000---	CPR Sensor error
Detection Description	An error in the CPR Sensor was detected.
Remedy	1. Replace the Toner Cartridge. 2. Check the harness/connector between the Color Displacement/Density Sensor and the Engine Controller PCB. 3. Replace the Color Displacement/Density Sensor Unit. 4. Replace the Engine Controller PCB. 5. Replace the ITB Unit.

E196-0000---	Engine Controller error
Detection Description	Update of the Engine Controller was failed. (RFU mode right after the startup)
Remedy	1. Replace the Engine Controller PCB.

E198-0000---	Engine Controller memory failure
Detection Description	Error in the nonvolatile memory on the Engine Controller PCB
Remedy	1. Turn OFF and then ON the power and check if the symptom occurs again. 2. Replace the Engine Controller PCB.

E246-0000---	System error
Detection Description	System error
Remedy	Contact the sales company.

E247-0000---	System error
Detection Description	System error
Remedy	Contact the sales company.

E350-0000---	System error
Detection Description	System error
Remedy	Contact the sales company.

E354-0000---	System error
Detection Description	System error
Remedy	Contact the sales company.

E355-0000---	System error
Detection Description	System error
Remedy	Contact the sales company.

E355-0004---	System error
Detection Description	System error
Remedy	Contact the sales company.

E355-0005---	System error
Detection Description	System error
Remedy	Contact the sales company.

E733-0000---	Printer communication error
Detection Description	Communication error between the Engine Controller PCB and the Main Controller PCB occurred.
Remedy	1. Check the connector connection between the Engine Controller PCB and the Main Controller PCB. 2. Install the set of the controller firmware. 3. Replace the Main Controller PCB. 4. Replace the Engine Controller PCB.

E743-0000---	DDI communication error
Detection Description	Software sequence error
Remedy	1. Turn OFF and then ON the main power.

E805-0005---	Sub Fan error
Detection Description	The Sub Fan was locked for a specified consecutive period of time.
Remedy	1. Check the connection of the Sub Fan. 2. Replace the Sub Fan.

E806-0000---	Main Fan error
Detection Description	The Main Fan was locked for a specified consecutive period of time.
Remedy	1. Check the connection of the Main Fan. 2. Replace the Main Fan.

E808-0000---	Low-voltage power supply failure detection
Detection Description	Printer detected low-voltage power supply failure.
Remedy	1. Replace the Engine Controller PCB

E840-0000---	Pressure release mechanism error
Detection Description	An error in pressure release mechanism of the Fixing Assembly was detected.
Remedy	1. Replace the Fixing Assembly. 2. Replace the Fixing Motor.

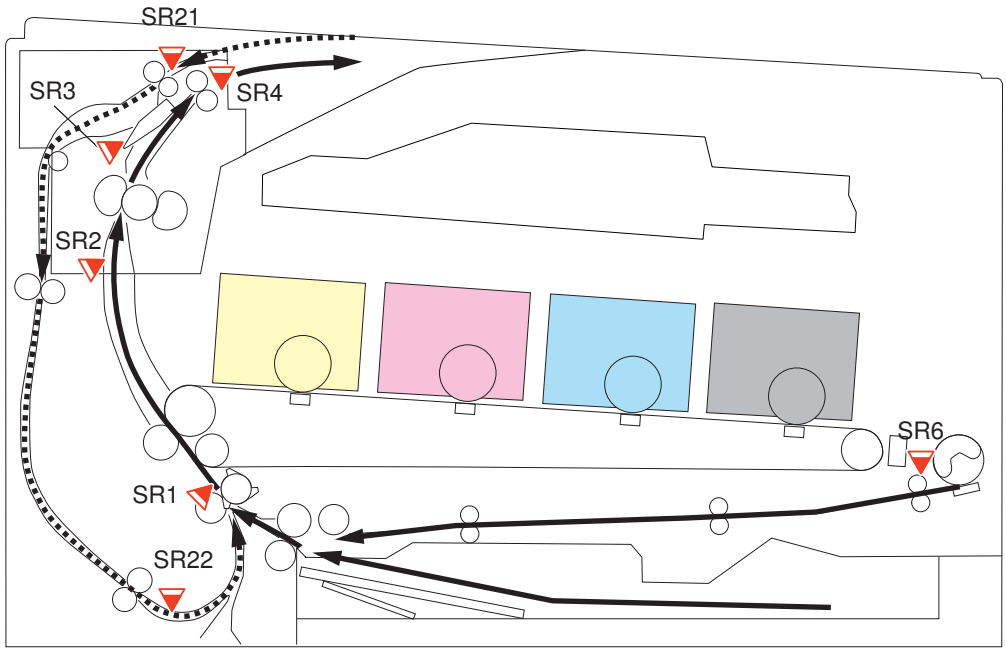
Jam Code

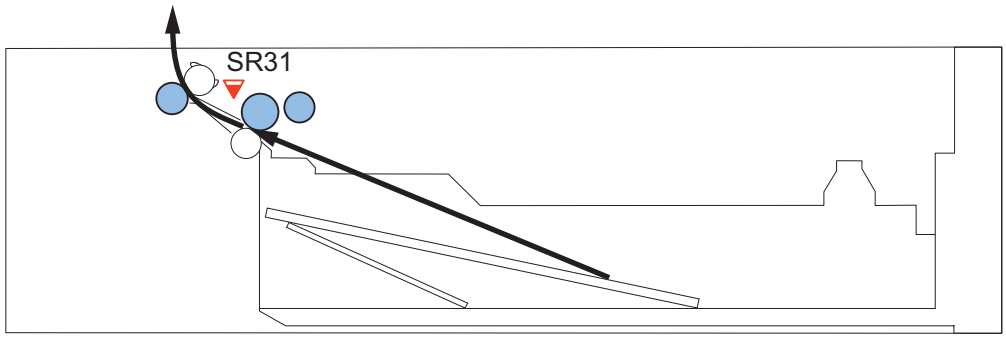
Jam Code Details

■ Host machine

Simplex paper path

Duplex paper path





Jam Code	Type	Sensor Name	Sensor ID	Area
0104	Pickup Delay Jam 1	Registration sensor/Multi-purpose Tray Paper Sensor/Cassette Feed Sensor	SR1/SR6/SR31	Cassette1/Multi-purpose Tray/Cassette2
0105	Pickup Delay Jam 2	Cassette Feed Sensor	SR31	Cassette2
014C	Fixing Delivery Delay Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Cartridge to Fixing Roller Area
016C	Delivery Delay Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Fixing Roller to Delivery Area
0248	Pickup Stationary Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Registration Area to Cartridge Cartridge to Fixing Roller Area
0250	Fixing Delivery Stationary Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Fixing Roller to Delivery Area

Jam Code	Type	Sensor Name	Sensor ID	Area
025C	Wrap Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Cartridge to Fixing Roller Area Fixing Roller to Delivery Area
025D	Wrap Jam2	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Cartridge to Fixing Roller Area Fixing Roller to Delivery Area
0260	Reverse Area Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Fixing Roller to Delivery Area
0270	Delivery Stationary Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor	SR1/SR3/SR4	Fixing Roller to Delivery Area
029D	Wrap Jam2	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Duplex Re-pickup Assembly
02A0	Reverse Area Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Duplex Re-pickup Assembly
02A4	Duplex Re-pickup Assembly Jam1	Duplex Re-pickup Sensor	SR22	Duplex Re-pickup Assembly
02A5	Duplex Re-pickup Assembly Jam2	Duplex Re-pickup Sensor	SR22	Duplex Re-pickup Assembly
02CD	Wrap Jam2	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area Duplex Re-pickup Assembly
02E0	Reverse Area Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area Duplex Re-pickup Assembly
1014	Power ON Jam 1	Cassette Feed Sensor	SR31	Cassette2
1054	Power ON Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area
1094	Power ON Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Duplex Re-pickup Assembly
10D4	Power ON Jam 1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area Duplex Re-pickup Assembly
1017	Power ON Jam 4	Cassette Feed Sensor	SR31	Cassette2
1057	Power ON Jam 4	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area
1097	Power ON Jam 4	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Duplex Re-pickup Assembly
10D7	Power ON Jam 4	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area Duplex Re-pickup Assembly
1118	Door Open Jam1	Registration sensor/Multi-purpose Tray Paper Sensor/Cassette Feed Sensor	SR1/SR6/SR31	Cassette1/Multi-purpose Tray/Cassette2
1158	Door Open Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area
1198	Door Open Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Duplex Re-pickup Assembly
11D8	Door Open Jam1	Registration sensor/Fixing Delivery Sensor/Delivery Sensor/Duplex Re-pickup Sensor	SR1/SR3/SR4/SR22	Registration Area to Delivery Area Duplex Re-pickup Assembly

Alarm Code

Alarm Code Details

10-0401	**Toner Bottle empty alarm (Y)**
A. Operation / B. Cause / C. Remedy	When the Toner Bottle empty was detected
10-0402	**Toner Bottle empty alarm (M)**
A. Operation / B. Cause / C. Remedy	When the Toner Bottle empty was detected
10-0403	**Toner Bottle empty alarm (C)**
A. Operation / B. Cause / C. Remedy	When the Toner Bottle empty was detected
10-0404	**Toner Bottle empty alarm (BK)**
A. Operation / B. Cause / C. Remedy	When the Toner Bottle empty was detected

Service Mode

Overview

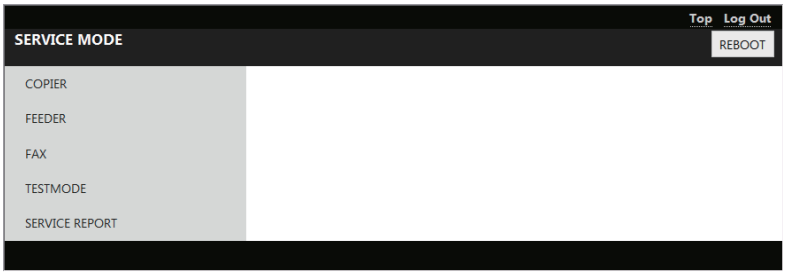
Entering Service Mode

For information on how to enter service mode, contact the Support Dept. of the sales company.

Remote UI Service Mode

■ Function Overview

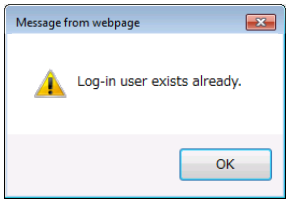
It is possible to display, configure, and execute various service mode modes as well as restart the host machine by using remote UI.



■ Operating conditions

In order to operate service mode using Remote UI, the following conditions must be met.

- Service mode is not used on the Control Panel.
  If service mode is accessed from the Control Panel of the host machine, "Log-in user exists already." is displayed when service mode is accessed from Remote UI.



- When Remote UI service mode (this function) is not being logged in by other users
  When service mode is being accessed from Remote UI, "Remote service mode" is displayed on the UI of the host machine.

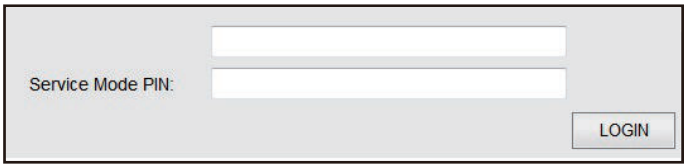
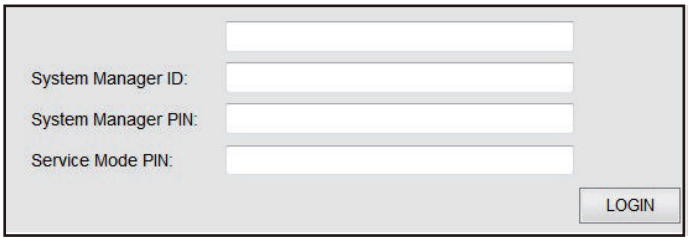
- When Remote UI is enabled in the setting on the Control Panel
  [Settings/Registration] > [System Settings] > [Remote UI Settings] > [Use Remote UI] > [ON]
- When the following setting (Remote UI service mode function) is enabled (setting value: 1) in service mode
  COPIER > OPTION > BODY > RMT-SW
  0:OFF(default), 1:ON

■ How to Use

1. **Activate the Web browser, and access the following URL:**
   http://<Host machine's IP address or host name>/servicemode.html

2. **Enter the password, and click [LOGIN].**
   Password required for authentication differs depending on the following service mode setting: `COPIER > OPTION > BODY > PSWD-SW`

Combinations of service mode settings and required passwords

PSWD-SW setting value	Password required for authentication	Authentication screen
0	• Password of remote UI service mode	
1	• Password of remote UI service mode • Service mode password	
2	• Password of RUI service mode • User's system administrator ID • Password of system administrator • Service mode password	

NOTE:
- If you do not know the password of remote UI service mode, contact the Support Dept. of the sales company.
- `Password of service mode can be changed in COPIER > OPTION > BODY > SM-PSWD.`

3. **If you do not know the password of remote UI service mode, contact the Support Dept. of the sales company. When finishing the operation, click [REBOOT] or [Log Out].**

NOTE:
If the user logged in and then closed the browser without logging out, connection status remains as "LOGIN". If the user attempts to log in to service mode under "LOGIN" status, exclusive control is executed so that the user cannot access service mode. In that case, wait for a fixed time (3 minutes) from the last access to let the user be automatically logged out, or turn OFF/ON the power of the machine to be forcibly logged out.

COPIER (Service mode for copier)

DISPLAY (State display mode)

■ VERSION

COPIER (Service mode for copier) > DISPLAY (State display mode) > VERSION

MAIN	**Display of Bootable version**
Detail	To display the firmware version of Main Controller PCB.
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
BOOT	**Display of BootROM version**
Detail	To display the version of Boot ROM (BOOT program).
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
LANG	**Display of language pack version**
Detail	To display the version of language pack.
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
DEMODATA	**Display of demo print data version**
Detail	To display the version of demo print data. For the models not having demo print function, "FF.FF" is displayed.
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
ECONT	**Display of Engine Controller version**
Detail	To display the version of Engine Controller PCB.
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
PANEL	**Display of firmware version of panel**
Detail	To display the firmware version of Control Panel CPU PCB.
Use Case	When upgrading the firmware
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	00.00 to 99.99
Related Service Mode	COPIER> FUNCTION> SYSTEM> PANEL-UP

ADJUST (Adjustment mode)

■ FEED-ADJ

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > FEED-ADJ

ADJ-MFY	**Adjustment of write start position in feed direction at Multi-purpose Tray pickup (1-sided print/2nd side of 2-sided print)**
Detail	To adjust the image write start position in the feed direction at the time of pickup from the Multi-purpose Tray. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-MFX	**Adjustment of write start position in horizontal scanning direction at Multi-purpose Tray pickup (1-sided print/2nd side of 2-sided print)**
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 1st side at the time of pickup from the Multi-purpose Tray. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-MFYR	**Adjustment of write start position in feed direction at Multi-purpose Tray pickup (1st side of 2-sided print)**
Detail	To adjust the write start position in the feed direction for the image on the 2nd side at the time of pickup from the Multi-purpose Tray. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > FEED-ADJ

ADJ-MFXR	**Adjustment of write start position in horizontal scanning direction at Multi-purpose Tray pickup (1st side of 2-sided print)**
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 2nd side at the time of pickup from the Multi-purpose Tray. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data.
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C1Y	**Adjustment of write start position in feed direction at Cassette 1 pickup (1-sided print/2nd side of 2-sided print)**
Detail	To adjust the image write start position in the feed direction at the time of pickup from the Cassette 1. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C1X	**Adjustment of write start position in horizontal scanning direction at Cassette 1 pickup (1-sided print/2nd side of 2-sided print)**
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 1st side at the time of pickup from the Cassette 1. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > FEED-ADJ

ADJ-C1YR	Adjustment of write start position in feed direction at Cassette 1 pickup (1st side of 2-sided print)
Detail	To adjust the write start position in the feed direction for the image on the 2nd side at the time of pickup from the Cassette 1. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C1XR	Adjustment of write start position in horizontal scanning direction at Cassette 1 pickup (1st side of 2-sided print)
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 2nd side at the time of pickup from the Cassette 1. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C2Y	Adjustment of write start position in feed direction at Cassette 2 pickup (1-sided print/2nd side of 2-sided print)
Detail	To adjust the image write start position in the feed direction at the time of pickup from the Cassette 2. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > FEED-ADJ

ADJ-C2X	Adjustment of write start position in horizontal scanning direction at Cassette 2 pickup (1-sided print/2nd side of 2-sided print)
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 1st side at the time of pickup from the Cassette 2. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 1-sided print and the 2nd side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C2YR	Adjustment of write start position in feed direction at Cassette 2 pickup (1st side of 2-sided print)
Detail	To adjust the write start position in the feed direction for the image on the 2nd side at the time of pickup from the Cassette 2. As the value is changed by 1, the leading edge margin is changed by 0.001 mm. +: Leading edge margin becomes larger. (An image moves to the trailing edge side.) -: Leading edge margin becomes smaller. (An image moves to the leading edge side.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

ADJ-C2XR	Adjustment of write start position in horizontal scanning direction at Cassette 2 pickup (1st side of 2-sided print)
Detail	To adjust the write start position in the horizontal scanning direction for the image on the 2nd side at the time of pickup from the Cassette 2. As the value is changed by 1, the left margin is changed by 0.001 mm. +: Left margin becomes larger. (An image moves to the right.) -: Left margin becomes smaller. (An image moves to the left.) When replacing the Engine Controller PCB/clearing RAM data, enter the value of service label. The setting is applied to the 1st side at 2-sided print.
Use Case	When replacing the Engine Controller PCB/clearing RAM data
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key) and press Apply key.
Display/Adj/Set Range	-5080 to 5080
Unit	0.001 mm
Default Value	0

■ PANEL

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > PANEL

TOUCHCHK	Adj of coordinate pstn on Touch Panel
Detail	To adjust the coordinate position on the Touch Panel of the Control Panel. By making adjustment, the setting of TOUCH-R becomes 1.
Use Case	When replacing the LCD Panel
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Press the nine "+" keys in sequence.
Related Service Mode	COPIER> ADJUST> PANEL> TOUCH-R

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > PANEL

TOUCH-R	Touch Panel coordinate pstn adj result
Detail	To set whether adjustment of the coordinate position on the Touch Panel of the Control Panel is completed. When adjustment with TOUCHCHK is completed, the setting of this item becomes 1.
Use Case	When replacing the LCD Panel
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: Not completed 1: Completed
Default Value	0
Related Service Mode	COPIER> ADJUST> PANEL> TOUCHCHK

■ VIFADJ

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > VIFADJ

DEV-HV-Y	Adjustment of developing bias setting value (Y)
Detail	To adjust the setting value of Y-color developing bias.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> DEV-HV-M/C/K

DEV-HV-M	Adjustment of developing bias setting value (M)
Detail	To adjust the setting value of M-color developing bias.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> DEV-HV-Y/C/K

DEV-HV-C	Adjustment of developing bias setting value (C)
Detail	To adjust the setting value of C-color developing bias.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> DEV-HV-Y/M/K

DEV-HV-K	Adjustment of developing bias setting value (Bk)
Detail	To adjust the setting value of Bk-color developing bias.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> DEV-HV-Y/M/C

TR1-HV-Y	Not use

TR1-HV-M	Not use

TR1-HV-C	Not use

TR1-HV-K	Not use

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > VIFADJ

TR2SF-HV	**Adj sec transfer bias set VL (1st side)**
Detail	To adjust the setting value of secondary transfer bias applied to the 1st side.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> TR2BK-HV
TR2BK-HV	**Adj sec transfer bias set VL (2nd side)**
Detail	To adjust the setting value of secondary transfer bias applied to the 2nd side.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
Related Service Mode	COPIER> ADJUST> VIFADJ> TR2SF-HV
ICL-HV	**Adj of ITB cleaning bias setting value**
Detail	To adjust the setting value of the bias to be applied at the time of ITB cleaning.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-5 to 5
Default Value	0
FU-TMP	**Adj of Fixing Film surface temp set VL**
Detail	To adjust the setting value of the surface temperature of the Fixing Film.
Use Case	When an image failure occurs
Adj/Set/Operate Method	Enter the setting value (switch negative/positive by +/- key), and then press Apply key.
Display/Adj/Set Range	-2 to 2
Default Value	0

■ SCNR

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > SCNR

SUB-S-Y0	**Not use**
SUB-S-M0	**Not use**
SUB-S-C0	**Not use**
SUB-S-K0	**Not use**
SUB-S-Y1	**Not use**
SUB-S-M1	**Not use**
SUB-S-C1	**Not use**
SUB-S-K1	**Not use**
SUB-S-Y2	**Not use**
SUB-S-M2	**Not use**
SUB-S-C2	**Not use**
SUB-S-K2	**Not use**
MAI-S-Y0	**Not use**
MAI-S-M0	**Not use**
MAI-S-C0	**Not use**

COPIER (Service mode for copier) > ADJUST (Adjustment mode) > SCNR

MAI-S-K0	**Not use**
MAI-S-Y1	**Not use**
MAI-S-M1	**Not use**
MAI-S-C1	**Not use**
MAI-S-K1	**Not use**
MAI-S-Y2	**Not use**
MAI-S-M2	**Not use**
MAI-S-C2	**Not use**
MAI-S-K2	**Not use**

FUNCTION (Operation / inspection mode)

■ INSTALL

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > INSTALL

ERDS	**ON/OFF of Embedded-RDS**
Detail	To set whether to use the Embedded-RDS function.
Use Case	When using Embedded-RDS
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to use ERDS, RGW-PORT, COM-TEST, COM-RSLT, and COM-LOG as a set.
Display/Adj/Set Range	0 to 1 0: OFF 1: ON
Default Value	It differs according to the location.
Related Service Mode	COPIER> FUNCTION> INSTALL> RGW-PORT, COM-TEST, COM-RSLT, COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system

RGW-PORT	**Setting of UGW port number when using Embedded-RDS**
Detail	To set the port number of UGW to be used for Embedded-RDS.
Use Case	When using Embedded-RDS
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to use ERDS, RGW-PORT, COM-TEST, COM-RSLT, and COM-LOG as a set.
Display/Adj/Set Range	1 to 65535
Default Value	443
Related Service Mode	COPIER> FUNCTION> INSTALL> ERDS, COM-TEST, COM-RSLT, COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to the sales company's server via SOAP protocol

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > INSTALL

COM-TEST	Execution of Embedded-RDS communication test
Detail	To execute Embedded-RDS communication test. If the connection fails, the information is added to the communication error log.
Use Case	When using E-RDS
Adj/Set/Operate Method	Select the item, and then press Yes key.
Caution	Be sure to use ERDS, RGW-PORT, COM-TEST, COM-RSLT, and COM-LOG as a set.
Related Service Mode	COPIER> FUNCTION> INSTALL> ERDS, RGW-PORT, COM-RSLT, COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system

COM-RSLT	Display of Embedded-RDS comctn test result
Detail	To display the Embedded-RDS communication test result.
Use Case	When using E-RDS
Adj/Set/Operate Method	N/A (Display only)
Caution	Be sure to use ERDS, RGW-PORT, COM-TEST, COM-RSLT, and COM-LOG as a set.
Display/Adj/Set Range	When not in execution: Unknown When connection is completed: OK When connection is failed: NG
Default Value	Unknown
Related Service Mode	COPIER> FUNCTION> INSTALL> ERDS, RGW-PORT, COM-TEST, COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system

COM-LOG	Display of Embedded-RDS comctn error log
Detail	To display the Embedded-RDS communication error log. The dates, times, and error codes of the latest 5 errors that occurred are displayed. As for the error detail information, the report can be output by executing ERDS-LOG.
Use Case	When using Embedded-RDS
Adj/Set/Operate Method	N/A (Display only)
Caution	Be sure to use ERDS, RGW-PORT, COM-TEST, COM-RSLT, and COM-LOG as a set.
Display/Adj/Set Range	Date: 6 digits Time: 4 digits Error code: 8 digits
Related Service Mode	COPIER> FUNCTION> INSTALL> ERDS, RGW-PORT, COM-TEST, COM-RSLT COPIER> FUNCTION> MISC-P> ERDS-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system

■ CLEAR

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > CLEAR

SRVC-DAT	Clearing of service mode setting values
Detail	To clear the service mode setting values. The user mode setting values are not cleared. The factory adjustment values of the Reader/DADF are not initialized.
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch.

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > CLEAR

COUNTER	**Clearing of service counter**
Detail	To clear the counter by maintenance/part. The numerator printed on a system dump list becomes 0.
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch.
HIST	**Clearing of logs**
Detail	To clear the communication management/print/jam/alarm/error log.
Use Case	When clearing logs
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch.
ALL	**Clearing of setting information**
Detail	To clear/initialize the following setting information according to the location set in LOCALE and SIZE-LC. - User mode setting values - Service mode setting values (excluding the service counter) - ID and password of the system administrator - Communication management/print/jam/alarm/error log - E719 error (counter meter-installed models only) The following items are not cleared/initialized. - Service counter - Factory adjustment values of the Reader/DADF
Use Case	At installation
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch.
Default Value	0
Related Service Mode	COPIER> OPTION> BODY> LOCALE, SIZE-LC COPIER> FUNCTION> CLEAR> E719-CLR
ERDS-DAT	**Initialize of Embedded-RDS setting value**
Detail	To initialize the Embedded-RDS setting values. ON/OFF of Embedded-RDS, UGW port number and communication error log set in ERDS, RGW-PORT, and COM-LOG are cleared.
Use Case	When upgrading the Bootable in the Embedded-RDS environment
Adj/Set/Operate Method	Select the item, and then press Yes key.
Caution	Use of the SRAM in Embedded-RDS differs depending on the Bootable version. Therefore, unless initialization is executed at the time of version upgrade, data inconsistency occurs.
Related Service Mode	COPIER> FUNCTION> INSTALL> ERDS, RGW-PORT, COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system
PLPW-CLR	**Clear security policy setting password**
Detail	To clear the password of the security administrator set in the security policy settings.
Use Case	When clearing the password of the security administrator
Adj/Set/Operate Method	Select the item, and then press Yes key.

■ MISC-P

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > MISC-P

SRVC-DAT	**Output system data list/system dump list**
Detail	To output the system data list and the system dump list in the form of a report. System data list: The service software switches and parameters used in FAX function System dump list: The number of sends/receives, the number of pages sent/received, the number of sheets printed/read, the number of errors, etc.
Adj/Set/Operate Method	Select the item, and then press Yes key.
Supplement/Memo	FAX model only
SYS-DAT	**Output of system data list**
Detail	To output the system data list in the form of a report. The service software switches and parameters used in FAX function are output.
Adj/Set/Operate Method	Select the item, and then press Yes key.
Supplement/Memo	FAX model only
SYS-DMP	**Output of system dump list**
Detail	To output the system dump list in the form of a report. The number of sends/receives, the number of pages sent/received, the number of sheets printed/read, the number of errors, etc. are output.
Adj/Set/Operate Method	Select the item, and then press Yes key.
Supplement/Memo	FAX model only
CNTR	**Output of counter report**
Detail	To output the counter values in the form of a report. The usage of functions (reading, recording, communication and copy) is output.
Adj/Set/Operate Method	Select the item, and then press Yes key.
ERR-LOG	**Output of error log report**
Detail	To output the error log in the form of a report.
Adj/Set/Operate Method	Select the item, and then press Yes key.
SPEC	**Output of spec report**
Detail	To output the specifications in the form of a report. The current device specifications such as the location, model information, and ROM version are output.
Adj/Set/Operate Method	Select the item, and then press Yes key.
ERDS-LOG	**Output of Embedded-RDS log report**
Detail	To output the log relating to Embedded-RDS in the form of a report. The date, time, and code (8 digits) of each error that occurred are output.
Use Case	When using Embedded-RDS
Adj/Set/Operate Method	Select the item, and then press Yes key.
Related Service Mode	COPIER> FUNCTION> INSTALL> COM-LOG
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system
CRG-LOG	**Output cartridge replacement log report**
Detail	To output the cartridge replacement log in the form of a report.
Use Case	When checking the cartridge replacement log
Adj/Set/Operate Method	Select the item, and then press Yes key.

■ SYSTEM

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SYSTEM

DOWNLOAD	**Upgrading of machine firmware:difference**
Detail	To upgrade the machine firmware using a USB flash drive. Compare the versions of firmware in the machine and the USB flash drive, and update the differences.
Use Case	At upgrade
Adj/Set/Operate Method	1) Connect the USB flash drive. 2) Select the item, and then press Yes key. The machine restarts in download mode.
Caution	Do not turn OFF/ON the power before "Executing..." disappears.
Related Service Mode	COPIER> FUNCTION> SYSTEM> DL-FORCE
PANEL-UP	**Upgrading of Control Panel CPU PCB firm**
Detail	To upgrade the firmware of the Control Panel CPU PCB using a USB flash drive. Upgrading is performed when PANEL exists in the root directory of the USB flash drive.
Use Case	At upgrade
Adj/Set/Operate Method	1. Connect the USB flash drive. 2. Select the item, and then press Yes. 3. Turn OFF/ON the main power.
Caution	Do not turn OFF/ON the power before "Executing..." disappears.
Related Service Mode	COPIER> DISPLAY> VERSION> PANEL
LOGWRITE	**Writing sublog to USB flash drive**
Detail	To write sublog that includes the following information to the USB flash drive. - Job list (job names, user names, and destinations) - Communications log (destinations and user names) - Job log (user names and job names)
Use Case	When analyzing the cause of a problem
Adj/Set/Operate Method	1. Connect the USB flash drive. 2. Select the item, and then press Yes. 3. Turn OFF/ON the main power.
Caution	Do not turn OFF/ON the power before "Executing..." disappears.
Related Service Mode	COPIER> FUNCTION> SYSTEM> LOG2USB
IMPORT	**Read s-mode set VL from USB flash drive**
Detail	To read the service mode setting information (excluding those related to Reader/DADF, but including those related to Finisher) from the USB flash drive.
Use Case	When replacing the Main Controller PCB
Adj/Set/Operate Method	1. Connect the USB flash drive. 2. Select the item, and then press Yes. 3. Turn OFF/ON the main power.
Caution	Do not turn OFF/ON the power before "Executing..." disappears.
Related Service Mode	COPIER> FUNCTION> SYSTEM> EXPORT
EXPORT	**Writing of service mode setting value to USB memory**
Detail	To write the service mode setting information (excluding those related to Reader/DADF, but including those related to Finisher) to the USB flash drive.
Use Case	When replacing the Main Controller PCB
Adj/Set/Operate Method	1) Connect the USB flash drive. 2) Select the item, and then press Yes key. "Executing..." disappears when writing is completed.
Related Service Mode	COPIER> FUNCTION> SYSTEM> IMPORT

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SYSTEM

SAVE-SM	Backup of service mode setting info
Detail	To back up the service mode setting information (excluding those related to Reader/DADF, but including those related to Finisher) as a file to the USB flash drive using DCM function. The setting information which has been backed up can be restored with RSTR-SM.
Use Case	When saving the setting information before changing the service mode settings
Adj/Set/Operate Method	Select the item, and then press Yes key.
Related Service Mode	COPIER> FUNCTION> SYSTEM> RSTR-SM
Supplement/Memo	DCM (Device Configuration Management): A function to export/import the machine's setting information as a file.

RSTR-SM	Restore of service mode setting info
Detail	To restore the service mode setting information (excluding those related to Reader/DADF, but including those related to Finisher) which has been backed up with SAVE-SM from the USB flash drive using DCM function.
Use Case	When changing the service mode settings back to those before the change
Adj/Set/Operate Method	Select the item, and then press Yes key.
Caution	It is necessary to back up the setting information using SAVE-SM in order to restore the information with RSTR-SM.
Related Service Mode	COPIER> FUNCTION> SYSTEM> SAVE-SM
Supplement/Memo	DCM (Device Configuration Management): A function to export/import the machine's setting information as a file.

LOG2USB	Writing of debug log to USB flash drive
Detail	To write the debug log stored in the eMMC PCB to the USB flash drive.
Use Case	When analyzing the cause of a problem
Adj/Set/Operate Method	1) Connect the USB flash drive. 2) Select the item, and then press Yes key.
Related Service Mode	COPIER> FUNCTION> SYSTEM> LOGWRITE

LOG-DEL	Deletion of debug log
Detail	To delete the debug log stored in the eMMC PCB.
Use Case	When the debug log is no longer needed
Adj/Set/Operate Method	Select the item, and then press Yes key.

DL-FORCE	Install machine firmware: overwriting
Detail	To forcibly overwrite the machine firmware with the firmware stored in the USB flash drive.
Use Case	At upgrade/downgrade
Adj/Set/Operate Method	1) Connect the USB flash drive. 2) Select the item, and then press Yes key.
Caution	Do not turn OFF/ON the power before "Executing..." disappears.
Related Service Mode	COPIER> FUNCTION> SYSTEM> DOWNLOAD

■ SPLMAN

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SPLMAN

SPL14159	ON/OFF of USB device ID fixing
Detail	To set whether to fix the USB device ID to "000000000000". A PC attempts to install the driver every time it is connected to a machine. However, by fixing the USB device ID, it recognizes that the same machine is connected so that it does not attempt to install the driver again.
Use Case	When saving the trouble of selecting a device used for printing from the candidate devices because the driver is installed every time a USB is connected
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0

SPL37510	ON/OFF of ITB cleaning at paper size mismatch
Detail	Normally, when paper other than that of the specified size is fed, ITB cleaning is executed to remove toner. When 1 is set, ITB cleaning is not executed even if paper size is mismatched. Productivity improves, but toner soiling may occur.
Use Case	When paper size is mismatched
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Caution	Be sure to get approval from the user by telling that toner soiling may occur to improve productivity.
Display/Adj/Set Range	0 to 1 0: OFF 1: ON
Default Value	0

SPL65677	Increase of paper leading edge margin
Detail	To increase the margin on the leading edge of paper. As the value is incremented by 1, the margin is increased by 0.1 mm. Actually, a value where the setting value of SPL68676 is subtracted from the setting value of this item is applied. The margin settings which are job-specific or based on the printable area are applied regardless of the setting of this item.
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 20
Unit	0.1 mm
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL68676

SPL68676	Decrease of paper leading edge margin
Detail	To decrease the margin on the leading edge of paper. As the value is incremented by 1, the margin is decreased by 0.1 mm. Actually, a value where the setting value of this item is subtracted from the setting value of SPL65677 is applied. The margin settings which are job-specific or based on the printable area are applied regardless of the setting of this item.
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 20
Unit	0.1 mm
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL65677

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SPLMAN

SPL68677	Increase of paper right and left margins
Detail	To increase the margins on the right and left edges of paper. As the value is incremented by 1, the margin is increased by 0.1 mm. Actually, a value where the setting value of SPL25607 is subtracted from the setting value of this item is applied. The margin settings which are job-specific or based on the printable area are applied regardless of the setting of this item.
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 20
Unit	0.1 mm
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL25607

SPL25607	Decrease of paper right and left margins
Detail	To decrease the margins on the right and left edges of paper. As the value is incremented by 1, the margin is decreased by 0.1 mm. Actually, a value where the setting value of this item is subtracted from the setting value of SPL68677 is applied. The margin settings which are job-specific or based on the printable area are applied regardless of the setting of this item.
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 20
Unit	0.1 mm
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL68677

SPL93822	Setting of department ID count all clear
Detail	To set whether to disable clearing of all department ID counts.
Use Case	When prohibiting clearing of all department ID counts
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to perform this mode after consulting with the system administrator at user's site.
Display/Adj/Set Range	0 to 1 0: Disabled 1: Enabled
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL78788

SPL78788	Setting of department ID count clear
Detail	To set whether to disable clearing of department ID count.
Use Case	When prohibiting clearing of department ID count
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to perform this mode after consulting with the system administrator at user's site.
Display/Adj/Set Range	0 to 1 0: Disabled 1: Enabled
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL93822

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SPLMAN

SPL41250	Initialize color displacement correction
Detail	To initialize the color displacement correction result. If shortage of toner occurs while [Continue Printing (Quality Not Guaranteed)] is selected by the user, color displacement correction cannot be executed. If color displacement correction cannot be executed while 1 is set, printing is continued based on the setting at the time of factory shipment. When 1 is set in the case that color displacement correction fails after replacement of the cartridge, the correction may succeed.
Use Case	- When prioritizing productivity over image quality - When color displacement correction fails even though there is sufficient toner remains
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch. 3) Execute print color displacement correction.
Caution	- Do not turn OFF/ON the power before "Executing..." disappears. - Be sure to perform print color displacement correction after turning OFF/ON the power.
Additional Functions Mode	Adjustment/Maintenance> Adjust Image Quality> Correct Print Color Mismatch

SPL71100	Setting of the duty of Off-hook PCB
Detail	This is the mode to make handsets of particular manufacturers to ring when fax reception mode is set to "Fax / Tel (Auto Switch)".
Use Case	When making the handsets of particular manufacturers to ring at the time of switching Fax/Tel
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	1 to 99
Default Value	50
Supplement/Memo	FAX model only

SPL00171	Set auto sleep shift time maximum value
Detail	To set the maximum auto sleep shift time displayed in [Auto Sleep Time] in [Settings/Registration]. When 0 is set, the time that can be set is 60 minutes maximum.
Use Case	When changing the setting time to shift to auto sleep mode
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: 60 minutes 1: Time specified for each model
Default Value	0 (Europe)/1 (Others)
Additional Functions Mode	Timer Settings> Auto Sleep Time

SPL80100	ON/OFF image left edge mask: book mode
Detail	To set whether to mask the left edge of the image at copyboard reading. When 0 is set, mask with the width based on the specification is applied for each job. When 1 is set, mask is canceled.
Use Case	Upon user's request (to print the left edge of the image)
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: ON, 1: OFF
Default Value	0

SPL27354	For R&D

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SPLMAN

SPL84194	ON/OFF of Embedded-RDS
Detail	To set ON/OFF of Embedded-RDS function.
Use Case	When using Embedded-RDS
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: ON, 1: OFF
Default Value	It differs according to the location.
Supplement/Memo	Embedded-RDS: Function to send device information such as the device counter, failure, and consumables to UGW via SOAP protocol UGW (Universal Gate Way): Remote monitoring service system

SPL32620	ON/OFF of PC-less update function
Detail	To set whether to disable the PC-less update function.
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF / ON the main power switch.
Caution	When LCDSFLG is 1, the setting of this item is disabled (the PC-less update function is turned OFF).
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Related Service Mode	COPIER> OPTION> FNC-SW> LCDSFLG
Supplement/Memo	PC-less update: A function to directly download the firmware from the GDLS server and update it.

SPL60061	Dspl/hide cloud print connct dest URL chng scrn
Detail	To set whether to display or hide the connection destination URL settings for Google Cloud Print on remote UI.
Use Case	When Google has changed the connection destination URL for cloud print
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF / ON the main power switch.
Display/Adj/Set Range	0 to 1 0: Display 1: Hide

SPL71700	Writing sublog to USB flash drive
Detail	To write the sublog stored in the eMMC PCB to the USB flash drive.
Use Case	When analyzing the cause of a problem
Adj/Set/Operate Method	Select the item, and then press Yes key.

SPL01734	ON/OFF of remote UI service mode
Detail	To set whether to allow using service mode on remote UI.
Use Case	When using service mode on remote UI
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	The setting value is linked with that of RMT-SW.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Related Service Mode	COPIER> OPTION> BODY> RMT-SW

SPL39533	ON/OFF of department ID management
Detail	To set whether to disable the department ID management.
Use Case	When disabling the department ID management
Adj/Set/Operate Method	Select the item, and then press Yes key.

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > SPLMAN

SPL43810	Clear of system administrator settings
Detail	To completely delete the following setting information. - System Manager ID - PIN After clearing of the information, it is necessary to set the system manager ID/PIN again.
Use Case	When the system manager ID/PIN has been forgotten
Adj/Set/Operate Method	Select the item, and then press Yes key.
Caution	Do not forget to set the system manager ID/PIN after clearing of the information.

SPL08159	ON/OFF of fax image backup data clear
Detail	To set whether to clear the fax image data which has been backed up. When 1 is set, it is cleared at next startup.
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0

SPL97097	ON/OFF of user setting backup data clear
Detail	To set whether to clear all the user setting data which has been backed up. When 1 is set, it is cleared at next startup.
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1

■ VIFFNC

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > VIFFNC

SMEAR-PV	ON/OFF of image smear prevention mode
Detail	To set whether to execute the image smear prevention mode. Depending on the paper type or environment (especially in a high humidity environment), thin line or fine halftone may become lighter
Use Case	When thin line or fine halftone becomes lighter
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0

FEED-IMP	ON/OFF of pickup jam reduction mode
Detail	To set whether to execute the pickup jam reduction mode. When using paper with which double feed is more likely to occur, pickup operation cannot be performed at the appropriate timing because of double feed. As a result of that, pickup delay jam may occur. In such cases, the pickup interval is extended by setting 1. As a result of that, jam occurrence can be reduced, but productivity is decreased.
Use Case	When pickup jam occurs with paper with which double feed is more likely to occur
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Caution	Be sure to get approval from the user by telling that the productivity decreases to prevent jam occurrence.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0

COPIER (Service mode for copier) > FUNCTION (Operation / inspection mode) > VIFFNC

FOG-PV	**ON/OFF of image fogging prevention mode**
Detail	To set whether to execute the image fogging prevention mode. Set 1 when fogging which looks like fine vertical lines appears. Execute the image fogging prevention mode.
Use Case	When fogging which looks like fine vertical lines occurs
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0
ICL-IMP	**ON/OFF ITB clean failure alleviate mode**
Detail	To set whether to execute ITB cleaning failure alleviation mode. An image that was on 2 sheets before may appear lightly depending on paper type and image ratio (in case of high image ratio). In such a case, set 1 to execute process to alleviate ITB cleaning failure.
Use Case	When an image failure (ghosting of an image on the 2 sheets before) occurs
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0
FD-R-CHG	**Not use**
STOR-DCN	**Backup of Engine Controller PCB NVRAM**
Detail	To back up the setting information in NVRAM of the Engine Controller PCB to NVRAM of the Main Controller PCB.
Use Case	Before replacing the Engine Controller PCB
Adj/Set/Operate Method	Select the item, and then press Yes key.
Caution	During operation, the setting information changes by manual or automatic adjustment. When backup data which has been left for a long period of time is restored, it is overwritten with the old setting information and the new information is deleted.
Related Service Mode	COPIER> FUNCTION> SYSTEM> RSTR-DCN
RSTR-DCN	**Restoration of Engine Controller PCB NVRAM**
Detail	To restore the setting information which has been backed up to NVRAM of the Main Controller PCB to the NVRAM of the Engine Controller PCB.
Use Case	After replacing the Engine Controller PCB
Adj/Set/Operate Method	1) Select the item, and then press Yes key. 2) Turn OFF/ON the main power switch.
Caution	During operation, the setting information changes by manual or automatic adjustment. When backup data which has been left for a long period of time is restored, it is overwritten with the old setting information and the new information is deleted.
Related Service Mode	COPIER> FUNCTION> SYSTEM> STOR-DCN

OPTION (Specification setting mode)

■ BODY

COPIER (Service mode for copier) > OPTION (Specification setting mode) > BODY

LOCALE	Setting of location
Detail	To set the location. Set the location in this item and the paper size configuration in SIZE-LC, and then clear the setting information in ALL.
Use Case	- When replacing the Main Controller PCB - When changing the location information
Adj/Set/Operate Method	1) Enter the setting value in this item, and then press Apply key. 2) Set the paper size configuration in SIZE-LC. 3) Execute ALL. 4) Turn OFF/ON the main power switch.
Caution	The setting information such as user mode and service mode is initialized by executing ALL. The settings of this item and SIZE-LC are not initialized.
Display/Adj/Set Range	1 to 10 1: Japan 2: North America 3: Korea 4: China 5: Taiwan 6: Europe 7: Asia 8: Oceania 9: Brazil 10: Latin
Related Service Mode	COPIER> FUNCTION> CLEAR> ALL COPIER> OPTION> BODY> SIZE-LC

SIZE-LC	Setting of paper size configuration
Detail	To set the paper size configuration. When replacing the Main Controller PCB, set the location in LOCALE and the paper size configuration in this item, and then clear the setting information in ALL.
Use Case	- When replacing the Main Controller PCB - Upon user's request
Adj/Set/Operate Method	1) Set the location in LOCALE. 2) Enter the setting value in this item, and then press Apply key. 3) Execute ALL. 4) Turn OFF/ON the main power switch.
Caution	The setting information such as user mode and service mode is initialized by executing ALL. The settings of this item and LOCALE are not initialized.
Display/Adj/Set Range	1 to 4 1: AB configuration 2: Inch configuration 3: A configuration 4: AB/Inch configuration
Related Service Mode	COPIER> FUNCTION> CLEAR> ALL COPIER> OPTION> BODY> LOCALE

COPIER (Service mode for copier) > OPTION (Specification setting mode) > BODY

MIBCOUNT	Set of charge counter MIB scope range
Detail	To set the range of counter information that can be obtained as MIB (Management Information Base).
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 2 0: All charge counters are obtained 1: Only displayed counter* is obtained 2: All charge counters are not obtained * : Counter specified by COUNTER 1 to 6
Default Value	0
Related Service Mode	COPIER> OPTION> USER> COUNTER1 - 6

NS-CMD5	Limit CRAM-MD5 auth method: SMTP auth
Detail	To restrict use of CRAM-MD5 authentication method at the time of SMTP authentication.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: SMTP server-dependent 1: Not used
Default Value	0
Supplement/Memo	SMTP authentication: Protocol in which user authentication function is added to SMTP, which is the protocol to be used for e-mail transmission. At the time of e-mail transmission, this protocol executes authentication of the user account and the password between the SMTP server and the user to approve e-mail transmission only when it's authenticated.

NS-PLN	Limit plaintext auth: SMTP auth, noencry
Detail	To restrict use of PLAIN/LOGIN authentication, which is plaintext, at the time of SMTP authentication under the environment where the communication packet is not encrypted.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: SMTP server-dependent 1: Not used
Default Value	0
Supplement/Memo	SMTP authentication: Protocol in which user authentication function is added to SMTP, which is the protocol to be used for e-mail transmission. At the time of e-mail transmission, this protocol executes authentication of the user account and the password between the SMTP server and the user to approve e-mail transmission only when it's authenticated.

NS-LGN	Limit LOGIN authentication: SMTP auth
Detail	To restrict use of LOGIN authentication at the time of SMTP authentication.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: SMTP server-dependent 1: Not used
Default Value	0
Supplement/Memo	SMTP authentication: Protocol in which user authentication function is added to SMTP, which is the protocol to be used for e-mail transmission. At the time of e-mail transmission, this protocol executes authentication of the user account and the password between the SMTP server and the user to approve e-mail transmission only when it's authenticated.

COPIER (Service mode for copier) > OPTION (Specification setting mode) > BODY

SLPMODE	Setting of shift to sleep mode
Detail	To restrict shift to sleep mode 1/sleep mode 3. When 1 is set, the machine does not shift to sleep mode.
Use Case	When sleep failure occurs
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0 : Shift is available. 1 : Shift is not available.
Default Value	0

SDTM-DSP	ON/OFF of auto shutdown shift time dspl
Detail	To set whether to display [Auto Shutdown Time] in [Menu]. The setting is enabled only for the model with automatic shutdown function.
Use Case	When switching to display or hide the items related to auto shutdown
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Caution	For the model without automatic shutdown function, the setting is disabled even if it is configured.
Display/Adj/Set Range	0 to 1 0: OFF 1: ON
Default Value	It differs according to the location.
Additional Functions Mode	Preferences> Timer/Energy Settings> Auto Shutdown Time

RMT-SW	ON/OFF of remote UI service mode
Detail	To set whether to allow using service mode on remote UI.
Use Case	When using service mode on remote UI
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1

PSWD-SW	Set password type to enter service mode
Detail	To set the type of password that is required to enter when getting into service mode. 2 types are available: one for "service technician" and the other for "system administrator + service technician". When selecting the type for "system administrator + service technician", enter the password for service technician after the password entry by the user's system administrator.
Use Case	Upon request from the user who concerns security
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 2 0: No password 1: Service technician 2: System administrator + service technician
Default Value	0

COPIER (Service mode for copier) > OPTION (Specification setting mode) > BODY

SM-PSWD	Password setting for service technician
Detail	To set password for service technician that is used when getting into service mode.
Use Case	When password is required to get into service mode
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to select 1 or 2 with PSWD-SW in advance.
Display/Adj/Set Range	11111111 to 99999999
Default Value	11111111
Related Service Mode	COPIER> OPTION> BODY> PSWD-SW

■ FNC-SW

COPIER (Service mode for copier) > OPTION (Specification setting mode) > FNC-SW

IMGCNTPR	Setting of image quality mode
Detail	To set the image quality mode. When 0 is set, "image quality priority mode" is applied. When 1 is set, "counter priority mode" is applied. When 2 is set, "image quality priority (photo) mode" is applied.
Use Case	Upon user's request
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 2 0: Image quality priority mode 1: Counter priority mode 2: Image quality priority (photo) mode
Default Value	1

LCDSFLG	Enabling of local CDS server
Detail	To set whether to use the local CDS server.
Use Case	When using the local CDS server
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: Disabled 1: Enabled
Default Value	0
Related Service Mode	COPIER> FUNCTION> SPLMAN> SPL32620
Supplement/Memo	When local CDS is used, iW EMC/MC device firmware update plug-in is required.

CRG-PROC	Set oprtn at cartridge estd life reach
Detail	To set the operation of the machine when the parts counter of the cartridge reaches the estimated life value.
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 2 0: Not stopped 1: Stopped once 2: Completely stopped
Default Value	0

COPIER (Service mode for copier) > OPTION (Specification setting mode) > FNC-SW

CRGLF-K	Set replacement ref VL (Bk): drum, etc.
Detail	To set the reference values for judging replacement of the component other than toner (Photosensitive Drum, Developing Assembly, and waste toner) included in the life of Bk-color cartridge. These values are used as the basis for calculation of component other than toner when deriving the estimated life value of the cartridge.
Use Case	When toner consumption is low (when the life of the Photosensitive Drum or the Developing Assembly decreases faster than that of toner)
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	100 to 200
Unit	1%
Default Value	100

CRGLF-CL	Set replacement ref VL(Y/M/C):drum, etc.
Detail	To set the reference values for judging replacement of the component other than toner (Photosensitive Drum, Developing Assembly, and waste toner) included in the life of Y/M/C-color cartridge. These values are used as the basis for calculation of component other than toner when deriving the estimated life value of the cartridge.
Use Case	When toner consumption is low (when the life of the Photosensitive Drum or the Developing Assembly decreases faster than that of toner)
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	100 to 200
Unit	1%
Default Value	100

■ DSPLY-SW

COPIER (Service mode for copier) > OPTION (Specification setting mode) > DSPLY-SW

CRGLW-LV	ON/OFF ctrdg prep thrshld set scrn dspl
Detail	To set whether to display the screen to set the threshold value for the toner level to prompt preparation of a cartridge. When 1 is set, [Custom] is displayed in [Display Timing for Cartridge Prep. Notif.] so that the user can set the toner level (1 to 99%). When 0 is set, the item is not displayed, so the user cannot set the toner level.
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Additional Functions Mode	Preferences > Display Settings > Display Timing for Cartridge Prep. Notif.

■ IMG-MCON

COPIER (Service mode for copier) > OPTION (Specification setting mode) > IMG-MCON

TMIC-BK	TMIC Bk PASCAL gamma LUT end edge crrct
Detail	To set whether to perform the trailing edge correction of Bk-color PASCAL gamma LUT used by TMIC. When 1 is set, the trailing edge correction is not performed so that density of the high density area becomes high. Consequently, texts and thin lines become clear; however, gradation of photos may become unnatural. When 0 is set, density of the high density area becomes low by the trailing edge correction. Consequently, gradation of photos is improved, but thin lines may be partly missing or texts may be faded.
Use Case	- When gradation of photos become unnatural - When thin lines are partly missing or characters are faded
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Supplement/Memo	TMIC: Error diffusion correction of photo/high image quality.

TMIC-CMY	TMIC Y/M/C PASCAL gamma LUT end correct
Detail	To set whether to perform the trailing edge correction of Y/M/C-color PASCAL gamma LUT used by TMIC. When 1 is set, the trailing edge correction is not performed so that density of the high density area becomes high. Consequently, texts and thin lines become clear; however, gradation of photos may become unnatural. When 0 is set, density of the high density area becomes low by the trailing edge correction. Consequently, gradation of photos is improved, but thin lines may be partly missing or texts may be faded.
Use Case	- When gradation of photos become unnatural - When thin lines are partly missing or characters are faded
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Supplement/Memo	TMIC: Error diffusion correction of photo/high image quality.

■ USER

COPIER (Service mode for copier) > OPTION (Specification setting mode) > USER

CTCHKDSP	ON/OFF of charge counter list output
Detail	To set whether to print the charge counter in the system management data list.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: ON, 1: OFF
Default Value	1
Additional Functions Mode	Output Report > Print List > System Manager Data List

COPIER (Service mode for copier) > OPTION (Specification setting mode) > USER

TNRB-SW	ON/OFF of toner replacement counter display
Detail	To set whether to display the toner replacement counter on the Counter Check screen. When 1 is set, the user can check the toner replacement counter.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 3 0: Hide 1: Display (Toner replacement counters in the 190s) 2 to 3: Not used
Default Value	0

PS-MODE	Setting of compatible mode at PS usage
Detail	To set the image processing at PS print. Set 8 when line width differs depending on the drawing position although the same line width is set. Setting of a value other than the setting values means that multiple settings are combined. (Example: 12=4+8)
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 63 4: Compatible with EFI at PS 2-sided delivery 8: strokeadjustment is enabled Any value other than those mentioned above: Not used
Default Value	0

SMD-EXPT	Set of service mode set VL export target
Detail	To set whether to export "service mode data" from remote UI. When 1 is set, "service mode data" is displayed as the target data of export on remote UI. When installing more than 1 machine at the same time, the same service mode data can be registered.
Use Case	When installing more than 1 machine at the same time
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: Not targeted 1: Targeted
Default Value	0
Supplement/Memo	If selecting "service mode data" as the target data of export on remote UI after setting SMD-EXPT to 1, service mode data can be exported.

ACC-SLP	Set shift to sleep3: Card Reader connect
Detail	To set whether to shift to sleep mode 3 when the Card Reader is connected.
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: Not shifted 1: Shifted
Default Value	1

COPIER (Service mode for copier) > OPTION (Specification setting mode) > USER

RPL-IMP	ON/OFF of replacement mode
Detail	To set whether to import the setting information of a machine which has been exported to a different one of the same model using DCM function. When 0 is set, the setting information which has been exported can be imported only to the same machine. When 1 is set, the machine-specific setting information such as IPv4 address setting can be imported to a different machine.
Use Case	When migrating the setting of a machine to a different machine of the same series that has been replaced
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0
Supplement/Memo	DCM (Device Configuration Management): A function to export/import the machine's setting information as a file.

■ ACC

COPIER (Service mode for copier) > OPTION (Specification setting mode) > ACC

WLAN	Setting of wireless LAN function
Detail	To set whether to enable the wireless LAN function.
Use Case	Upon user's request
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Display/Adj/Set Range	0 to 1 0: Disabled 1: Enabled
Default Value	It differs according to the model.

UNIF-OF	Setting of uniFLOW function
Detail	To set whether to enable the uniFLOW function. If 1 is set for this item and power is turned OFF/ON while the uniFLOW function is in operation, the function stops. When the setting value is set to 1, the uniFLOW function is disabled.
Use Case	- When avoiding failure due to error of the uniFLOW function - When connecting to the uniFLOW server is failed due to the error in the machine
Adj/Set/Operate Method	1) Enter the setting value, and then press Apply key. 2) Turn OFF/ON the main power switch.
Caution	Be sure to change the value back to 0 after servicing.
Display/Adj/Set Range	0 to 1 0: Enabled 1: Disabled
Default Value	0

■ LCNS-TR

COPIER (Service mode for copier) > OPTION (Specification setting mode) > LCNS-TR

ST-BRDIM	Install state Display of BarDIMM function
Detail	To display installation state of Barcode Printing for PCL when disabling and then transferring the license.
Use Case	When checking whether Barcode Printing for PCL is installed
Adj/Set/Operate Method	1) Select ST-BRDIM. 2) Enter 0, and then press Apply key. When installation has been completed, the transfer license key is displayed under TR-BRDIM.
Default Value	According to the setting at shipment

COPIER (Service mode for copier) > OPTION (Specification setting mode) > LCNS-TR

TR-BRDIM	Trns lcns key Display of BarDIMM function
Detail	To display transfer license key to use Barcode Printing for PCL when disabling and then transferring the license.
Use Case	When replacing the device
Adj/Set/Operate Method	1) Select ST-BRDIM. 2) Enter 0, and then press Apply key. The transfer license key is displayed under TR-BRDIM.
Display/Adj/Set Range	24 digits

■ LCNS-OF

COPIER (Service mode for copier) > OPTION (Specification setting mode) > LCNS-OF

ST-BRDIM	Not use

COUNTER (Counter mode)

■ TOTAL

COPIER (Service mode for copier) > COUNTER (Counter mode) > TOTAL

SERVICE1	Service-purposed total counter 1
Detail	To count up when the printout is delivered outside the machine. Large size: 1, Small size: 1 A blank sheet is not counted.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

SERVICE2	Service-purposed total counter 2
Detail	To count up when the printout is delivered outside the machine. Large size: 2, Small size: 1 A blank sheet is not counted.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

TTL	Total counter
Detail	To display the total of counters of COPY, PDL-PRT, FAX-PRT, RPT-PRT, and MD-PRT.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0
Related Service Mode	COPIER> COUNTER> TOTAL> COPY, PDL-PRT, FAX-PRT, RPT-PRT, MD-PRT

PDL-PRT	PDL print counter
Detail	To count up when the printout is delivered outside the machine/2-sided printout is stacked according to the charge counter at PDL print. Large size: 1, Small size: 1 A blank sheet is not counted.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

COPIER (Service mode for copier) > COUNTER (Counter mode) > TOTAL

FAX-PRT	FAX reception print counter
Detail	To count up when the FAX reception print is delivered outside the machine/2-sided printout is stacked. Large size: 1, Small size: 1 The counter is not advanced by blank paper or delivery in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0
Related Service Mode	COPIER> COUNTER> TOTAL> TTL
Supplement/Memo	FAX model only

RPT-PRT	Report print counter
Detail	To count up when the report print is delivered outside the machine/2-sided printout is stacked. Large size: 1, Small size: 1 The counter is not advanced by blank paper or delivery in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0
Related Service Mode	COPIER> COUNTER> TOTAL> TTL

MD-PRT	Media print counter
Detail	To count up when the media print is delivered outside the machine. Large size: 1, Small size: 1 The counter is not advanced by blank paper or delivery in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0
Related Service Mode	COPIER> COUNTER> TOTAL> TTL

■ PICK-UP

COPIER (Service mode for copier) > COUNTER (Counter mode) > PICK-UP

C1	Cassette 1 pickup total counter
Detail	To count up the number of sheets picked up from the Cassette 1. Large size: 1, Small size: 1 The counter is advanced by printout in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

C2	Cassette 2 pickup total counter
Detail	To count up the number of sheets picked up from the Cassette 2. Large size: 1, Small size: 1 The counter is advanced by printout in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

COPIER (Service mode for copier) > COUNTER (Counter mode) > PICK-UP

MF	Multi-purpose Tray pickup total counter
Detail	To count up the number of sheets picked up from the Multi-purpose Tray Pickup Unit. Large size: 1, Small size: 1 The counter is advanced by printout in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

2-SIDE	2-sided pickup total counter
Detail	To count up the number of sheets picked up in duplex mode. Large size: 1, Small size: 1 The counter is advanced by printout in service mode.
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 sheet
Default Value	0

■ JAM

COPIER (Service mode for copier) > COUNTER (Counter mode) > JAM

TOTAL	Total jam counter
Detail	To count up the number of total jam occurrences.
Use Case	When checking the jam counter
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 time
Default Value	0

2-SIDE	Duplex Unit jam counter
Detail	To count up the number of jam occurrences in the Duplex Unit.
Use Case	When checking the jam counter
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 time
Default Value	0

MF	Multi-purpose Tray jam counter
Detail	To count up the number of jam occurrences in the Multi-purpose Tray. The counter is advanced even in the case of paper size mismatch or misprint.
Use Case	When checking the jam counter
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 time
Default Value	0

COPIER (Service mode for copier) > COUNTER (Counter mode) > JAM

C1	Cassette 1 jam counter
Detail	To count up the number of jam occurrences in the Cassette 1. The counter is advanced even in the case of paper size mismatch or misprint.
Use Case	When checking the jam counter
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 time
Default Value	0

C2	Cassette 2 jam counter
Detail	To count up the number of jam occurrences in the Cassette 2. The counter is advanced even in the case of paper size mismatch or misprint.
Use Case	When checking the jam counter
Adj/Set/Operate Method	N/A (Display only)
Display/Adj/Set Range	0 to 99999999
Unit	1 time
Default Value	0

TESTMODE (Service mode for test print, operation check, etc.)

PRINT (Print test mode)

TESTMODE (Service mode for test print, operation check, etc.) > PRINT (Print test mode)

PG-TYPE	Setting of PG number
Detail	To set the PG number of the test print.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 26 0 to 1: For R&D use 2: Color chart 3: For R&D use 4: Rainbow chart (vertical scanning direction, A4) 5: Rainbow chart (horizontal scanning direction, A4) 6: Color grid (A4) 7: Rainbow chart (vertical scanning direction, LTR/LGL) 8: Rainbow chart (horizontal scanning direction, LTR/LGL) 9: Color grid (LTR/LGL) 10: 16 gradations 11: 17 gradations of Y/M/C/Bk/R/G/B 12: Halftone 13: For checking ghost due to transfer failure 14: For checking the density patch 15: For checking transfer 20: For R&D use 21: For checking developing performance (white spots) 22: For checking resolution 23: For checking banding image 24: 4 colors (landscape) 25: 4 colors (portrait) 26: For calibrating color difference between the front and back sides with DADF (1-path model)
Default Value	0

COUNT	Setting of PG output quantity
Detail	To set the number of sheets for PG output.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	1 to 99
Unit	1 sheet
Default Value	1

PHASE	Set 1-sided/2-sided print for PG output
Detail	To set 1-sided/2-sided print for PG output. Even if 1 is set for a machine supporting 1-sided print, the setting is disabled.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: 1-sided 1: 2-sided
Default Value	0

TESTMODE (Service mode for test print, operation check, etc.) > PRINT (Print test mode)

MODE	Setting of test print image formation method
Detail	To set the image formation method for the test print. If PG-TYPE is 0 or 1, this setting is disabled because a specific image formation method is applied.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 3 0: T-MIC 1: High screen ruling (SCA) 2: Low screen ruling (SCB) 3: TBIC
Default Value	0
Related Service Mode	TESTMODE> PRINT> PG-TYPE

THRU	Setting of image correction table at test print
Detail	To set the image correction table that is used at the time of test print output. When 0 is set, normal gamma LUT is used so that the density characteristics by the density correction process can be checked. When 1 is set, linear gamma LUT is used so that the density characteristics of this machine can be checked. When 2 is set, the high density area of Bk-color is printed darker.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 2 0: Normal gamma LUT 1: Through (linear) gamma LUT 2: With trailing edge correction of Bk-color
Default Value	0
Supplement/Memo	Gamma LUT: Density gradation characteristic table

NRKE	ON/OFF of laser scanning transfer process of test print
Detail	To set whether to perform line transfer process for skew correction of laser scanning at test print.
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF 1: ON
Default Value	0
Supplement/Memo	Transfer process: A process to correct skew of laser scanning toward vertical scanning direction

BLND	ON/OFF of interpolation process at test print
Detail	To set whether to perform interpolation process at test print. When 1 is set, interpolation process is performed (no phase shift).
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF 1: ON
Default Value	0
Supplement/Memo	Interpolation process: A process to predict, for pixels holding no color information, color based on the surrounding pixels, and then set up the color information.

TESTMODE (Service mode for test print, operation check, etc.) > PRINT (Print test mode)

DENS-Y	Adj of Y-color density at test print
Detail	To adjust Y-color density when performing test print . As the value is larger, the image gets darker.
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 255
Default Value	128
Related Service Mode	TESTMODE> PRINT> PG-TYPE

DENS-M	Adj of M-color density at test print
Detail	To adjust M-color density when performing test print . As the value is larger, the image gets darker.
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 255
Default Value	128
Related Service Mode	TESTMODE> PRINT> PG-TYPE

DENS-C	Adj of C-color density at test print
Detail	To adjust C-color density when performing test print . As the value is larger, the image gets darker.
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 255
Default Value	128
Related Service Mode	TESTMODE> PRINT> PG-TYPE

DENS-K	Adj of Bk-color density at test print
Detail	To adjust Bk-color density when performing test print . As the value is larger, the image gets darker.
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 255
Default Value	128
Related Service Mode	TESTMODE> PRINT> PG-TYPE

SW-Y	ON/OFF of Y-color output at test print
Detail	To set whether to output Y-color at the time of test print .
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1
Related Service Mode	TESTMODE> PRINT> PG-TYPE

SW-M	ON/OFF of M-color output at test print
Detail	To set whether to output M-color at the time of test print .
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1

TESTMODE (Service mode for test print, operation check, etc.) > PRINT (Print test mode)

SW-C	ON/OFF of C-color output at test print
Detail	To set whether to output C-color at the time of test print .
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1

SW-K	ON/OFF of Bk-color output at test print
Detail	To set whether to output Bk-color at the time of test print .
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	1

MONOMODE	ON/OFF of black mode at test print
Detail	To set whether to enable black mode at the time of test print.
Use Case	At test print
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Display/Adj/Set Range	0 to 1 0: OFF, 1: ON
Default Value	0

FEED	Setting of paper source at test print
Detail	To set the paper source at the time of test print output. If this mode is set when there is no Cassette 2 (option Pickup Cassette), the output is made from Cassette 1 (standard Pickup Cassette).
Use Case	At trouble analysis
Adj/Set/Operate Method	Enter the setting value, and then press Apply key.
Caution	In case of using the Multi-purpose Tray, be sure to place paper on the tray before executing this item.
Display/Adj/Set Range	0 to 4 0: Multi-purpose Tray 1: Cassette 1 2: Cassette 2 3: Cassette 3 4: Cassette 4
Default Value	1

START	Output of test print
Detail	To output a test print with the PG pattern set in PG-TYPE, MODE, etc.
Use Case	At trouble analysis
Adj/Set/Operate Method	Select the item, and then press Yes key.
Related Service Mode	TESTMODE> PRINT

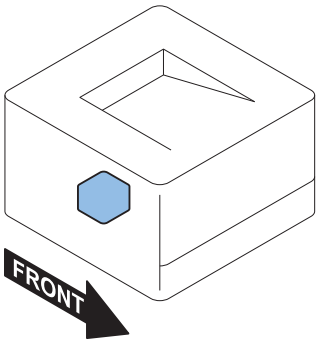
10 Installation

MiCARD Attachment Kit-B1

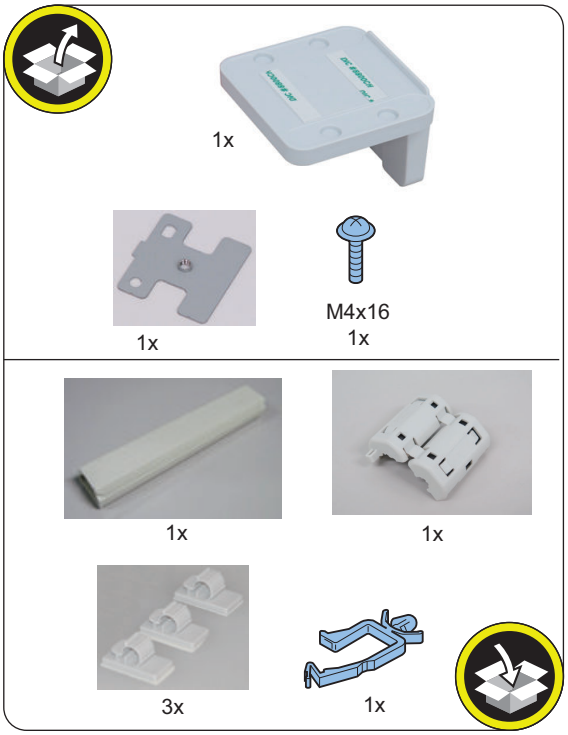
Points to Note at Installation

Prepare a Card Reader (sales company's option) in advance. Although the shape of the Card Reader may differ, the installation procedure is the same. Use the short-type Card Reader Cable.

Installation Outline Drawing



Checking the Contents



Check Item When Turning OFF the Main Power

Check that the main power is OFF.

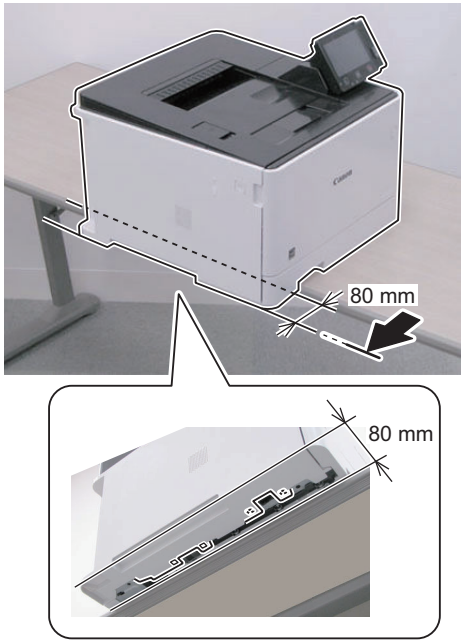
1. **Turn OFF the main power switch.**
2. **Check that the display in the Control Panel and the lamp of the main power are turned off, and then disconnect the power plug.**

Installation Procedure

□

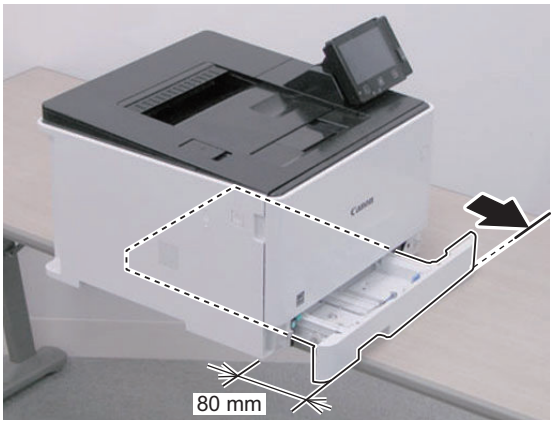
1.

NOTE:
Shift the host machine by approximately 80 mm from the working table to release the claws on the bottom of the Left Cover.

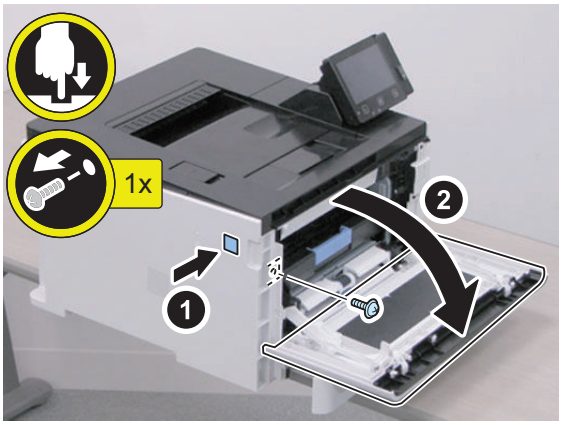


□
2.

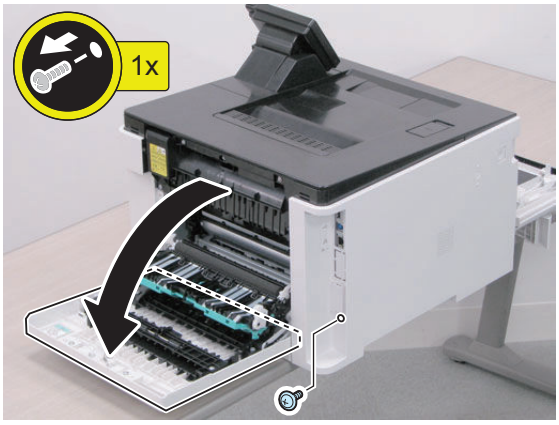
⚠ CAUTION:
Do not completely pull out the cassette, as doing so will disturb the balance of the product and may cause it to fall down.



□
3.

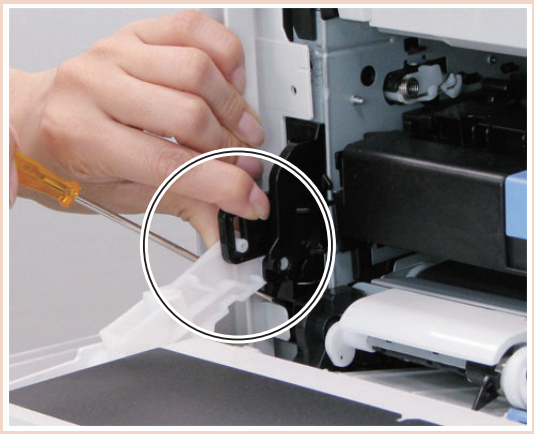


□
4.

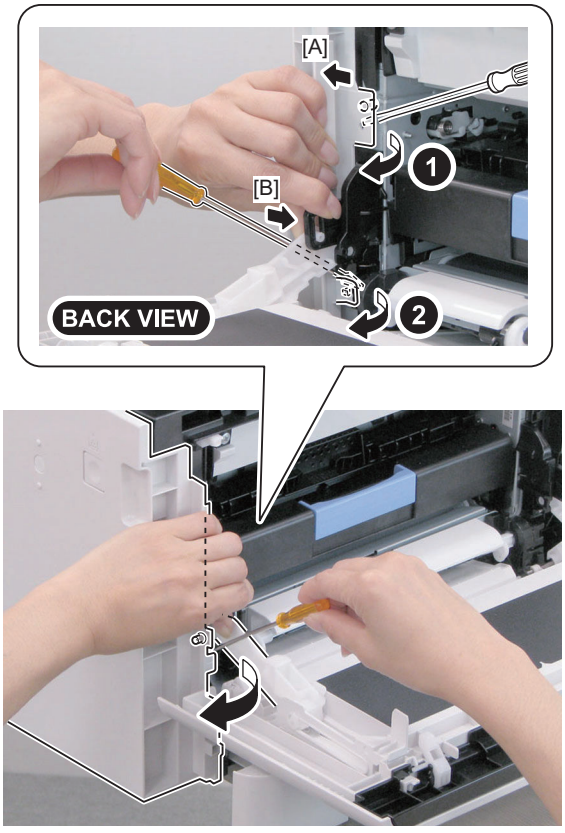


□
5.

CAUTION:
Be sure to free the bosses while holding the joint because the Cartridge Cover Retainer comes off easily.

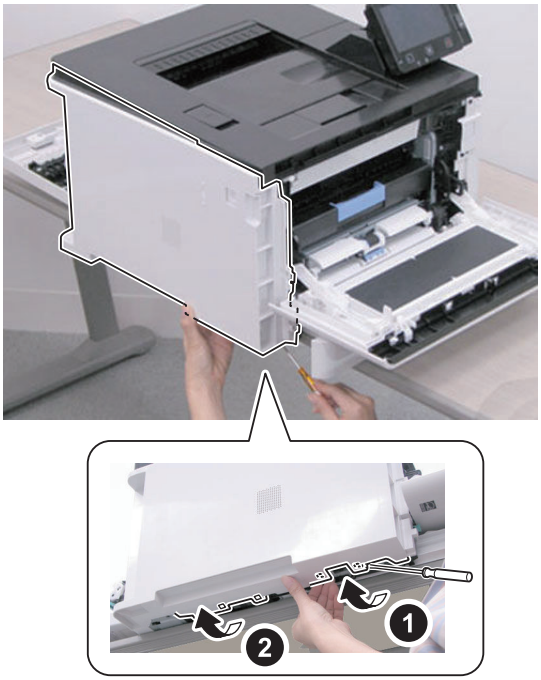


NOTE:
The bosses can be freed easily by pulling the Left Cover in the [A] direction and pulling the Cartridge Cover Retainer in the [B] direction.

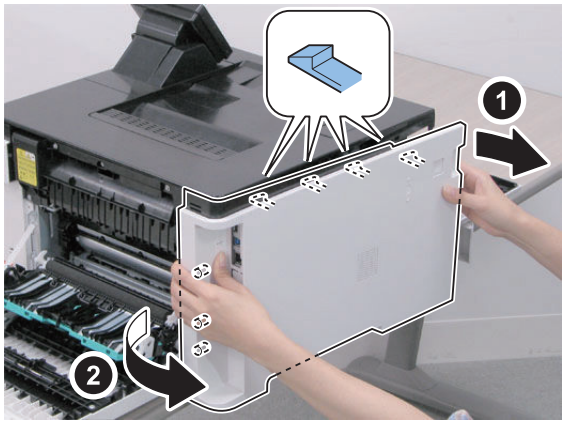


□
6.

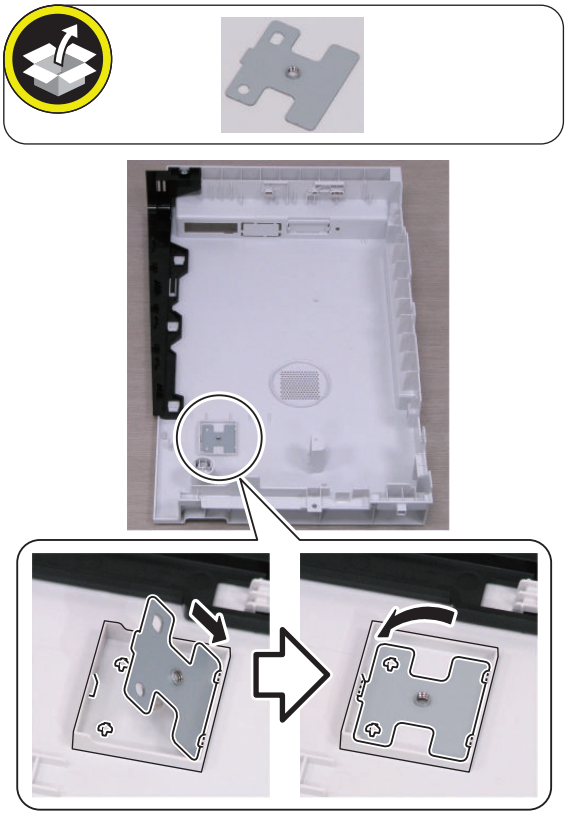
NOTE:
Release the claw while opening the Left Cover Unit in the direction of the arrow.



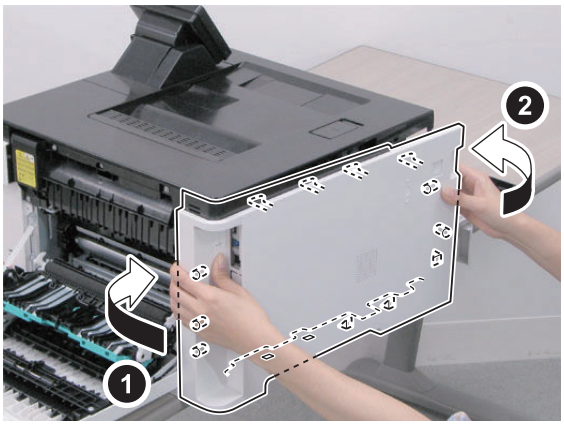
□
7.



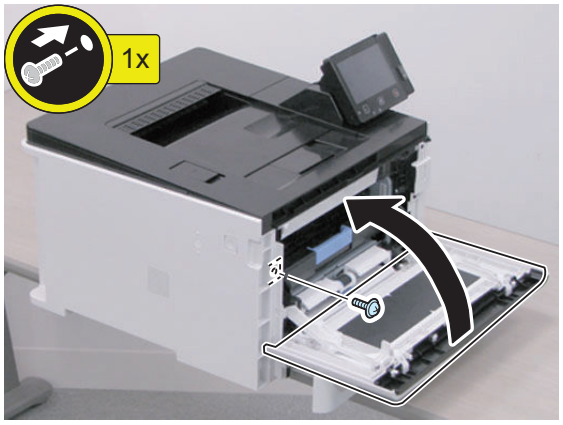
☐
8.



☐
9.

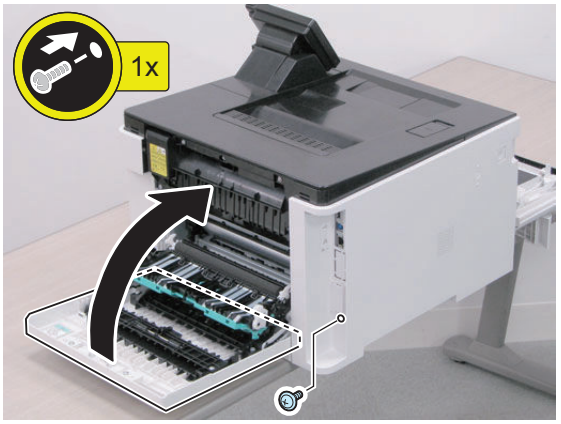


☐
10.

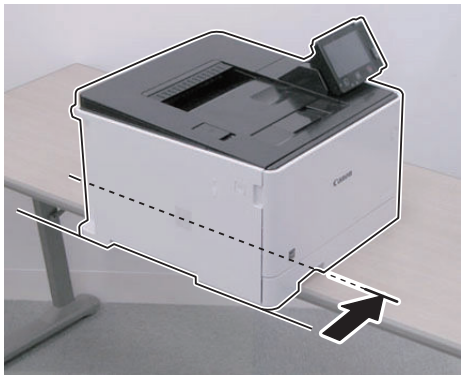


☐
11.

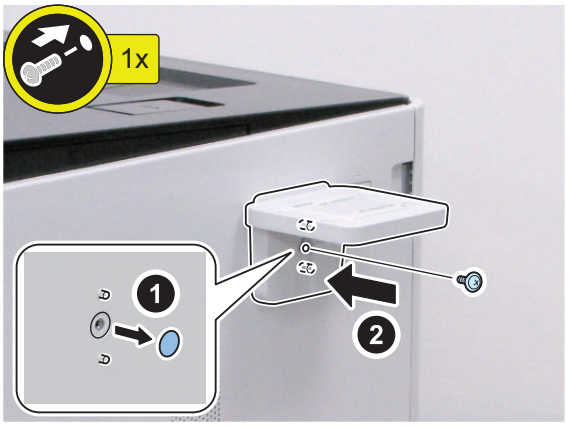
☐
12.

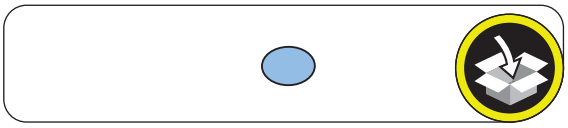


☐
13.



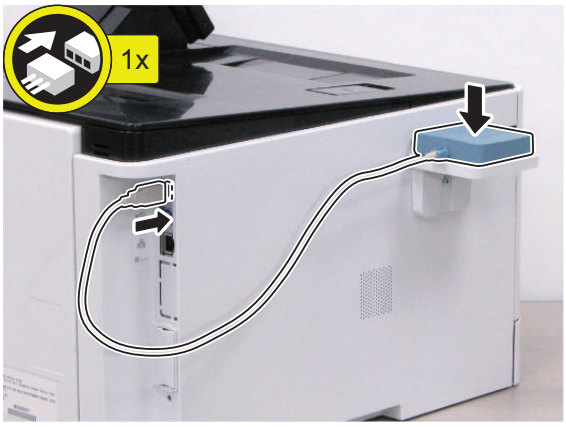
☐
14.





☐
15.

☐
16.



☐
17. **Connect the power plug to the outlet.**

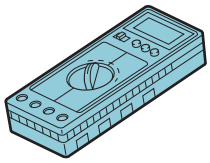
18. **Turn ON the main power switch.**

APPENDICES

Service Tools

Special Tools

In addition to the standard tools set, the following special tools are required when servicing the machine:

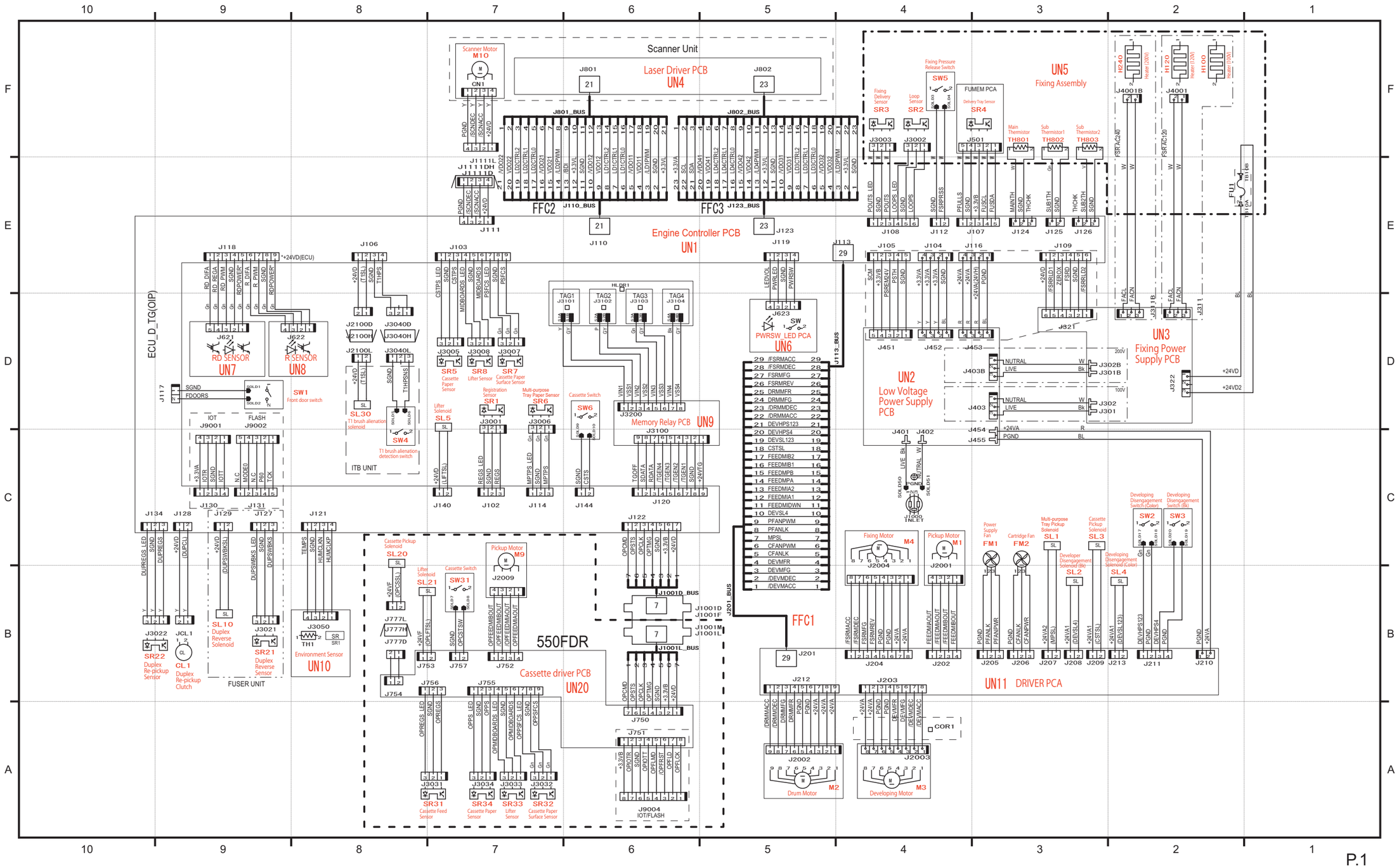
Name of Tool	Parts.No	Use
Digital Multimeter	FY9-2002	Used as a probe extension when making electrical checks. 

Solvents and Oil List

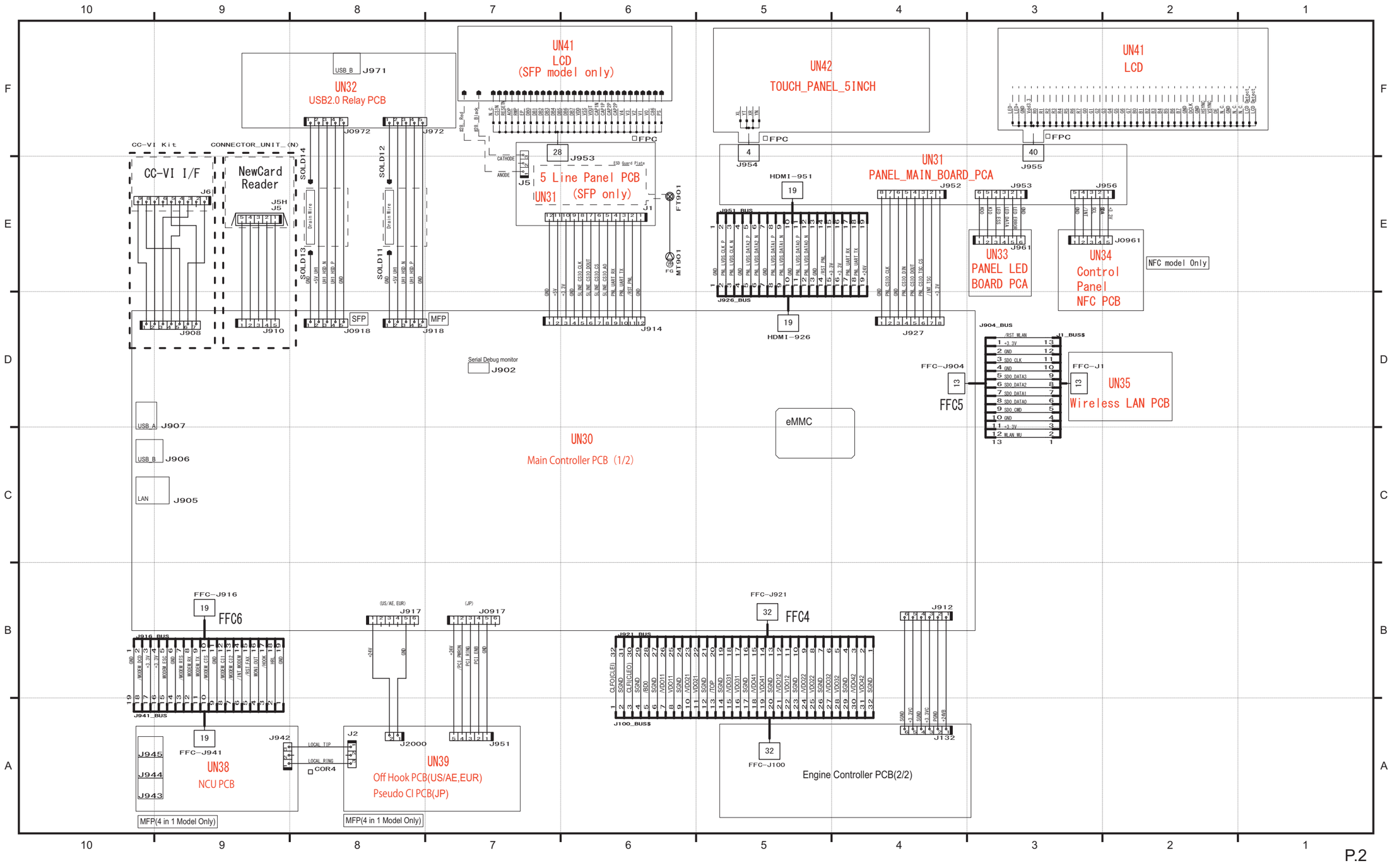
No.	Type	Purpose	Remark
1	Ethyl alcohol	• Cleaning: metal part, oil stains, toner stains	• Purchase locally • Keep away from flame

General Circuit Diagram

General Circuit Diagram(1/2)


Scanner Unit
Scanner Motor M10
Laser Driver PCB UN4
Engine Controller PCB UN1
Fixing Assembly UN5
Low Voltage Power Supply PCB UN2
Fixing Power Supply PCB UN3
PWRSW_LED PCA UN6
Memory Relay PCB UN9
RD SENSOR UN7
R SENSOR UN8
Environment Sensor UN10
Cassette driver PCB UN20
DRIVER PCA UN11
FFC1
FFC2
FFC3
550FDR
ITB UNIT
FUSER UNIT
Fixing Pressure Release Switch SW5
FUMEM PCA
Front door switch SW1
T1 brush alienation solenoid SL30
T1 brush alienation detection switch SW4
Cassette Paper Sensor SR5
Lifter Solenoid SL5
Lifter Sensor SR8
Registration Sensor SR1
Cassette Paper Surface Sensor SR7
Multi-purpose Tray Paper Sensor SR6
Cassette Switch SW6
Cassette Feed Sensor SR31
Cassette Paper Sensor SR34
Lifter Sensor SR33
Cassette Paper Surface Sensor SR32
Cassette Pickup Solenoid SL20
Lifter Solenoid SL21
Cassette Switch SW31
Pickup Motor M9
Duplex Re-pickup Sensor SR22
Duplex Re-pickup Clutch CL1
Duplex Reverse Solenoid SL10
Duplex Reverse Sensor SR21
Fixing Delivery Sensor SR3
Loop Sensor SR2
Delivery Tray Sensor SR4
Main Thermistor TH801
Sub Thermistor1 TH802
Sub Thermistor2 TH803
Heater (200V) H240
Heater (120V) H120
Heater (100V) H100
Fixing Motor M4
Pickup Motor M1
Drum Motor M2
Developing Motor M3
Power Supply Fan FM1
Cartridge Fan FM2
Multi-purpose Tray Pickup Solenoid SL1
Developer Disengagement Solenoid (Bk) SL2
Cassette Pickup Solenoid SL3
Developing Disengagement solenoid (Color) SL4
Developing Disengagement Switch (Color) SW2
Developing Disengagement Switch (Bk) SW3
Drum Cartridge Memory PCB UN9
Developing Motor M3
ECU_D_TG(OIP)
J1001D_BUS
J1001F
J1001M
J1001L_BUS
J113_BUS
J201_BUS
550FDR
IOT
FLASH
J9001
J9002
J9004
IOT/FLASH
J3200
J3100
J1000
INLET
J2001
J2002
J2003
J2004
J201
J202
J203
J204
J205
J206
J207
J208
J209
J210
J211
J212
J213
J301
J302
J301B
J302B
J321
J322
J311
J318
J4001
J4001B
J501
J3002
J3003
J108
J112
J107
J124
J125
J126
J105
J104
J116
J109
J451
J452
J453
J454
J455
J401
J402
J403
J403B
J621
J622
J623
J624
J625
J626
J627
J628
J629
J630
J631
J632
J633
J634
J635
J636
J637
J638
J639
J640
J641
J642
J643
J644
J645
J646
J647
J648
J649
J650
J651
J652
J653
J654
J655
J656
J657
J658
J659
J660
J661
J662
J663
J664
J665
J666
J667
J668
J669
J670
J671
J672
J673
J674
J675
J676
J677
J678
J679
J680
J681
J682
J683
J684
J685
J686
J687
J688
J689
J690
J691
J692
J693
J694
J695
J696
J697
J698
J699
J700
J701
J702
J703
J704
J705
J706
J707
J708
J709
J710
J711
J712
J713
J714
J715
J716
J717
J718
J719
J720
J721
J722
J723
J724
J725
J726
J727
J728
J729
J730
J731
J732
J733
J734
J735
J736
J737
J738
J739
J740
J741
J742
J743
J744
J745
J746
J747
J748
J749
J750
J751
J752
J753
J754
J755
J756
J757
J758
J759
J760
J761
J762
J763
J764
J765
J766
J767
J768
J769
J770
J771
J772
J773
J774
J775
J776
J777
J778
J779
J780
J781
J782
J783
J784
J785
J786
J787
J788
J789
J790
J791
J792
J793
J794
J795
J796
J797
J798
J799
J800
J801
J802
J803
J804
J805
J806
J807
J808
J809
J810
J811
J812
J813
J814
J815
J816
J817
J818
J819
J820
J821
J822
J823
J824
J825
J826
J827
J828
J829
J830
J831
J832
J833
J834
J835
J836
J837
J838
J839
J840
J841
J842
J843
J844
J845
J846
J847
J848
J849
J850
J851
J852
J853
J854
J855
J856
J857
J858
J859
J860
J861
J862
J863
J864
J865
J866
J867
J868
J869
J870
J871
J872
J873
J874
J875
J876
J877
J878
J879
J880
J881
J882
J883
J884
J885
J886
J887
J888
J889
J890
J891
J892
J893
J894
J895
J896
J897
J898
J899
J900
J901
J902
J903
J904
J905
J906
J907
J908
J909
J910
J911
J912
J913
J914
J915
J916
J917
J918
J919
J920
J921
J922
J923
J924
J925
J926
J927
J928
J929
J930
J931
J932
J933
J934
J935
J936
J937
J938
J939
J940
J941
J942
J943
J944
J945
J946
J947
J948
J949
J950
J951
J952
J953
J954
J955
J956
J957
J958
J959
J960
J961
J962
J963
J964
J965
J966
J967
J968
J969
J970
J971
J972
J973
J974
J975
J976
J977
J978
J979
J980
J981
J982
J983
J984
J985
J986
J987
J988
J989
J990
J991
J992
J993
J994
J995
J996
J997
J998
J999
J1000
J1001
J1002
J1003
J1004
J1005
J1006
J1007
J1008
J1009
J1010
J1011
J1012
J1013
J1014
J1015
J1016
J1017
J1018
J1019
J1020
J1021
J1022
J1023
J1024
J1025
J1026
J1027
J1028
J1029
J1030
J1031
J1032
J1033
J1034
J1035
J1036
J1037
J1038
J1039
J1040
J1041
J1042
J1043
J1044
J1045
J1046
J1047
J1048
J1049
J1050
J1051
J1052
J1053
J1054
J1055
J1056
J1057
J1058
J1059
J1060
J1061
J1062
J1063
J1064
J1065
J1066
J1067
J1068
J1069
J1070
J1071
J1072
J1073
J1074
J1075
J1076
J1077
J1078
J1079
J1080
J1081
J1082
J1083
J1084
J1085
J1086
J1087
J1088
J1089
J1090
J1091
J1092
J1093
J1094
J1095
J1096
J1097
J1098
J1099
J1100
J1101
J1102
J1103
J1104
J1105
J1106
J1107
J1108
J1109
J1110
J1111
J1112
J1113
J1114
J1115
J1116
J1117
J1118
J1119
J1120
J1121
J1122
J1123
J1124
J1125
J1126
J1127
J1128
J1129
J1130
J1131
J1132
J1133
J1134
J1135
J1136
J1137
J1138
J1139
J1140
J1141
J1142
J1143
J1144
J1145
J1146
J1147
J1148
J1149
J1150
J1151
J1152
J1153
J1154
J1155
J1156
J1157
J1158
J1159
J1160
J1161
J1162
J1163
J1164
J1165
J1166
J1167
J1168
J1169
J1170
J1171
J1172
J1173
J1174
J1175
J1176
J1177
J1178
J1179
J1180
J1181
J1182
J1183
J1184
J1185
J1186
J1187
J1188
J1189
J1190
J1191
J1192
J1193
J1194
J1195
J1196
J1197
J1198
J1199
J1200
J1201
J1202
J1203
J1204
J1205
J1206
J1207
J1208
J1209
J1210
J1211
J1212
J1213
J1214
J1215
J1216
J1217
J1218
J1219
J1220
J1221
J1222
J1223
J1224
J1225
J1226
J1227
J1228
J1229
J1230
J1231
J1232
J1233
J1234
J1235
J1236
J1237
J1238
J1239
J1240
J1241
J1242
J1243
J1244
J1245
J1246
J1247
J1248
J1249
J1250
J1251
J1252
J1253
J1254
J1255
J1256
J1257
J1258
J1259
J1260
J1261
J1262
J1263
J1264
J1265
J1266
J1267
J1268
J1269
J1270
J1271
J1272
J1273
J1274
J1275
J1276
J1277
J1278
J1279
J1280
J1281
J1282
J1283
J1284
J1285
J1286
J1287
J1288
J1289
J1290
J1291
J1292
J1293
J1294
J1295
J1296
J1297
J1298
J1299
J1300
J1301
J1302
J1303
J1304
J1305
J1306
J1307
J1308
J1309
J1310
J1311
J1312
J1313
J1314
J1315
J1316
J1317
J1318
J1319
J1320
J1321
J1322
J1323
J1324
J1325
J1326
J1327
J1328
J1329
J1330
J1331
J1332
J1333
J1334
J1335
J1336
J1337
J1338
J1339
J1340
J1341
J1342
J1343
J1344
J1345
J1346
J1347
J1348
J1349
J1350
J1351
J1352
J1353
J1354
J1355
J1356
J1357
J1358
J1359
J1360
J1361
J1362
J1363
J1364
J1365
J1366
J1367
J1368
J1369
J1370
J1371
J1372
J1373
J1374
J1375
J1376
J1377
J1378
J1379
J1380
J1381
J1382
J1383
J1384
J1385
J1386
J1387
J1388
J1389
J1390
J1391
J1392
J1393
J1394
J1395
J1396
J1397
J1398
J1399
J1400
J1401
J1402
J1403
J1404
J1405
J1406
J1407
J1408
J1409
J1410
J1411
J1412
J1413
J1414
J1415
J1416
J1417
J1418
J1419
J1420
J1421
J1422
J1423
J1424
J1425
J1426
J1427
J1428
J1429
J1430
J1431
J1432
J1433
J1434
J1435
J1436
J1437
J1438
J1439
J1440
J1441
J1442
J1443
J1444
J1445
J1446
J1447
J1448
J1449
J1450
J1451
J1452
J1453
J1454
J1455
J1456
J1457
J1458
J1459
J1460
J1461
J1462
J1463
J1464
J1465
J1466
J1467
J1468
J1469
J1470
J1471
J1472
J1473
J1474
J1475
J1476
J1477
J1478
J1479
J1480
J1481
J1482
J1483
J1484
J1485
J1486
J1487
J1488
J1489
J1490
J1491
J1492
J1493
J1494
J1495
J1496
J1497
J1498
J1499
J1500
J1501
J1502
J1503
J1504
J1505
J1506
J1507
J1508
J1509
J1510
J1511
J1512
J1513
J1514
J1515
J1516
J1517
J1518
J1519
J1520
J1521
J1522
J1523
J1524
J1525
J1526
J1527
J1528
J1529
J1530
J1531
J1532
J1533
J1534
J1535
J1536
J1537
J1538
J1539
J1540
J1541
J1542
J1543
J1544
J1545
J1546
J1547
J1548
J1549
J1550
J1551
J1552
J1553
J1554
J1555
J1556
J1557
J1558
J1559
J1560
J1561
J1562
J1563
J1564
J1565
J1566
J1567
J1568
J1569
J1570
J1571
J1572
J1573
J1574
J1575
J1576
J1577
J1578
J1579
J1580
J1581
J1582
J1583
J1584
J1585
J1586
J1587
J1588
J1589
J1590
J1591
J1592
J1593
J1594
J1595
J1596
J1597
J1598
J1599
J1600
J1601
J1602
J1603
J1604
J1605
J1606
J1607
J1608
J1609
J1610
J1611
J1612
J1613
J1614
J1615
J1616
J1617
J1618
J1619
J1620
J1621
J1622
J1623
J1624
J1625
J1626
J1627
J1628
J1629
J1630
J1631
J1632
J1633
J1634
J1635
J1636
J1637
J1638
J1639
J1640
J1641
J1642
J1643
J1644
J1645
J1646
J1647
J1648
J1649
J1650
J1651
J1652
J1653
J1654
J1655
J1656
J1657
J1658
J1659
J1660
J1661
J1662
J1663
J1664
J1665
J1666
J1667
J1668
J1669
J1670
J1671
J1672
J1673
J1674
J1675
J1676
J1677
J1678
J1679
J1680
J1681
J1682
J1683
J1684
J1685
J1686
J1687
J1688
J1689
J1690
J1691
J1692
J1693
J1694
J1695
J1696
J1697
J1698
J1699
J1700
J1701
J1702
J1703
J1704
J1705
J1706
J1707
J1708
J1709
J1710
J1711
J1712
J1713
J1714
J1715
J1716
J1717
J1718
J1719
J1720
J1721
J1722
J1723
J1724
J1725
J1726
J1727
J1728
J1729
J1730
J1731
J1732
J1733
J1734
J1735
J1736
J1737
J1738
J1739
J1740
J1741
J1742
J1743
J1744
J1745
J1746
J1747
J1748
J1749
J1750
J1751
J1752
J1753
J1754
J1755
J1756
J1757
J1758
J1759
J1760
J1761
J1762
J1763
J1764
J1765
J1766
J1767
J1768
J1769
J1770
J1771
J1772
J1773
J1774
J1775
J1776
J1777
J1778
J1779
J1780
J1781
J1782
J1783
J1784
J1785
J1786
J1787
J1788
J1789
J1790
J1791
J1792
J1793
J1794
J1795
J1796
J1797
J1798
J1799
J1800
J1801
J1802
J1803
J1804
J1805
J1806
J1807
J1808
J1809
J1810
J1811
J1812
J1813
J1814
J1815
J1816
J1817
J1818
J1819
J1820
J1821
J1822
J1823
J1824
J1825
J1826
J1827
J1828
J1829
J1830
J1831
J1832
J1833
J1834
J1835
J1836
J1837
J1838
J1839
J1840
J1841
J1842
J1843
J1844
J1845
J1846
J1847
J1848
J1849
J1850
J1851
J1852
J1853
J1854
J1855
J1856
J1857
J1858
J1859
J1860
J1861
J1862
J1863
J1864
J1865
J1866
J1867
J1868
J1869
J1870
J1871
J1872
J1873
J1874
J1875
J1876
J1877
J1878
J1879
J1880
J1881
J1882
J1883
J1884
J1885
J1886
J1887
J1888
J1889
J1890
J1891
J1892
J1893
J1894
J1895
J1896
J1897
J1898
J1899
J1900
J1901
J1902
J1903
J1904
J1905
J1906
J1907
J1908
J1909
J1910
J1911
J1912
J1913
J1914
J1915
J1916
J1917
J1918
J1919
J1920
J1921
J1922
J1923
J1924
J1925
J1926
J1927
J1928
J1929
J1930
J1931
J1932
J1933
J1934
J1935
J1936
J1937
J1938
J1939
J1940
J1941
J1942
J1943
J1944
J1945
J1946
J1947
J1948
J1949
J1950
J1951
J1952
J1953
J1954
J1955
J1956
J1957
J1958
J1959
J1960
J1961
J1962
J1963
J1964
J1965
J1966
J1967
J1968
J1969
J1970
J1971
J1972
J1973
J1974
J1975
J1976
J1977
J1978
J1979
J1980
J1981
J1982
J1983
J1984
J1985
J1986
J1987
J1988
J1989
J1990
J1991
J1992
J1993
J1994
J1995
J1996
J1997
J1998
J1999
J2000
J2001
J2002
J2003
J2004
J2005
J2006
J2007
J2008
J2009
J2010
J2011
J2012
J2013
J2014
J2015
J2016
J2017
J2018
J2019
J2020
J2021
J2022
J2023
J2024
J2025
J2026
J2027
J2028
J2029
J2030
J2031
J2032
J2033
J2034
J2035
J2036
J2037
J2038
J2039
J2040
J2041
J2042
J2043
J2044
J2045
J2046
J2047
J2048
J2049
J2050
J2051
J2052
J2053
J2054
J2055
J2056
J2057
J2058
J2059
J2060
J2061
J2062
J2063
J2064
J2065
J2066
J2067
J2068
J2069
J2070
J2071
J2072
J2073
J2074
J2075
J2076
J2077
J2078
J2079
J2080
J2081
J2082
J2083
J2084
J2085
J2086
J2087
J2088
J2089
J2090
J2091
J2092
J2093
J2094
J2095
J2096
J2097
J2098
J2099
J2100
J2101
J2102
J2103
J2104
J2105
J2106
J2107
J2108
J2109
J2110
J2111
J2112
J2113
J2114
J2115
J2116
J2117
J2118
J2119
J2120
J2121
J2122
J2123
J2124
J2125
J2126
J2127
J2128
J2129
J2130
J2131
J2132
J2133
J2134
J2135
J2136
J2137
J2138
J2139
J2140
J2141
J2142
J2143
J2144
J2145
J2146
J2147
J2148
J2149
J2150
J2151
J2152
J2153
J2154
J2155
J2156
J2157
J2158
J2159
J2160
J2161
J2162
J2163
J2164
J2165
J2166
J2167
J2168
J2169
J2170
J2171
J2172
J2173
J2174
J2175
J2176
J2177
J2178
J2179
J2180
J2181
J2182
J2183
J2184
J2185
J2186
J2187
J2188
J2189
J2190
J2191
J2192
J2193
J2194
J2195
J2196
J2197
J2198
J2199
J2200
J2201
J2202
J2203
J2204
J2205
J2206
J2207
J2208
J2209
J2210
J2211
J2212
J2213
J2214
J2215
J2216
J2217
J2218
J2219
J2220
J2221
J2222
J2223
J2224
J2225
J2226
J2227
J2228
J2229
J2230
J2231
J2232
J2233
J2234
J2235
J2236
J2237
J2238
J2239
J2240
J2241
J2242
J2243
J2244
J2245
J2246
J2247
J2248
J2249
J2250
J2251
J2252
J2253
J2254
J2255
J2256
J2257
J2258
J2259
J2260
J2261
J2262
J2263
J2264
J2265
J2266
J2267
J2268
J2269
J2270
J2271
J2272
J2273
J2274
J2275
J2276
J2277
J2278
J2279
J2280
J2281
J2282
J2283
J2284
J2285
J2286
J2287
J2288
J2289
J2290
J2291
J2292
J2293
J2294
J2295
J2296
J2297
J2298
J2299
J2300
J2301
J2302
J2303
J2304
J2305
J2306
J2307
J2308
J2309
J2310
J2311
J2312
J2313
J2314
J2315
J2316
J2317
J2318
J2319
J2320
J2321
J2322
J2323
J2324
J2325
J2326
J2327
J2328
J2329
J2330
J2331
J2332
J2333
J2334
J2335
J2336
J2337
J2338
J2339
J2340
J2341
J2342
J2343
J2344
J2345
J2346
J2347
J2348
J2349
J2350
J2351
J2352
J2353
J2354
J2355
J2356
J2357
J2358
J2359
J2360
J2361
J2362
J2363
J2364
J2365
J2366
J2367
J2368
J2369
J2370
J2371
J2372
J2373
J2374
J2375
J2376
J2377
J2378
J2379
J2380
J2381
J2382
J2383
J2384
J2385
J2386
J2387
J2388
J2389
J2390
J2391
J2392
J2393
J2394
J2395
J2396
J2397
J2398
J2399
J2400
J2401
J2402
J2403
J2404
J2405
J2406
J2407
J2408
J2409
J2410
J2411
J2412
J2413
J2414
J2415
J2416
J2417
J2418
J2419
J2420
J2421
J2422
J2423
J2424
J2425
J2426
J2427
J2428
J2429
J2430
J2431
J2432
J2433
J2434
J2435
J2436
J2437
J2438
J2439
J2440
J2441
J2442
J2443
J2444
J2445
J2446
J2447
J2448
J2449
J2450
J2451
J2452
J2453
J2454
J2455
J2456
J2457
J2458
J2459
J2460
J2461
J2462
J2463
J2464
J2465
J2466
J2467
J2468
J2469
J2470
J2471
J2472
J2473
J2474
J2475
J2476
J2477
J2478
J2479
J2480
J2481
J2482
J2483
J2484
J2485
J2486
J2487
J2488
J2489
J2490
J2491
J2492
J2493
J2494
J2495
J2496
J2497
J2498
J2499
J2500
J2501
J2502
J2503
J2504
J2505
J2506
J2507
J2508
J2509
J2510
J2511
J2512
J2513
J2514
J2515
J2516
J2517
J2518
J2519
J2520
J2521
J2522
J2523
J2524
J2525
J2526
J2527
J2528
J2529
J2530
J2531
J2532
J2533
J2534
J2535
J2536
J2537
J2538
J2539
J2540
J2541
J2542
J2543
J2544
J2545
J2546
J2547
J2548
J2549
J2550
J2551
J2552
J2553
J2554
J2555
J2556
J2557
J2558
J2559
J2560
J2561
J2562
J2563
J2564
J2565
J2566
J2567
J2568
J2569
J2570
J2571
J2572
J2573
J2574
J2575
J2576
J2577
J2578
J2579
J2580
J2581
J2582
J2583
J2584
J2585
J2586
J2587
J2588
J2589
J2590
J2591
J2592
J2593
J2594
J2595
J2596
J2597
J2598
J2599
J2600
J2601
J2602
J2603
J2604
J2605
J2606
J2607
J2608
J2609
J2610
J2611
J2612
J2613
J2614
J2615
J2616
J2617
J2618
J2619
J2620
J2621
J2622
J2623
J2624
J2625
J2626
J2627
J2628
J2629
J2630
J2631
J2632
J2633
J2634
J2635
J2636
J2637
J2638
J2639
J2640
J2641
J2642
J2643
J2644
J2645
J2646
J2647
J2648
J2649
J2650
J2651
J2652
J2653
J2654
J2655
J2656
J2657
J2658
J2659
J2660
J2661
J2662
J2663
J2664
J2665
J2666
J2667
J2668
J2669
J2670
J2671
J2672
J2673
J2674
J2675
J2676
J2677
J2678
J2679
J2680
J2681
J2682
J2683
J2684
J2685
J2686
J2687
J2688
J2689
J2690
J2691
J2692
J2693
J2694
J2695
J2696
J2697
J2698
J2699
J2700
J2701
J2702
J2703
J2704
J2705
J2706
J2707
J2708
J2709
J2710
J2711
J2712
J2713
J2714
J2715
J2716
J2717
J2718
J2719
J2720
J2721
J2722
J2723
J2724
J2725
J2726
J2727
J2728
J2729
J2730
J2731
J2732
J2733
J2734
J2735
J2736
J2737
J2738
J2739
J2740
J2741
J2742
J2743
J2744
J2745
J2746
J2747
J2748
J2749
J2750
J2751
J2752
J2753
J2754
J2755
J2756
J2757
J2758
J2759
J2760
J2761
J2762
J2763
J2764
J2765
J2766
J2767
J2768
J2769
J2770
J2771
J2772
J2773
J2774
J2775
J2776
J2777
J2778
J2779
J2780
J2781
J2782
J2783
J2784
J2785
J2786
J2787
J2788
J2789
J2790
J2791
J2792
J2793
J2794
J2795
J2796
J2797
J2798
J2799
J2800
J2801
J2802
J2803
J2804
J2805
J2806
J2807
J2808
J2809
J2810
J2811
J2812
J2813
J2814
J2815
J2816
J2817
J2818
J2819
J2820
J2821
J2822
J2823
J2824
J2825
J2826
J2827
J2828
J2829
J2830
J2831
J2832
J2833
J2834
J2835
J2836
J2837
J2838
J2839
J2840
J2841
J2842
J2843
J2844
J2845
J2846
J2847
J2848
J2849
J2850
J2851
J2852
J2853
J2854
J2855
J2856
J2857
J2858
J2859
J2860
J2861
J2862
J2863
J2864
J2865
J2866
J2867
J2868
J2869
J2870
J2871
J2872
J2873
J2874
J2875
J2876
J2877
J2878
J2879
J2880
J2881
J2882
J2883
J2884
J2885
J2886
J2887
J2888
J2889
J2890
J2891
J2892
J2893
J2894
J2895
J2896
J2897
J2898
J2899
J2900
J2901
J2902
J2903
J2904
J2905
J2906
J2907
J2908
J2909
J2910
J2911
J2912
J2913
J2914
J2915
J2916
J2917
J2918
J2919
J2920
J2921
J2922
J2923
J2924
J2925
J2926
J2927
J2928
J2929
J2930
J2931
J2932
J2933
J2934
J2935
J2936
J2937
J2938
J2939
J2940
J2941
J2942
J2943
J2944
J2945
J2946
J2947
J2948
J2949
J2950
J2951
J2952
J2953
J2954
J2955
J2956
J2957
J2958
J2959
J2960
J2961
J2962
J2963
J2964
J2965
J2966
J2967
J2968
J2969
J2970
J2971
J2972
J2973
J2974
J2975
J2976
J2977
J2978
J2979
J2980
J2981
J2982
J2983
J2984
J2985
J2986
J2987
J2988
J2989
J2990
J2991
J2992
J2993
J2994
J2995
J2996
J2997
J2998
J2999
J3000
J3001
J3002
J3003
J3004
J3005
J3006
J3007
J3008
J3009
J3010
J3011
J3012
J3013
J3014
J3015
J3016
J3017
J3018
J3019
J3020
J3021
J3022
J3023
J3024
J3025
J3026
J3027
J3028
J3029
J3030
J3031
J3032
J3033
J3034
J3035
J3036
J3037
J3038
J3039
J3040
J3041
J3042
J3043
J3044
J3045
J3046
J3047
J3048
J3049
J3050
J3051
J3052
J3053
J3054
J3055
J3056
J3057
J3058
J3059
J3060
J3061
J3062
J3063
J3064
J3065
J3066
J3067
J3068
J3069
J3070
J3071
J3072
J3073
J3074
J3075
J3076
J3077
J3078
J3079
J3080
J3081
J3082
J3083
J3084
J3085
J3086
J3087
J3088
J3089
J3090
J3091
J3092
J3093
J3094
J3095
J3096
J3097
J3098
J3099
J3100
J3101
J3102
J3103
J3104
J3105
J3106
J3107
J3108
J3109
J3110
J3111
J3112
J3113
J3114
J3115
J3116
J3117
J3118
J3119
J3120
J3121
J3122
J3123
J3124
J3125
J3126
J3127
J3128
J3129
J3130
J3131
J3132
J3133
J3134
J3135
J3136
J3137
J3138
J3139
J3140
J3141
J3142
J3143
J3144
J3145
J3146
J3147
J3148
J3149
J3150
J3151
J3152
J3153
J3154
J3155
J3156
J3157
J3158
J3159
J3160
J3161
J3162
J3163
J3164
J3165
J3166
J3167
J3168
J3169
J3170
J3171
J3172
J3173
J3174
J3175
J3176
J3177
J3178
J3179
J3180
J3181
J3182
J3183
J3184
J3185
J3186
J3187
J3188
J3189
J3190
J3191
J3192
J3193
J3194
J3195
J3196
J3197
J3198
J3199
J3200
J3201
J3202
J3203
J3204
J3205
J3206
J3207
J3208
J3209
J3210
J3211
J3212
J3213
J3214
J3215
J3216
J3217
J3218
J3219
J3220
J3221
J3222
J3223
J3224
J3225
J3226
J3227
J3228
J3229
J3230
J3231
J3232
J3233
J3234
J3235
J3236
J3237
J3238
J3239
J3240
J3241
J3242
J3243
J3244
J3245
J3246
J3247
J3248
J3249
J3250
J3251
J3252
J3253
J3254
J3255
J3256
J3257
J3258
J3259
J3260
J3261
J3262
J3263
J3264
J3265
J3266
J3267
J3268
J3269
J3270
J3271
J3272
J3273
J3274
J3275
J3276
J3277
J3278
J3279
J3280
J3281
J3282
J3283
J3284
J3285
J3286
J3287
J3288
J3289
J3290
J3291
J3292
J3293
J3294
J3295
J3296
J3297
J3298
J3299
J3300
J3301
J3302
J3303
J3304
J3305
J3306
J3307
J3308
J3309
J3310
J3311
J3312
J3313
J3314
J3315
J3316
J3317
J3318
J3319
J3320
J3321
J3322
J3323
J3324
J3325
J3326
J3327
J3328
J3329
J3330
J3331
J3332
J3333
J3334
J3335
J3336
J3337
J3338
J3339
J3340
J3341
J3342
J3343
J3344
J3345
J3346
J3347
J3348
J3349
J3350
J3351
J3352
J3353
J3354
J3355
J3356
J3357
J3358
J3359
J3360
J3361
J3362
J3363
J3364
J3365
J3366
J3367
J3368
J3369
J3370
J3371
J3372
J3373
J3374
J3375
J3376
J3377
J3378
J3379
J3380
J3381
J3382
J3383
J3384
J3385
J3386
J3387
J3388
J3389
J3390
J3391
J3392
J3393
J3394
J3395
J3396
J3397
J3398
J3399
J3400
J3401
J3402
J3403
J3404
J3405
J3406
J3407
J3408
J3409
J3410
J3411
J3412
J3413
J3414
J3415
J3416
J3417
J3418
J3419
J3420
J3421
J3422
J3423
J3424
J3425
J3426
J3427
J3428
J3429
J3430
J3431
J3432
J3433
J3434
J3435
J3436
J3437
J3438
J3439
J3440
J3441
J3442
J3443
J3444
J3445
J3446
J3447
J3448
J3449
J3450
J3451
J3452
J3453
J3454
J3455
J3456
J3457
J3458
J3459
J3460
J3461
J3462
J3463
J3464
J3465
J3466
J3467
J3468
J3469
J3470
J3471
J3472
J3473
J3474
J3475
J3476
J3477
J3478
J3479
J3480
J3481
J3482
J3483
J3484
J3485
J3486
J3487
J3488
J3489
J3490
J3491
J3492
J3493
J3494
J3495
J3496
J3497
J3498
J3499
J3500
J3501
J3502
J3503
J3504
J3505
J3506
J3507
J3508
J3509
J3510
J3511
J3512
J3513
J3514
J3515
J3516
J3517
J3518
J3519
J3520
J3521
J3522
J3523
J3524
J3525
J3526
J3527
J3528
J3529
J3530
J3531
J3532
J3533
J3534
J3535
J3536
J3537
J3538
J3539
J3540
J3541
J3542
J3543
J3544
J3545
J3546
J3547
J3548
J3549
J3550
J3551
J3552
J3553
J3554
J3555
J3556
J3557
J3558
J3559
J3560
J3561
J3562
J3563
J3564
J3565
J3566
J3567
J3568
J3569
J3570
J3571
J3572
J3573
J3574
J3575
J3576
J3577
J3578
J3579
J3580
J3581
J3582
J3583
J3584
J3585
J3586
J3587
J3588
J3589
J3590
J3591
J3592
J3593
J3594
J3595
J3596
J3597
J3598
J3599
J3600
J3601
J3602
J3603
J3604
J3605
J3606
J3607
J3608
J3609
J3610
J3611
J3612
J3613
J3614
J3615
J3616
J3617
J3618
J3619
J3620
J3621
J3622
J3623
J3624
J3625
J3626
J3627
J3628
J3629
J3630
J3631
J3632
J3633
J3634
J3635
J3636
J3637
J3638
J3639
J3640
J3641
J3642
J3643
J3644
J3645
J3646
J3647
J3648
J3649
J3650
J3651
J3652
J3653
J3654
J3655
J3656
J3657
J3658
J3659
J3660
J3661
J3662
J3663
J3664
J3665
J3666
J3667
J3668
J3669
J3670
J3671
J3672
J3673
J3674
J3675
J3676
J3677
J3678
J3679
J3680
J3681
J3682
J3683
J3684
J3685
J3686
J3687
J3688
J3689
J3690
J3691
J3692
J3693
J3694
J3695
J3696
J3697
J3698
J3699
J3700
J3701
J3702
J3703
J3704
J3705
J3706
J3707
J3708
J3709
J3710
J3711
J3712
J3713
J3714
J3715
J3716
J3717
J3718
J3719
J3720
J3721
J3722
J3723
J3724
J3725
J3726
J3727
J3728
J3729
J3730
J3731
J3732
J3733
J3734
J3735
J3736
J3737
J3738
J3739
J3740
J3741
J3742
J3743
J3744
J3745
J3746
J3747
J3748
J3749
J3750
J3751
J3752
J3753
J3754
J3755
J3756
J3757
J3758
J3759
J3760
J3761
J3762
J3763
J3764
J3765
J3766
J3767
J3768
J3769
J3770
J3771
J3772
J3773
J3774
J3775
J3776
J3777
J3778
J3779
J3780
J3781
J3782
J3783
J3784
J3785
J3786
J3787
J3788
J3789
J3790
J3791
J3792
J3793
J3794
J3795
J3796
J3797
J3798
J3799
J3800
J3801
J3802
J3803
J3804
J3805
J3806
J3807
J3808
J3809
J3810
J3811
J3812
J3813
J3814
J3815
J3816
J3817
J3818
J3819
J3820
J3821
J3822
J3823
J3824
J3825
J3826
J3827
J3828
J3829
J3830
J3831
J3832
J3833
J3834
J3835
J3836
J3837
J3838
J3839
J3840
J3841
J3842
J3843
J3844
J3845
J3846
J3847
J3848
J3849
J3850
J3851
J3852
J3853
J3854
J3855
J3856
J3857
J3858
J3859
J3860
J3861
J3862
J3863
J3864
J3865
J3866
J3867
J3868
J3869
J3870
J3871
J3872
J3873
J3874
J3875
J3876
J3877
J3878
J3879
J3880
J3881
J3882
J3883
J3884
J3885
J3886
J3887
J3888
J3889
J3890
J3891
J3892
J3893
J3894
J3895
J3896
J3897
J3898
J3899
J3900
J3901
J3902
J3903
J3904
J3905
J3906
J3907
J3908
J3909
J3910
J3911
J3912
J3913
J3914
J3915
J3916
J3917
J3918
J3919
J3920
J3921
J3922
J3923
J3924
J3925
J3926
J3927
J3928
J3929
J3930
J3931
J3932
J3933
J3934
J3935
J3936
J3937
J3938
J3939
J3940
J3941
J3942
J3943
J3944
J3945
J3946
J3947
J3948
J3949
J3950
J3951
J3952
J3953
J3954
J3955
J3956
J3957
J3958
J3959
J3960
J3961
J3962
J3963
J3964
J3965
J3966
J3967
J3968
J3969
J3970
J3971
J3972
J3973
J3974
J3975
J3976
J3977
J3978
J3979
J3980
J3981
J3982
J3983
J3984
J3985
J3986
J3987
J3988
J3989
J3990
J3991
J3992
J3993
J3994
J3995
J3996
J3997
J3998
J3999
J4000
J4001
J4001B
J4002
J4003
J4004
J4005
J4006
J4007
J4008
J4009
J4010
J4011
J4012
J4013
J4014
J4015
J4016
J4017
J4018
J4019
J4020
J4021
J4022
J4023
J4024
J4025
J4026
J4027
J4028
J4029
J4030
J4031
J4032
J4033
J4034
J4035
J4036
J4037
J4038
J4039
J4040
J4041
J4042
J4043
J4044
J4045
J4046
J4047
J4048
J4049
J4050
J4051
J4052
J4053
J4054
J4055
J4056
J4057
J4058
J4059
J4060
J4061
J4062
J4063
J4064
J4065
J4066
J4067
J4068
J4069
J4070
J4071
J4072
J4073
J4074
J4075
J4076
J4077
J4078
J4079
J4080
J4081
J4082
J4083
J4084
J4085
J4086
J4087
J4088
J4089
J4090
J4091
J4092
J4093
J4094
J4095
J4096
J4097
J4098
J4099
J4100
J4101
J4102
J4103
J4104
J4105
J4106
J4107
J4108
J4109
J4110
J4111
J4112
J4113
J4114
J4115
J4116
J4117
J4118
J4119
J4120
J4121
J4122
J4123
J4124
J4125
J4126
J4127
J4128
J4129
J4130
J4131
J4132
J4133
J4134
J4135
J4136
J4137
J4138
J4139
J4140
J4141
J4142
J4143
J4144
J4145
J4146
J4147
J4148
J4149
J4150
J4151
J4152
J4153
J4154
J4155
J4156
J4157
J4158
J4159
J4160
J4161
J4162
J4163
J4164
J4165
J4166
J4167
J4168
J4169
J4170
J4171
J4172
J4173
J4174
J4175
J4176
J4177
J4178
J4179
J4180
J4181
J4182
J4183
J4184
J4185
J4186
J4187
J4188
J4189
J4190
J4191
J4192
J4193
J4194
J4195
J4196
J4197
J4198
J4199
J4200
J4201
J4202
J4203
J4204
J4205
J4206
J4207
J4208
J4209
J4210
J4211
J4212
J4213
J4214
J4215
J4216
J4217
J4218
J4219
J4220
J4221
J4222
J4223
J4224
J4225
J4226
J4227
J4228
J4229
J4230
J4231
J4232
J4233
J4234
J4235
J4236
J4237
J4238
J4239
J4240
J4241
J4242
J4243
J4244
J4245
J4246
J4247
J4248
J4249
J4250
J4251
J4252
J4253
J4254
J4255
J4256
J4257
J4258
J4259
J4260
J4261
J4262
J4263
J4264
J4265
J4266
J4267
J4268
J4269
J4270
J4271
J4272
J4273
J4274
J4275
J4276
J4277
J4278
J4279
J4280
J4281
J4282
J4283
J4284
J4285
J4286
J4287
J4288
J4289
J4290
J4291
J4292
J4293
J4294
J4295
J4296
J4297
J4298
J4299
J4300
J4301
J4302
J4303
J4304
J4305
J4306
J4307
J4308
J4309
J4310
J4311
J4312
J4313
J4314
J4315
J4316
J4317
J4318
J4319
J4320
J4321
J4322
J4323
J4324
J4325
J4326
J4327
J4328
J4329
J4330
J4331
J4332
J4333
J4334
J4335
J4336
J4337
J4338
J4339
J4340
J4341
J4342
J4343
J4344
J4345
J4346
J4347
J4348
J4349
J4350
J4351
J4352
J4353
J4354
J4355
J4356
J4357
J4358
J4359
J4360
J4361
J4362
J4363
J4364
J4365
J4366
J4367
J4368
J4369
J4370
J4371
J4372
J4373
J4374
J4375
J4376
J4377
J4378
J4379
J4380
J4381
J4382
J4383
J4384
J4385
J4386
J4387
J4388
J4389
J4390
J4391
J4392
J4393
J4394
J4395
J4396
J

General Circuit Diagram(2/2)



Backup Data List

Data	Location	Replace		Delete																Backup by User			Backup by Service		
				Menu > System Management Settings									Service Mode > COPIER > FUNCTION >												
							Menu Clear						CLEAR						SPLMAN						
		Engine Controller PCB	Main Controller PCB	Initialize All Data / Settings	Initializing Key and Certificate	Initializing Address Book	Preferences	Function Settings	Set Destination	Management Settings	Network Settings	Clear All	SRVC-DAT*1	COUNTER	HIST *2	ALL	PLPW-CLR	DC-CON	SPL43810	Yes/No	Method	Location to be stored	Yes/No	Method	Location to be stored
Address Book	Main Controller PCB	-	Clear	Clear	-	Clear	-	-	-	-		-	-	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	No	-	-
Settings Menu																									
Preferences	Main Controller PCB	-	Clear	Clear	-	-	Clear*8	-	-	-	Clear*9	Clear	-	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	No	-	-
Function Settings	Main Controller PCB	-	Clear	Clear	-	-	-	Clear	-	-	-	Clear	-	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	No	-	-
Set Destination	Main Controller PCB	-	Clear	Clear	-	-	-	-	Clear	-	-	Clear	-	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	No	-	-
Management Settings	Main Controller PCB	-	Clear	Clear	-	-	-	-	-	Clear	-	Clear	-	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	No	-	-
Status Monitor/Cancel																									
Job Log	Main Controller PCB	-	Clear	Clear	-	-	-	-	-	-	-	-	-	-	Clear	Clear	-	-	-	No	-	-	No	-	-
Counter																									
Part counter (Main Controller)	Main Controller PCB	-	Clear	Clear	-	-	-	-	-	-	-	-	-	Clear	-	-	-	-	-	No	-	-	No	-	-
Part counter (DC Controller)	Engine Controller PCB	Clear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	-	No	-	-
Other																									
Key and Certificate Settings	Main Controller PCB	-	Clear	Clear	Clear	-	-	-	-	-	-	-	-	-	-	Clear	-	-	-	No	-	-	No	-	-
Service mode																									
Service mode setting values (Main Controller)	Main Controller PCB	-	Clear	-	-	-	-	-	-	-	-	-	Clear	-	-	Clear	-	-	-	Yes	Remote UI *5 LUI *6	PC, USB memory	Yes	Service mode *4	USB memory
Service mode setting values (DC Controller)	Engine Controller PCB	Clear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Clear	-	Yes	Remote UI *5 LUI *6	PC, USB memory	Yes	Service mode *4 *7	USB memory / Main Controller
Password																									

Data	Location	Replace		Delete																Backup by User			Backup by Service		
				Menu > System Management Settings									Service Mode > COPIER > FUNCTION >												
							Menu Clear						CLEAR						SPLMAN						
		Engine Controller PCB	Main Controller PCB	Initialize All Data / Settings	Initializing Key and Certificate	Initializing Address Book	Preferences	Function Settings	Set Destination	Management Settings	Network Settings	Clear All	SRVC-DAT*1	COUNTER	HIST *2	ALL	PLPW-CLR	DC-CON	SPL43810	Yes/No	Method	Location to be stored	Yes/No	Method	Location to be stored
System Administrator password	Main Controller PCB	-	Clear*3	Clear*3	-	-	-	-	-	Clear*3	-	Clear*3	-	-	-	Clear*3	-	-	Clear*10	No	-	-	No	-	-
Security Policy Administrator password	Main Controller PCB	-	Clear	Clear	-	-	-	-	-	Clear	-	Clear	-	-	-	Clear	Clear	-	-	No	-	-	No	-	-
Service Mode password*11	Main Controller PCB	-	Clear	Clear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	-	No	-	-

*1. Service data (Except "COPIER > COUNTER" and "COPIER > FEED-ADJ") are cleared. The factory adjustment values of the Reader and ADF are not initialized.
*2. Service data is cleared. User data is not cleared. The factory adjustment values of the Reader and ADF are not initialized.
*3. In the counter meter-installed model: The user data and service data and each history and the settings of the system administrator are cleared. (The system manager ID and password are changed back to the default values ID: 7654321/PWD: 7654321)
The factory adjustment values of the Reader and ADF are not initialized.
*4. COPIER > FUNCTION > SYSTEM > IMPORT / COPIER > FUNCTION > SYSTEM > EXPORT
*5. Settings/Registration >Management Settings >Data Management > Import/Export
*6. Settings Manu > Management Settings > Data Management > Import/Export
*7. COPIER > FUNCTION > VIFFNC > STOR-DCN
*8. Except "Preferences > Network Settings"
*9. Clear only an item of the "Preferences > Network Settings".
*10. Because the settings of the "System Manager ID and PIN" are cleared, set "System Manager ID and PIN" again.
*11. COPIER > OPTION > BODY > SM-PSWD(Setup password by SM-PSWD)

Soft counter specifications

The numbers entered for software counters are classified as follows:

No.	Counter Details
100 to 199	Total
300 to 399	Print

100 to 199

No.	Counter Name
101	Total 1
108	Total (Black1)
113	Total (Black / Small)
114	Total 1 (2-Sided)
123	Total (full color +mono color /small)
149	Total A (full color +mono color 1)
191	Toner replacement /Yellow
192	Toner replacement /Magenta
193	Toner replacement /Cyan
194	Toner replacement /Black

300 to 399

No.	Counter Name
322	Print (full color +mono color /small)