RICOH

M136

SERVICE MANUAL

LANIER RICOH savin

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Ricoh USA, Inc.

LEGEND

PRODUCT CODE	COMPANY		
	LANIER	RICOH	SAVIN
M136	SP C352DN	SP C352DN	SP C352DN

DOCUMENTATION HISTORY

REV. NO.	DATE	COMMENTS
*	08/2017	Original Printing

M136

TABLE OF CONTENTS

IMPORTANT SAFETY NOTICES

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

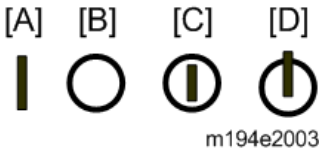
For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.



[A]: ON

[B]: OFF

[C]: Push ON/Push OFF

[D]: Standby

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.

Safety

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. Always unplug the power cord from the power source before you move the product. Before you move the machine, arrange the power cord so it will not fall under the machine.
5. Disconnect all peripheral units (finisher, LCT, etc.) from the mainframe before you move the machine.
6. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
7. The machine drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the machine starts operation.
8. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
9. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.
10. Do not use flammable sprays or solvent in the vicinity of the machine. Also, avoid placing these items in the vicinity of the machine. Doing so could result in fire or electric shock.
11. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
12. Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries.
13. Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
14. Never do any procedure that defeats the function of any safety device.
15. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
16. For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.
17. For machines installed with the ADF/ARDF:
    When a thick book or three-dimensional original is placed on the exposure glass and the ARDF cover is lowered, the back side of the ARDF rises up to accommodate the original.

Therefore, when closing the ARDF, please be sure to keep your hands away from the hinges at the back of the ARDF.

18. When using a vacuum cleaner around the machine, keep others away from the cleaner, especially small children.

⇒19. For machines installed with the anti-tip components:
The anti-tip components are necessary to prevent the products, which are heavy in weight, from toppling a result of people running into or leaning onto the products, which can lead to serious accidents such persons becoming trapped under the products. Therefore, removal of such components must always be with the consent of the customer. Do not remove them at your own judgment.

20. **NEVER touch** the AC circuits on the PSU board to prevent electric shock caused by residual charge. Residual charge of about 100V-400V remains in the AC circuits on the PSU board for several months even when the board has been removed from the machine after turning off the machine power and unplugging the power cord.

Health Safety Conditions

21. For the machines installed with the ozone filters:
    - Never operate the machine without the ozone filters installed.
    - Always replace the ozone filters with the specified types at the proper intervals.
22. The machine, which use high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, locate the machine in a large well ventilated room that has an air turnover rate of more than $50m^3$/hr/person.
23. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

24. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models with exceptions on some machines where the installation can be handled by the user.

Safety and Ecological Notes for Disposal

25. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
26. Dispose of used toner, developer, organic photoconductors, and AIO unit in accordance with local regulations. (These are non-toxic supplies.)
27. Dispose of replaced parts in accordance with local regulations.
28. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.
29. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Handling Toner

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.
- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well-ventilated location. If there are signs of irritation or other problems, seek medical attention.
- If toner gets on the skin, wash immediately with soap and cold running water.
- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.
- Always store toner and developer supplies such as toner and developer packages, cartridges, bottles (including used toner and empty bottles and cartridges), and AIO unit out of the reach of children.
- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.
- Do not use a vacuum cleaner to remove spilled toner (including used toner). Vacuumed toner may cause a fire or explosion due to sparks or electrical contact inside the cleaner. However, it is possible to use a cleaner designed to be dust explosion-proof. If toner is spilled over the floor, sweep up spilled toner slowly and clean up any remaining toner with a wet cloth.

Handling the development unit cooling system

For the machines installed the development cooling system:

30. The development unit cooling system circulates propylene glycol from a sealed tank through hoses that pass behind cooling plates on the sides of each development unit.
31. The coolant tank is located at the bottom of the cooling box on the back of the main machine.
32. Always obey local laws and regulations if you need to dispose of a tank or the propylene glycol coolant.
33. The tank must never be emptied directly into a local drainage system, river, pond, or lake.
34. Contact a professional industrial waste disposal organization and ask them to dispose of the tank.

Lithium Batteries for Taiwan

警告

本機器內的鋰電池如果更換不正確型號會有爆炸的危險。
只能使用相同或製造商推薦同等類型的電池進行更換。
請依製造商說明書處理用過之廢棄電池。

Laser Safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

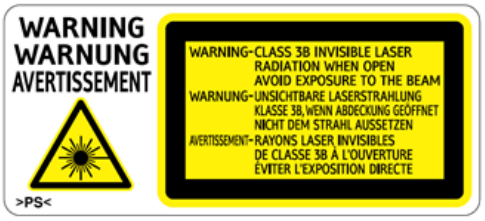
⚠WARNING

- Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

WARNING FOR LASER UNIT

WARNING:

Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.



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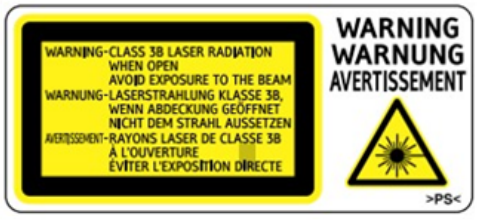
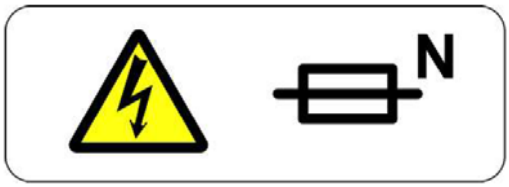


_safe007

⇒

_safe008



⇒ ⚠CAUTION

- **Double Pole/Neutral Fusing**
  Turn off the main power switch and disconnect the power cord before disassembling or assembling the parts of the machine.

Safety Instructions for the Color Controller

Fuse

The color controller uses a double pole fuse. If this fuse blows, be sure to replace it with an identical fuse.

Batteries

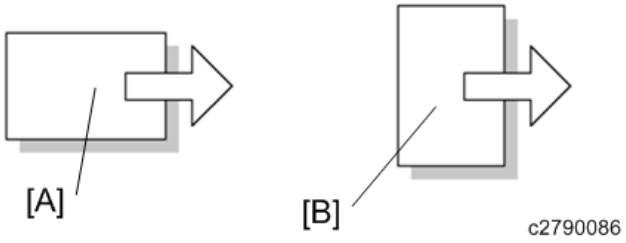
35. Always replace a battery with the same type of battery prescribed for use with the color controller unit. Replacing a battery with any type other than the one prescribed for use could cause an explosion.
36. Never discard used batteries by mixing them with other batteries or other refuse.
37. Always remove used batteries from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

Symbols, Abbreviations and Trademarks

Symbols, Abbreviations

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

Symbol	What it means
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
	Flat Flexible Cable
	Timing Belt
SEF	Short Edge Feed
LEF	Long Edge Feed
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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The proper name of Internet Explorer 6 is Microsoft® Internet Explorer® 6.

The proper name of Internet Explorer 8 is Windows® Internet Explorer® 8.

The proper names of the Windows operating systems are as follows:

- The product names of Windows Vista are as follows:

Microsoft® Windows Vista® Ultimate

Microsoft® Windows Vista® Business

Microsoft® Windows Vista® Home Premium

Microsoft® Windows Vista® Home Basic

Microsoft® Windows Vista® Enterprise

- The product names of Windows 7 are as follows:

Microsoft® Windows® 7 Home Premium

Microsoft® Windows® 7 Professional

Microsoft® Windows® 7 Ultimate

Microsoft® Windows® 7 Enterprise

- The product names of Windows 8 are as follows:

Microsoft® Windows® 8

Microsoft® Windows® 8 Pro

Microsoft® Windows® 8 Enterprise

- The product names of Windows 8.1 are as follows:

Microsoft® Windows® 8.1

Microsoft® Windows® 8.1 Pro

Microsoft® Windows® 8.1 Enterprise

- The product names of Windows 10 are as follows:

Microsoft® Windows® 10 Home Premium

Microsoft® Windows® 10 Pro

Microsoft® Windows® 10 Enterprise

Microsoft® Windows® 10 Education

- The product names of Windows Server 2003 are as follows:

Microsoft® Windows Server® 2003 Standard Edition

Microsoft® Windows Server® 2003 Enterprise Edition

- The product names of Windows Server 2003 R2 are as follows:

Microsoft® Windows Server® 2003 R2 Standard Edition

Microsoft® Windows Server® 2003 R2 Enterprise Edition

- The product names of Windows Server 2008 are as follows:

Microsoft® Windows Server® 2008 Standard

Microsoft® Windows Server® 2008 Enterprise

- The product names of Windows Server 2008 R2 are as follows:

Microsoft® Windows Server® 2008 R2 Standard

Microsoft® Windows Server® 2008 R2 Enterprise

- The product names of Windows Server 2012 are as follows:

Microsoft® Windows Server® 2012 Foundation

Microsoft® Windows Server® 2012 Essentials

Microsoft® Windows Server® 2012 Standard

- The product names of Windows Server 2012 R2 are as follows:

Microsoft® Windows Server® 2012 R2 Foundation

Microsoft® Windows Server® 2012 R2 Essentials

Microsoft® Windows Server® 2012 R2 Standard

Other product names used herein are for identification purposes only and might be trademarks of

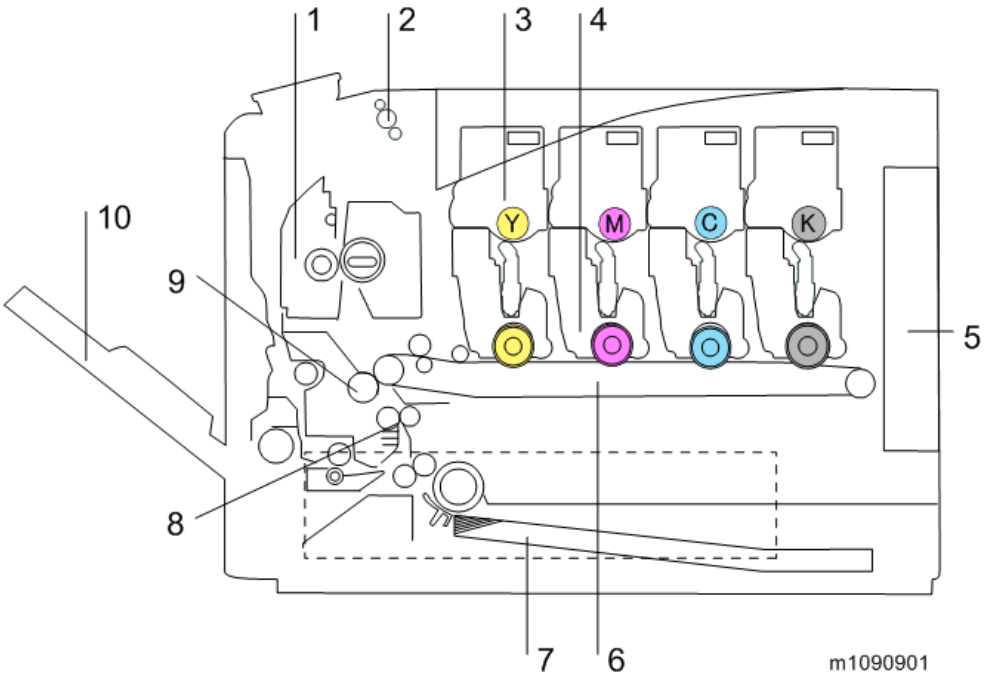
PRODUCT INFORMATION

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. PRODUCT INFORMATION

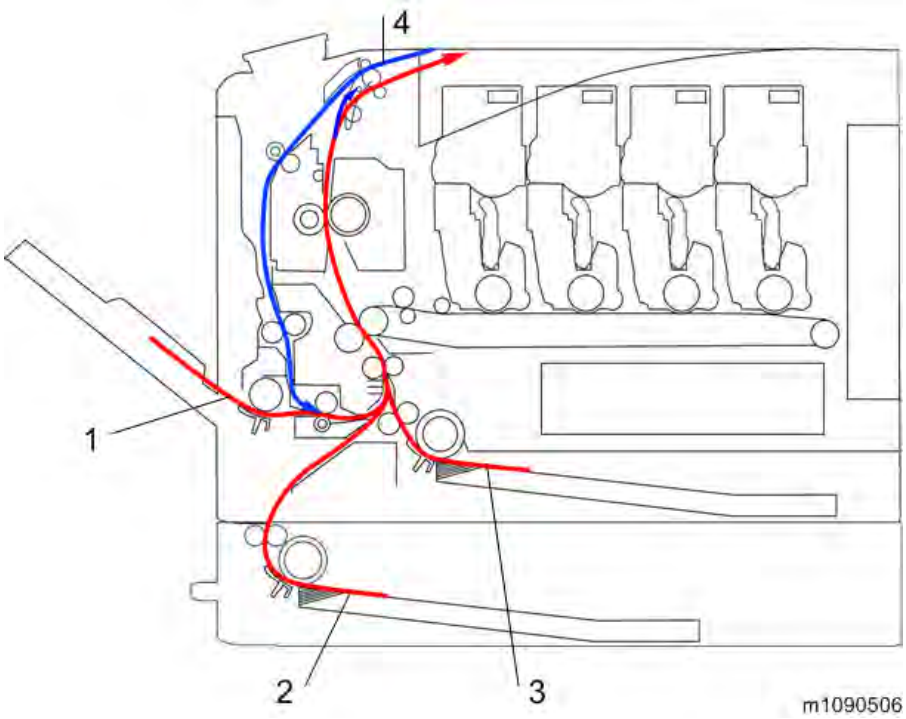
1.1 PRODUCT OVERVIEW

1.1.1 COMPONENT LAYOUT



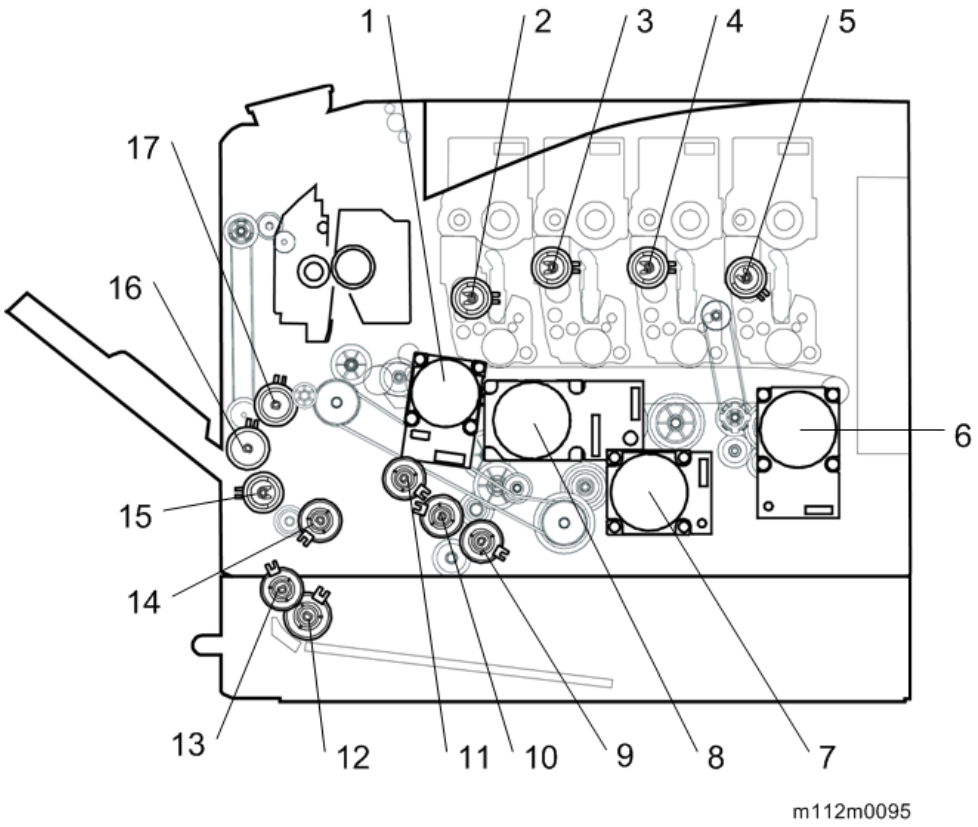
No.	Description	No.	Description
1	Fusing Unit	6	Image Transfer Belt Unit
2	Paper Exit/Reverse Roller	7	Paper Feed Tray
3	Toner Cartridge	8	Registration Roller
4	PCDU	9	Paper Transfer Roller
5	Engine Board/Controller Board	10	Bypass Tray Unit

1.1.2 PAPER PATH



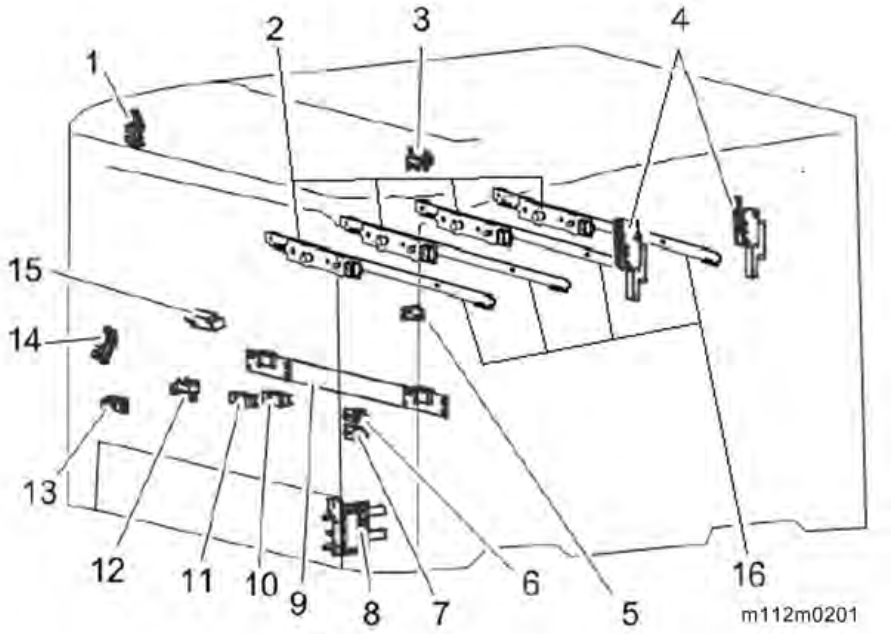
No.	Description	No.	Description
1	Bypass Tray	3	Standard Paper Feed Tray
2	Optional Paper Feed Tray	4	Duplex Feed Path

1.1.3 DRIVE LAYOUT



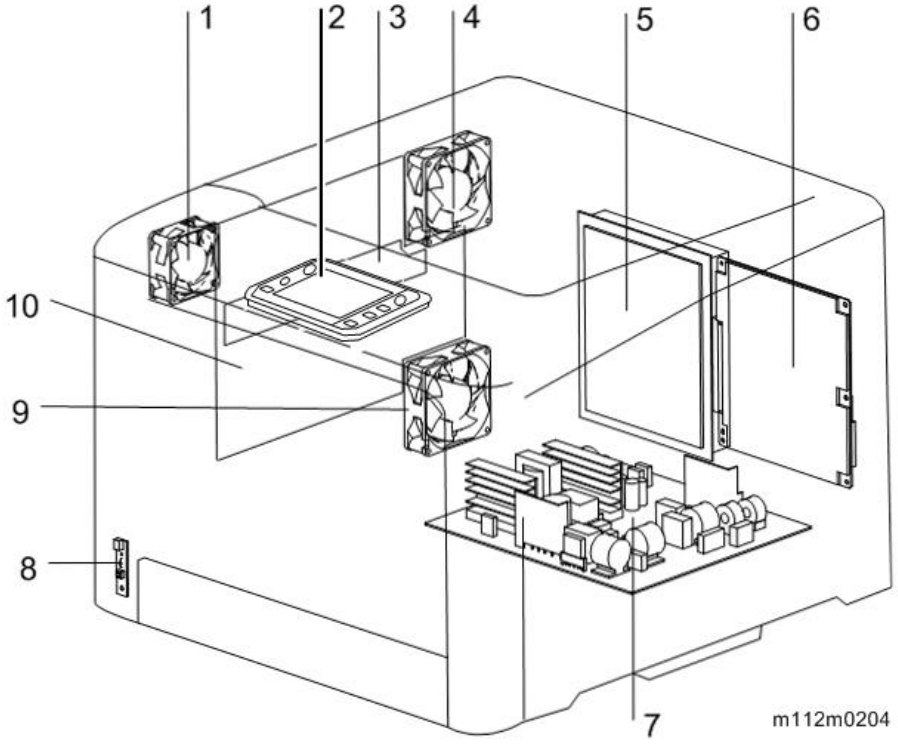
No.	Description	No.	Description
1	Transfer/Transport Motor	10	Paper Feed Clutch
2	Toner Supply Clutch (Y)	11	Registration Clutch
3	Toner Supply Clutch (M)	12	Optional Paper Feed Clutch
4	Toner Supply Clutch (C)	13	Grip Roller Clutch
5	Toner Supply Clutch (K)	14	Duplex Paper Exit Clutch
6	Drum Motor: K	15	Bypass Feed Clutch
7	Fusing Motor	16	Bypass Bottom Plate Clutch
8	Drum Motor: CMY	17	Duplex Intermediate Clutch
9	ITB Contact Clutch		

1.1.4 ELECTRICAL COMPONENTS 1



No.	Description	No.	Description
1	Paper exit sensor	9	TM(ID) Sensor
2	Toner end sensor	10	Registration Sensor
3	Paper exit full sensor	11	Duplex Sensor
4	Interlock switch	12	Bypass Paper End Sensor
5	ITB Contact Switch	13	Bypass Bottom Plate Home Position Sensor
6	Waste Toner Bottle Set Switch	14	Paper End Sensor
7	Waste Toner Full Sensor	15	Fusing Entrance Sensor
8	Paper Size Switch (3pins)	16	Discharge Lamp

1.1.5 ELECTRICAL COMPONENTS 2



No.	Description	No.	Description
1	Fusing Fan	6	EGB
2	Operation Panel	7	PSU
3	New PCDU Detection Board	8	Main Power Switch
4	Cooling Fan	9	PSU Fan
5	CTL	10	HVP

1.2 MACHINE CODES AND PERIPHERALS CONFIGURATION

1.2.1 MACHINE NAMES

Machine Code	Product Name	Controller
M136	SP C352DN	GW Controller

1.2.2 LIST OF OPTIONS

Item	Machine Code	Remarks
Paper Feed Unit TK1230	M407-17 (NA/EU/AP/TW) M407-21 (CHN)	NEW
Paper Feed Unit TK1240	M408-17 (NA/EU/AP/TW) M408-21 (CHN)	NEW
IEEE802.11 Interface Unit Type M24	M500-08	*1*3
Hard Disk Drive Option Type P12	M500-62	NEW
VM CARD Type P8	M500-09 (NA/CHN/TW) M500-10 (EU) M500-11 (AP)	*2
Camera Direct Print Card Type P10	M500-32	
IEEE1284 Interface Board Type M19	D3C0-17	*1
XPS Direct Print Option Type P12	M500-55	NEW
PostScript3 Unit Type P12	M500-57	NEW
USB Device Server Option Type M19	D3BC-28 (NA) D3BC-29 (EU/AP/CWN/TW)	

*1: You can only install one of these at a time.

*2: You cannot install this without the HDD.

*3: This unit will not be released in China and Taiwan.

1.3 GUIDANCE FOR THOSE WHO ARE FAMILIAR WITH PREDECESSOR PRODUCTS

1.3.1 DIFFERENCES BETWEEN SIMILAR MODELS

SP C352 vs. SP C730

Item	SP C352	SP C730	Remarks
Waste Toner Bottle: Yield	13K (A4 portrait feed)	17K (A4 landscape feed)	
Paper Size Switch	3-pin	4-pin	This is due to the difference in the size and type of paper that can be fed.
Transfer/Transport Motor	Integrated	Separated	This is due to the difference in load.
DC High Voltage Power Supply (Relay)	No	Yes	This is due to the difference in the power required for separation. SP C352 handles narrower paper sizes compared with SP C730 series.
Destination of the discharge plate	GND	DC High Voltage Power Supply (Relay)	
Number of Fusing Lamps	1	2	This is due to the difference in the width of paper that can be fed.
Number of Thermostats	1	3	
Duplex Junction Gate Solenoid	No (Duplex Inverter Solenoid doubles as a junction gate solenoid)	Yes	This is because SP C352 does not support duplex printing for paper sizes longer than the duplex paper path.
Toner cartridge: ID chip position	Left side as viewed from the front of the machine	Right side as viewed from the front of the machine	The right side of the top cover was dented to make it easier to take paper from the output tray.

SP C352 vs. SP C320

Item	SP C352	SP C320	Remarks
Fusing Method	A Color QSU (Quick Start Up)	Belt Type Fusing System	This is for improving the print speed at the start of paper transfer.
Writing Method	LED	LD	The LED writing method requires less space compared with the LD writing method, which makes the machine more compact. It is also quieter and more energy-efficient.
Toner Supply Method	Separated cartridge (Non-AIO)	Integrated cartridge (AIO)	Reducing the running cost (In the case of an AIO, the cartridge must be replaced when either the toner or photoconductor becomes due for replacement. By separating them, both can be used fully before replacement.)

INSTALLATION

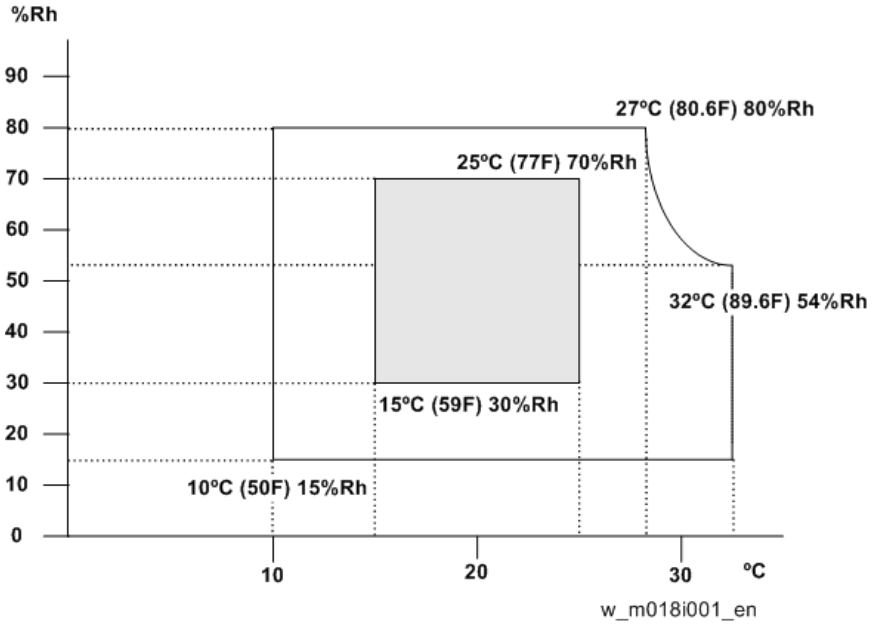
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

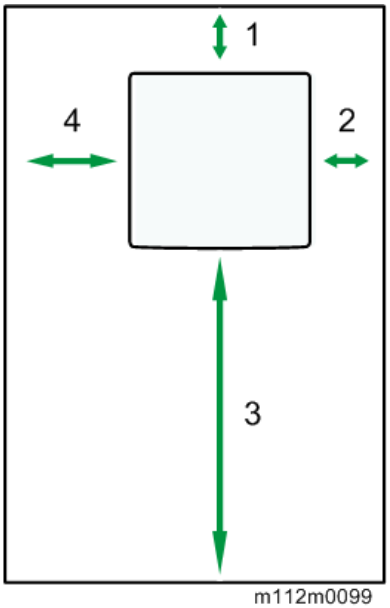
This machine is installed by the user.

2.1.1 ENVIRONMENT



38. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
39. Humidity Range: 15% to 80% RH
40. Ambient Illumination: Less than 2,000 lux (do not expose to direct sunlight)
41. Ventilation: 3 times/hr/person
42. Do not install the machine at locations over the following heights above sea level.
    All areas except for China: 2,500 m (8,125 ft.)
    China: 2,000 m (6,562 ft.)
43. Atmospheric pressure: more than 740 hPa.

2.1.2 MACHINE SPACE REQUIREMENTS



1	Rear	Over 10 cm (3.9“)
2	Right	Over 10 cm (3.9“)
3	Front	Over 70 cm (27.6“)
4	Left	Over 20 cm (7.9“)

2.1.3 POWER REQUIREMENTS

⚠CAUTION

- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.
- Never place anything on the power cord.

1. Input voltage level:

Destination	Power supply voltage	Frequency
NA	120 V to 127 V	60 Hz
EU/AP/CHN	220 V to 240V	50 Hz/60 Hz
TWN	110V	60 Hz

2. Permissible voltage fluctuation:

Destination	For printing images	For operating
NA	+8.66 / -10%	+8.66 / -15%
EU/AP/CHN, TWN	±10%	±15%

2.2 MAIN MACHINE INSTALLATION

2.2.1 MAIN MACHINE INSTALLATION

This machine is installed by the user.

Refer to the Quick Installation Guide for details about installing the machine.

Note

- If the customer has a meter click charge contract, make sure to change the settings to the meter click charge mode (SP5-930-001).

2.2.2 MOVING THE MACHINE

This section shows you how to manually move the machine from one floor to another floor. See the section "Transporting the Machine" if you have to pack the machine and move it a longer distance.

- Turn the main power OFF and pull out the plug.
- Close all the covers and trays.
- Remove peripherals physically attached to the main machine if possible.
- Keep the machine horizontal and move it slowly. Tipping and excess vibrations may damage the machine.

2.2.3 TRANSPORTING THE MACHINE

1. When moving the printer after use, do not take out any of the toners, nor the waste toner bottle to prevent toner spill inside the printer.
2. Do one of the following steps:
   - Attach shipping tape to the covers and doors.
   - Shrink-wrap the machine tightly.
3. When moving the printer, use the inset grips on both sides, and lift slowly in pairs. The printer will break or cause injury if dropped or not using the insert grips. Be sure not to hold the paper feed tray.
4. Re-attach peripherals to the main machine if removed.

2.3 OPTION INSTALLATION

2.3.1 PAPER FEED UNIT TK1230 (M407)

This optional unit is installed by the user.

2.3.2 PAPER FEED UNIT TK1240 (M408)

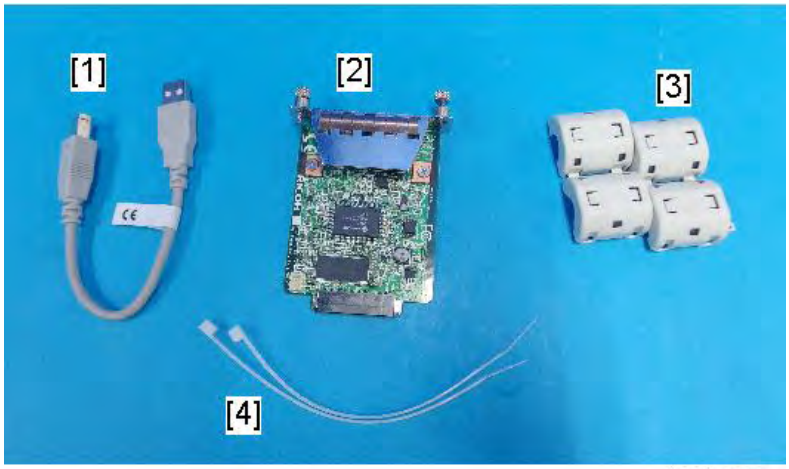
This optional unit is installed by the user.

2.4 USB DEVICE SERVER OPTION TYPE M19 (D3BC-28, -29)

NA only: This option is installed by a CE.

Other areas: This option is installed by the end user.

2.4.1 COMPONENT CHECK

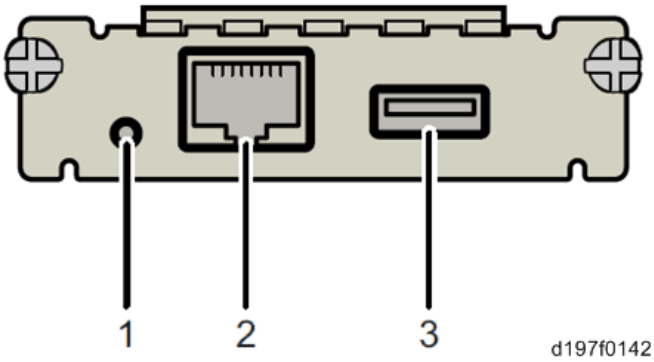


No	Items	Q'ty
1	USB cable	1
2	Interface board	1
3	Ferrite core	2
4	Cable ties	2

Note

- An Ethernet cable, which is not packed with this option, is required.

Interface Board Surface



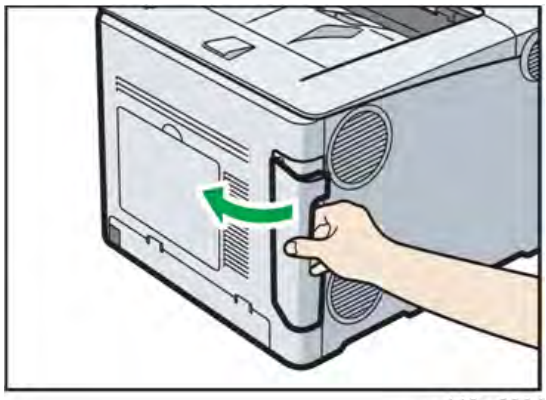
No.	Item	Description
1	Switch	Used to reset to the factory settings.
2	Ethernet port	Used to connect the Ethernet cable.
3	USB port	Used to connect this option to the main machine. Do not use with other options.

2.4.2 INSTALLATION PROCEDURE

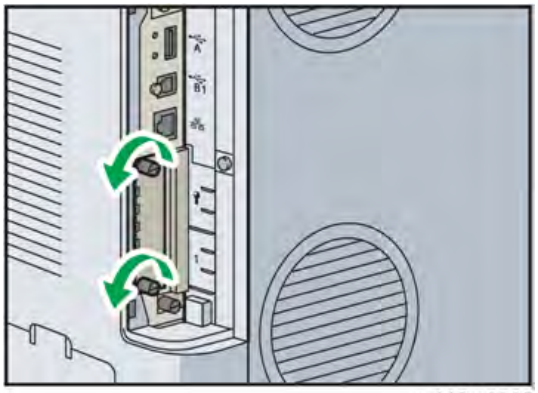
Note

- When you install this option to the main machine for the first time, the interface board must be connected directly to your PC to set up the IP address and other network settings.

1. Turn off the main power switch, and unplug the power cord from the wall socket.
2. Remove the cable cover.



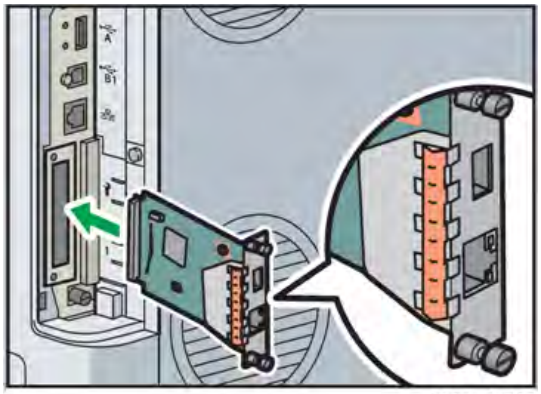
3. Loosen the two screws and remove the slot cover.



m112m0305

The removed cover and screws will not be reused.

4. Fully insert the interface board.

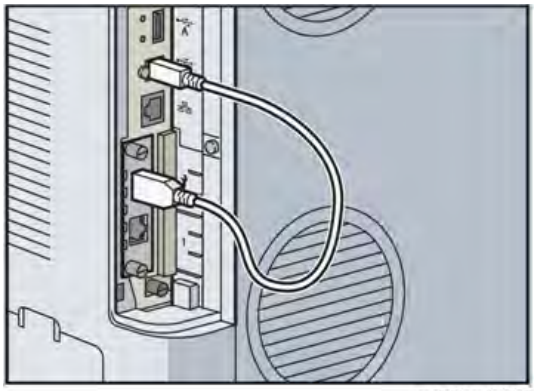


m112m0306

Check that the interface board is firmly connected to the controller board.

5. Tighten the two screws to secure the interface board.

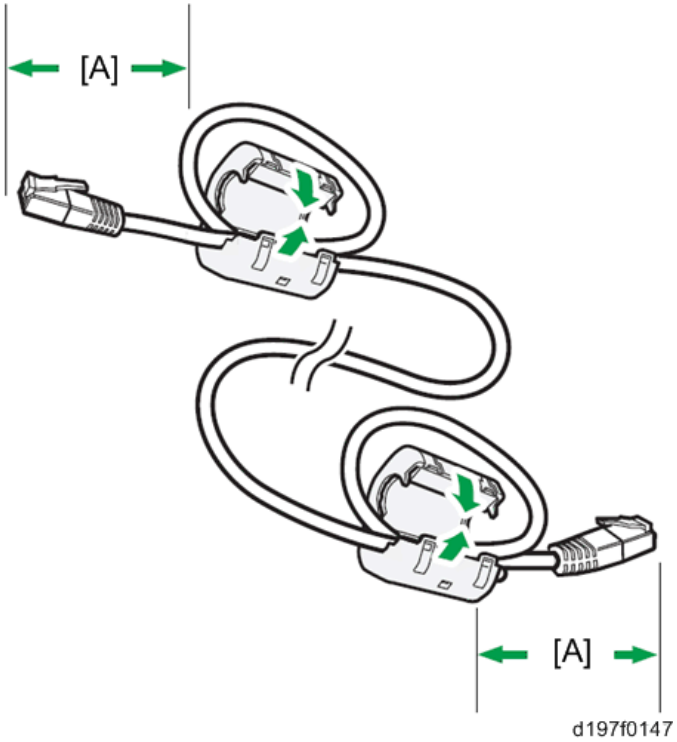
6. Using the supplied USB cable, connect the printer and USB print server unit.



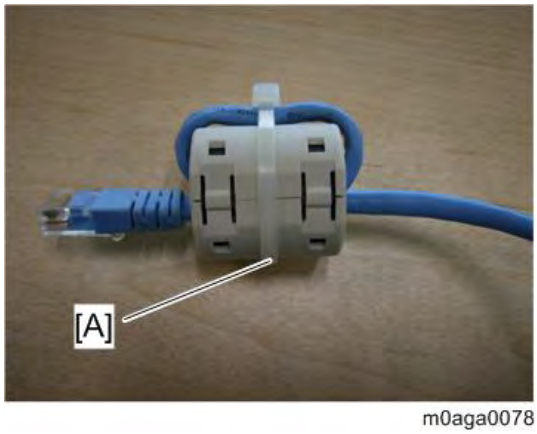
m112m0307

7. Mount the ferrite cores on the Ethernet cable, while looping the cable at 3 cm (approx. 1.2

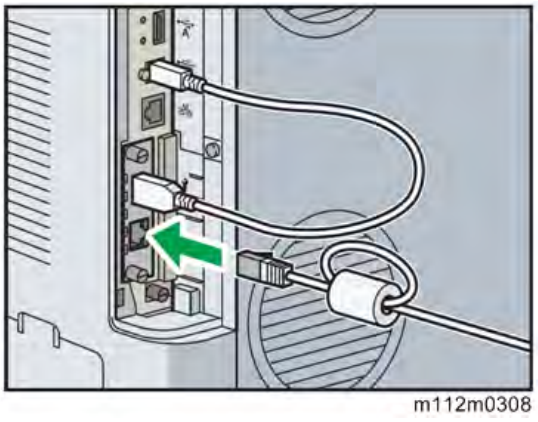
inch) [A] from each end of the cable.



8. Fix each ferrite core with a cable tie [A].



9. Connect the Ethernet cable to the Ethernet socket on this option.



10. Insert the other end of the Ethernet cable to the PC that you will use to make the network settings for this option.

11. Plug the power cord into the wall socket and turn on the main power switch.

Note

- Do not unplug the USB connector while the machine is recognizing this option. It may take between 30 seconds to 1 minute to finish recognizing it (the LEDs by the connector light up when finished; see below). If unplugged, connect the cable again.

What Do the LED Indications Mean?

If the USB device server is attached properly, the LEDs on the Ethernet port light up as follows:

 m112m0309	During 10BASE-T operation, the lower LED lights up in green.
 m112m0310	During 100BASE-TX operation, the upper LED lights up in orange.
 m112m0311	During 1000BASE-T operation, both LEDs light up.

2.4.3 IP ADDRESS SETTING

This section describes how to set an IP address on this option manually. The IP address can be on the same network segment, or it can be on a different network segment to share a single printer with devices on multiple networks.

Note

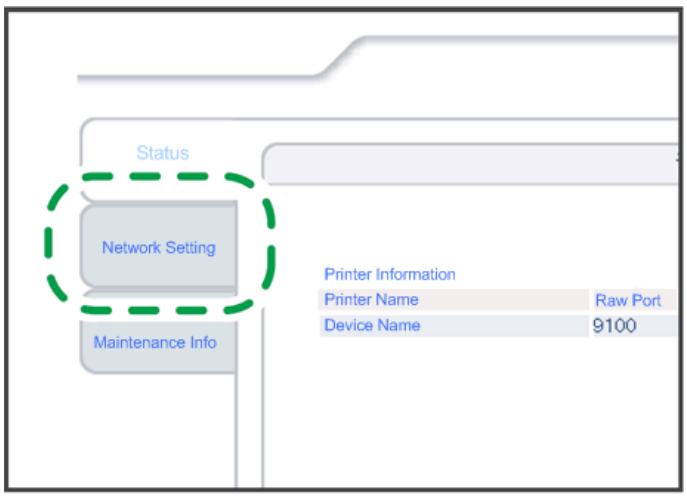
- You cannot change the IP address for this option from the operation panel of the main machine. The setting must be done from a web browser on your PC.
- The network setting of this option is initially assigned as follows:
  IP address: 192.168.100.100 / Subnet mask: 255.255.255.0
- The network setting of your PC must be in the same network segment to change the network setting of this option.

1. Make a note of the current network settings of your PC.
2. Change the IP address on your PC to [192.168.100.xxx (*0 - 255)].
3. Change the subnet mask on your PC to [255.255.255.0].
4. Open a web browser.
5. Type [http://192.168.100.100/] in the address bar.
6. Press the Enter key.

Note

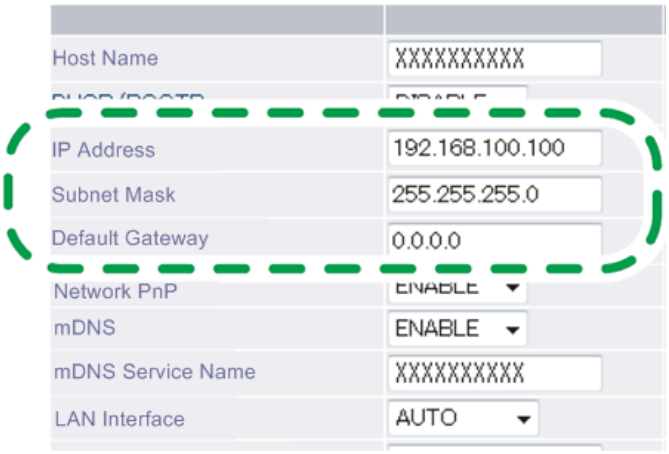
- The setting screen for this option appears.

7. Click [Network Setting].



d197f0134

8. Type [root] in the user name textbox and click [OK].
9. Input [IP Address], [Subnet Mask] and [Default Gateway].



d197f0135

10. Set other items if needed.
11. Press [Set].
12. Close the web browser.
13. Disconnect the Ethernet cable from the PC.
14. Connect the Ethernet cable to a network device (e.g. switching hub).
15. Set the IP address of this option in the printer driver that will be used.

PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

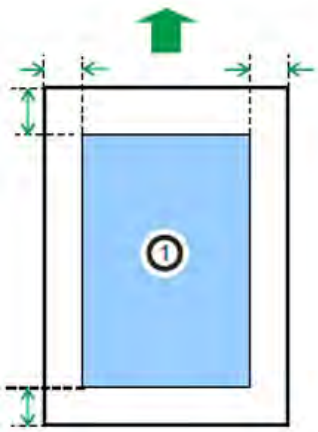
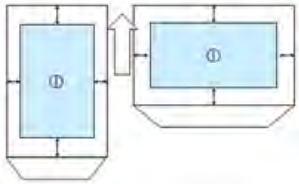
3. PREVENTIVE MAINTENANCE

3.1 PREVENTIVE MAINTENANCE TABLES

See "Appendices" for the following information:

- Preventive Maintenance Items

3.2 IMAGE QUALITY STANDARDS

Item	Specification	Remarks
Assured Image Area	**Except Envelopes** The standard print area of a sheet is the area enclosed by margins of 4.2 mm from all sides of the sheet. **Envelopes** The 15mm excluding the flap portion from the rear end / tip of the sheet, except for the region of the left and right ends 10mm.	**Except Envelopes**  **Envelopes** 
Magnification Error	Main: ±0.50% or more Sub: ±0.50% or less	Scale

3.3 PAPER TRANSFER QUALITY STANDARDS

Item	Specification	Remarks
Registration	**Single Side:** Width: 0±2.0mm (Main Scan Direction) Vertical: All Environments 0±2.0mm (Sub Scan Direction) **Duplex:** Width: 0±3.0mm (Main Scan Direction) Vertical: Office / All Environments 0±3.0mm/0±4.0mm (Sub Scan Direction)	Scale
Skew	**Single Side:** ±1.0mm/100mm or less (Less than B5 SEF) ±1.0mm/200mm or less (B5 SEF or more) **Reverse Side** ±1.5mm/100mm or less (Less than B5 SEF) ±1.0mm/100mm or less (B5 SEF or more)	Except if the paper is more than LG size.

These standards are determined using the standard paper with the standard conditions. The value may change depend on the environmental conditions such as temperature, humidity, and used paper, etc.

REPLACEMENT AND ADJUSTMENT

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

4. REPLACEMENT AND ADJUSTMENT

4.1 GENERAL CAUTIONS

4.1.1 NOTES ON THE MAIN POWER SWITCH

The main power button of this machine has been changed to a push-button switch (push button) from the conventional rocker switch. The push switch has characteristics and specifications different from the rocker switch. Care must be taken when replacing and adjusting parts.

Characteristics of the Push Switch (DC Switch)

Power is supplied to the machine even when the main power switch is turned OFF.

The push switch in this machine uses DC (direct current). Therefore, if the AC power cord is connected to an electrical outlet, power is supplied to the controller board and other modules even when the main power is turned OFF. When replacing the controller board, not only this board, it will damage other electrical components.
So, when performing maintenance work such as replacing parts, in addition to turning off the main power with the push switch, always unplug the AC power cord.

When you disconnect the power cord from the AC wall outlet, inside the machine there is still residual charge.

When you disconnect the power cord from the AC wall outlet, inside the machine for a while there is still residual charge. Therefore, if you remove boards in this state, it can cause a blown fuse or memory failure.
-- How to remove the residual charge inside the machine--
After you unplug the power cord from the AC wall outlet, in order to remove the residual charge from inside the machine, be sure to press the main power switch. Thus, the charge remaining in the machine is released, and it is possible to remove boards.

When you reconnect the AC power cord into an AC wall outlet, the machine will start automatically.

In order to remove the residual charge, push the main power switch while you disconnect the AC power cord. At that time, the power ON flag inside the machine is set. Therefore, after you finish work on the machine and reconnect the power cord to the AC, even if you do not press the main power switch, the machine will start automatically and the moving parts will begin to move. When working on moving parts, be careful that fingers or clothes do not get caught.

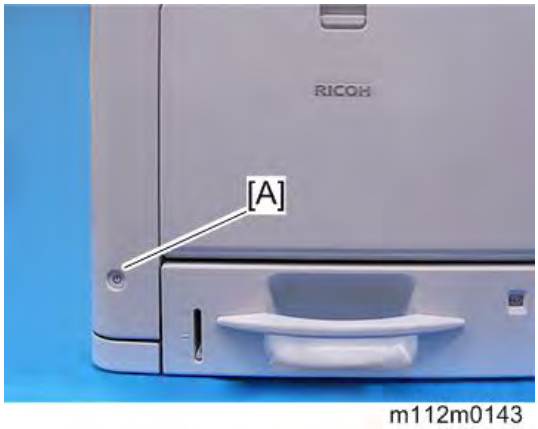
Note

- Automatic restart deals with cases when you accidentally unplugged the AC power cord or unexpected power outages. By keeping the power flag ON, after the resumption of power, the machine will start up automatically.

In rare cases, when you reconnect the AC power cord to a power outlet, the machine does not start automatically. In this case, the machine has not failed. The cause is due to the timing of releasing the residual charge. If you press the main power switch while the residual charge was already released, the power ON flag will not be set. At this time, start the machine manually by pressing the main power switch.

Shutdown Method

1. Press the main power switch [A] on the left side of the machine.



After the shutdown process, the main power is turned off automatically.

When the shutdown is complete

Operation panel LED: Off

2. Pull out the power cord.
3. Wait 3 minutes (this is the time required if you will remove the rear cover and access the interior of the machine, to take out the controller board for example).

Note: If some LEDs on any of the boards are blinking or lit, current is still flowing.

How to start from shutdown

To start the machine, press the main power switch. However, if you press the main power switch between the beginning and the end of a shutdown, the machine will not start.

Forced Shutdown

In case normal shutdown does not complete for some reason, the machine has a forced shutdown function.

To make a forced shutdown, press and hold the main power switch for 6 seconds.

In general, do not use the forced shutdown.

Important

- Forced shutdown may damage the memory, and can cause damage to the machine. Use a forced shutdown only if it is unavoidable.

4.2 SPECIAL TOOLS

Part Number	Description	Q'ty
-	PC for Windows /Vista/7/8/8.1, Windows server 2003/2012. (USB or network connection)	1
B6455010	SD Card 128MB	1
B6455020	SD Card 1GB	1
B6455040	SD Card 8GB	1

Note

- A PC (Personal Computer) is required for creating the Encryption key file to an SD card when replacing the controller board for a model in which HDD encryption has been enabled.

4.3 EXTERIOR COVERS

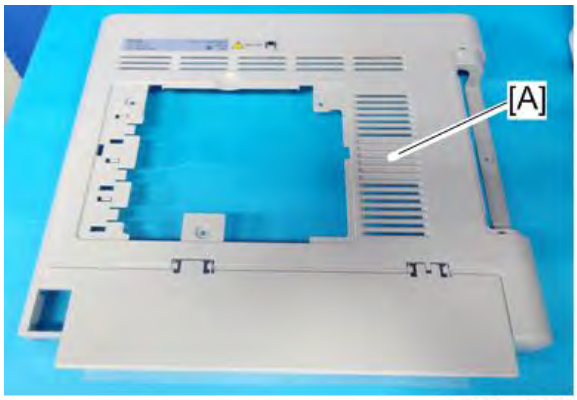
4.3.1 REAR COVER

1. Remove the Memory/HDD cover [A] and cable cover [B].

m112m0033

2. Remove the rear cover [A] (×7).

m112m0034



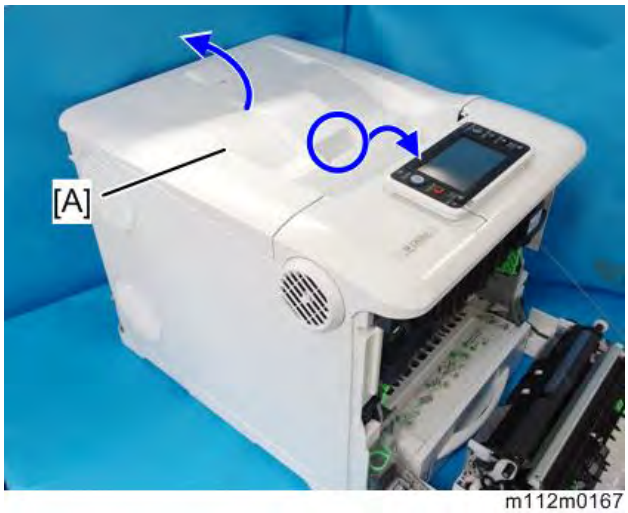
m112m0139

4.3.2 PAPER EXIT COVER (WITH OPERATION PANEL)

1. Open the front cover [A].

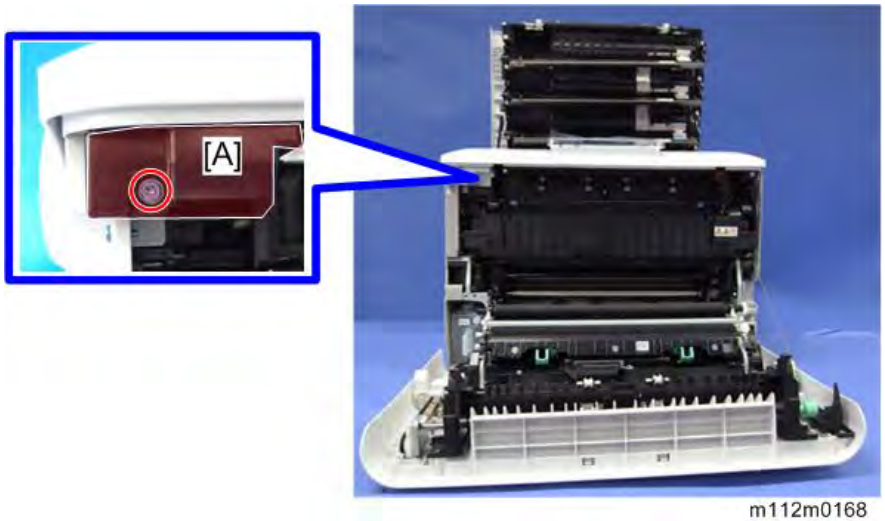
m112m0166

2. Open the upper cover [A].



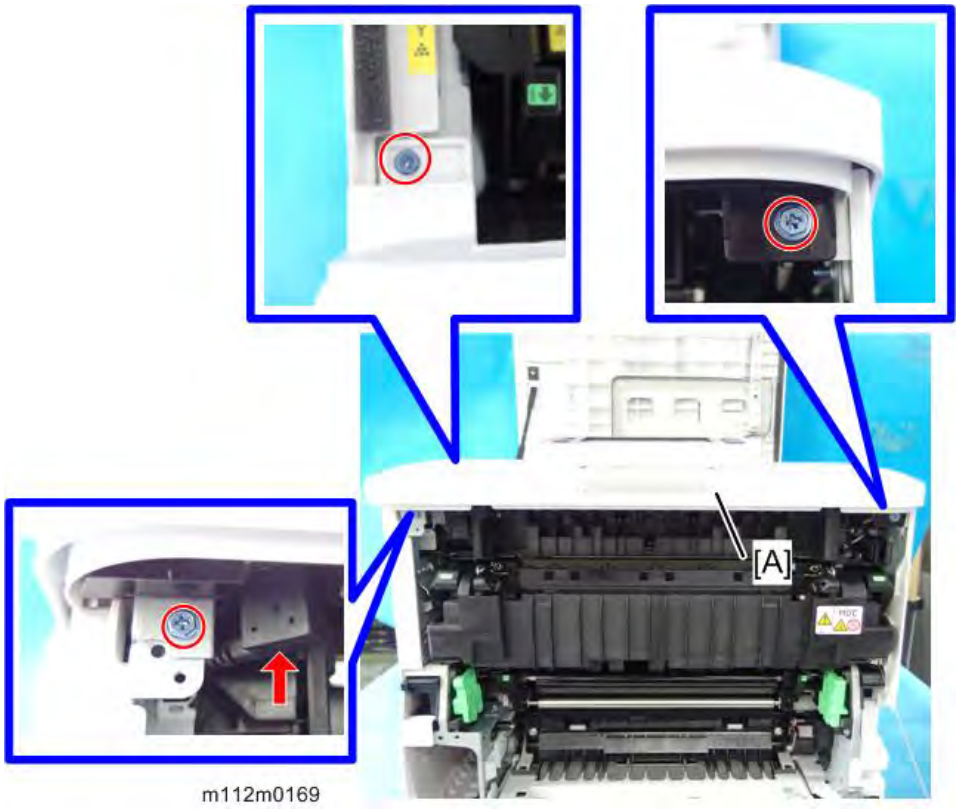
m112m0167

3. Remove the connector cover [A] (×1).



m112m0168

4. Remove the paper exit cover [A] (×3, ×1).

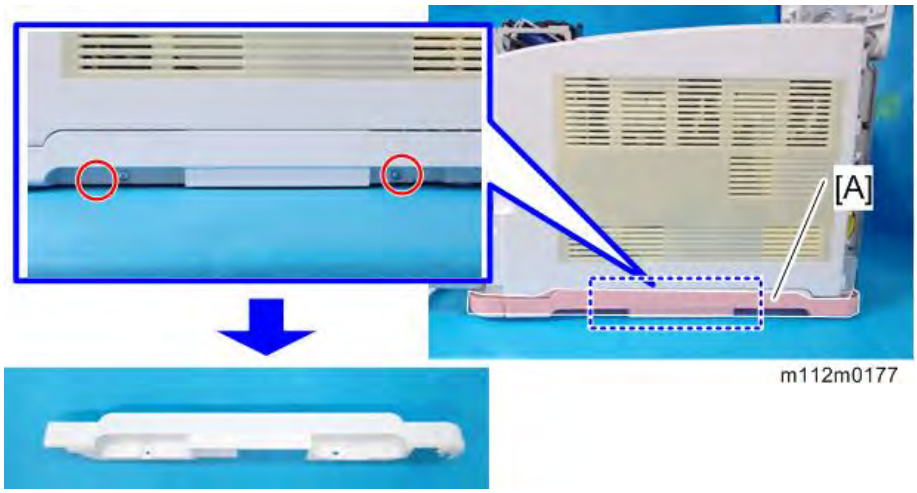


m112m0169

m112m0170

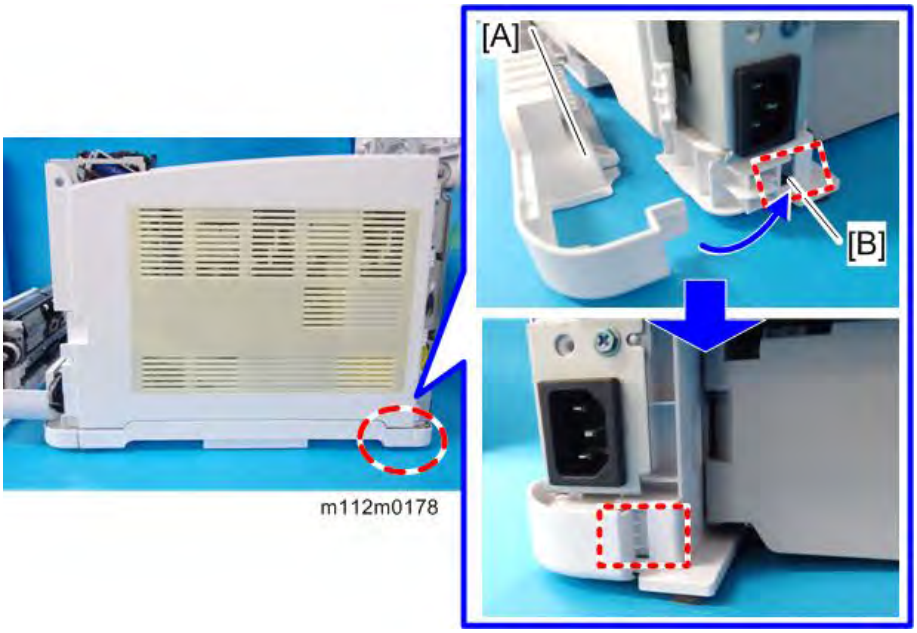
4.3.3 RIGHT COVER

1. Remove the rear cover (***Rear Cover***).
2. Remove the paper exit cover (***Paper Exit Cover (with Operation Panel)***).
3. Open the inner cover.
4. Remove the right lower cover [A] (×2).

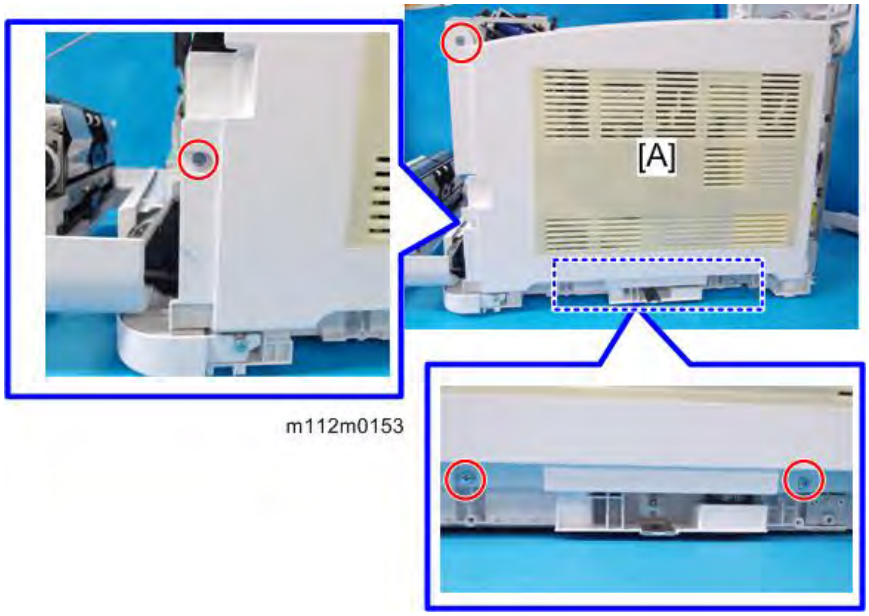


Note

- When attaching the right lower cover [A], fit the cover into the hole [B] of the main unit as shown in the photo below.



5. Remove the right cover [A] (×4).



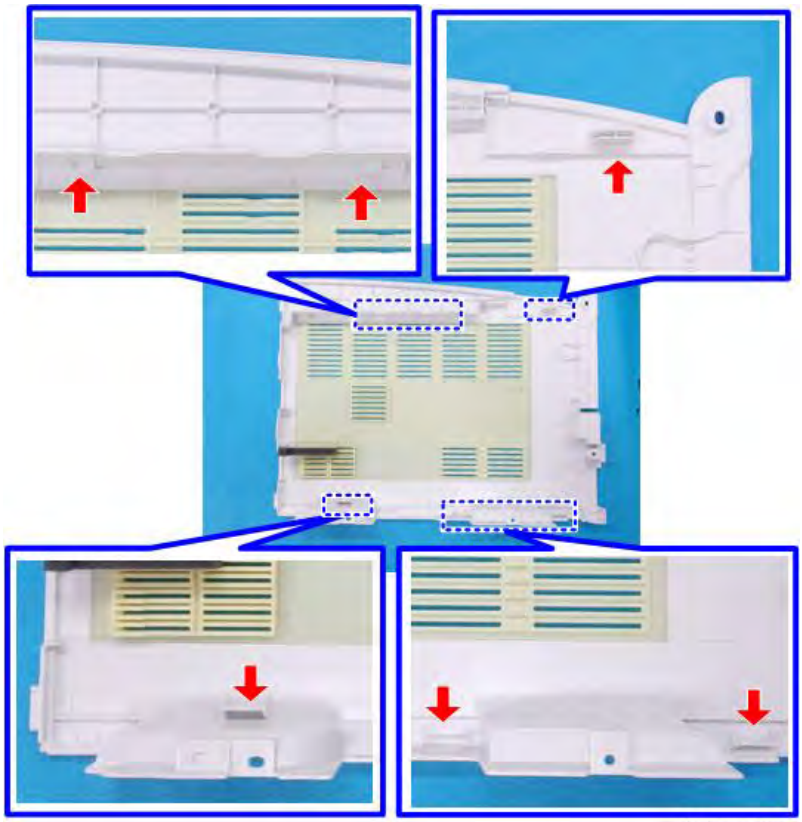
m112m0153

6. Remove the right cover [A] from the bottom.

m136a0021

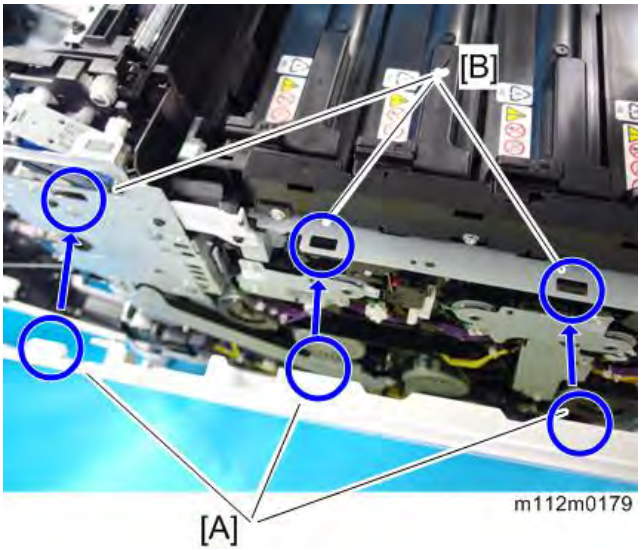
Note

- Check the position of the hooks in the photo below before removing.



m112m0180

- When attaching the right cover, first attach it from the top. Then fit the hooks [A] into the holes [B] of the main unit as shown in the photo below.



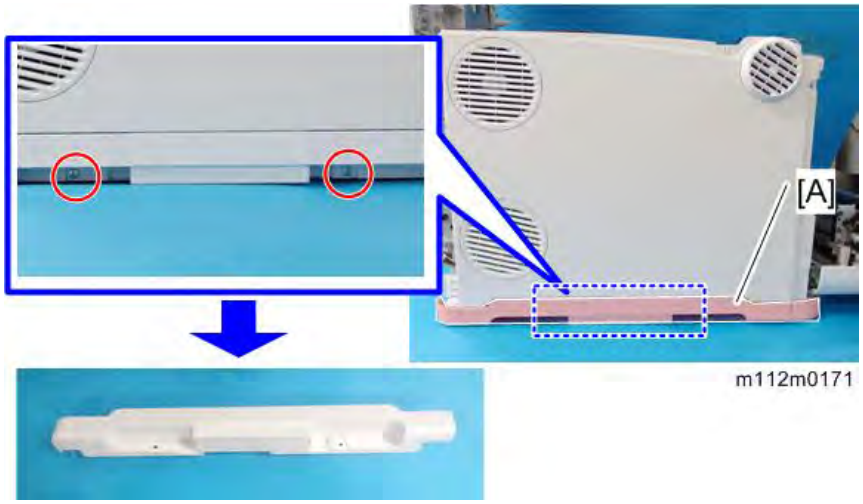
m112m0179

4.3.4 LEFT COVER

⚠CAUTION

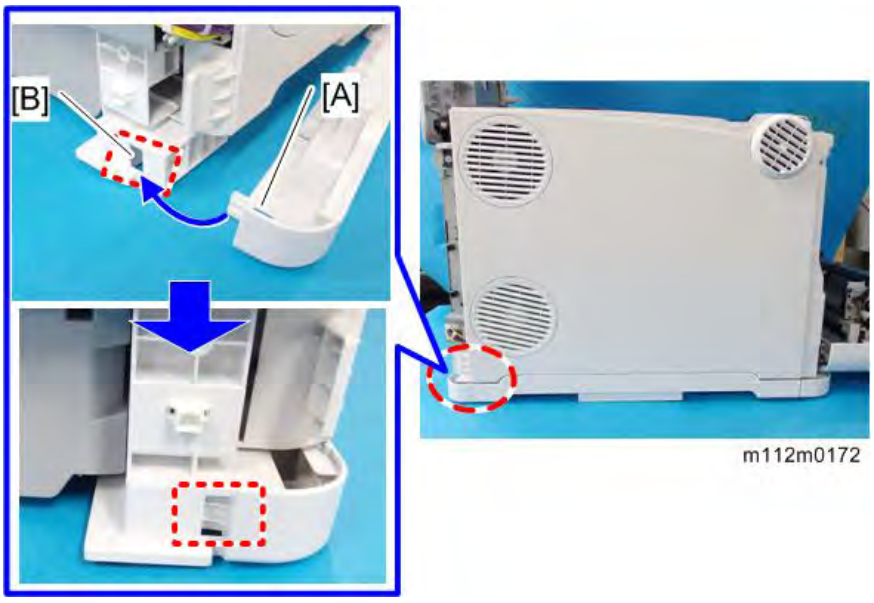
- Remove the Waste Toner Bottle before you remove the Left Cover, so as not to disperse the toner.

1. Remove the waste toner bottle (***Waste Toner Bottle***).
2. Remove the paper exit cover (***Paper Exit Cover (with Operation Panel)***).
3. Remove the rear cover (***Rear Cover***).
4. Remove the left lower cover [A] (×2).

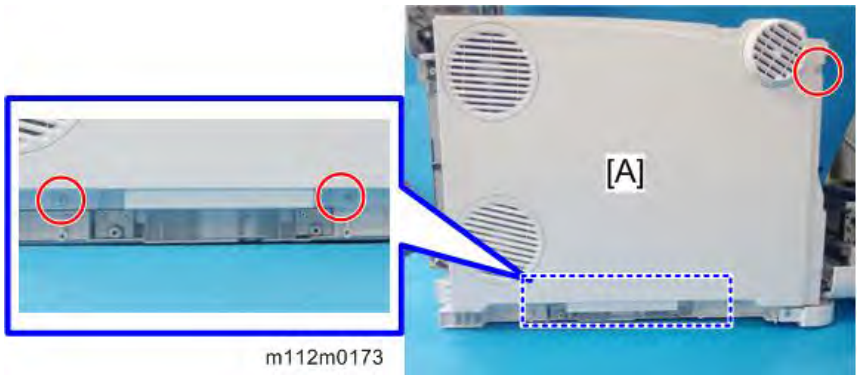


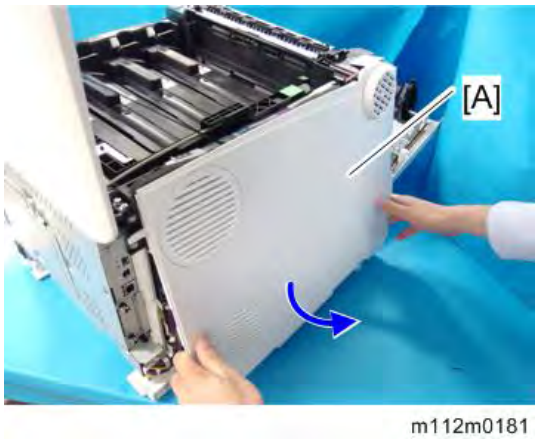
Note

- When attaching the left lower cover [A], fit the cover into the hole [B] of the main unit as shown in the figure below.



5. Remove the left cover [A] (×3).

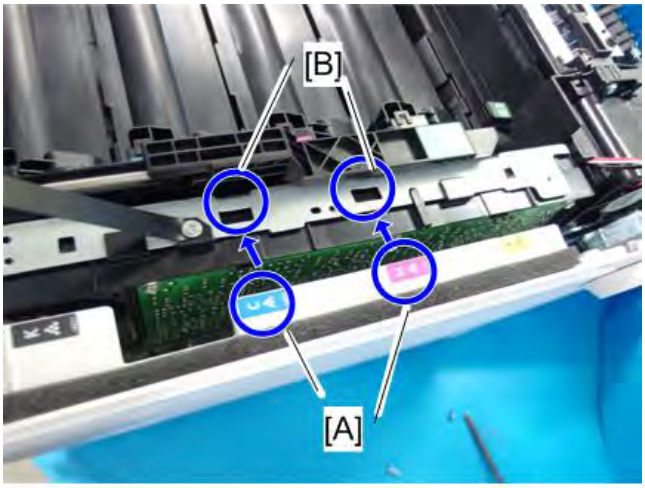




Note

- Check the position of the hooks in the photo below before removing.

- When attaching the left cover, first attach it from the top. Then fit the hooks [A] into the holes [B] of the main unit as shown in the photo below.



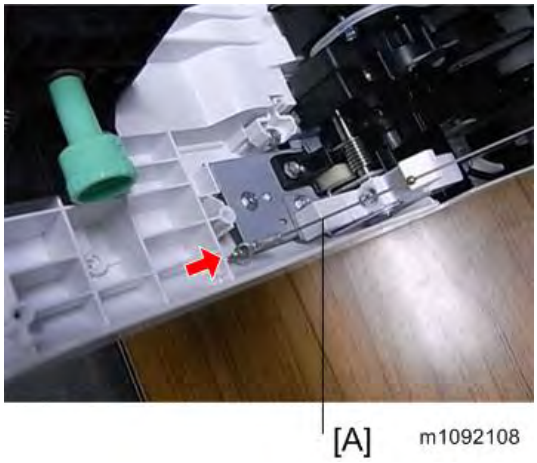
m112m0183

4.3.5 FRONT COVER UNIT

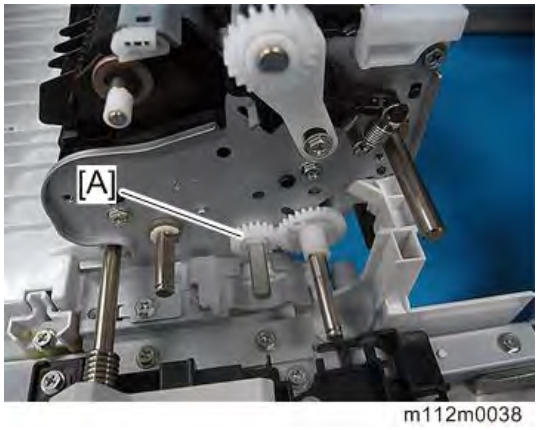
1. Remove the bypass tray unit (***Bypass Tray Unit***).
2. Open the front cover.
3. Remove the bracket [A] (×2).

m1092107

4. Close the front cover slightly, and then remove the wire [A].

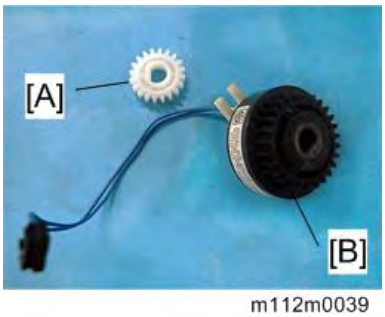


5. Remove the bypass bottom plate clutch (***Bypass Bottom Plate Clutch***).
6. Remove the gear [A].

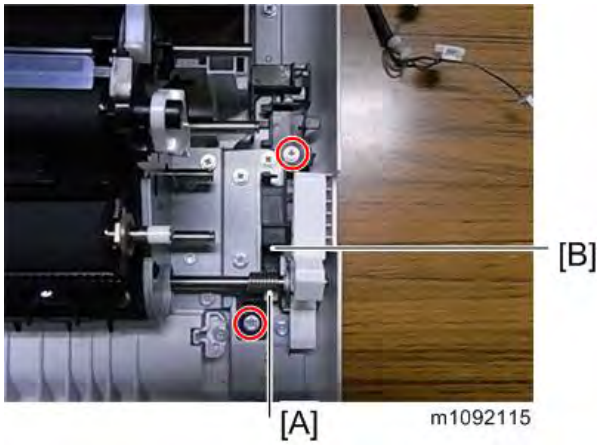


Note

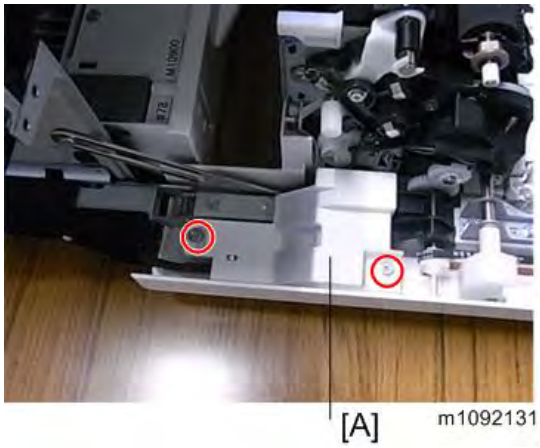
- [A]: Gear (The hole in the gear is in the form of a 'D'.)
- [B]: Bypass bottom plate clutch.



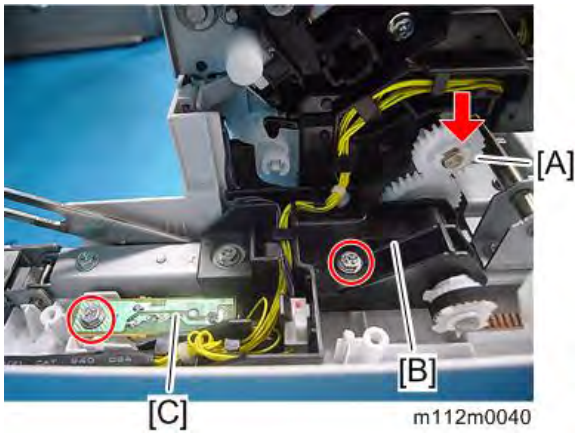
7. Loosen the tension of the spring [A], and then remove the harness guide [B] (×2).



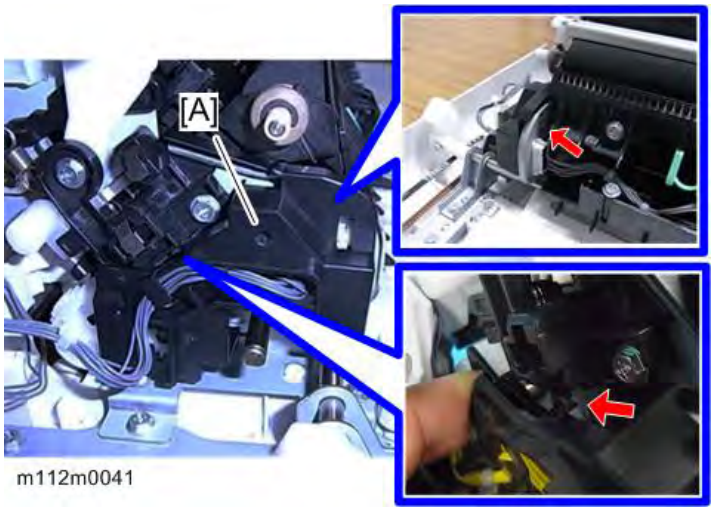
8. Remove the cover [A] (×2).



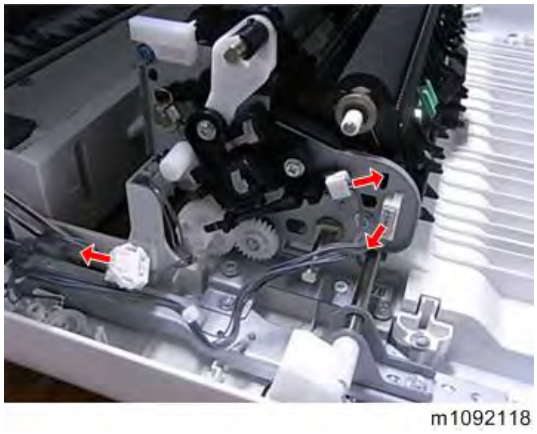
9. Remove the gear [A], and then remove the harness guide [B] and the power switch [C] (×2,×1).



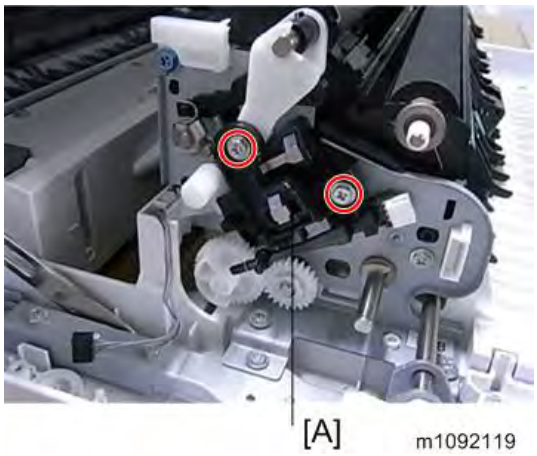
10. Remove the harness guide [A] (hook×2).



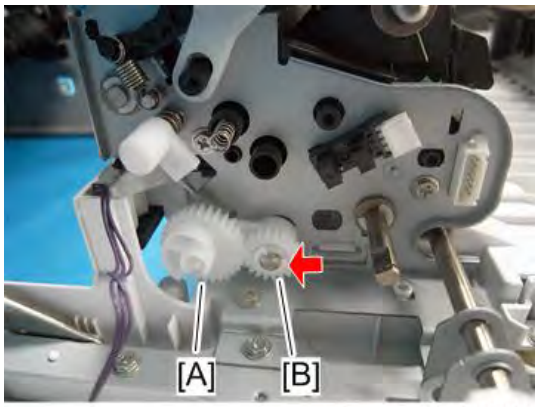
11. Remove the connectors (×3).



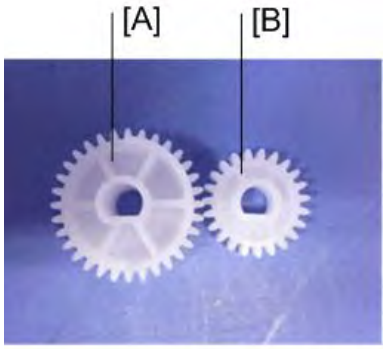
12. Remove the ground plate [A] (×2).



13. Remove the gears [A], [B] (×1).



m112m0042



m1092203

Note

- The hole in the gears [A] and [B] is in the form of a 'D'.

14. Remove the bearing [A].

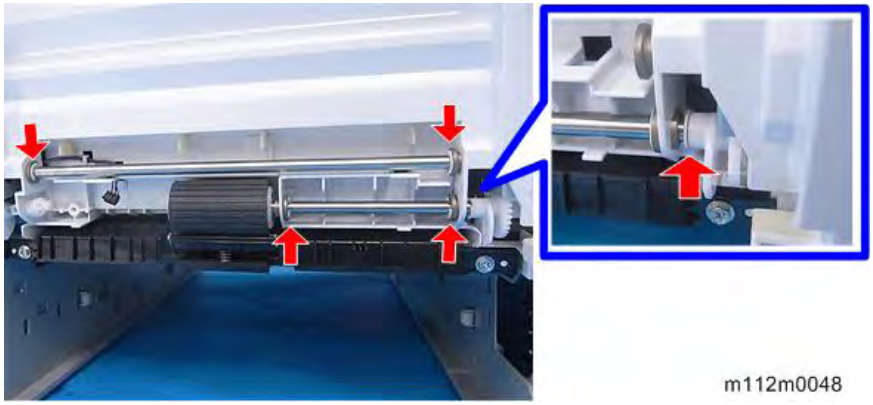
m1092121

15. Close the front cover slightly.

m1092122

16. Remove the bypass feed roller (***Bypass Feed Roller***).

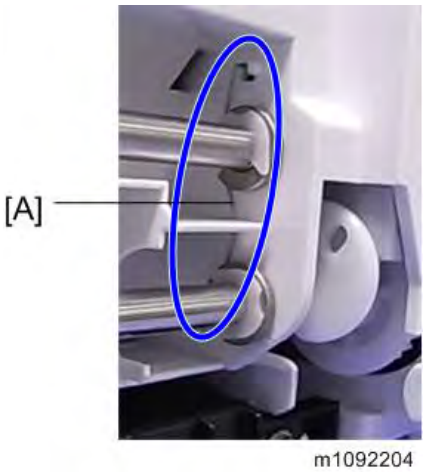
17. Remove the snaps (×5).



m112m0048

Note

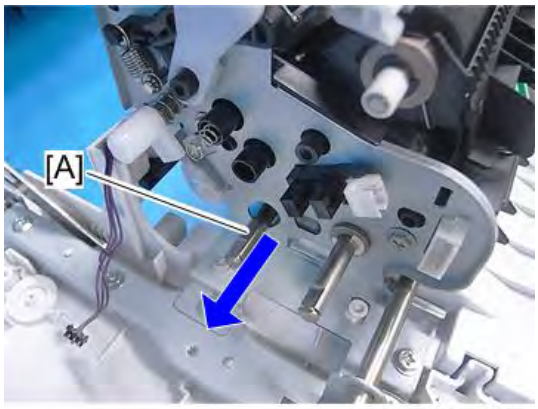
- Be careful not to lose the spring [A].



m1092204

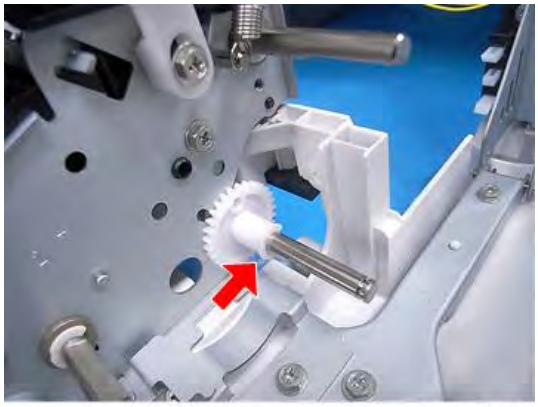
18. Open the front cover.

19. Remove the shaft [A].



m112m0049

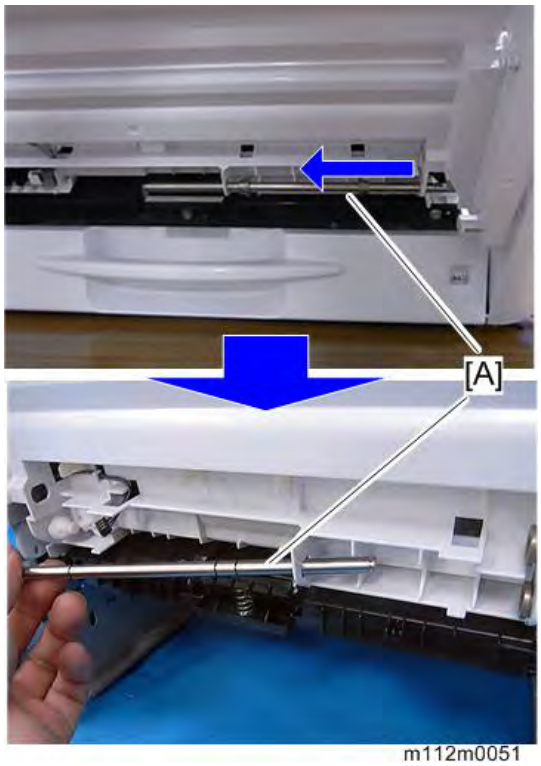
20. Remove the snap (×1).



m112m0050

21. Close the front cover slightly.

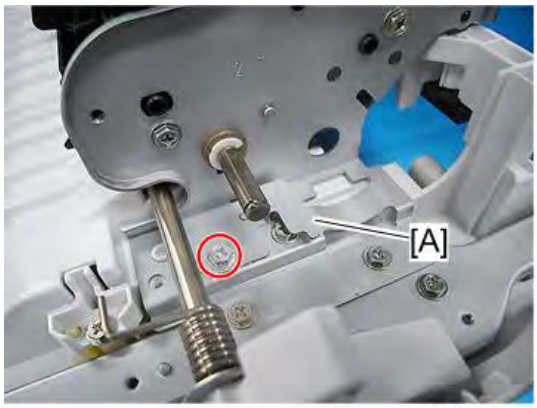
22. Remove the shaft [A].



m112m0051

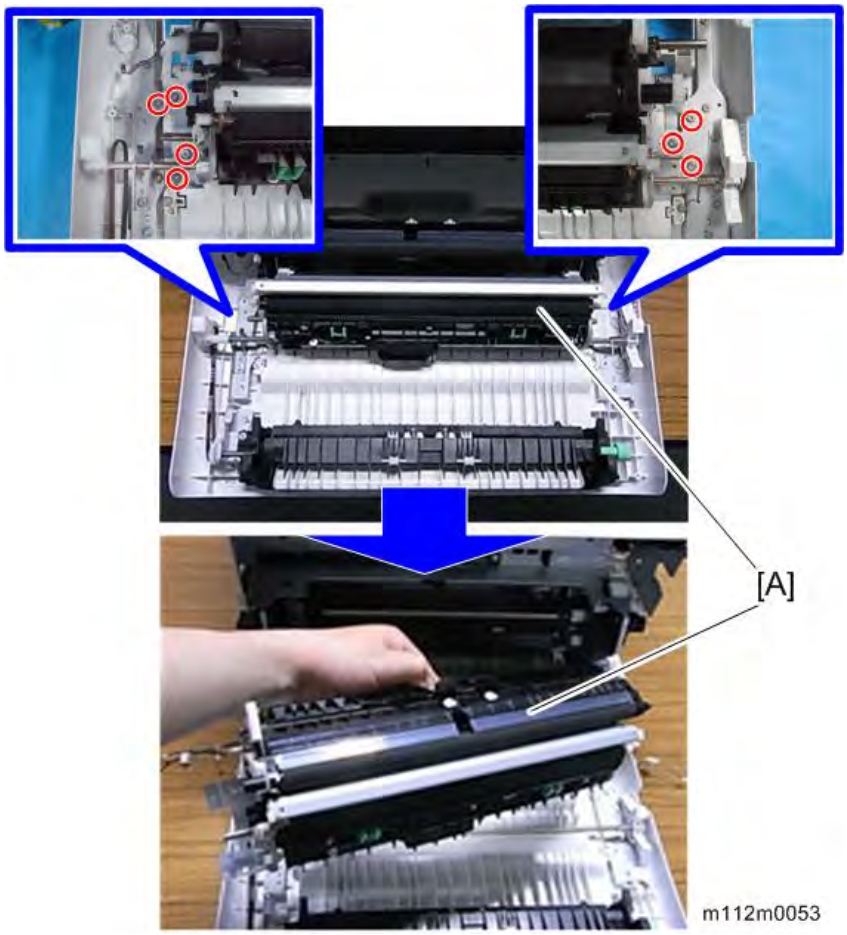
23. Open the front cover.

24. Remove the plate [A] (×1).

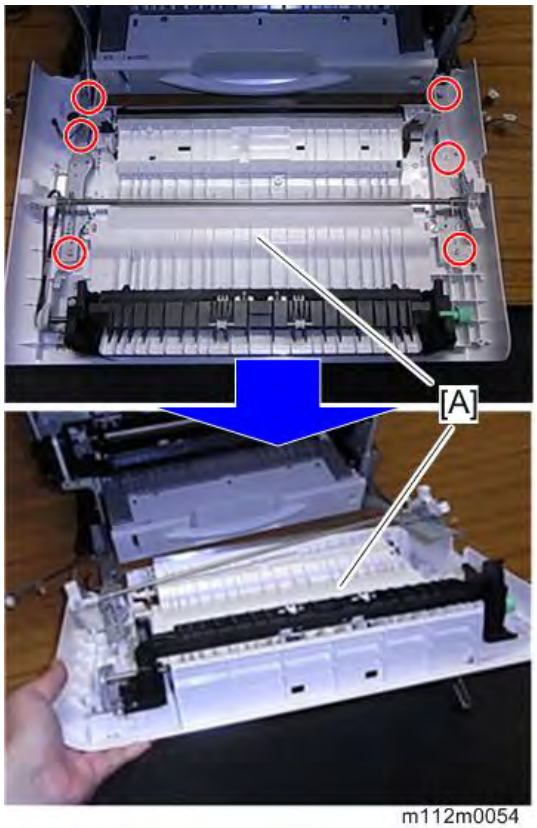


m112m0052

25. Remove the transport unit [A] (×7).

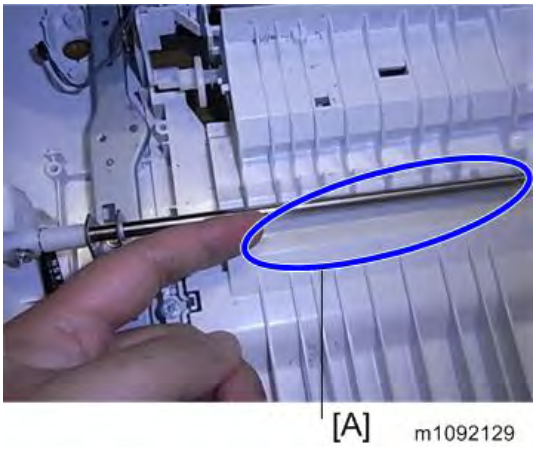


26. Remove the front cover unit [A] (×6).



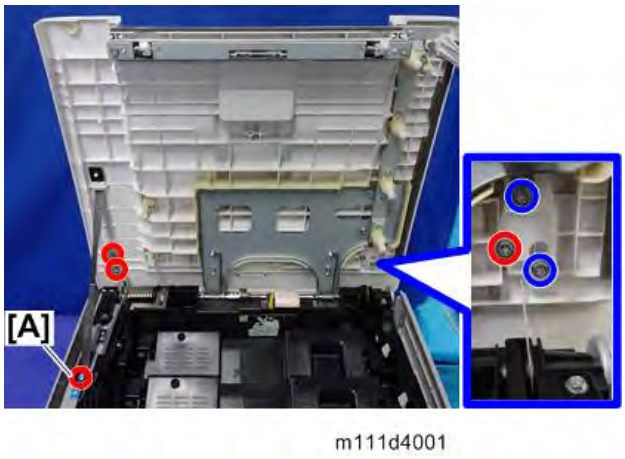
Note

- Be careful not to break the Mylar [A] during the exchange.



4.3.6 UPPER COVER

1. Remove the rear cover (***Rear Cover***).
2. Open the upper cover.
3. Remove the screws (×4).



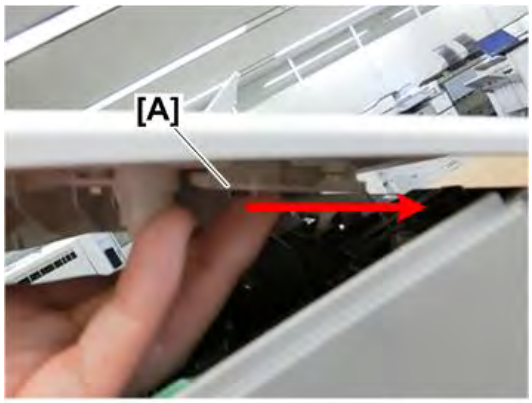
Note

- Do not remove the blue circled screws.

4. Remove the wire bracket [A].

Note

- Close the top cover to the limit, and slide the wire bracket [A] in the direction of the arrow.

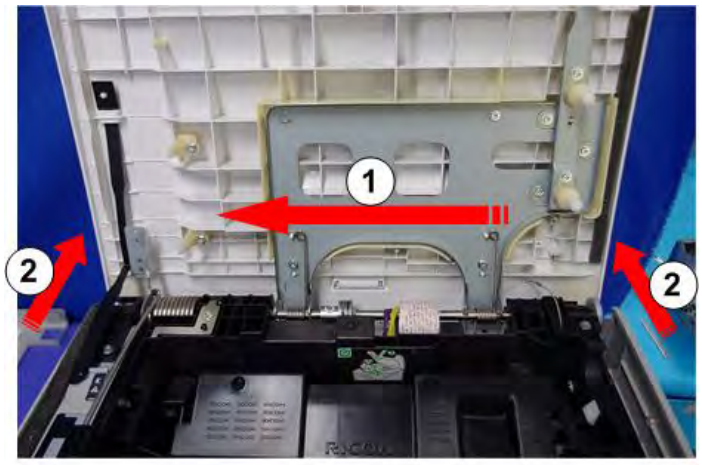


m111d4002

5. Remove the wire [A].

m111d4003

6. Slide to the left and remove the upper cover.



m111d4004

Note

- There are notches [A] on the shaft. You can remove the upper cover by sliding it to the notch position.

- Be careful not to lose the attached silencer (at the position circled in blue).

m111d4005a

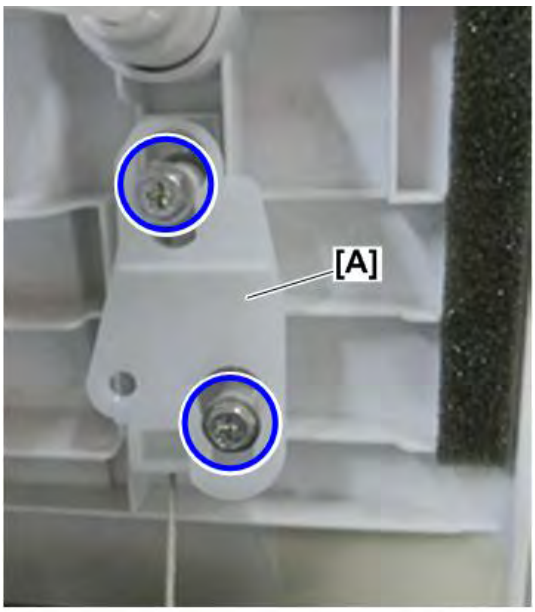
m111d4006

Reinstalling the Upper Cover

1. Hook the wire [A] onto the boss.

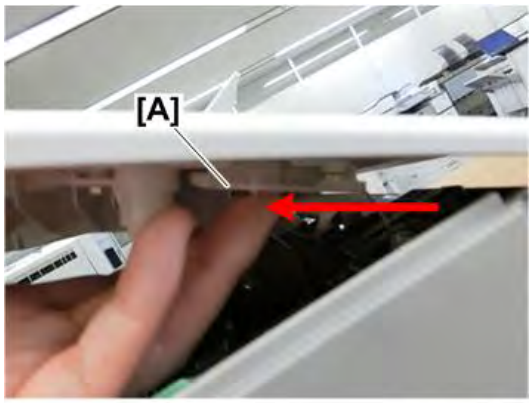
m111d4003

2. Fit the holes in the wire bracket [A] over the screw heads.



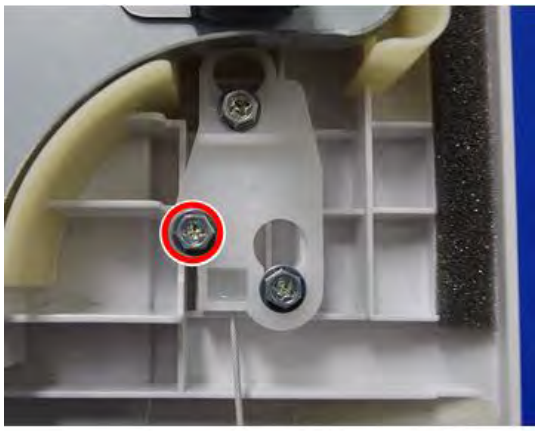
m111d4007

3. Close the top cover to the limit, and slide the wire bracket [A] in the direction of the arrow to fix it temporarily.



m111d4008

4. Fix the wire bracket.



m111d4009

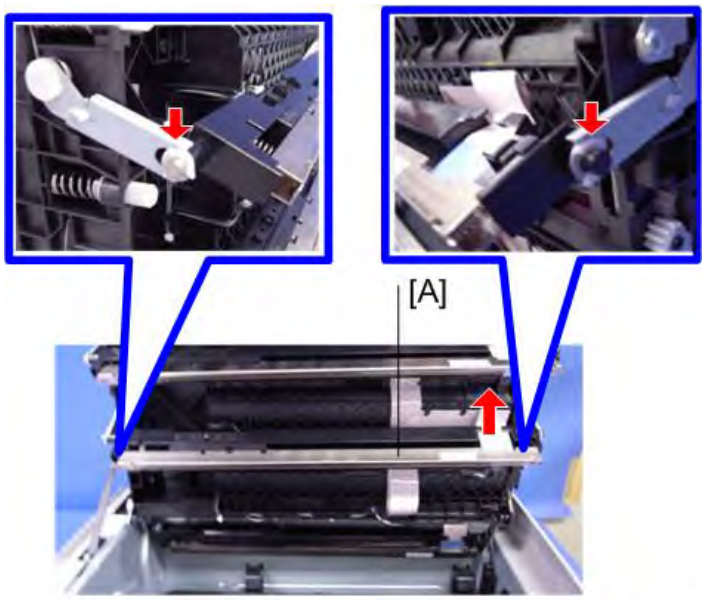
4.4 LED OPTICS

4.4.1 LED HEAD

1. Open the upper inner cover, and then cover the PCDUs with a sheet of paper, to prevent foreign objects from falling into the PCDUs. (***PCDU_1***)

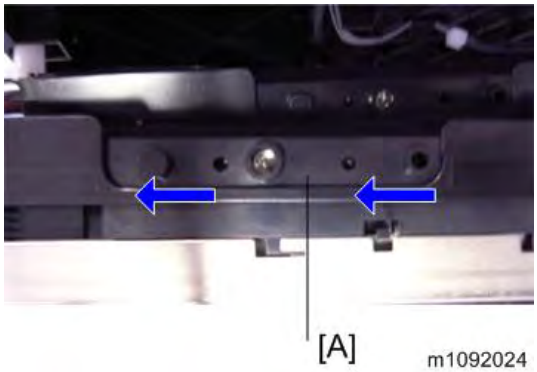
m1092191

2. Remove the snaps and flat cable from the LED head [A] (×2, ×1).



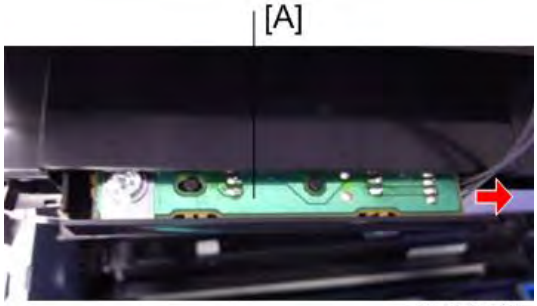
m1092023

3. Lift the toner end sensor unit [A] upward, and then slide it in the direction of the arrow.



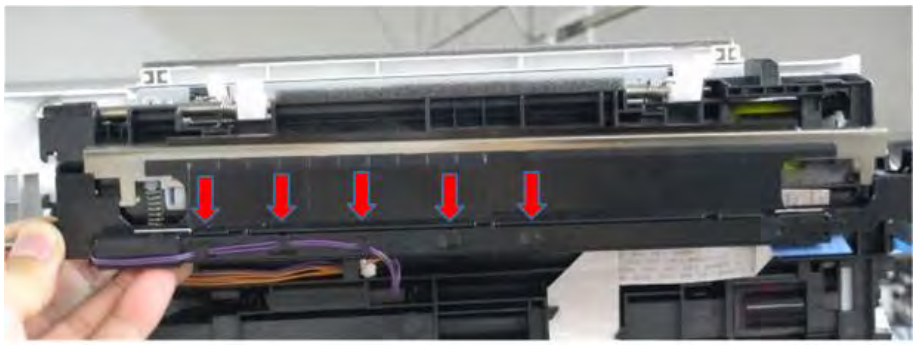
m1092024

4. Remove the connector from the toner end sensor [A] (×1).



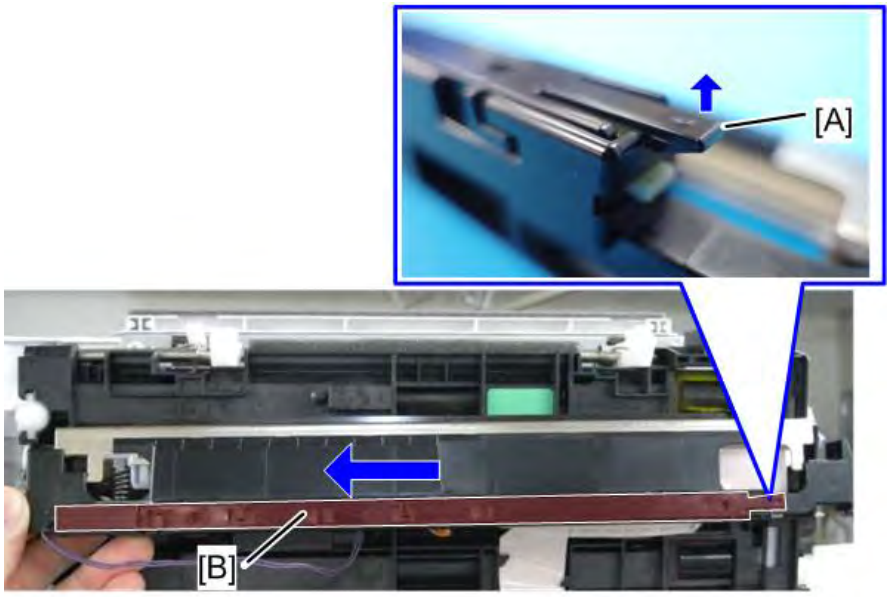
m1092176

5. Release the harness from the guide hooks on the cover (hook x5 (for BK), x3 (for CMY).



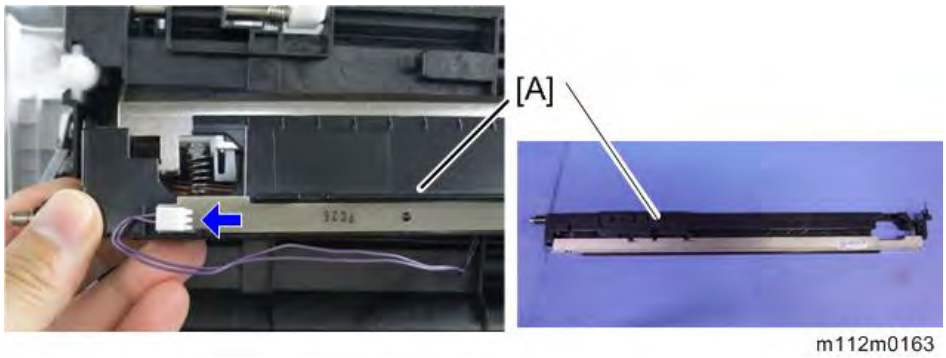
m112m0161

6. Raise the hook [A], and then slide the discharge lamp cover [B] in the direction of the arrow to remove it (hook x1).



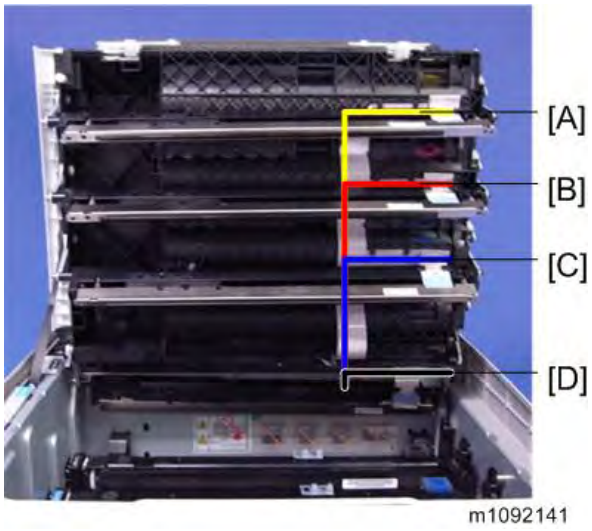
m112m0162

7. Disconnect the connector for discharge lamp and remove the LED head [A] (×1).



Note

- The Flat cables of the LED heads have different colors. They have a fixed order.
- If you remove the Flat cables of the LED heads, during re-assembly connect them so that they overlap in the order of Y / M / C / K.



[A]: Flat cable: EGB: LED head Y

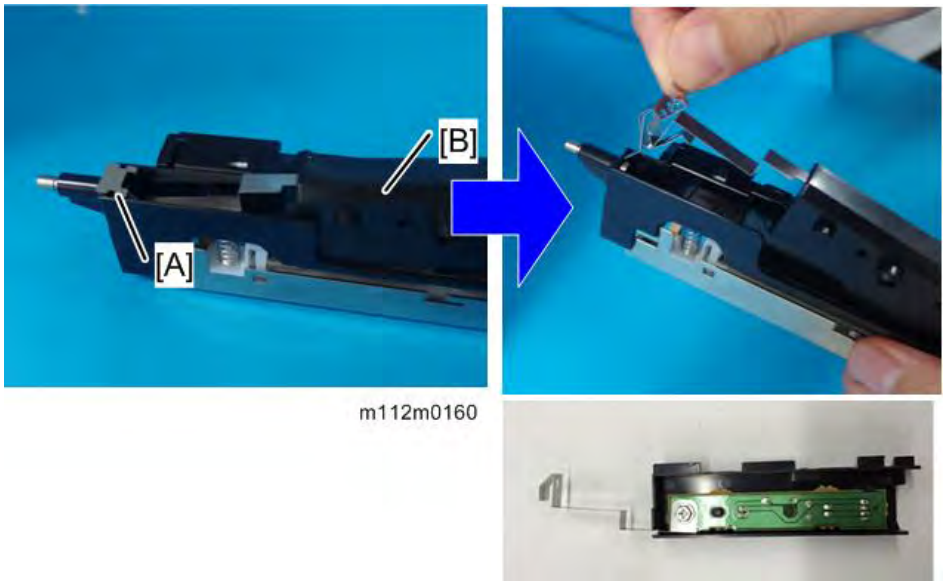
[B]: Flat cable: EGB: LED head M

[C]: Flat cable: EGB: LED head C

[D]: Flat cable: EGB: LED head K

4.4.2 TONER END SENSOR

1. Remove the LED head (***LED Head***).
2. Pull up the leaf spring [A] and remove the toner end sensor [B].



Note

- For information that is related to replacing the toner end sensor, refer to "***When SC365/SC332 Is Displayed***".
- After replacing the toner end sensor, set an SP value according to the leaflet supplied with the unit.
- Set the correct SP value corresponding to the replaced station.

Related SP:

SP No.	Dexcription
SP3-244-005	TonerRmn HHThresh:Up:K
SP3-244-009	TonerRmn HHThresh::Low:K
SP3-244-013	TonerRmn NNThresh::Up:K
SP3-244-017	TonerRmn NNThresh::Low:K
SP3-244-021	TonerRmn LLThresh::Up:K
SP3-244-025	TonerRmn LLThresh::Low:K
SP3-244-008	TonerRmn HHThresh::Up:C
SP3-244-012	TonerRmn HHThresh::Low:C
SP3-244-016	TonerRmn NNThresh::Up:C
SP3-244-020	TonerRmn NNThresh::Low:C
SP3-244-024	TonerRmn LLThresh::Up:C
SP3-244-028	TonerRmn LLThresh::Low:C
SP3-244-007	TonerRmn HHThresh::Up:M
SP3-244-011	TonerRmn HHThresh::Low:M
SP3-244-015	TonerRmn NNThresh::Up:M

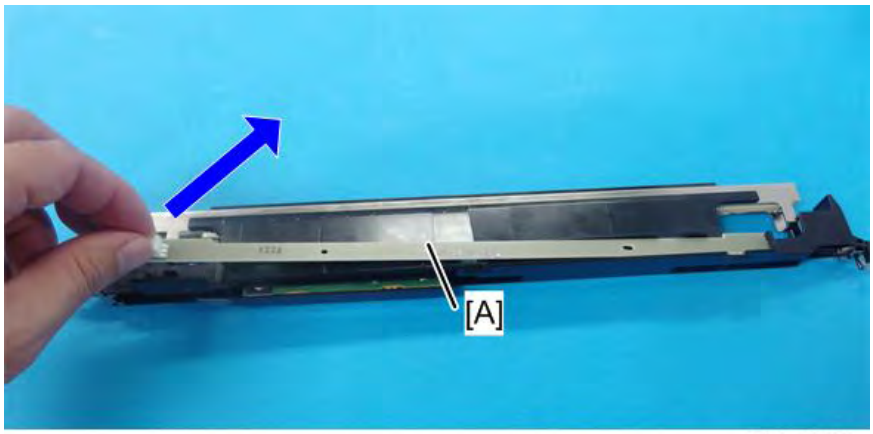
SP No.	Dexcription
SP3-244-019	TonerRmn NNThresh::Low:M
SP3-244-023	TonerRmn LLThresh::Up:M
SP3-244-027	TonerRmn LLThresh::Low:M
SP3-244-006	TonerRmn HHThresh::Up:Y
SP3-244-010	TonerRmn HHThresh::Low:Y
SP3-244-014	TonerRmn NNThresh::Up:Y
SP3-244-018	TonerRmn NNThresh::Low:Y
SP3-244-022	TonerRmn LLThresh::Up:Y
SP3-244-026	TonerRmn LLThresh::Low:Y

4.4.3 DISCHARGE LAMP

1. Remove the LED head (***LED Head***).
2. Remove the hook [A] that holds the discharge lamp (hook x1).

m112m0164

3. Remove the discharge lamp.



m112m0165

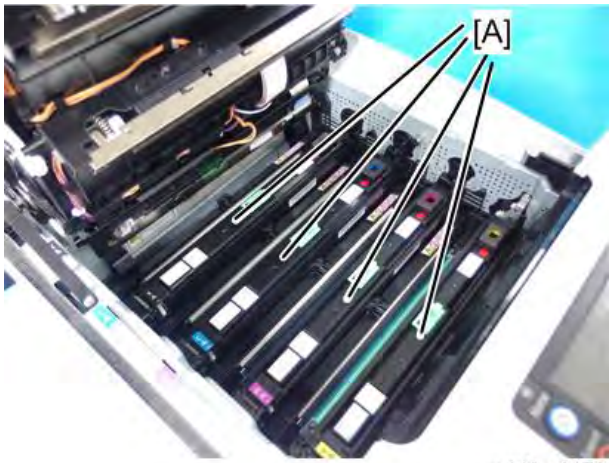
4.5 PCDU

4.5.1 PCDU

1. Open the upper cover.
2. Release the lock [A], and open the upper inner cover [B].

m112m0175

3. Remove the PCDUs [A].



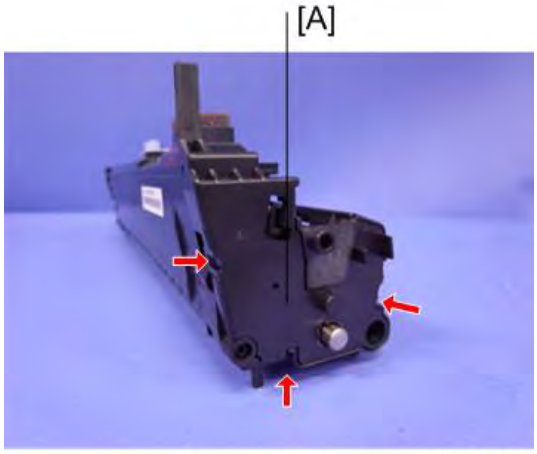
m112m0176

Note

- All PCDUs (Cyan, Magenta, Yellow, and Black) have a new unit detecting mechanism. Technicians do not need to reset counters after replacing, even if not all the PCDUs are replaced at the same time.

4.5.2 PCDU COVER (RIGHT)

1. Remove the PCDU (***PCDU_1***).
2. Remove the PCDU cover [A] (hook ×3).



m112m0102

4.6 IMAGE TRANSFER

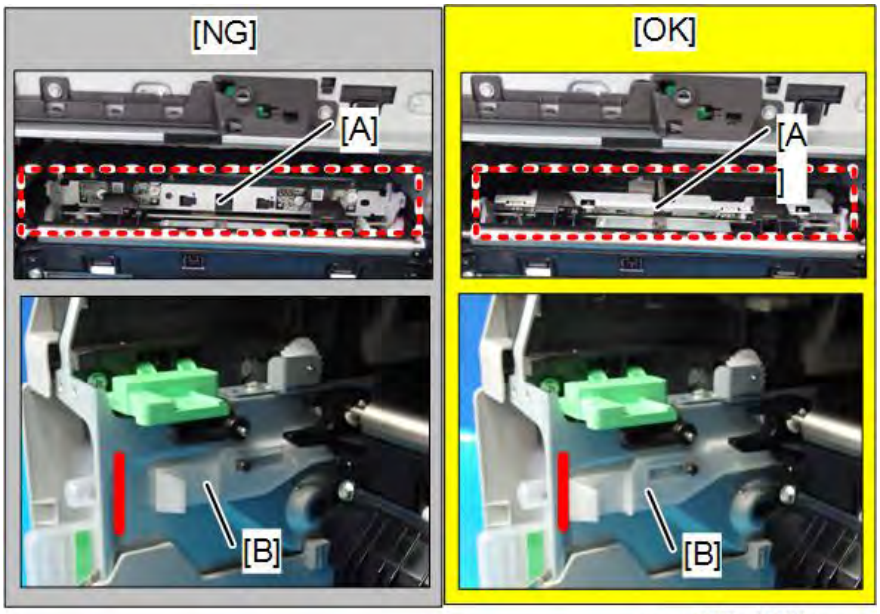
4.6.1 IMAGE TRANSFER BELT UNIT

1. Open the Front cover.
2. Remove the fusing unit. (***Fusing Unit***)
3. Release the locks [A], and then pull out the Image transfer belt unit [B].

m112m0174

Note

- Before reinstalling the ITB unit, if the TM sensor [A] is facing upward (the white lever [B] is retracted), pull the lever to the position indicated by the red line in the photo to make sure that the TM sensor is facing downward.



w_m112m0160a_en

After installing a new Image Transfer Belt Unit

Important

- Print out the logging data using SP5-990-004 before you replace either the transfer belt unit or the transfer roller.

Note

- The Image Transfer Belt Unit as a supply part is equipped with a new unit detection mechanism and does not require counter reset. The Paper Transfer Roller as a supply part is kitted together with the Image Transfer Belt unit and does not require counter reset, since it will be replaced at the same time as the Image Transfer Belt Unit.

	Part replaced	Action
1	Image Transfer Belt Unit and Paper Transfer Roller (at the end of their service life)	Execute the following SPs to reset the counter, and then turn off/on the unit. SP7-804-017 (PM Counter Clear ITB Unit) SP7-804-060 (PM Counter Clear Life: ITB Unit) SP7-804-022 (PM Counter Clear PTR Unit) SP7-804-061 (PM Counter Clear Life: PTR Unit)
2	Image Transfer Belt Unit	1. Execute SP7-804-017 and SP7-804-060 2. Turn off the machine, and then turn it back on.
3	Paper Transfer Roller	1. Execute SP7-804-022 and SP7-804-061 2. Turn off the machine, and then turn it back on

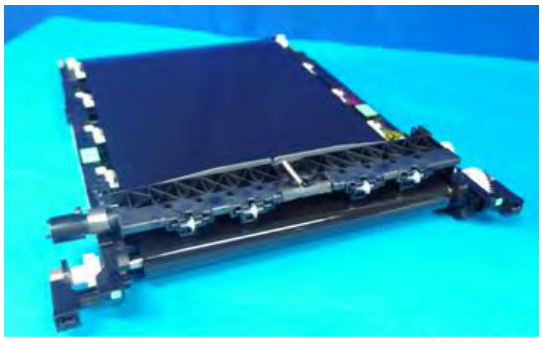
As mentioned above, action is necessary only in the following two cases:

1. If you are replacing the image transfer belt unit
   SP7-804-017 (PM Counter Clear ITB Unit)
   SP7-804-060 (PM Counter Clear Life: ITB Unit)
   If you are replacing the image transfer belt unit, you should execute SP7-804-017, for correct control depending on the rotation distance. But, if you execute only SP7-804-017, the counter for displaying the unit life is not cleared. So you must also clear the counter by executing SP7-804-060 (PM Counter Clear Life: ITB Unit).
2. If you are replacing the paper transfer roller
   SP7-804-022 (PM Counter Clear PTR Unit)
   SP7-804-061 (PM Counter Clear Life: PTR Unit)
   If you are replacing the paper transfer roller, you should execute SP7-804-022, for correct

control depending on the rotation distance. But, if you execute only SP7-804-022, the counter for displaying the unit life is not cleared. So you must also clear the counter by executing SP7-804-061 (PM Counter Clear Life: PTR Unit).

4.6.2 IMAGE TRANSFER BELT CLEANING UNIT

1. Remove the image transfer belt unit. (***Image Transfer Belt Unit***)



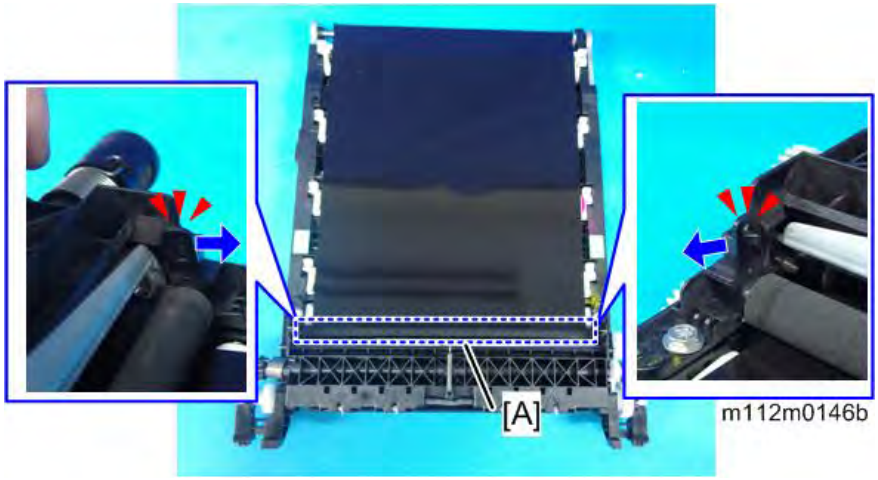
m112m0146

Note

- Put a sheet of A4 paper under the ITB unit to protect its surface, as shown.

m112m0146a

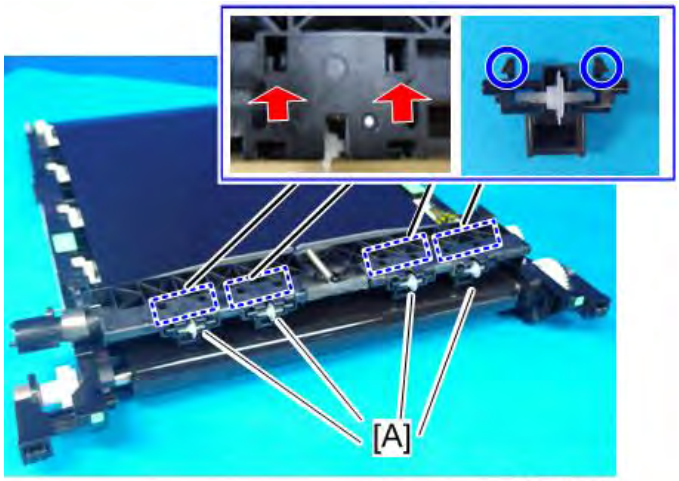
2. Remove the belt guide roller [A] (hook×2).



m112m0146b

3. Push the two projections of the paper guide holder [A] inward to disengage them using a

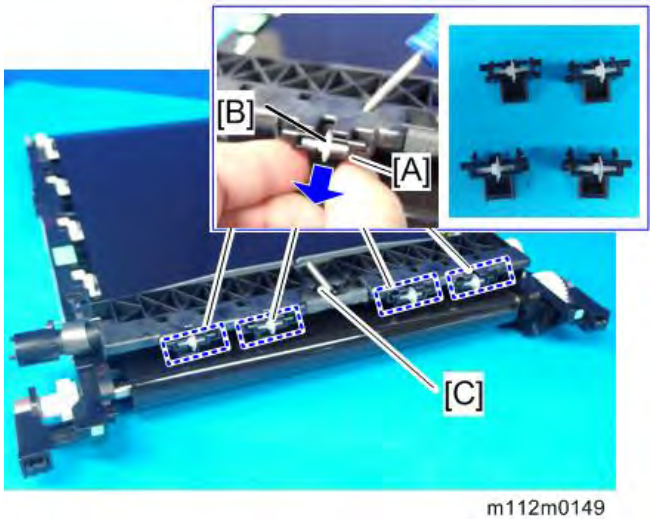
small screw driver.



m112m0147

m112m0148

4. Remove the paper guide holder [A] and spur [B] from the image transfer belt cleaning unit [C].

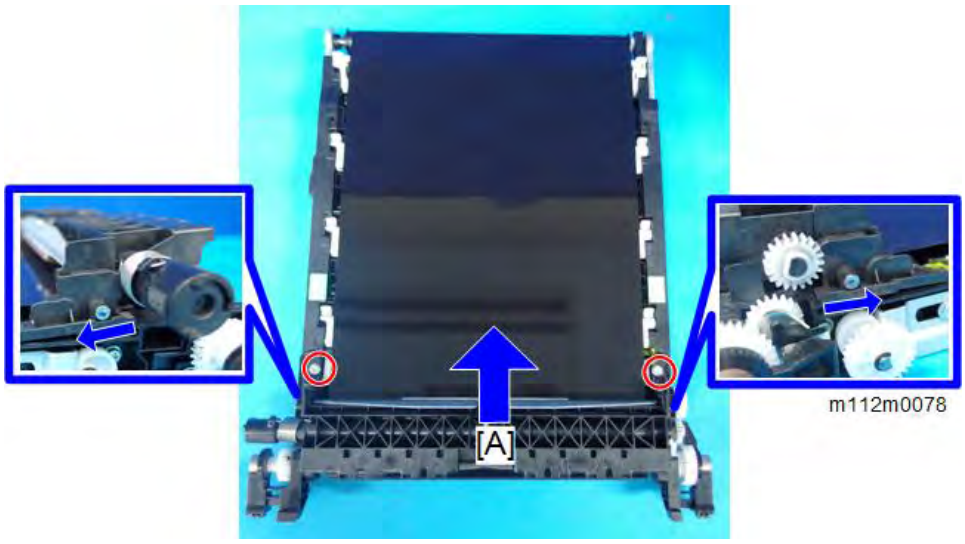


m112m0149

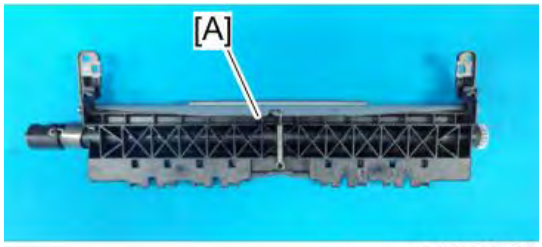
Note

- Take care not to damage the ITB surface when removing and installing the Paper Guide Holder.

5. Remove the image transfer belt cleaning unit [A] (×2).



m112m0078



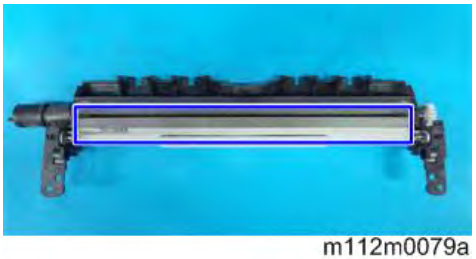
m112m0079

Important

- Return the image transfer belt cleaning unit without the Paper Guide Holder & Spur. Then, return the Paper Guide Holder with the Spur. Otherwise, the surface of the ITB may be damaged.

Note

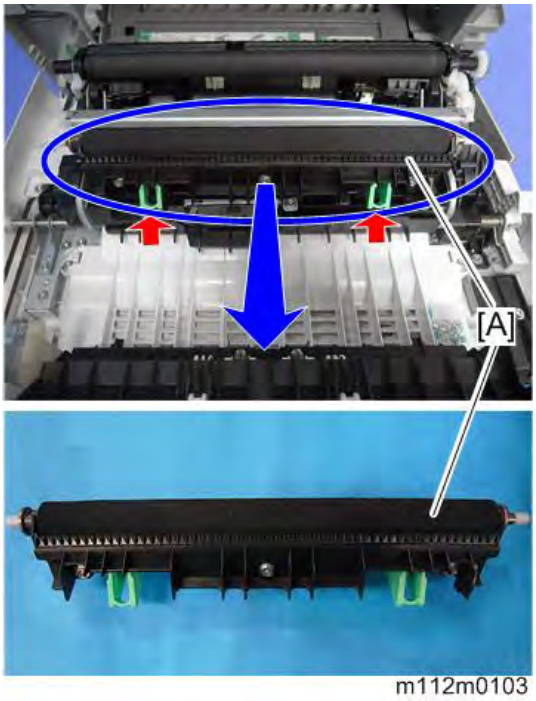
- When you change the Transfer belt cleaning unit, dust the new one with toner as a lubricant.



m112m0079a

4.6.3 TRANSFER ROLLER

1. Open the front cover.
2. Remove the transfer roller [A] with green handles.



m112m0103

After installing a new Transfer Roller

Important

- Print out the logging data using SP5-990-004 before you replace either the transfer belt unit or the transfer roller.

	Part replaced	Action
1	Image Transfer Belt Unit and Paper Transfer Roller (at the end of their service life)	Execute the following SPs to reset the counter, and then turn off/on the unit. SP7-804-017 (PM Counter Clear ITB Unit) SP7-804-060 (PM Counter Clear Life: ITB Unit) SP7-804-022 (PM Counter Clear PTR Unit) SP7-804-061 (PM Counter Clear Life: PTR Unit)
2	Image Transfer Belt Unit	1. Execute SP7-804-017 and SP7-804-060 2. Turn off the machine, and then turn it back on.
3	Paper Transfer Roller	1. Execute SP7-804-022 and SP7-804-061 2. Turn off the machine, and then turn it back on

As mentioned above, action is necessary only in the following two cases:

1. If you are replacing the image transfer belt unit
   SP7-804-017 (PM Counter Clear ITB Unit)
   SP7-804-060 (PM Counter Clear Life: ITB Unit)

If you are replacing the image transfer belt unit, you should execute SP7-804-017, for correct control depending on the rotation distance. But, if you execute only SP7-804-017, the counter for displaying the unit life is not cleared. So you must also clear the counter by executing SP7-804-060 (PM Counter Clear Life: ITB Unit).

2. If you are replacing the paper transfer roller
   SP7-804-022 (PM Counter Clear PTR Unit)
   SP7-804-061 (PM Counter Clear Life: PTR Unit)
   If you are replacing the paper transfer roller, you should execute SP7-804-022, for correct control depending on the rotation distance. But, if you execute only SP7-804-022, the counter for displaying the unit life is not cleared. So you must also clear the counter by executing SP7-804-061 (PM Counter Clear Life: PTR Unit).

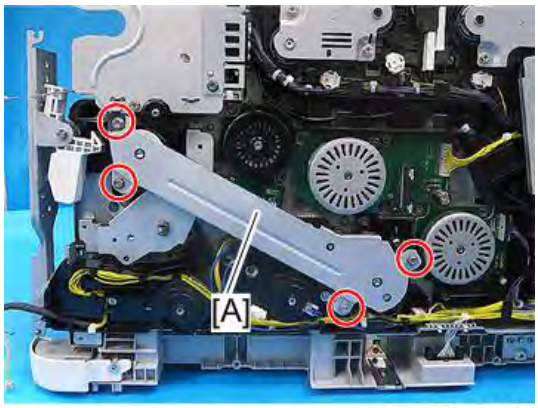
Note

- The Paper Transfer Roller as a supply part is kitted together with the Image Transfer Belt unit and does not require counter reset, since it will be replaced at the same time as the Image Transfer Belt Unit.

4.7 DRIVE UNIT

4.7.1 TRANSFER/TRANSPORT MOTOR

1. Remove the right cover. (***Right Cover***)
2. Remove the bracket [A] (×4).



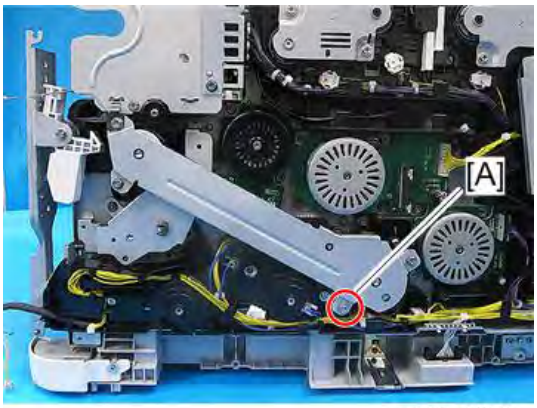
m112m0059

Note

- Caution for Installation

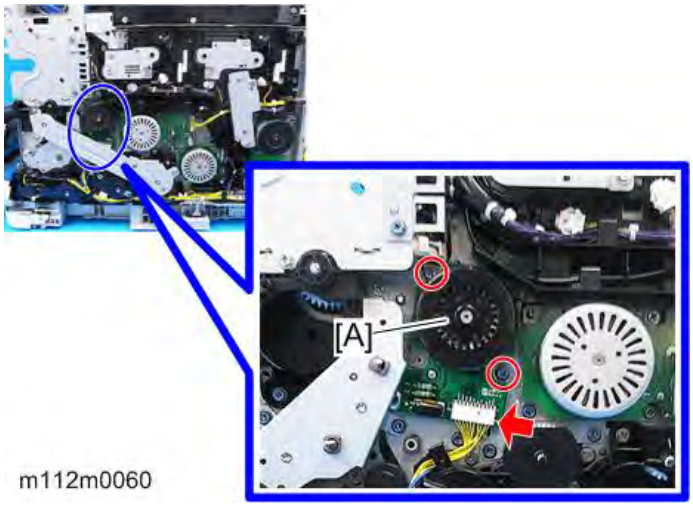
  Before tightening the screws for the bracket, confirm that the harness is not caught.

  Take extra attention to pinching at the screw [A].



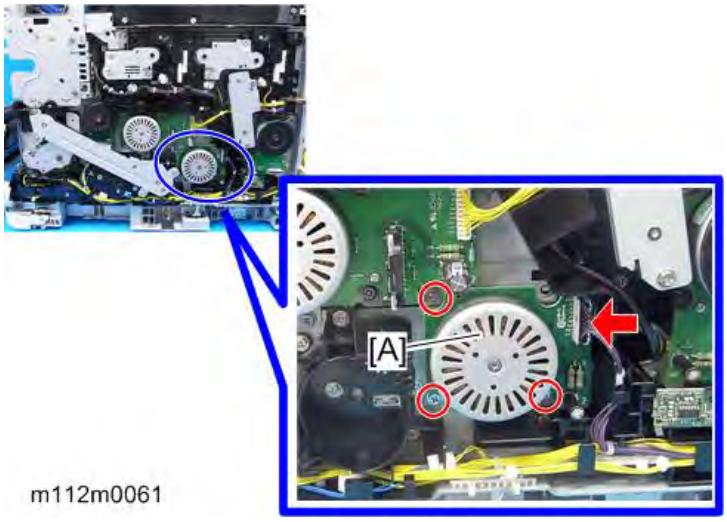
m112m0059a

3. Remove the transfer/transport motor [A] (×1,×2).



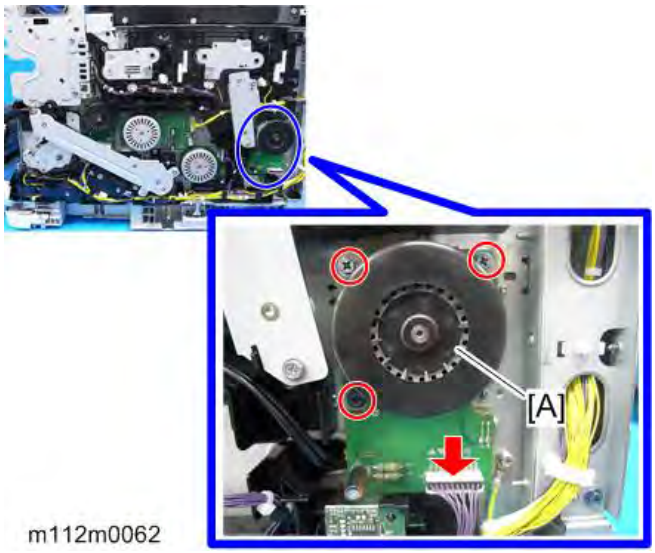
4.7.2 FUSING MOTOR

1. Remove the right cover. (***Right Cover***)
2. Remove the fusing motor [A] (×1,× 3).



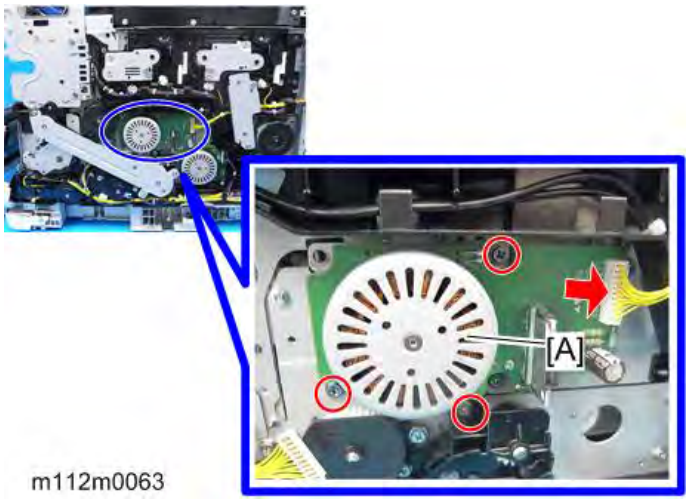
4.7.3 DRUM MOTOR: K

1. Remove the right cover. (***Right Cover***)
2. Remove the drum motor: K (×1, ×3).



4.7.4 DRUM MOTOR: CMY

1. Remove the right cover. (***Right Cover***)
2. Remove the drum motor: CMY [A] (×1, ×3).

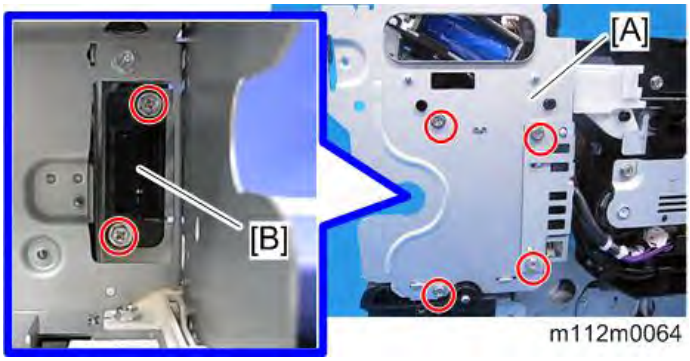


4.7.5 DUPLEX INVERTER SOLENOID

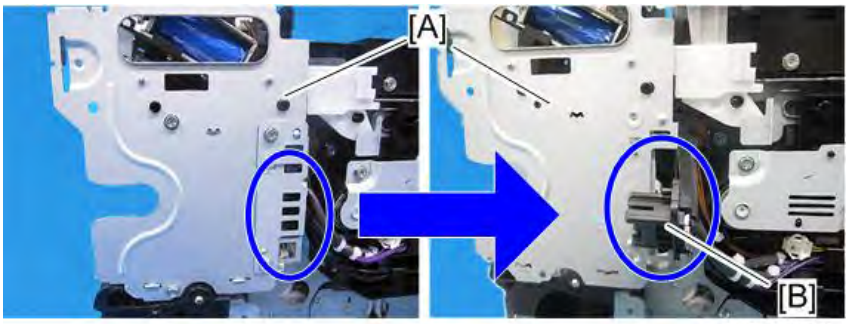
1. Remove the right cover. (***Right Cover***)
2. Remove the paper exit cover. (***Paper Exit Cover (with Operation Panel)***)
3. Remove the fusing unit. (***Fusing Unit***)
4. Remove the metal bracket [A] (×6).

Note

- For the drawer connector of the fusing unit, washer screws are used.
- After removing the screws, turn the connector [B] outward.

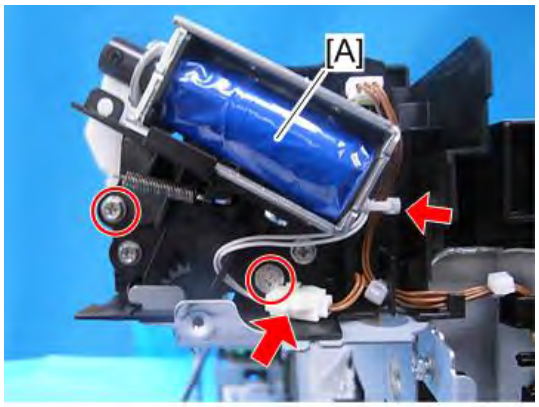


m112m0064



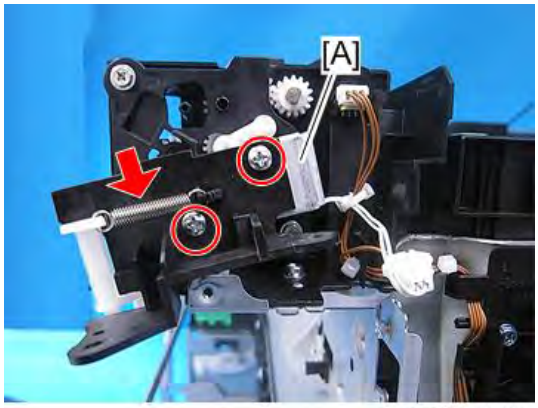
m112m0065

5. Remove the solenoid [A] with the bracket (×2, ×1, ×1).

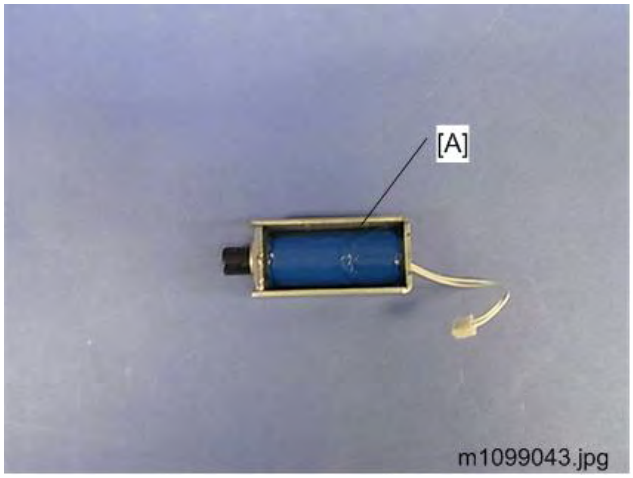


m112m0066

6. Remove the duplex inverter solenoid [A] om the bracket (×2, ×1).



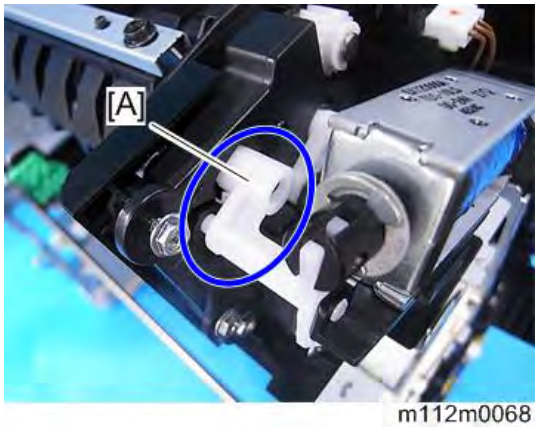
m112m0067



m1099043.jpg

Note

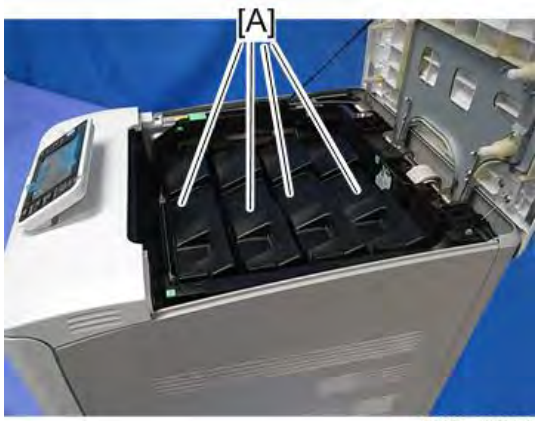
- Align the hole of the arm with the boss on the bracket side when attaching the solenoid.



m112m0068

4.7.6 TONER SUPPLY SOLENOID

1. Remove the upper cover. (***Upper Cover***)
2. Remove the toner unit [A].

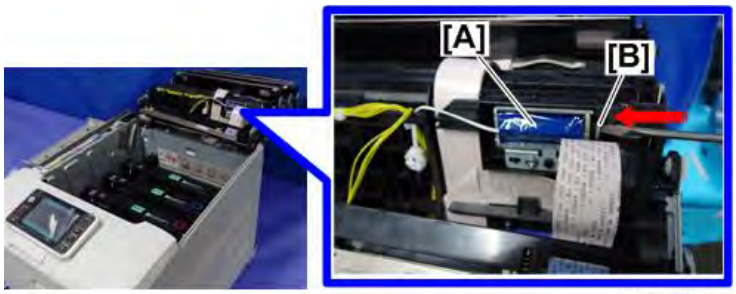


m112m0104

3. Open the upper inner cover [A] 180 degrees.

m111d4401

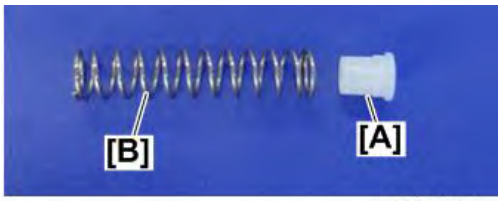
4. Push the plunger [B] as shown below.



m111d4402

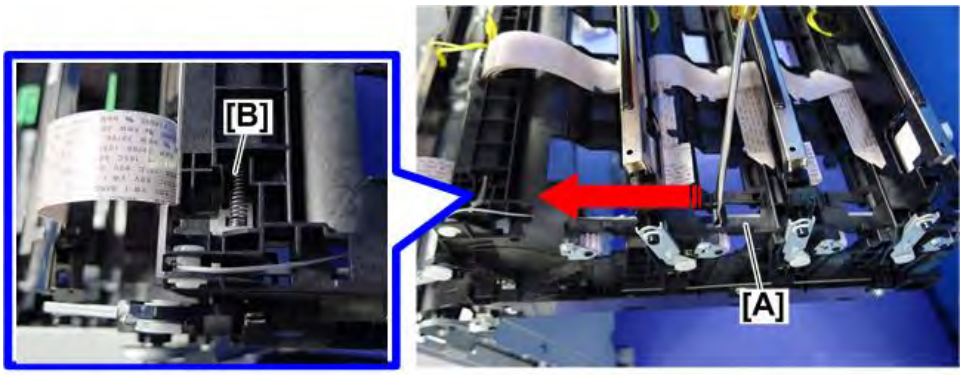
5. Remove the plate [A] and spring [B].

m111d4403



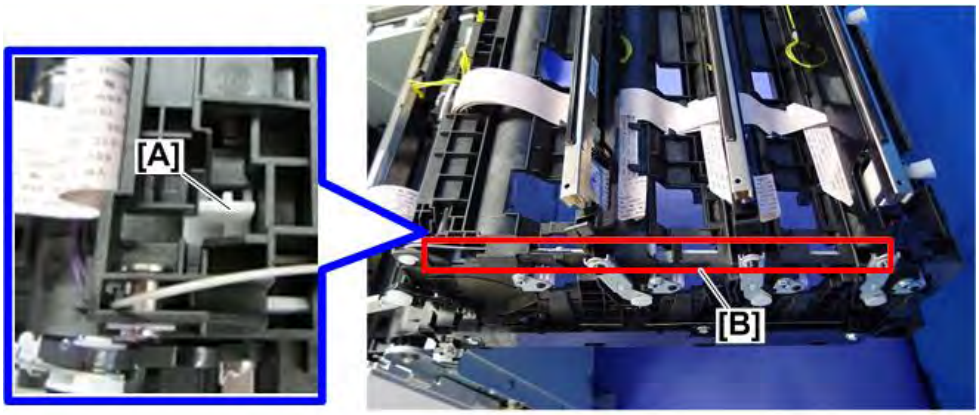
m111d4404

6. Slide the shutter [A] as shown below to remove the spring [B].



m111d4405

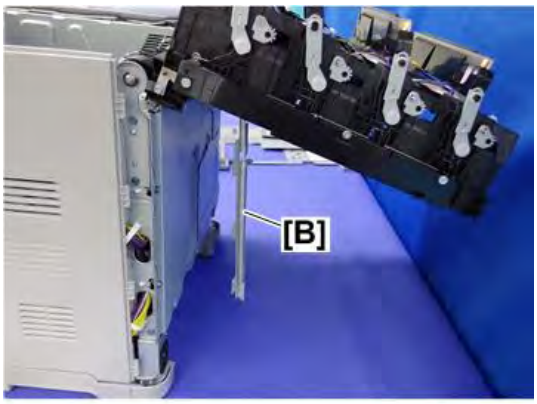
7. Move the bracket [A] towards the inside to remove the shutter [B].



m111d4406

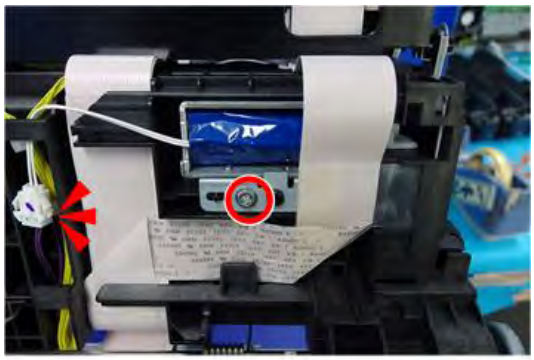
Note

- Let the shutter [B] hang, without taking it off.



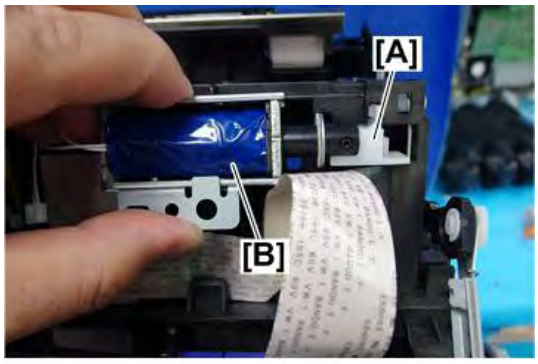
m111d4407

8. Remove the screw and connector (x1, x1).

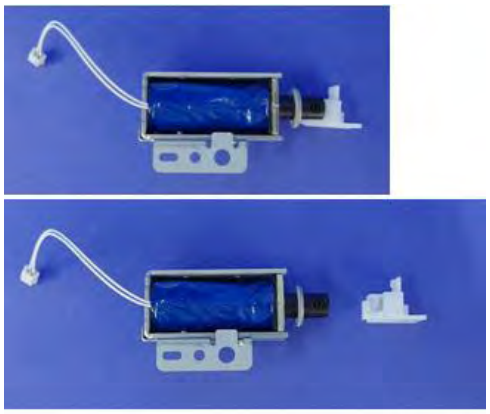


m111d4408

9. Slide the bracket [A] to remove the toner supply solenoid [B].



m111d4409

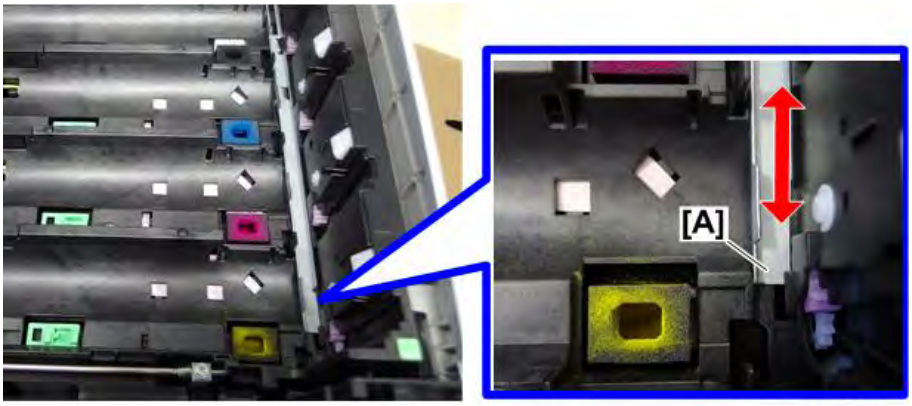


m111d4410

Note

- When you attach the shutter [A], fit it securely on the inner side of the upper inner cover and make sure that it slides properly and is interlocked with the movement of the toner

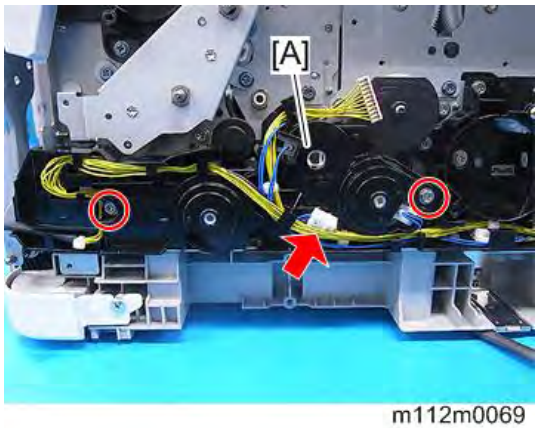
supply solenoid.



m111d4411

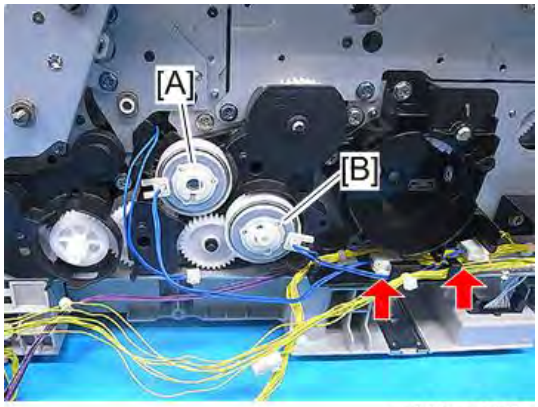
4.7.7 PAPER FEED CLUTCH, ITB CONTACT CLUTCH AND DRIVE GEARS

1. Remove the transfer/transport Motor. (***Transfer/Transport Motor***)
2. Remove the paper size switch. (***Paper Size Switch***)
3. Remove the harness guide [A] (×2).

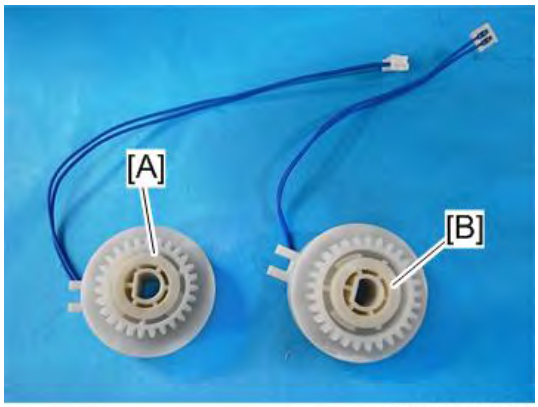


m112m0069

4. Remove the paper feed clutch [A] and ITB (image transfer belt) contact clutch [B] (×2).



m112m0070

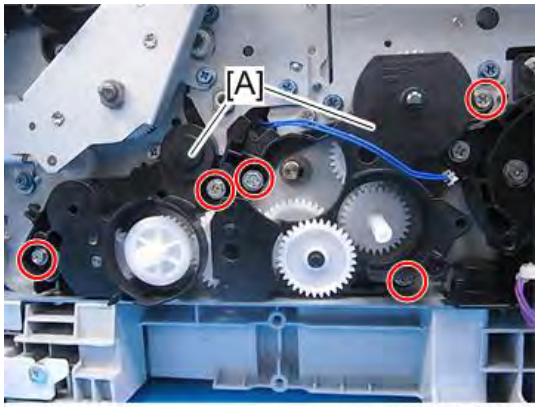


m112m0074

Note

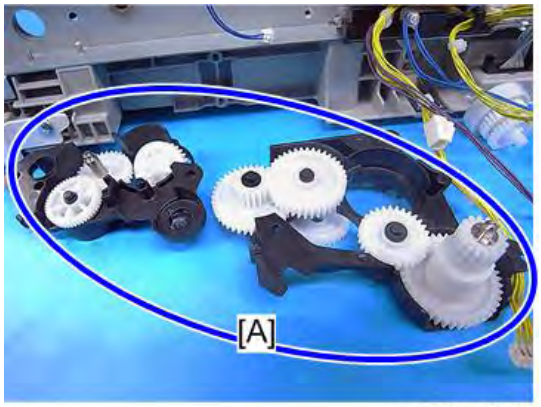
- Paper Feed Clutch: 3-pin
- ITB Contact Clutch: 2-pin

5. Remove the harness guide (inner) [A] (×5).



m112m0071

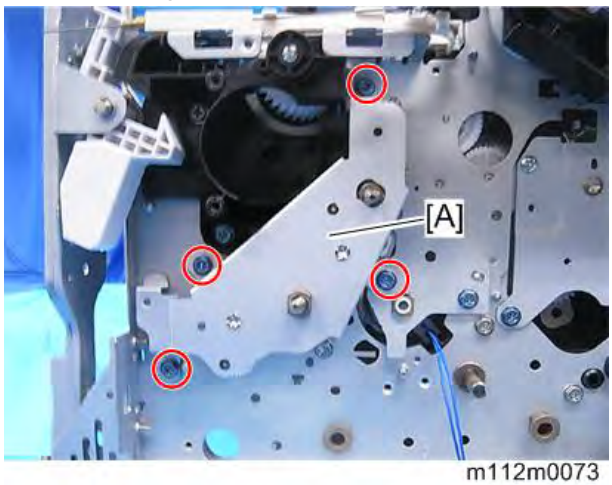
6. Remove the drive gears [A].



m112m0072

4.7.8 REGISTRATION CLUTCH

1. Remove the harness guide. (***Paper Feed Clutch, ITB Contact Clutch and Drive Gears***)
2. Remove the gear cover [A] (×4).



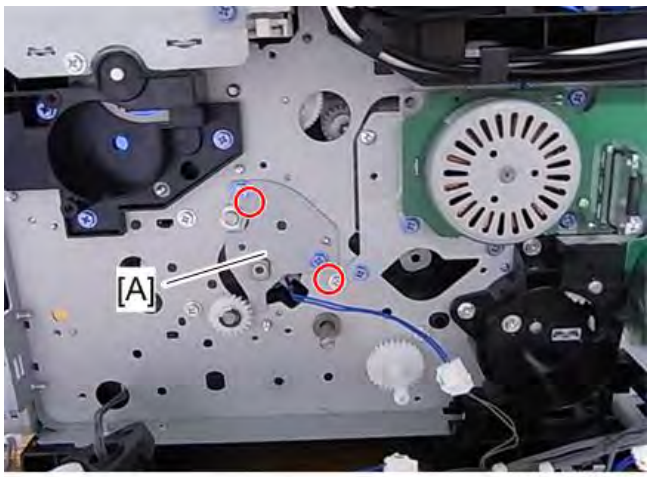
m112m0073

Note

- Refer to the picture below showing the location of each gear.

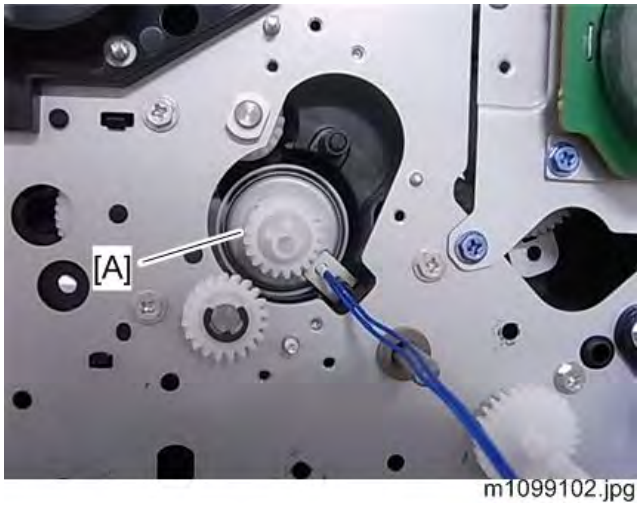
m112m0134

3. Remove the bracket [A] (×2).



m1099101.jpg

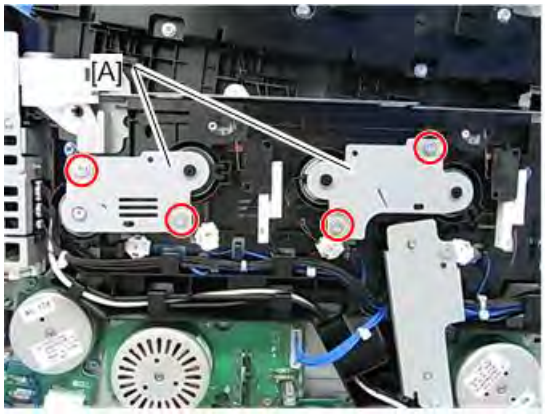
4. Remove the registration clutch [A].



m1099102.jpg

4.7.9 TONER SUPPLY CLUTCH

1. Remove the right cover. (***Right Cover***)
2. Remove the cover brackets [A] (×2 each).

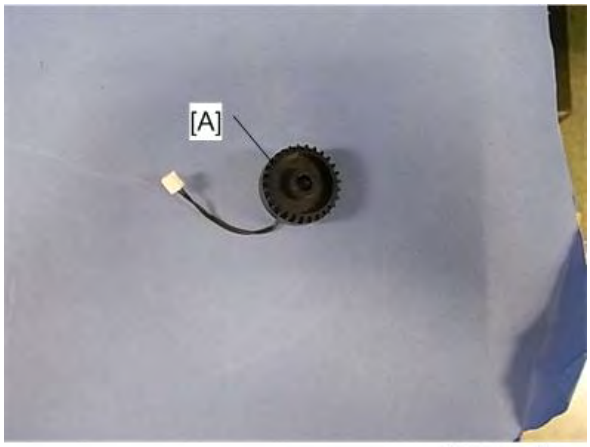


m1099032.jpg

3. Remove the clips and connectors (×1, ×1 each).


m1099033.jpg

4. Remove the toner supply clutch [A].



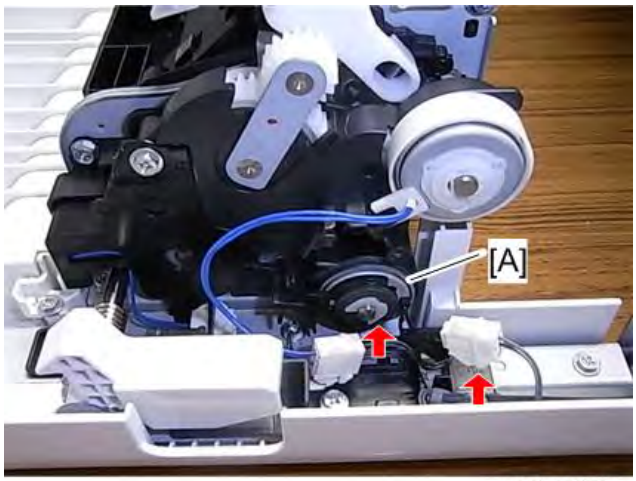
m1099034.jpg

4.7.10 BYPASS FEED CLUTCH

1. Open the front cover.
2. Remove the bracket [A] (x1).

m1099103.jpg

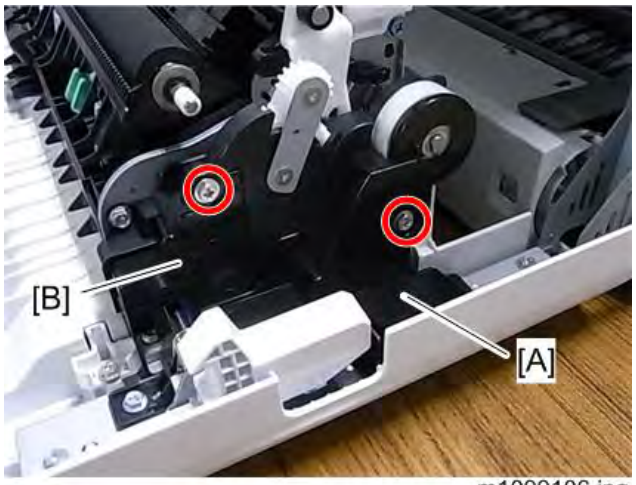
3. Remove the bypass feed clutch [A] (x1, x1).



m1099105.jpg

4.7.11 DUPLEX INTERMEDIATE CLUTCH

1. Open the front cover.
2. Remove the brackets [A] [B] (x2).

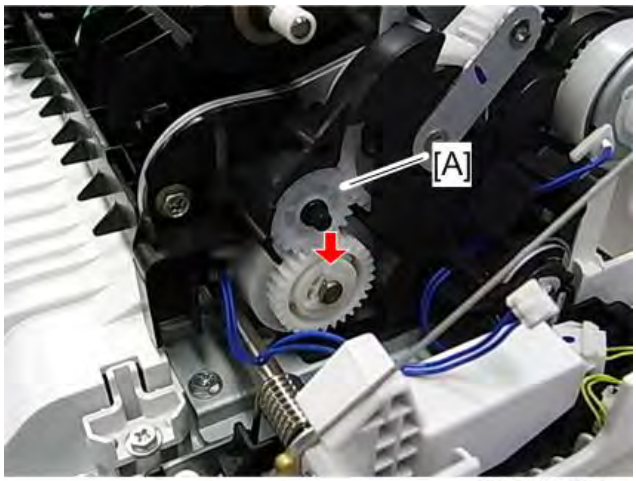


m1099106.jpg

3. Remove the connector (x1).

m1099107.jpg

4. Remove the gear [A] and clip.



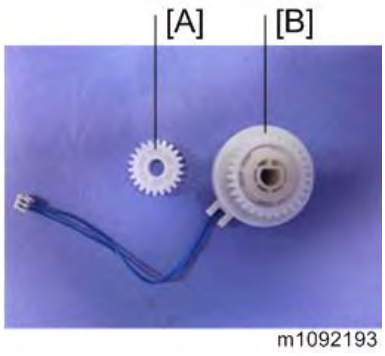
m1099108.jpg

5. Remove the duplex intermediate clutch [A].

m1099109.jpg

Note

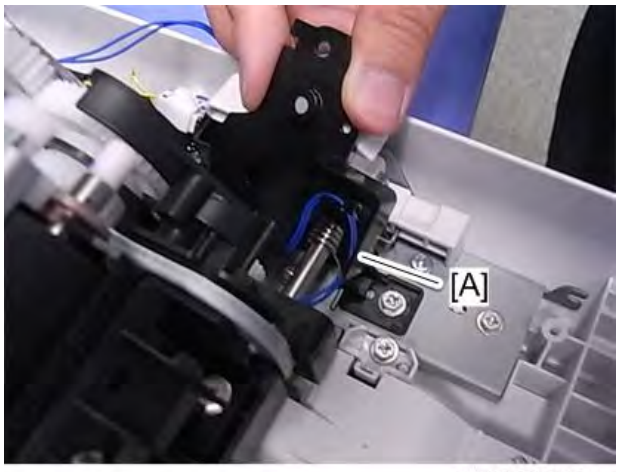
- [A]: Gear (This gear has a round hole.)
- [B]: Duplex intermediate clutch



m1092193

Note

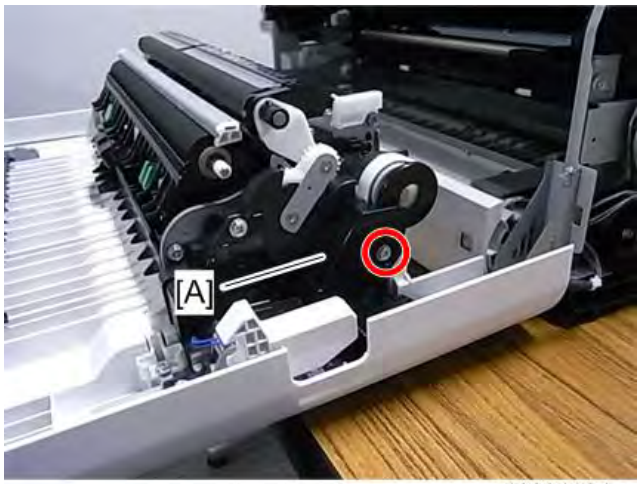
- Make sure that the harness [A] is installed as shown above when reinstalling the duplex intermediate clutch.



M1099184.jpg

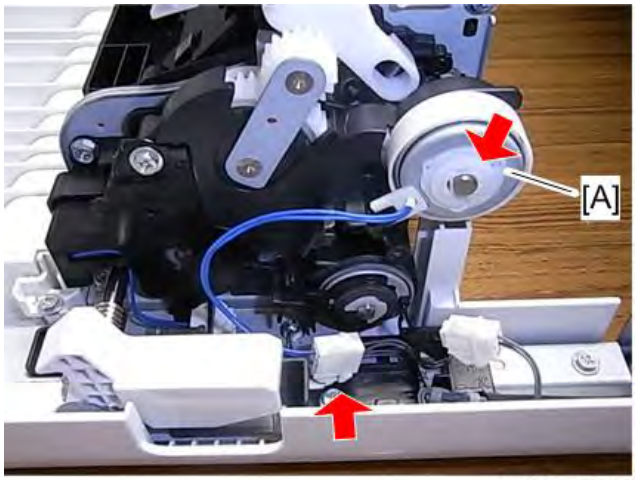
4.7.12 DUPLEX PAPER EXIT CLUTCH

1. Open the front cover.
2. Remove the bracket [A] (x1).



m1099103.jpg

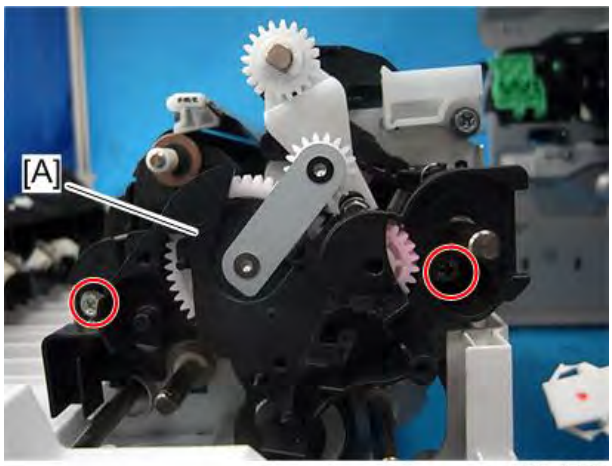
3. Remove the duplex paper exit clutch [A] (x1, x1).



m112m0037

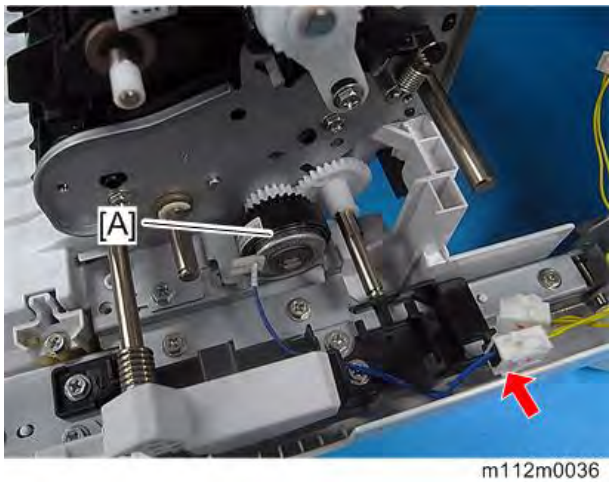
4.7.13 BYPASS BOTTOM PLATE CLUTCH

1. Remove the bypass feed clutch. (***Bypass Feed Clutch***)
2. Remove the Duplex intermediate clutch. (***Duplex Intermediate Clutch***)
3. Remove the Duplex paper exit clutch. (***Duplex Paper Exit Clutch***)
4. Remove the gear unit [A] (×2).



m112m0035

5. Remove the bypass bottom plate clutch [A] (×1).



m112m0036

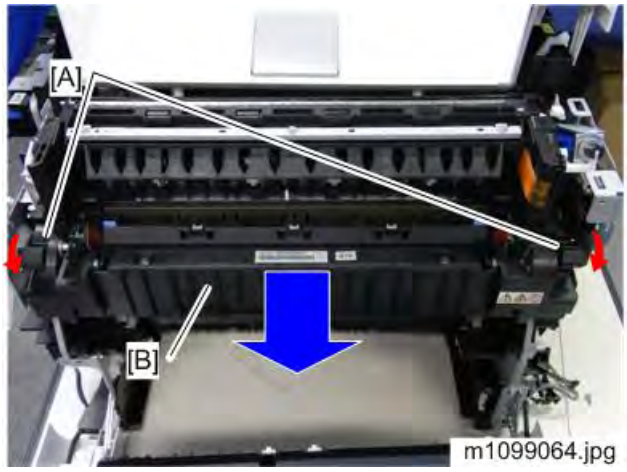
4.8 FUSING

⚠CAUTION

- Make sure that the fusing unit is cool before you touch it. The fusing unit can be very hot. Make sure to restore the insulators, shields, etc. after you service the fusing unit.

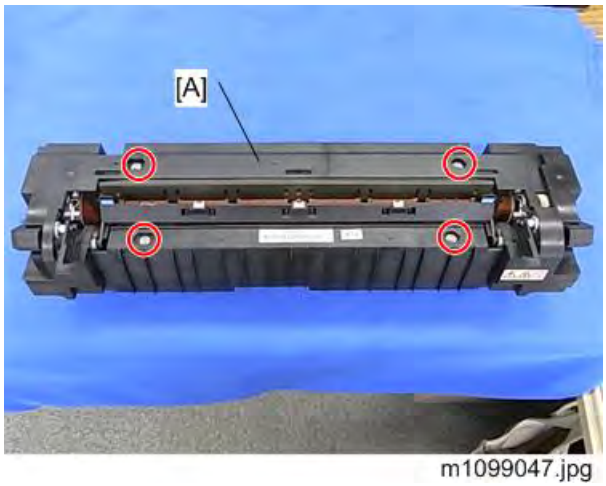
4.8.1 FUSING UNIT

1. Open the front cover.
2. Hold the fusing unit lock levers [A] while pulling out the fusing unit.
3. Remove the fusing unit [B].

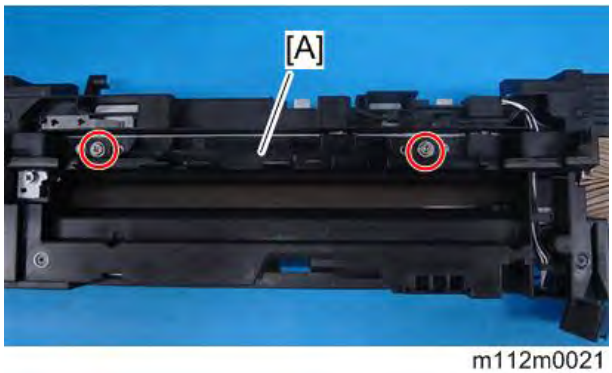


4.8.2 THERMISTOR

1. Remove the fusing unit. (***Fusing Unit***)
2. Remove the fusing upper cover [A] (×4).

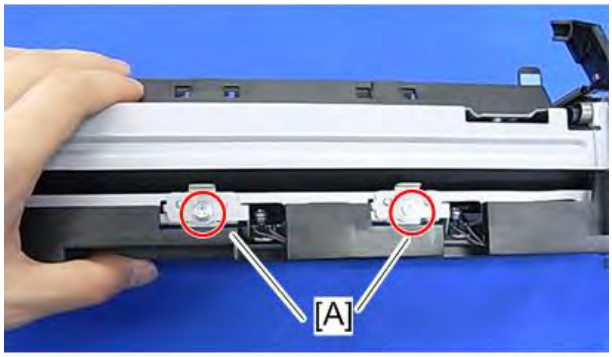


3. Remove the fusing entrance guide [A] (×2).



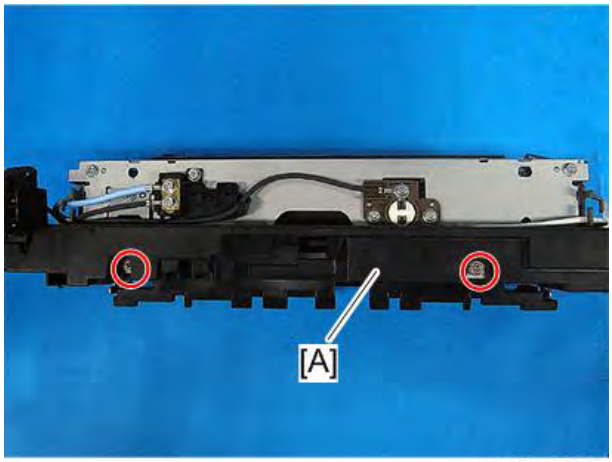
m112m0021

4. Remove the thermistor bracket [A] (×2).

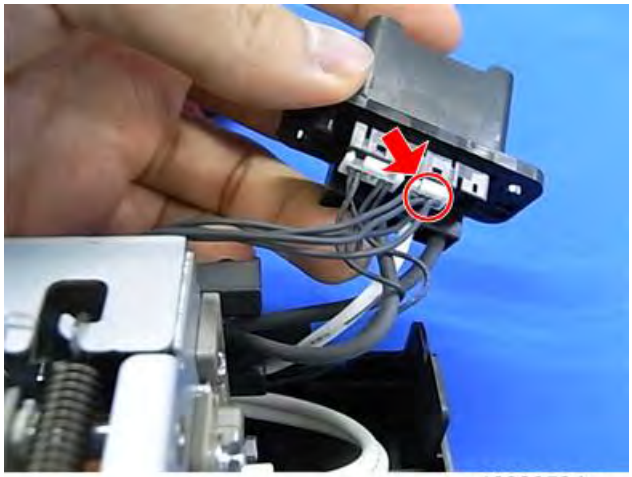


m112m0022

5. Remove the fusing lower cover [A] (×2, ×1).



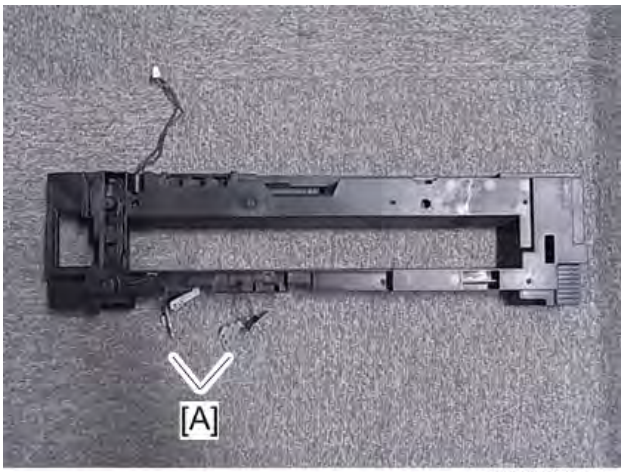
m112m0023



m1099059.jpg

Note

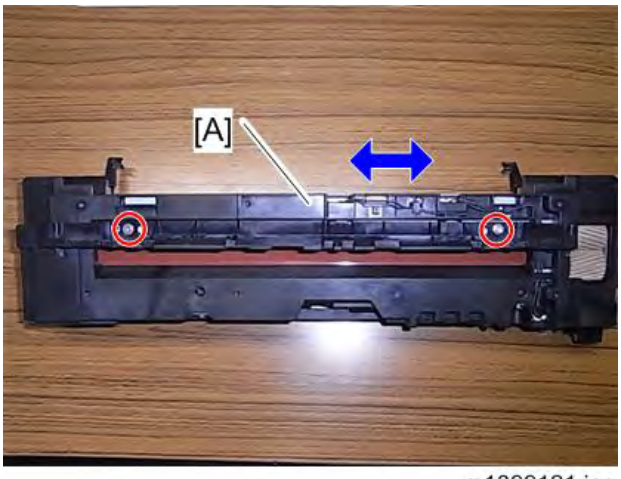
- Put the fusing lower cover as shown above in order to prevent damaging the thermistor [A].



m1099120.jpg

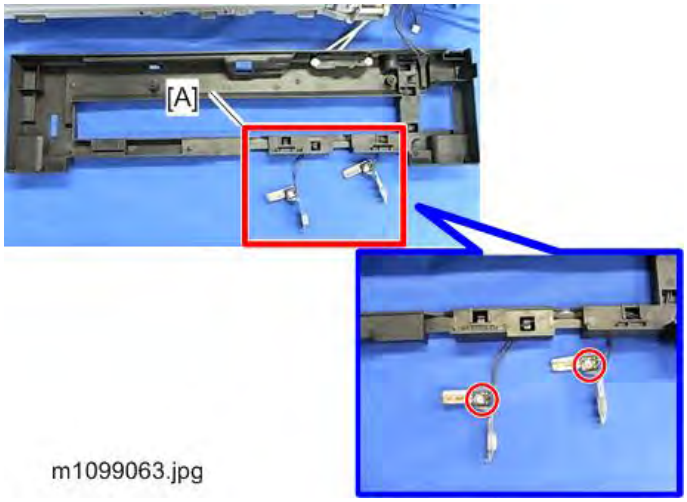
Note

- The guide [A] of the fusing lower cover can be adjusted to right and left by removing the two screws.



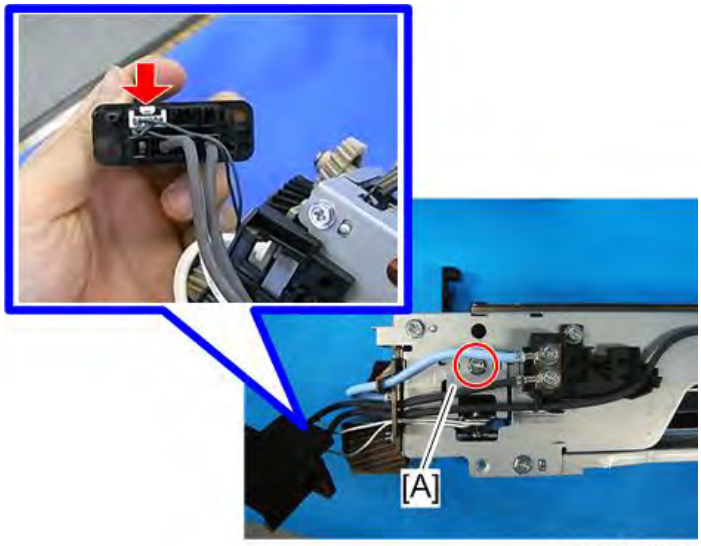
m1099121.jpg

6. Remove the thermistor ×2 [A] (×1 each).



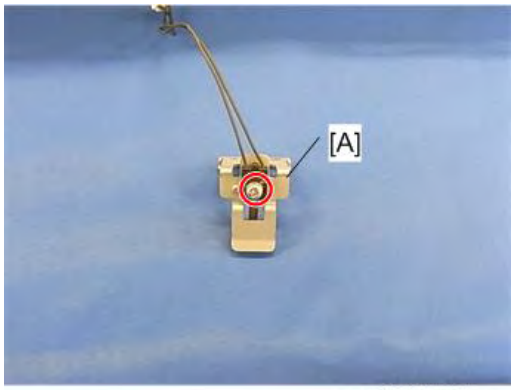
m1099063.jpg

7. Remove the thermistor bracket [A] (×1, ×1).



m112m0024

8. Remove the thermistor [A] (×1).



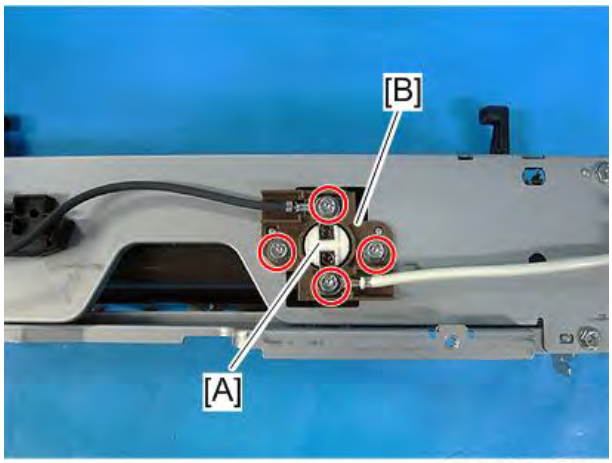
m1099050.jpg

4.8.3 THERMOSTAT

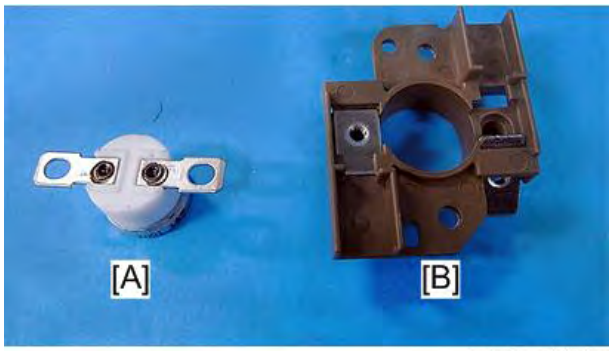
Important

- If a thermostat has been triggered, be sure to change it.

1. Remove the fusing unit (***Fusing Unit***).
2. Remove the fusing upper cover (***Thermistor***).
3. Remove the fusing lower cover (***Thermistor***).
4. Remove the thermostat (left) [A] (×2).
5. Remove the thermostat [A] and Thermostat bracket [B] (×4).



m112m0025

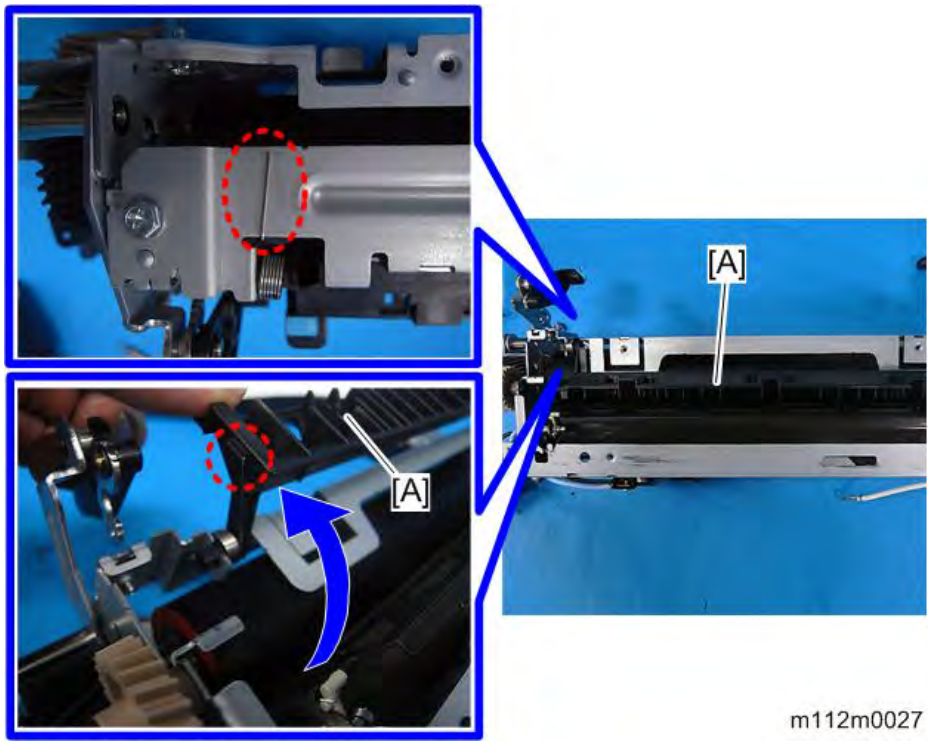


m112m0026

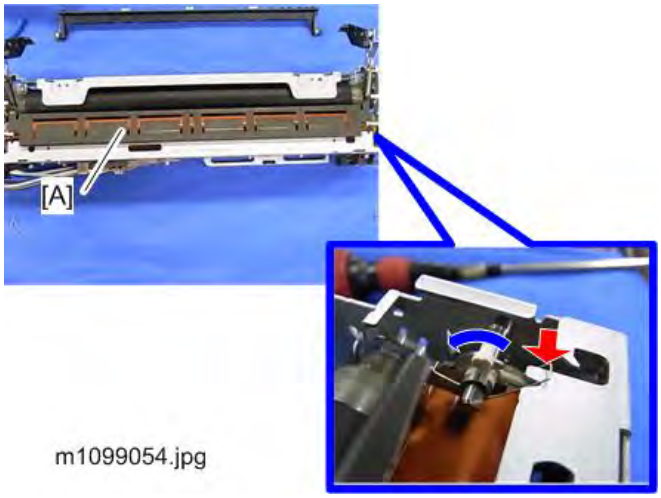
4.8.4 FUSING BELT UNIT

1. Remove the fusing unit. (***Fusing Unit***)
2. Remove the fusing upper cover. (***Thermistor***)
3. Remove the fusing lower cover. (***Thermistor***)
4. Remove the spring [A] (×2).

5. Remove the guide [A] (×1).



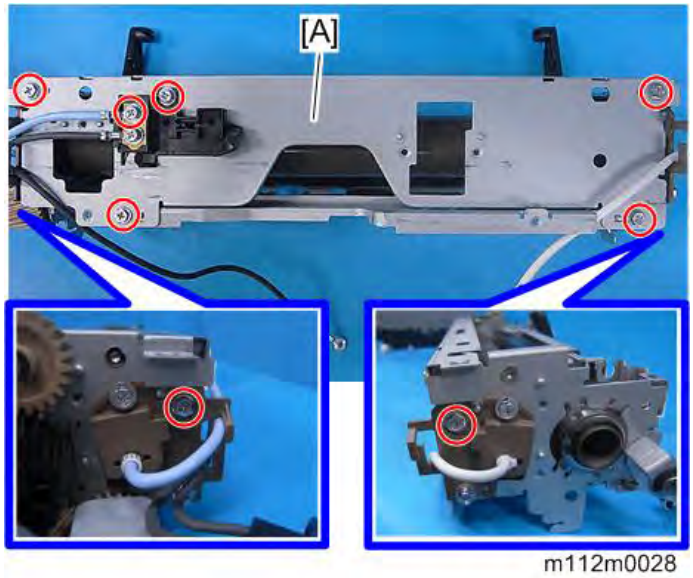
6. Remove the guide plate [A] (spring ×2, hook ×2).



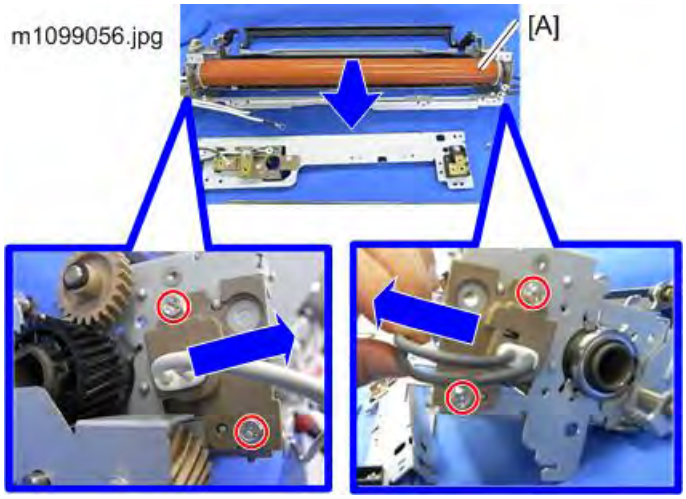
Note

- Push the lever backward as shown by the blue arrow in the picture above. Then pay attention to the shape (D-shape) of the joints in order to pull the guide plate off the axis smoothly.

7. Remove the bracket [A] (×8).

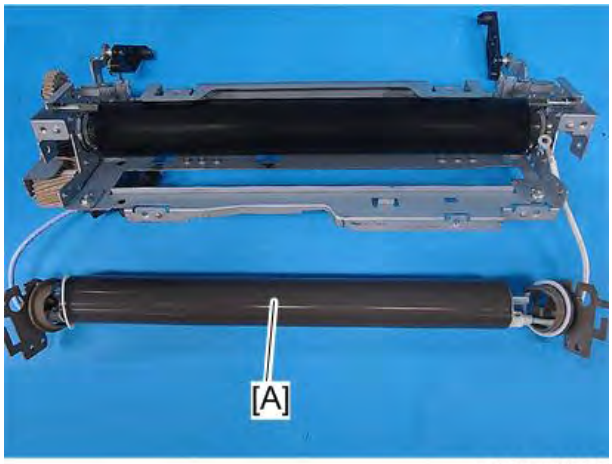


8. Remove the fusing belt unit [A] (× 4).



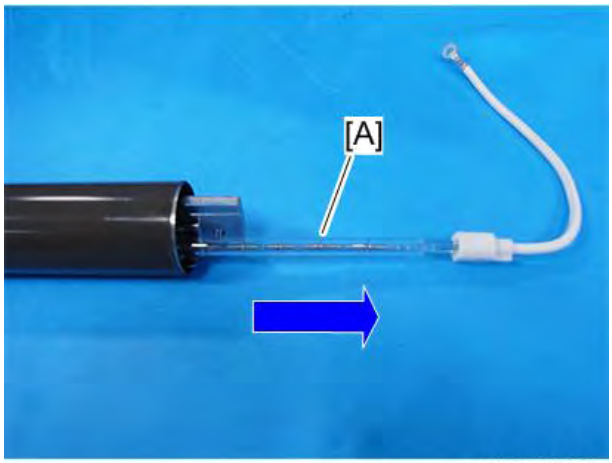
Note

- To detach easily, move the ends of the fusing belt unit sideways to release the hold. Then try to pull it out.



4.8.5 FUSING LAMP

1. Remove the fusing belt unit. (***Fusing Belt Unit***)
2. Pull out the fusing lamp [A] from the belt assembly.

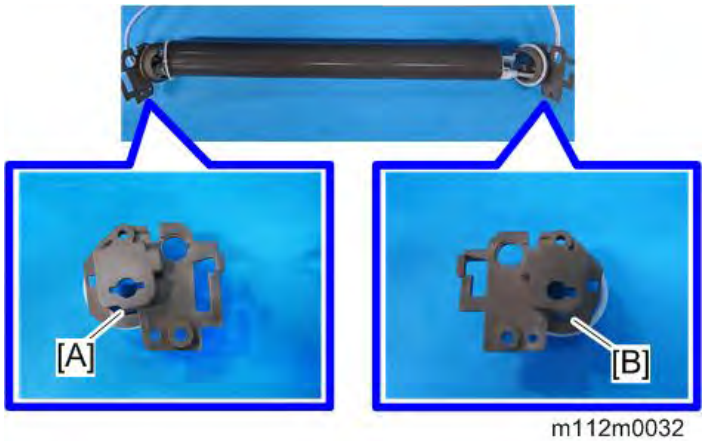


m112m0030

m112m0031

Note

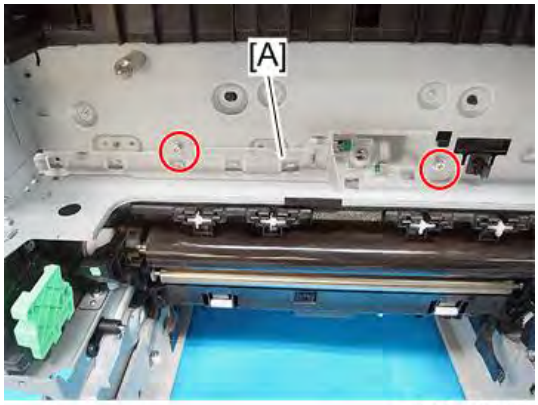
- When you reassemble, pay attention to the shape (bracket [A] and [B]) as shown in the picture below.



m112m0032

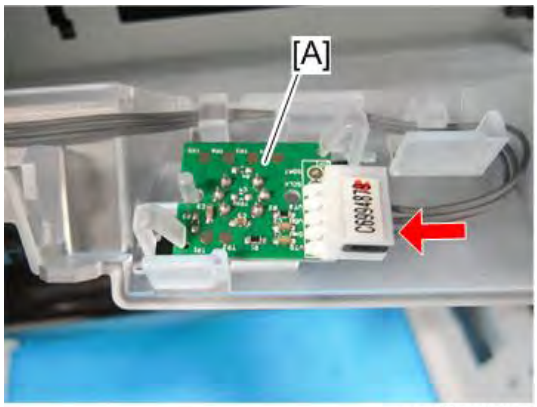
4.8.6 THERMOPILE (WITH BRACKET)

1. Remove the fusing unit. (***Fusing Unit***)
2. Remove the thermopile bracket (Holder) [A] (×2).



m112m0145

3. Remove the thermopile with its holder [A] (×1).



m112m0144

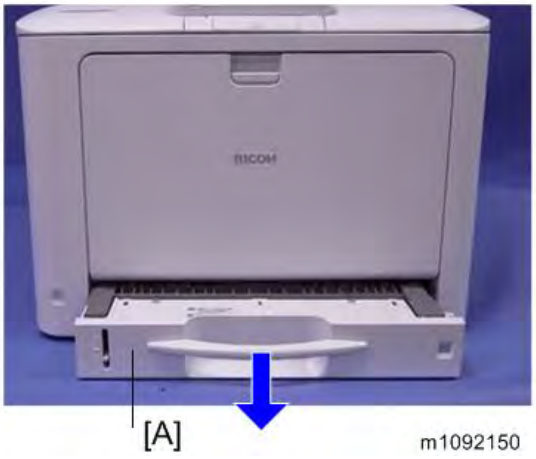
Important

- Do not remove the Thermopile [A] from the bracket (Holder). Otherwise, the hooks of the bracket (holder) will be damaged.

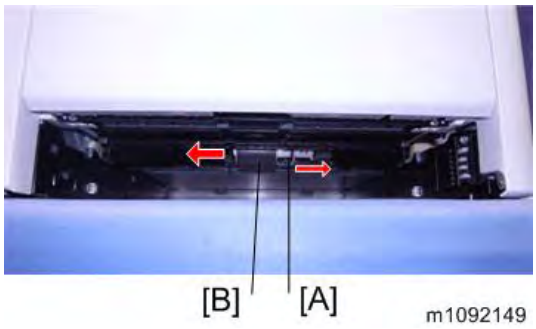
4.9 PAPER FEED

4.9.1 PAPER FEED ROLLER

1. Pull out the Standard paper tray [A].

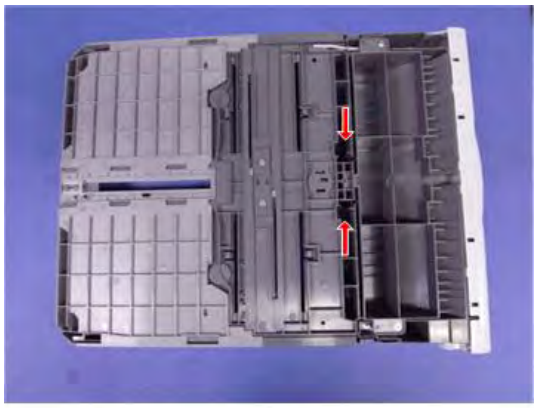


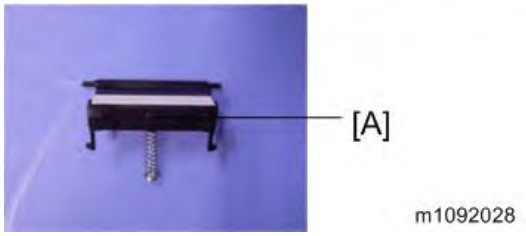
2. **Slide the Paper feed shaft [A] to the right side, and then slide the Paper feed roller [B] to the left side,** and remove it.



4.9.2 FRICTION PAD

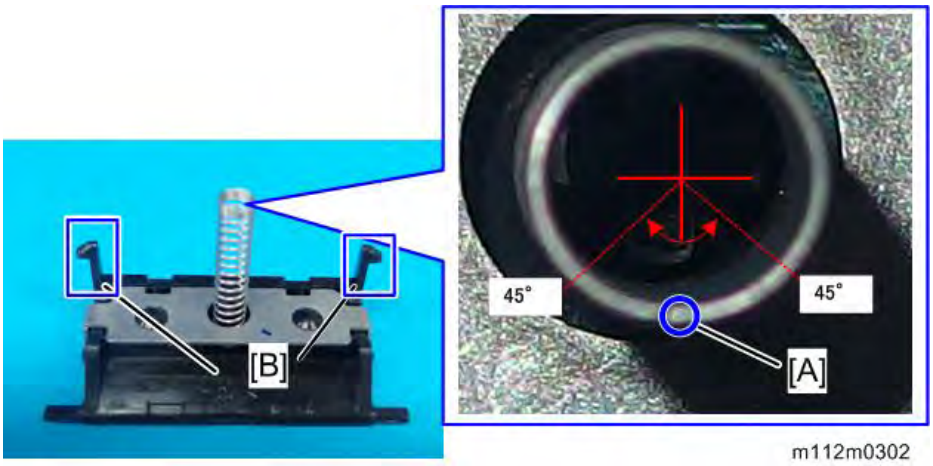
1. Remove the Paper tray unit from the machine before removing the Friction pad.
2. Remove the friction pad [A] (hook×2).





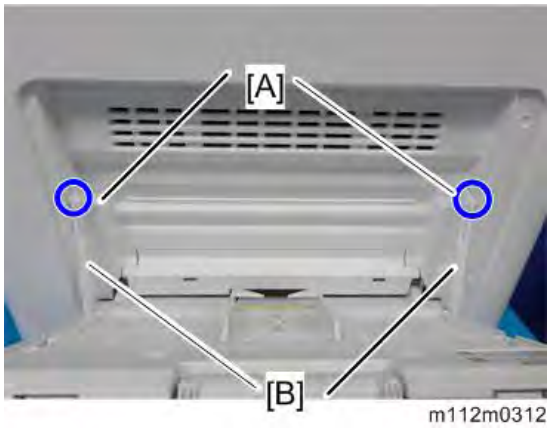
Note

- When installing the friction pad, turn the upper end of the spring [A] toward the opposite of the side where the end hooks [B] are mounted, and place it within 45° to the right and left respectively from the center of the spring, because separation pressure for paper feed is weakened depending on the direction of the spring.

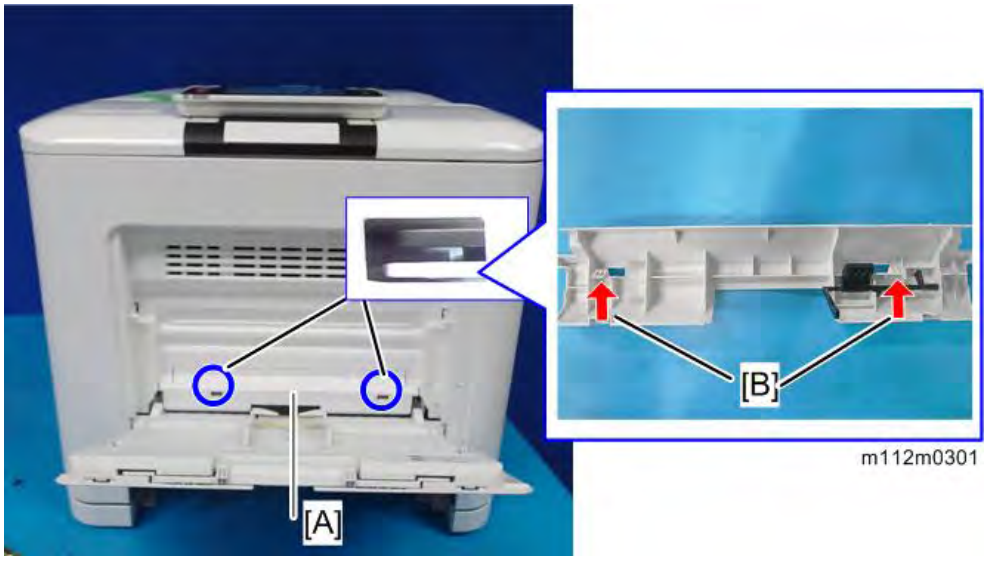


4.9.3 BYPASS TRAY UNIT

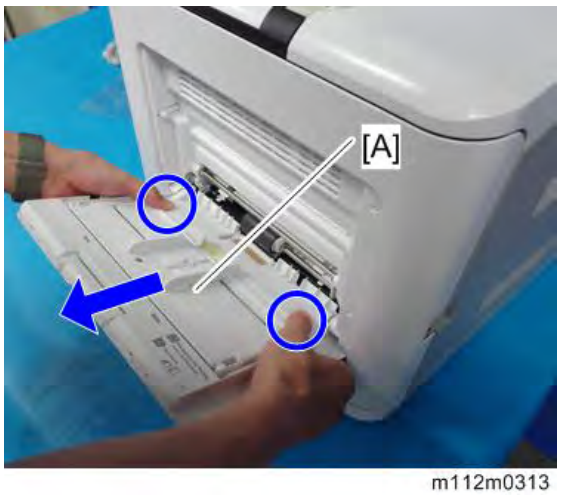
1. Open the bypass tray.
2. Remove the snaps [A] from the Shaft, and then release the shaft [B] (×2).



3. Insert a flat-bladed screwdriver into the holes indicated by blue circles to push the tabs [B] in, and remove the Bypass Feed Roller Cover [A] (hook x2).

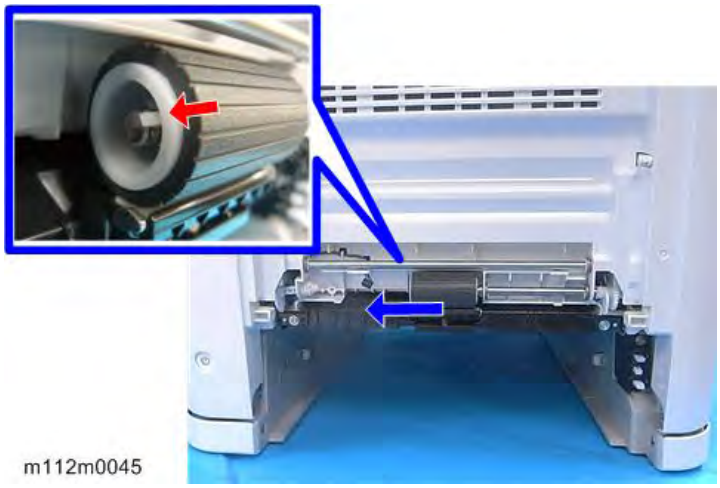


4. While pushing the parts indicated by blue circles, pull out the Bypass Tray Unit [A] towards you.



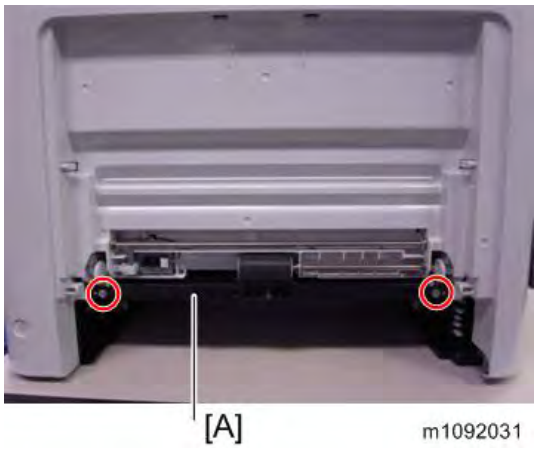
4.9.4 BYPASS FEED ROLLER

1. Remove the bypass tray unit (***Bypass Tray Unit***).
2. Remove the bypass paper end sensor (***Bypass Paper End Sensor***).
3. Remove the bypass feed roller [A] (hook ×1).

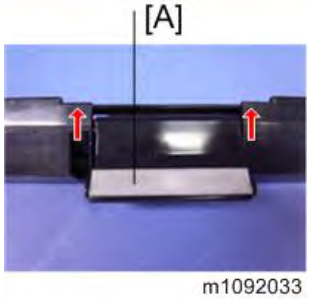


4.9.5 BYPASS FRICTION PAD

1. Remove the bypass feed roller. (***Bypass Feed Roller***)
2. Remove the guide [A] (×2).



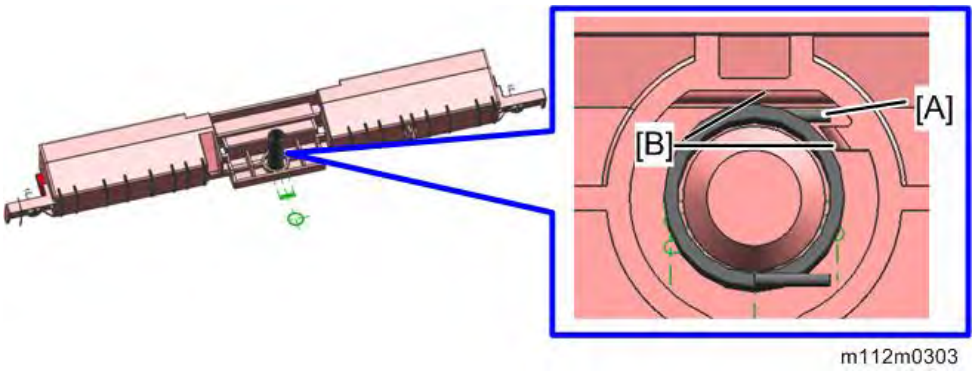
3. Remove the bypass friction pad [A].



Note

- When installing the bypass friction pad, place the lower end of the spring [A] between the ribs [B] on the guide, because separation pressure for bypass paper

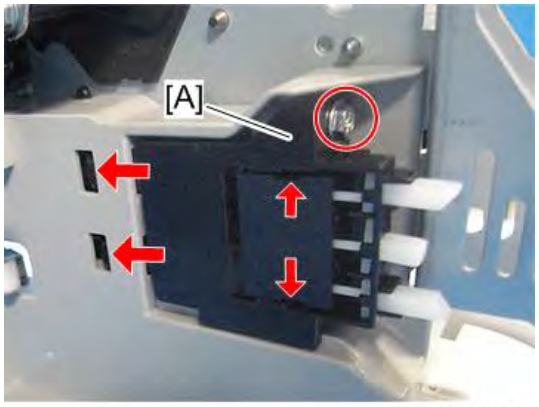
feed is weakened depending on the direction of the spring.



m112m0303

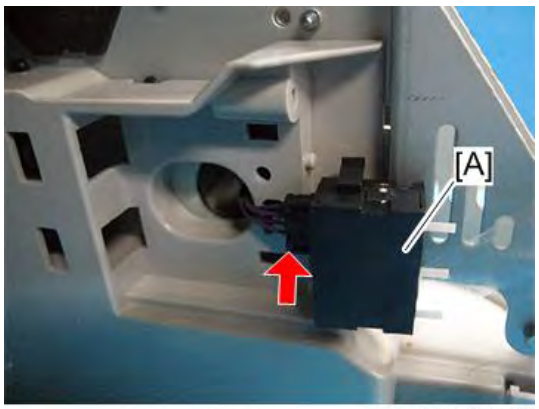
4.9.6 PAPER SIZE SWITCH

1. Remove the standard paper tray. (***Paper Feed Roller***)
2. Remove the paper size switch cover [A] (×1, hook×4).



m112m0055

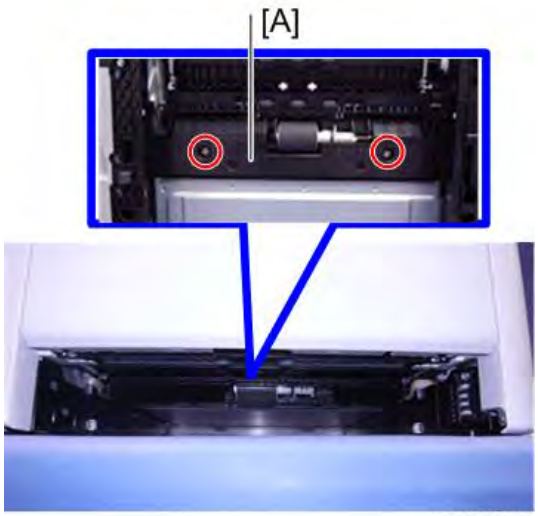
3. Remove the paper size switch [A] (×1).



m112m0056

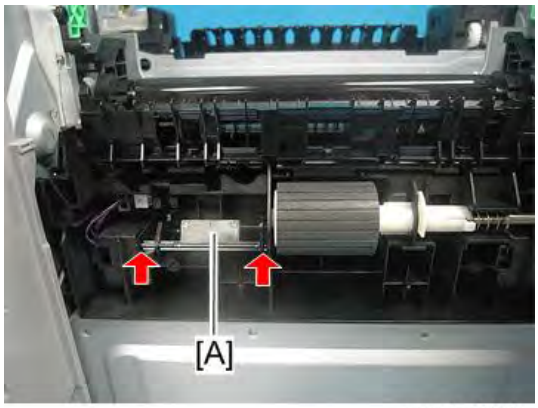
4.9.7 PAPER END SENSOR

1. Remove the standard paper tray. (***Paper Feed Roller***)
2. Remove the sensor cover [A] (×2).



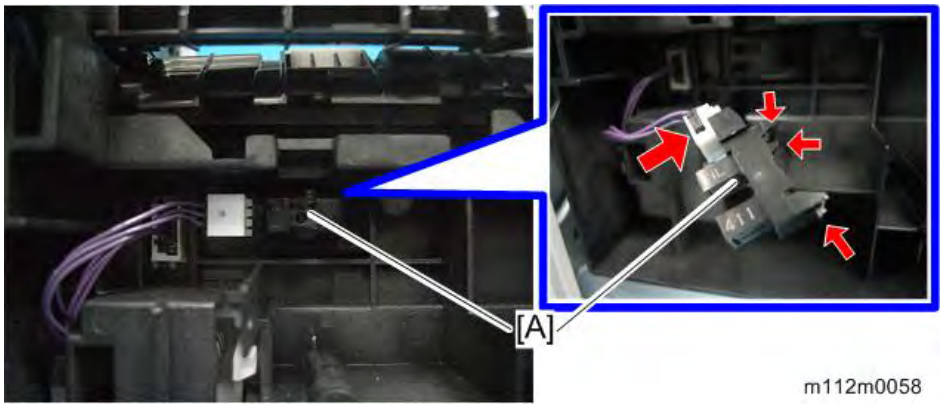
m1092036

3. Remove the feeler [A].



m112m0057

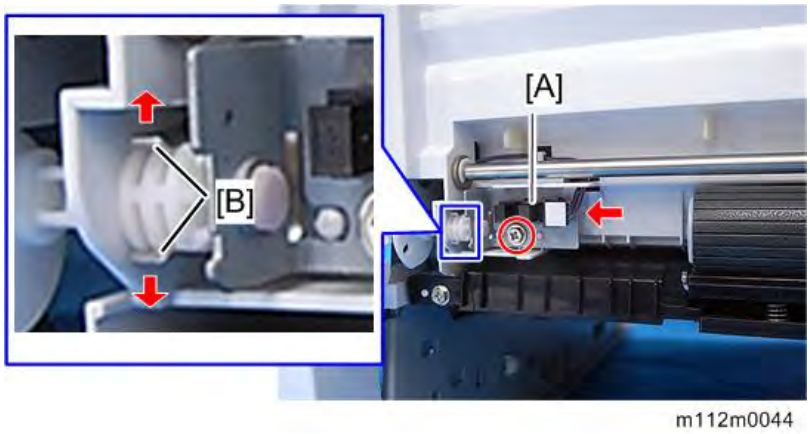
4. Remove the hooks of the paper end sensor [A], and then remove the connector (×1, hook×3).



m112m0058

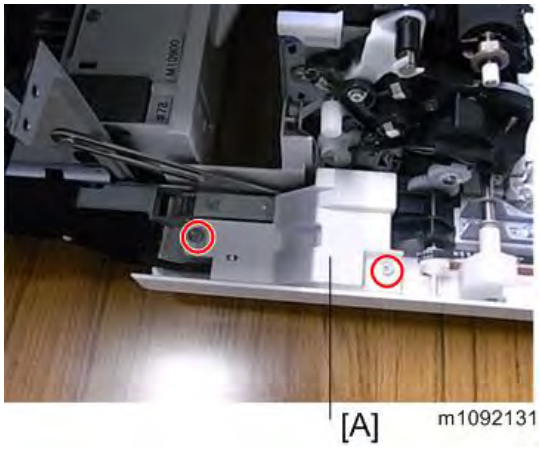
4.9.8 BYPASS PAPER END SENSOR

1. Remove the bypass tray unit. (***Bypass Tray Unit***)
2. Release the two leaf springs [B], and then remove the bypass paper end sensor [A] (×1, ×1).

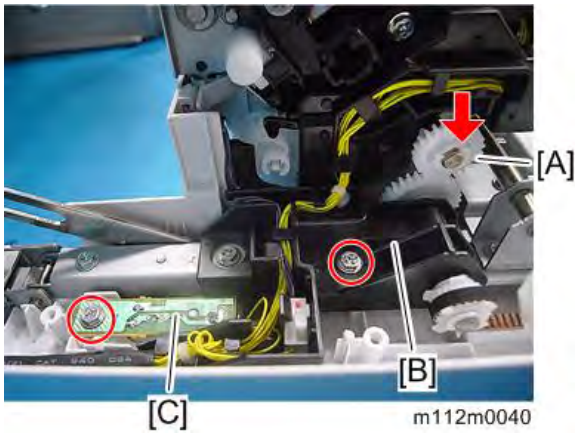


4.9.9 BYPASS BOTTOM PLATE HOME POSITION SENSOR

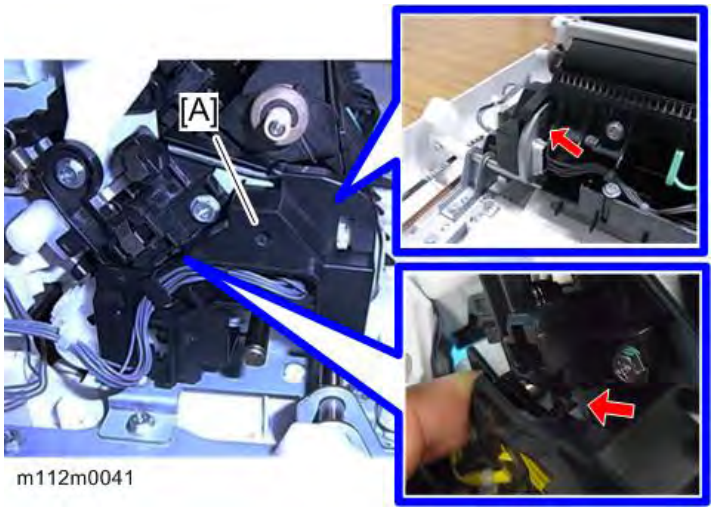
1. Open the Front cover.
2. Remove the cover [A] (×2).



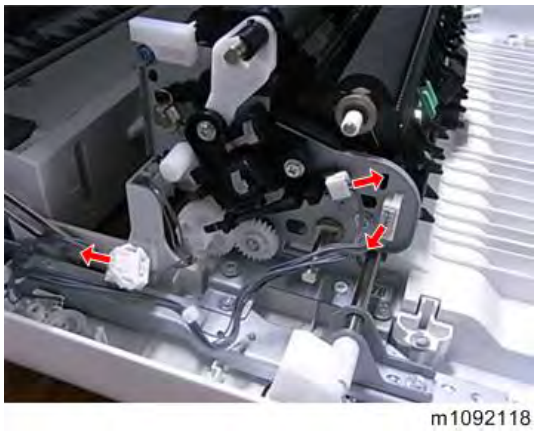
3. Remove the gear [A], and then remove the harness guide [B] and the power switch [C] (×2, ×1).



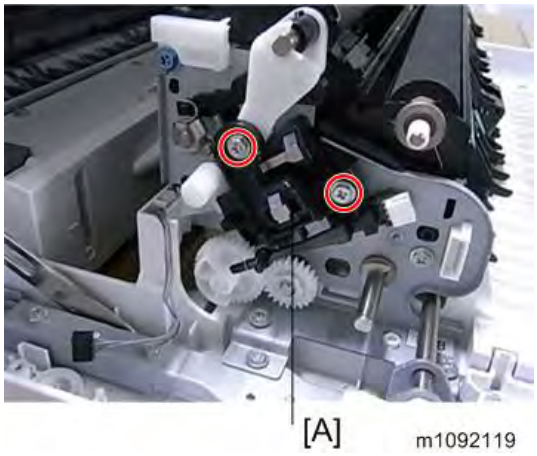
4. Remove the harness guide [A] (hook×2).



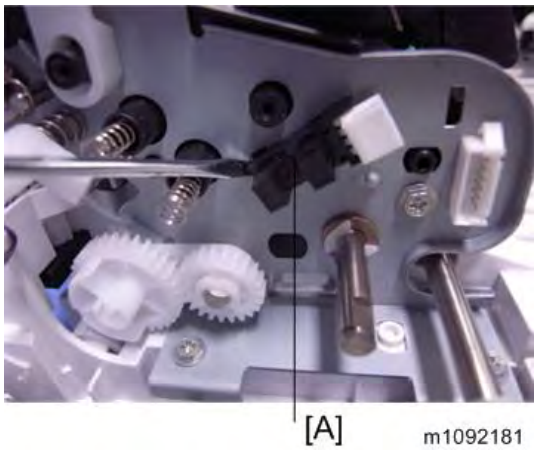
5. Remove the connectors (×3).



6. Remove the ground plate [A] (×2).



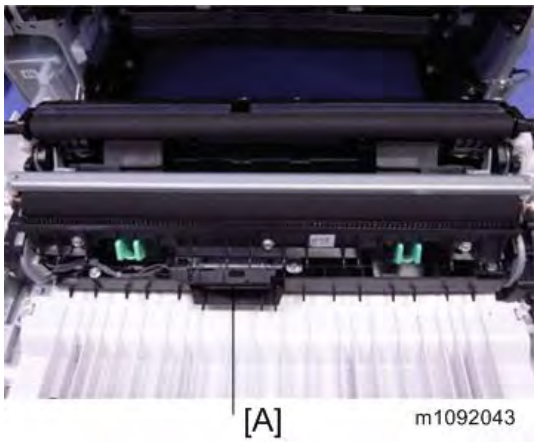
7. Insert a flat-blade screwdriver into the outside of the bypass bottom plate Home position sensor [A], and then pull out.



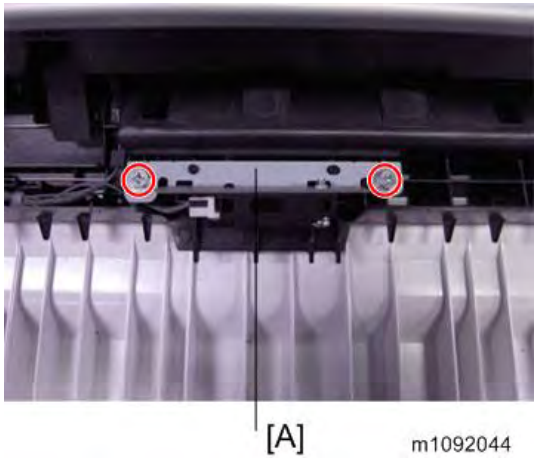
4.10 PAPER TRANSPORT

4.10.1 FUSING ENTRANCE SENSOR

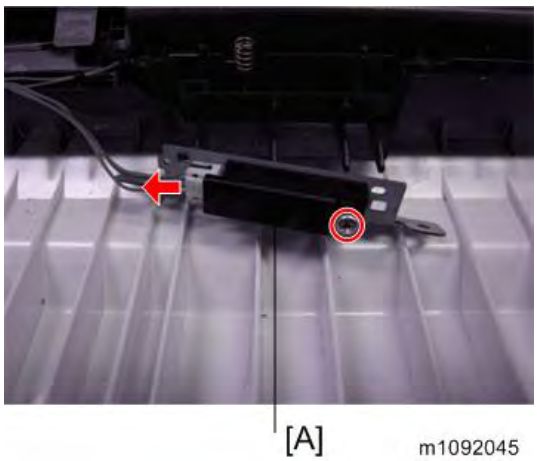
1. Open the front cover.
2. Remove the sensor cover [A] (hook×2).



3. Remove the sensor unit [A] (×2).

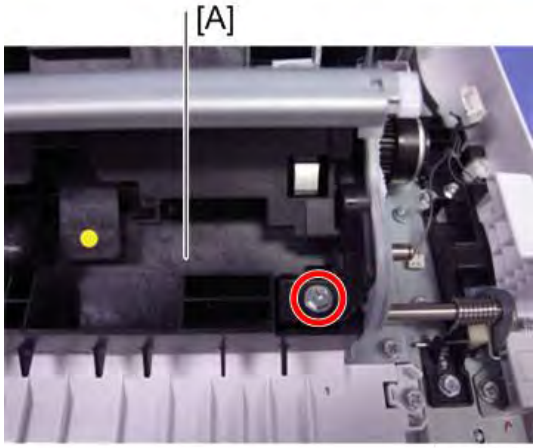


4. Remove the fusing entrance sensor [A] (×1,×1).



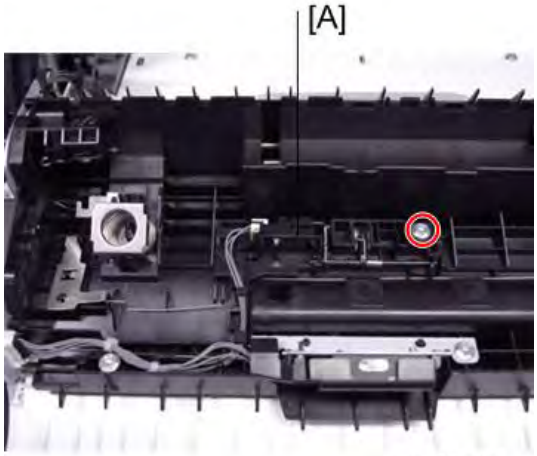
4.10.2 DUPLEX SENSOR

1. Open the front cover.
2. Remove the transfer roller. (***Transfer Roller***)
3. Remove the roller upper cover [A] (×1).



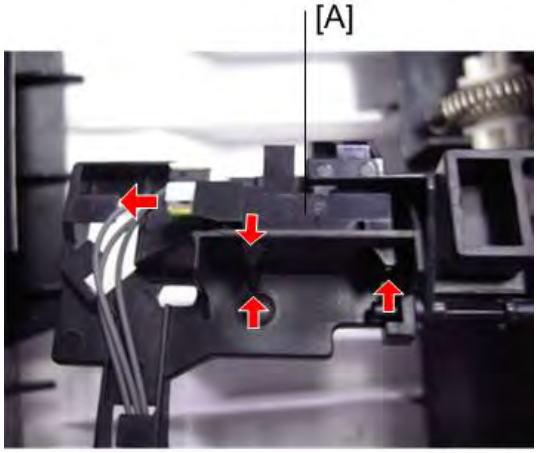
m1092063

4. Remove the sensor unit [A] (×1).



m1092064

5. Remove the duplex sensor [A] (×1, hook×3).



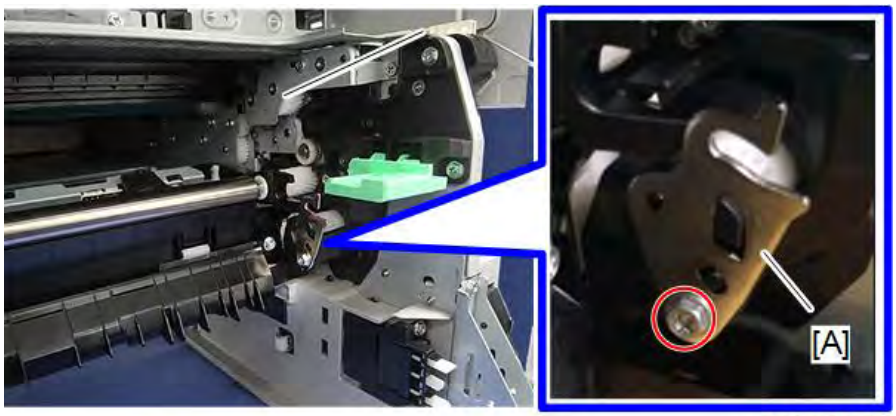
m112m0122

4.10.3 REGISTRATION SENSOR

1. Remove the paper feed tray. (***Paper Feed Roller***)
2. Open the front cover.
3. Remove the transport guide (front) [A] (×2).

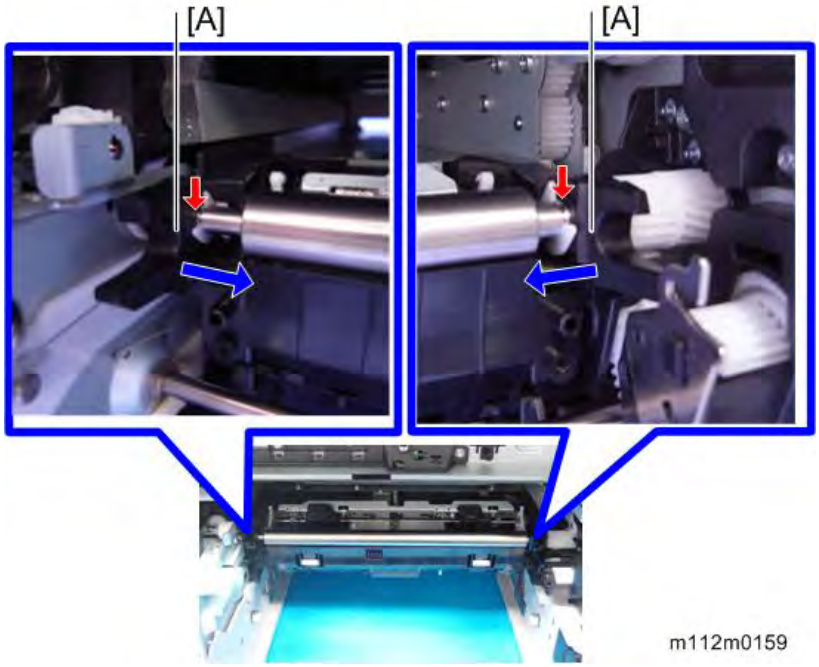
m112m0080

4. Remove the plate [A] (×1).



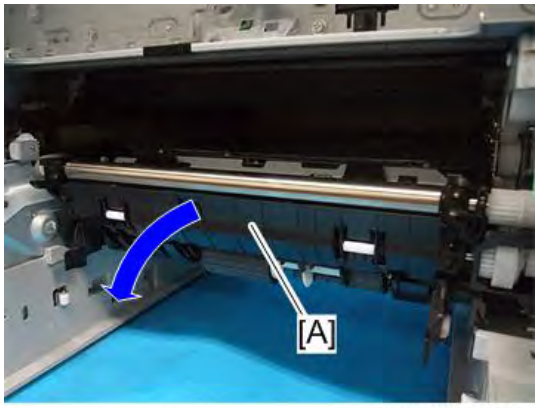
m112m0158

5. Slide the registration position stopper inside (left/right) [A] (×2).



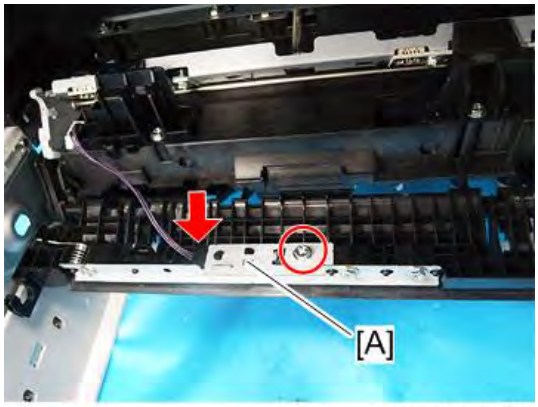
m112m0159

6. Pull out the transport guide (upper) [A].

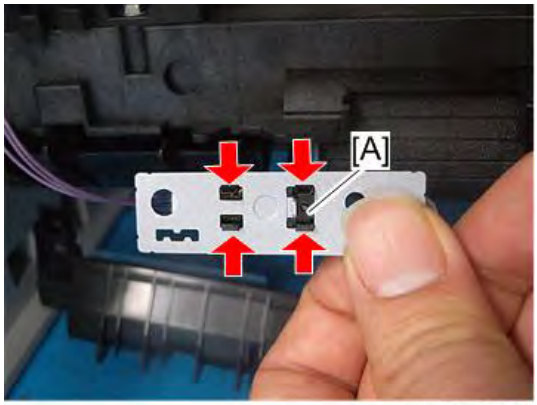


m112m0127a

7. Remove the registration sensor [A] (×1, ×1, hook ×4).



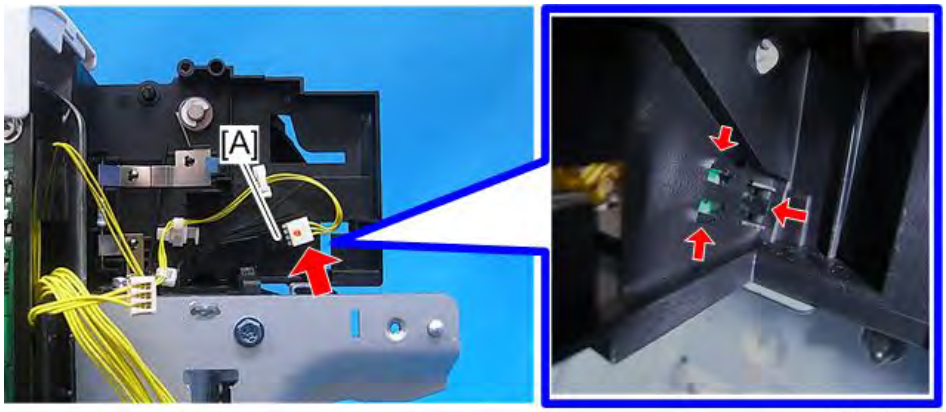
m112m0128



m112m0129

4.10.4 PAPER EXIT SENSOR

1. Remove the fusing fan. (***Fusing Fan Motor***)
2. Remove the paper exit sensor [A] (×1, hook×3).



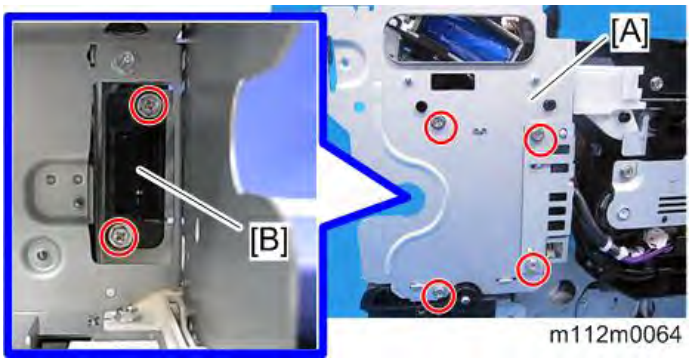
m112m0083

4.10.5 PAPER EXIT FULL SENSOR

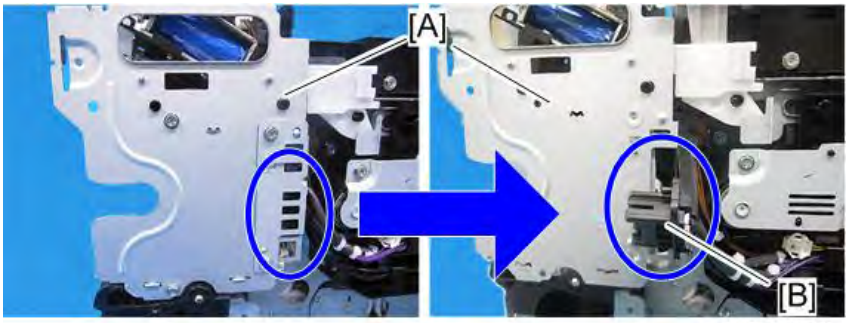
1. Remove the right cover. (***Right Cover***)
2. Remove the paper exit cover. (***Paper Exit Cover (with Operation Panel)***)
3. Remove the fusing unit. (***Fusing Unit***)
4. Remove the metal bracket [A] (×6).

Note

- For the drawer connector of the fusing unit, washer screws are used.
- After removing the screws, turn the connector [B] outward.

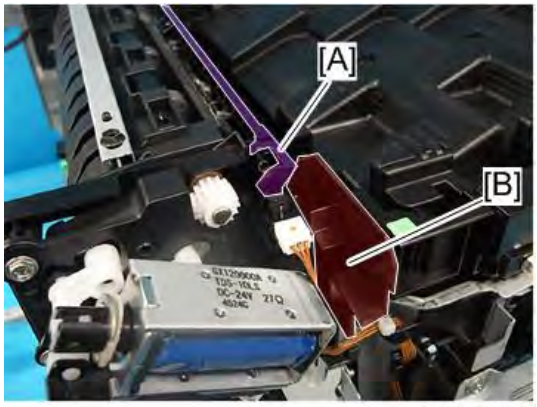


m112m0064



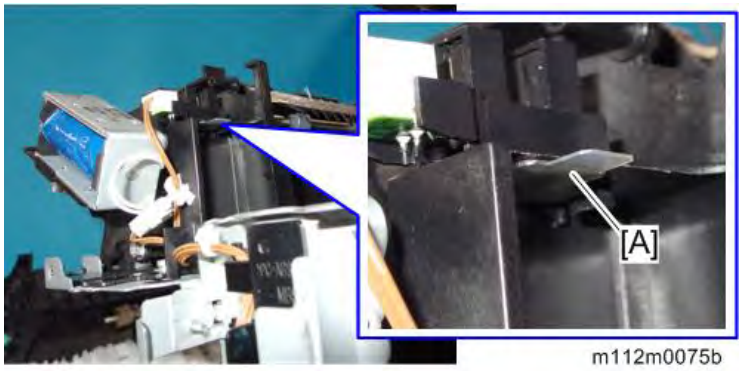
m112m0065

5. Remove the actuator [A] and partition plate [B].



m112m0075

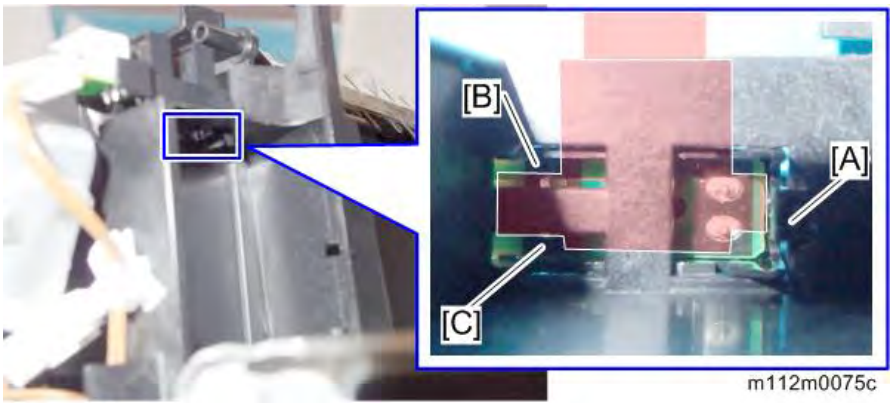
6. Remove the Mylar plate [A] attached under the sensor.



m112m0075b

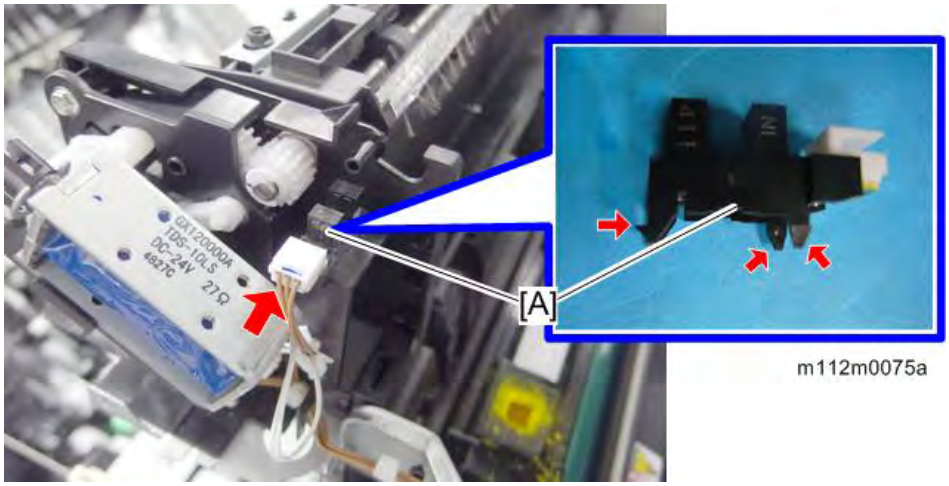
Note

- Do not discard the removed mylar plate because it will be reused when the sensor is installed.
- When reattaching the plate, fit its shape to the space within 3 tabs of the sensor.



m112m0075c

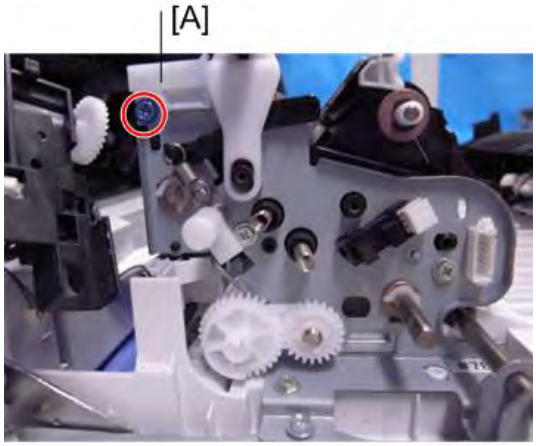
7. Remove the paper exit full sensor [A] (×1, hook ×3).



m112m0075a

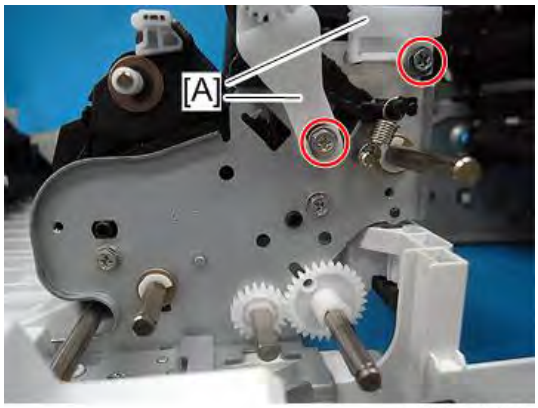
4.10.6 REGISTRATION ROLLER (DRIVE)

1. Remove the right and left gear covers. (*Front Cover Unit*)
2. Remove the roller left slide rail [A] (×1).



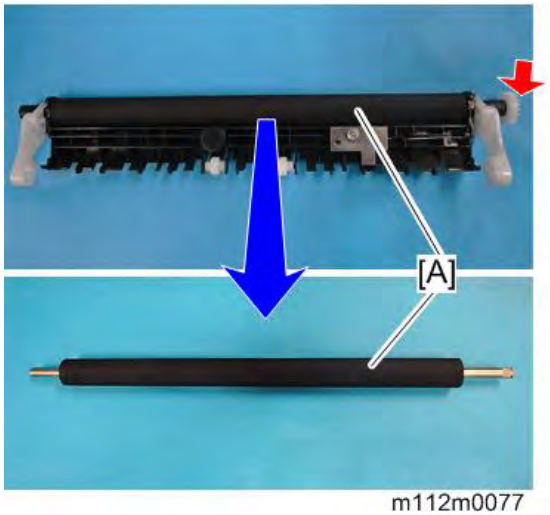
m1092052

3. Remove the roller right slide rail and bearing [A] (×2).



m112m0076

4. Remove the registration roller (Drive) [A] (×1).



m112m0077

4.10.7 REGISTRATION ROLLER (DRIVEN)

1. Remove the image transfer belt unit. (***Image Transfer Belt Unit***)
2. Remove the transport guide (front) [A] (×2).

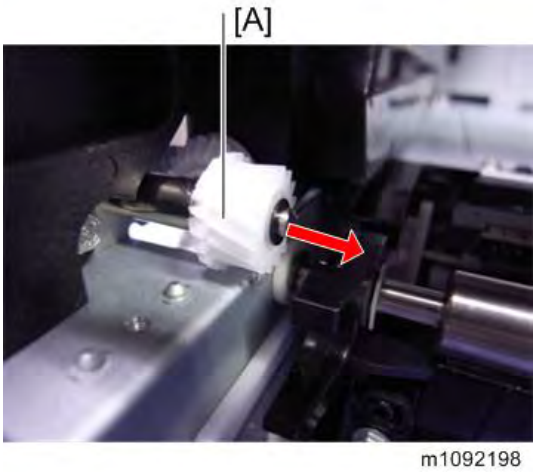
m112m0080

3. Remove the E-ring (×1).


m1092199

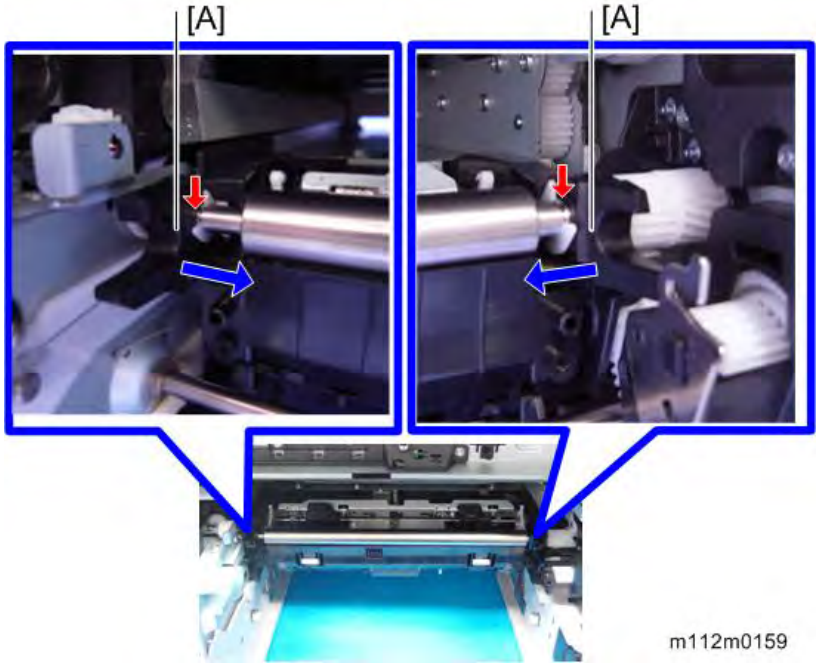
Note

- If it is difficult to remove the E-ring, remove the gear [A]. (***Waste Toner Duct***)



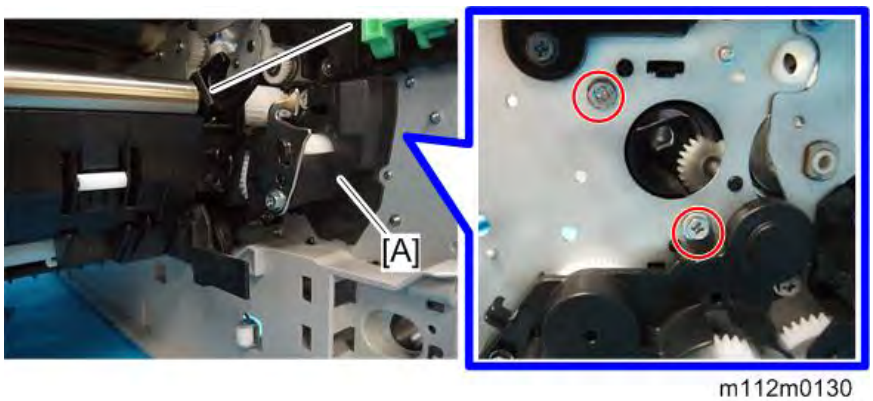
m1092198

4. Slide the registration position stopper inside (left/right) [A].



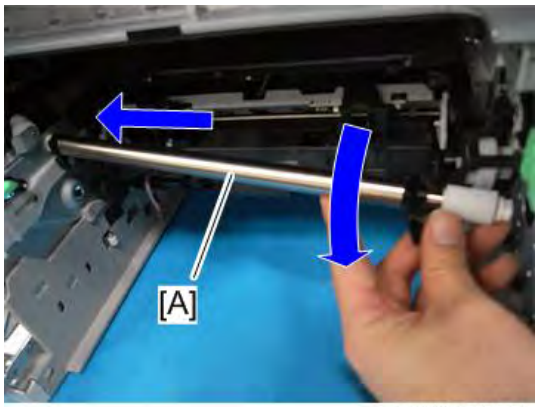
m112m0159

5. Remove the gear cover (***Registration Clutch***)
6. Remove the gear bracket [A] (×2).

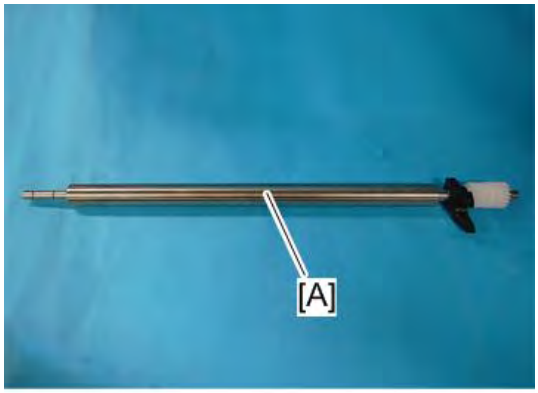


m112m0130

7. Remove the registration roller (driven) [A].



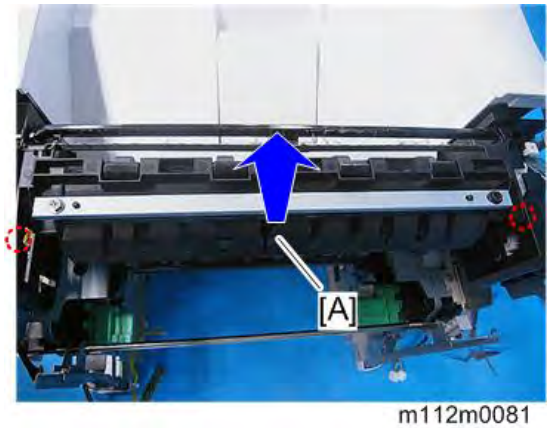
m112m0131



m112m0132

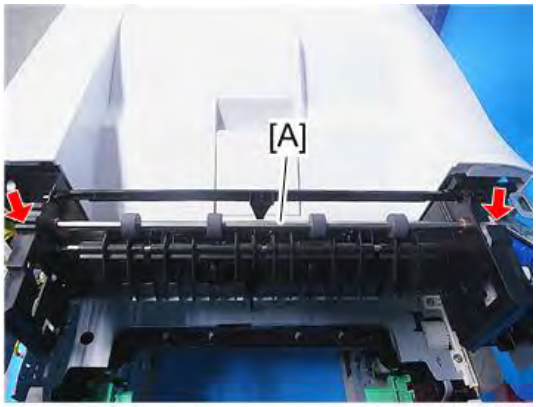
4.10.8 PAPER EXIT/REVERSE ROLLER

1. Remove the solenoid bracket. (***Duplex Inverter Solenoid***)
2. Remove the fusing fan bracket. (***Fusing Fan Motor***)
3. Remove the bracket [A].



m112m0081

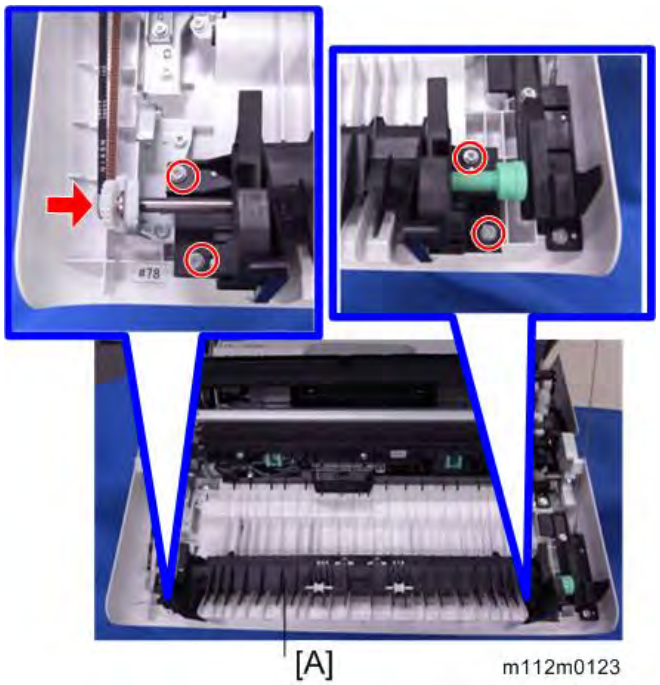
4. Remove the paper exit/reverse roller [A] (×2).



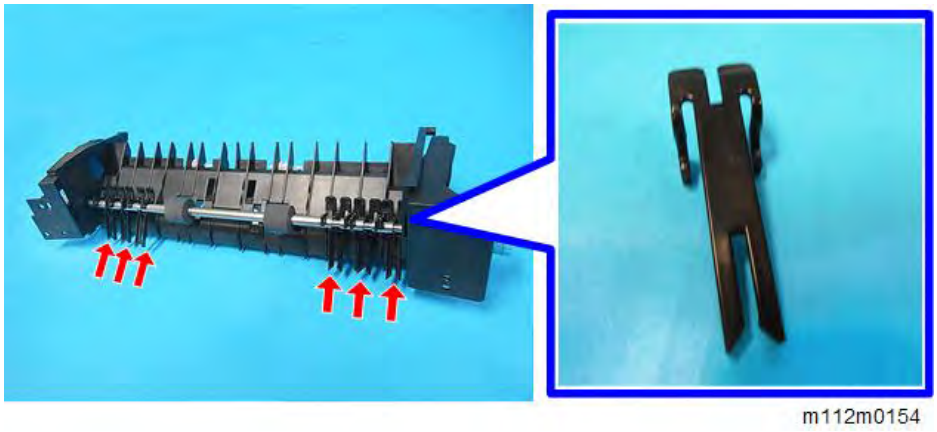
m112m0082

4.10.9 DUPLEX ENTRANCE ROLLER

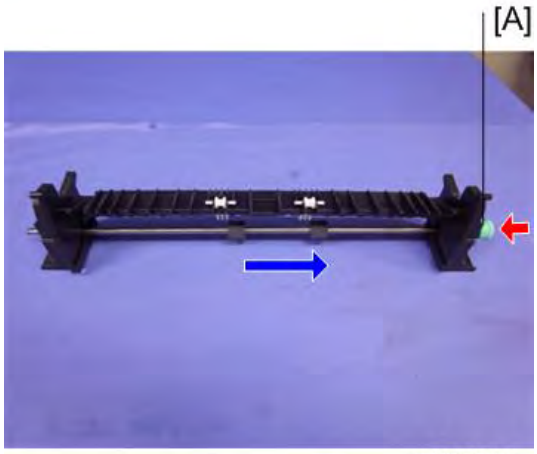
1. Open the front cover.
2. Remove the entrance roller unit [A] (×4, x1).



3. Remove the 6 guides.



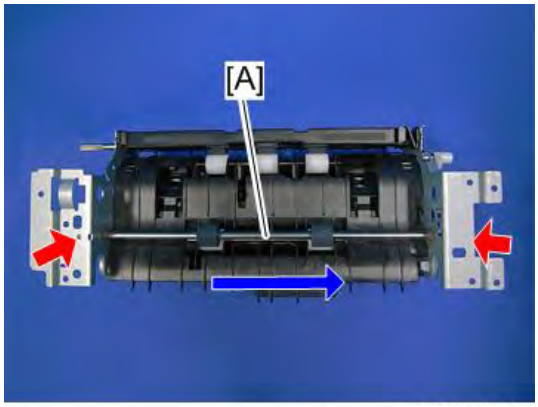
4. Remove the duplex entrance roller [A] (x1).



m1092042

4.10.10 DUPLEX INTERMEDIATE ROLLER

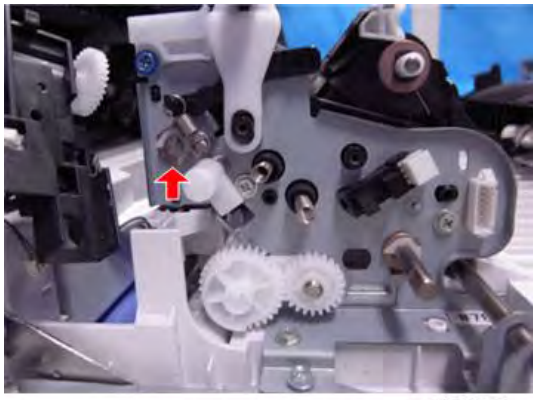
1. Remove the transport unit. (*Front Cover Unit*)
2. Remove the duplex intermediate roller [A] (×2).



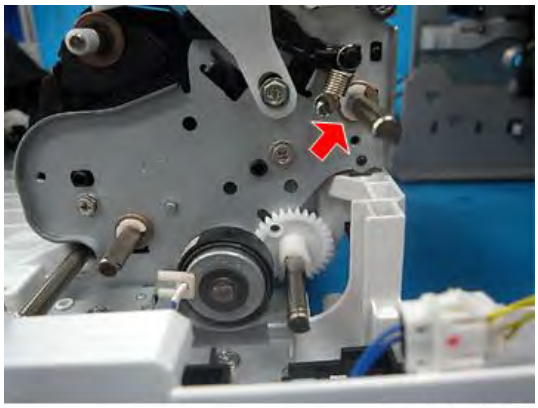
m112m0125

4.10.11 DUPLEX EXIT ROLLER

1. Remove the gear unit. (*Bypass Bottom Plate Clutch*)
2. Remove the snaps (×2).

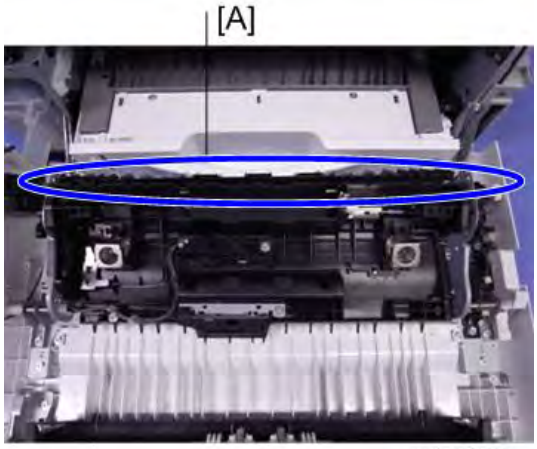


m1092053



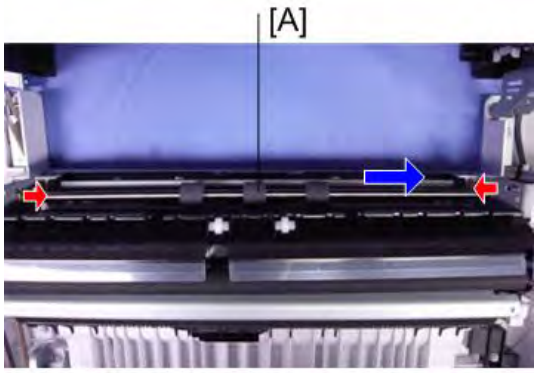
m112m0126

3. Remove the roller rear cover [A].



m1092070

4. Remove the duplex exit roller [A] (×2).



m1092082

4.11 WASTE TONER

4.11.1 WASTE TONER BOTTLE

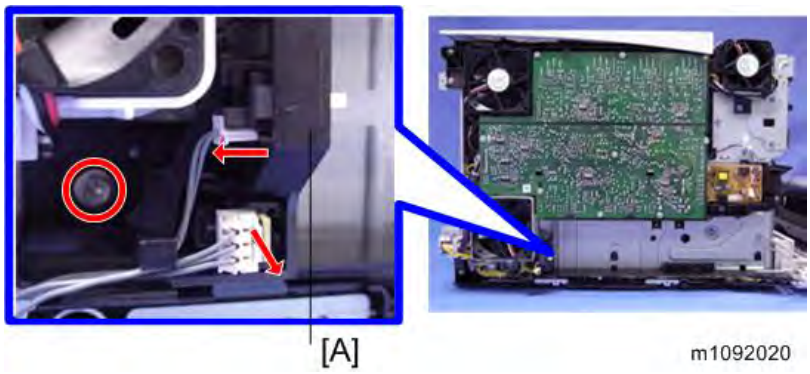
1. Open the front cover.
2. Pull out the waste toner bottle [A].

Note

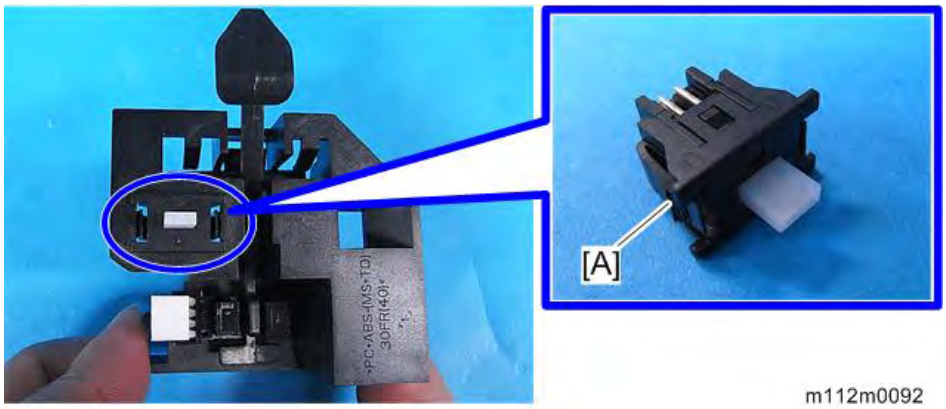
- Put a seal on the lid of the removed waste toner bottle.
- Be sure to attach the waste toner bottle with the left cover installed. If not, the waste toner bottle is not positioned accurately, which may cause the clogging of waste toner because the lid between the waste toner duct and the waste toner bottle may not open.

4.11.2 WASTE TONER BOTTLE SET SWITCH

1. Remove the left cover. (***Left Cover***)
2. Remove the waste toner sensor unit [A] (×1, ×2).

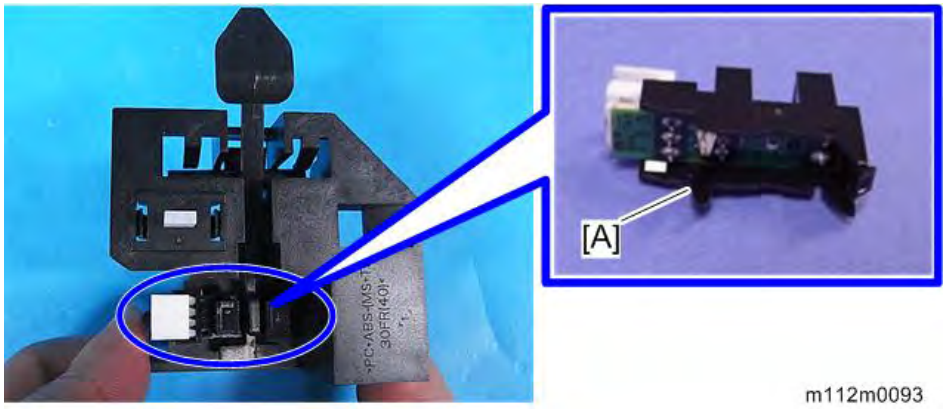


3. Remove the waste toner bottle set switch [A].



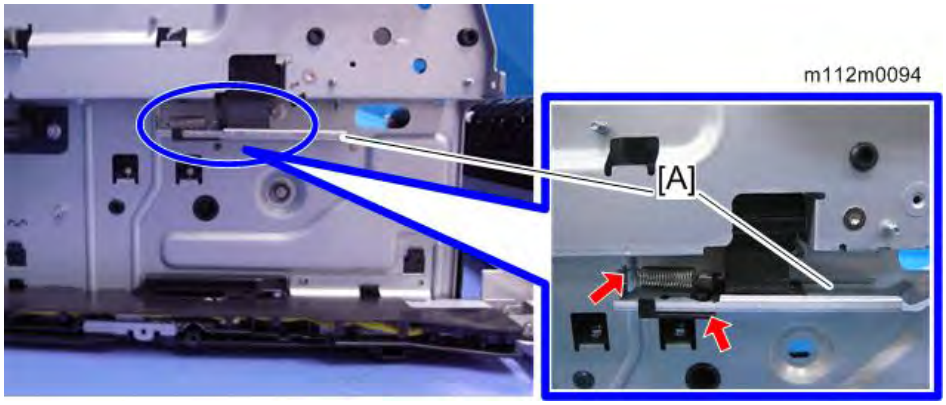
4.11.3 WASTE TONER FULL SENSOR

1. Remove the waste toner sensor unit. (***Waste Toner Bottle Set Switch***)
2. Remove the waste toner full sensor [A].



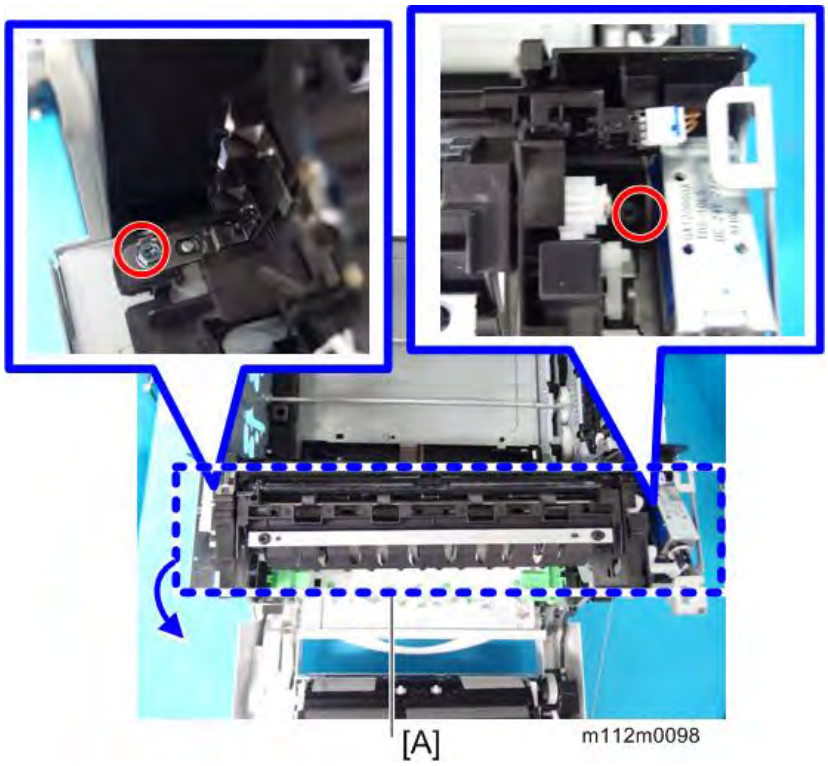
4.11.4 WASTE TONER DUCT

1. Remove the image transfer belt unit. (***Image Transfer Belt Unit***)
2. Remove the PCDUs. (***PCDU_1***)
3. Remove the left inner cover. (***PCDU Sensor Board***)
4. Remove the waste toner cover [A] (×1, Stopper×1).

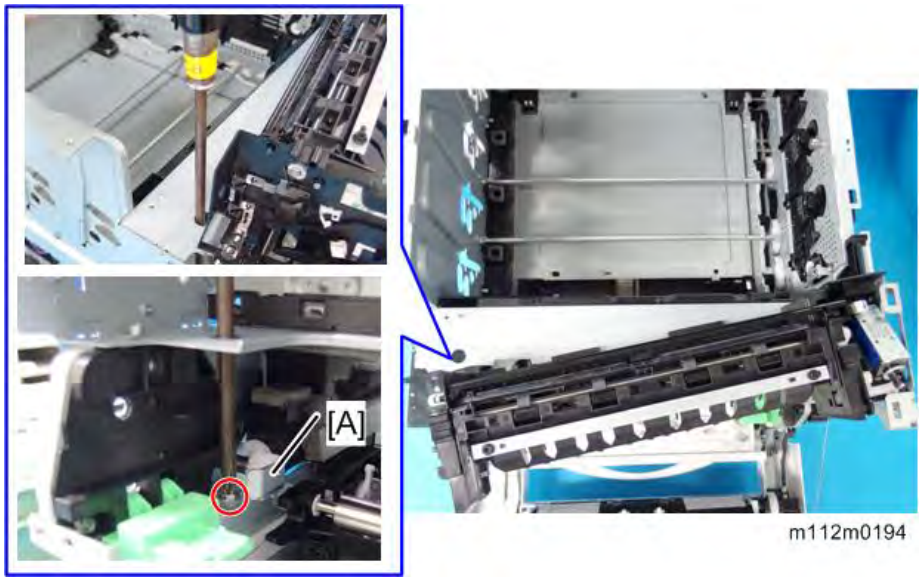


5. Remove the right cover. (***Right Cover***)

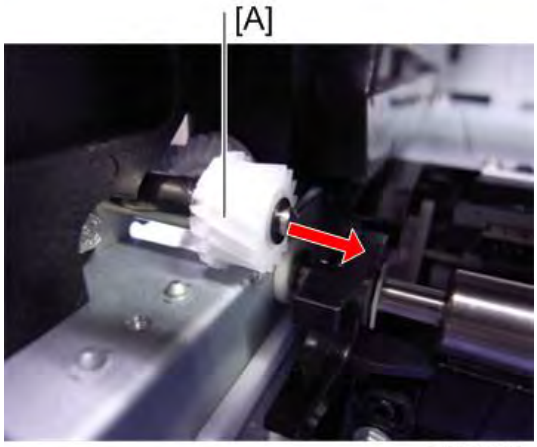
6. Remove the fusing fan motor. (***Fusing Fan Motor***)
7. Move the Paper exit/reverse roller unit [A] (×2).



8. Insert a screwdriver through the hole, and then remove the gear plate [A] (×1).

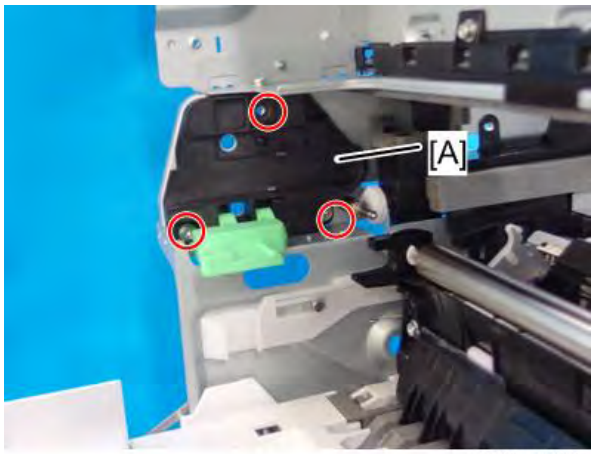


9. Remove the gear [A].



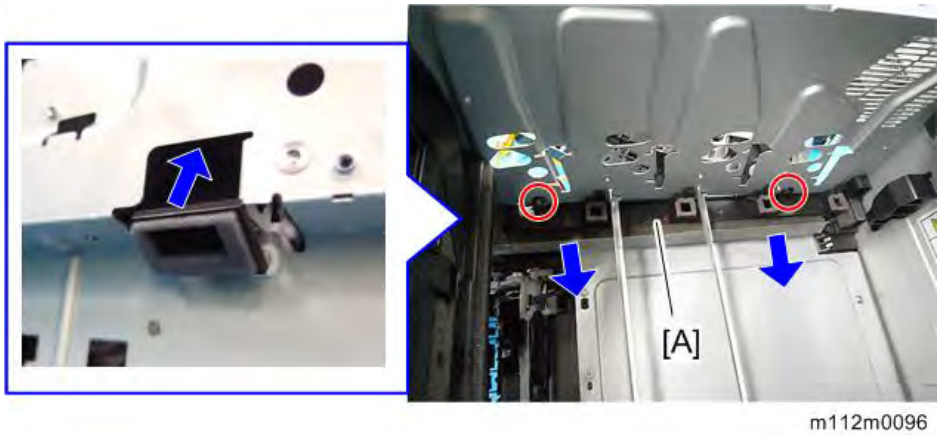
m1092198

10. Remove the fixing plate for the image transfer belt unit [A] on the left side (×3).

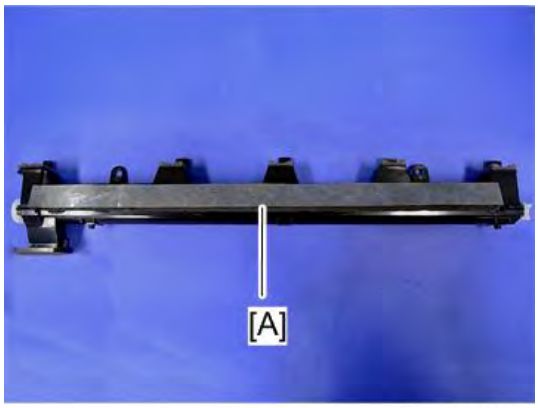


m112m0195

11. Remove the waste toner duct [A] (×2).



m112m0096

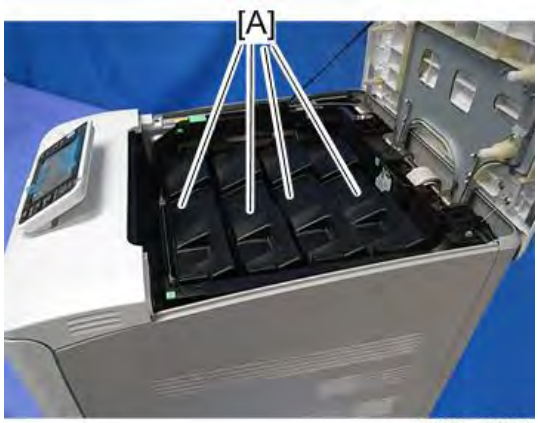


m112m0097

4.12 ELECTRICAL COMPONENTS

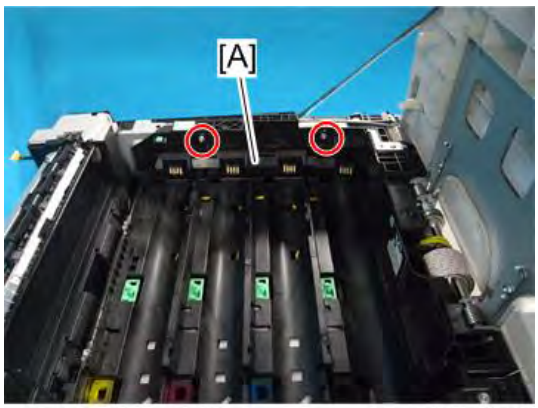
4.12.1 ID CHIP RELAY BOARD

1. Open the upper cover.
2. Remove the toner unit [A].



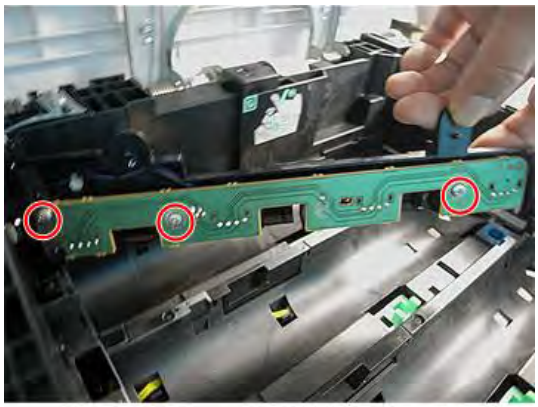
m112m0104

3. Remove the ID chip relay board cover [A] (×2).



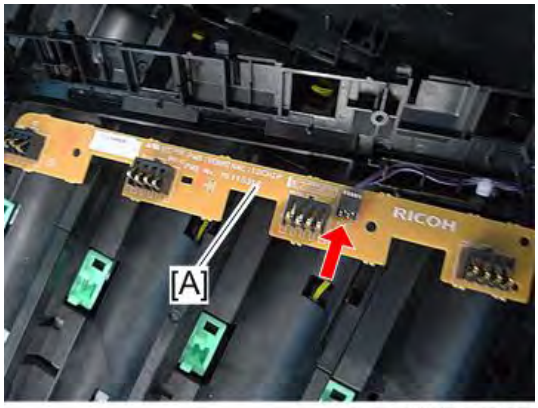
m112m0105

4. Remove the screws (×3).



m112m0106

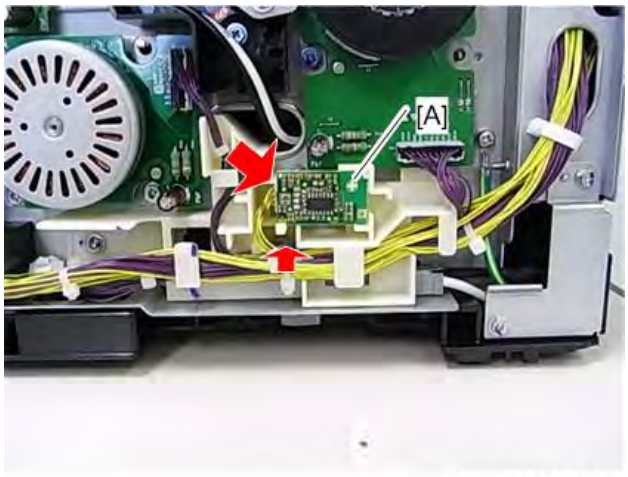
5. Remove the ID chip relay board [A] (×1).



m112m0107

4.12.2 TEMPERATURE & HUMIDITY SENSOR

1. Remove the right cover. (*Right Cover*)
2. Remove the temperature & humidity sensor [A] (×1, hook ×1).



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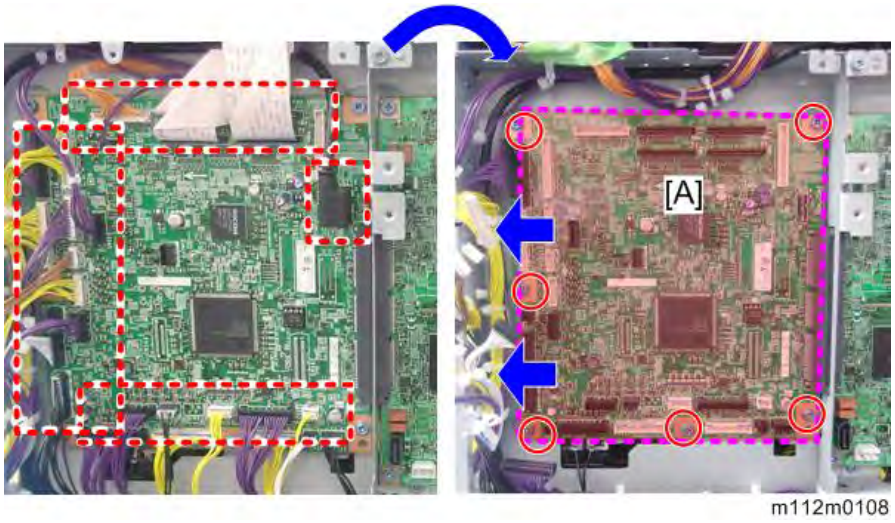
4.12.3 ENGINE BOARD

1. Remove the rear cover. (***Right Cover***)
2. Remove the controller box cover. (***Controller Board***)
3. Remove the engine board [A] (×All, x6).



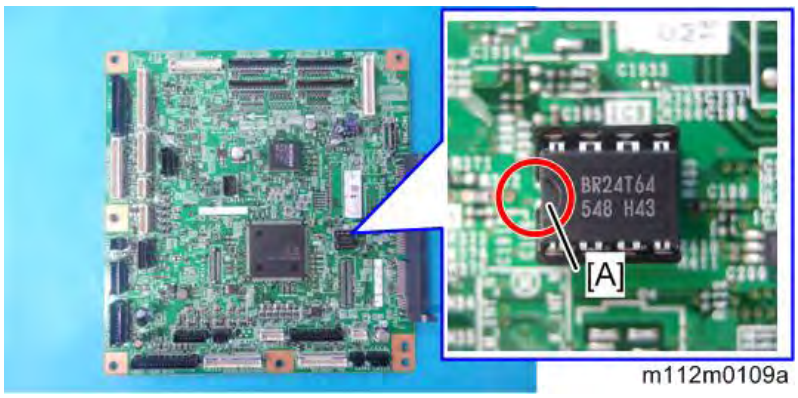
m112m0108

4. Remove the EEPROM [A].

m112m0109

When installing the new engine board

1. Remove the EEPROM from the old engine board.
2. Install the removed EEPROM on the new engine board, with the mark [A] pointing to the left side of the board.



m112m0109a

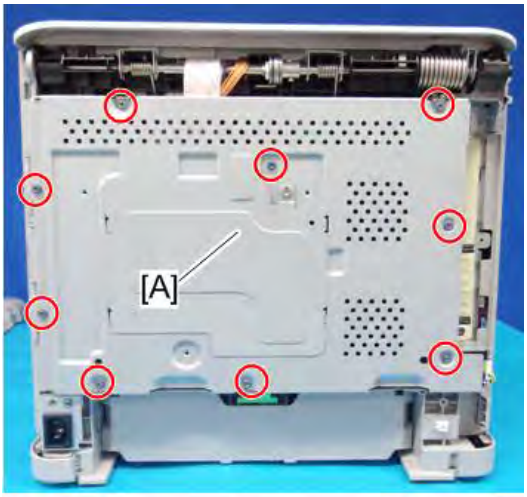
3. Replace the EEPROM if the EEPROM on the old engine board is defective.

⚠CAUTION

- Keep the EEPROM away from objects that can cause static electricity. Static electricity can damage EEPROM data.
- Make sure that the EEPROM is correctly installed on the engine board.

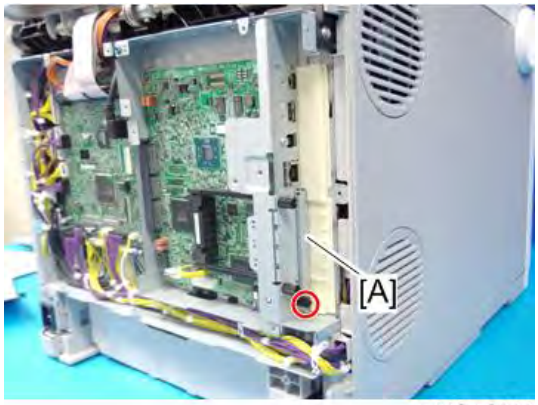
4.12.4 CONTROLLER BOARD

1. Remove the rear cover. (***Rear Cover***)
2. Remove the controller box cover [A] (☞×9).



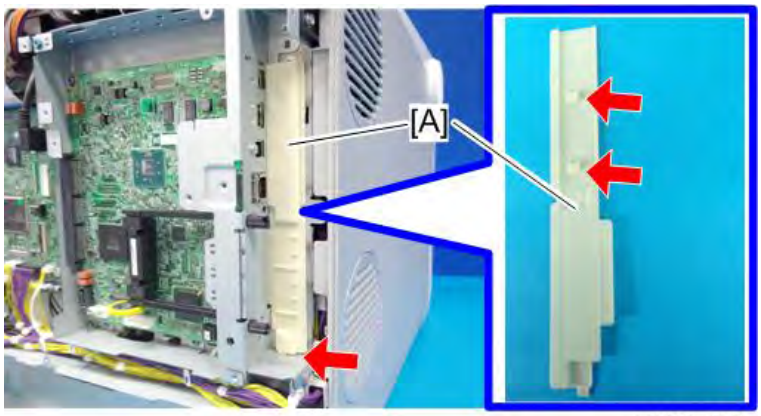
m112m0110

3. Remove the plate [A] (knob screw×1).



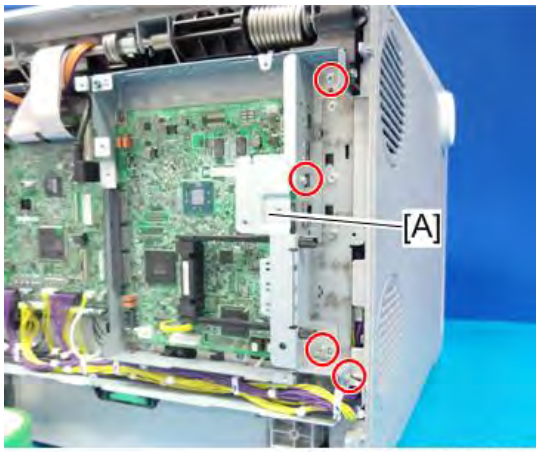
m112m0111

4. Remove the SD card/LAN guide [A] (hook×3).



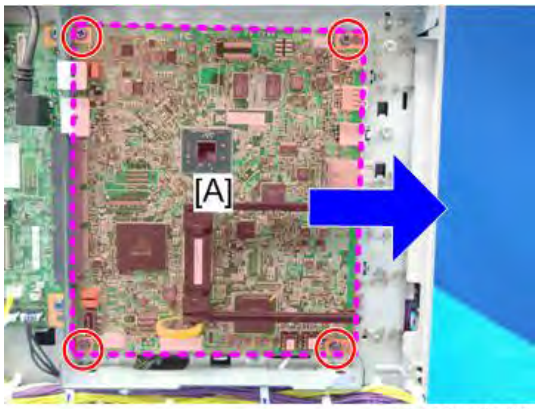
m112m0112

5. Remove the “L-shaped” bracket [A] (×4).



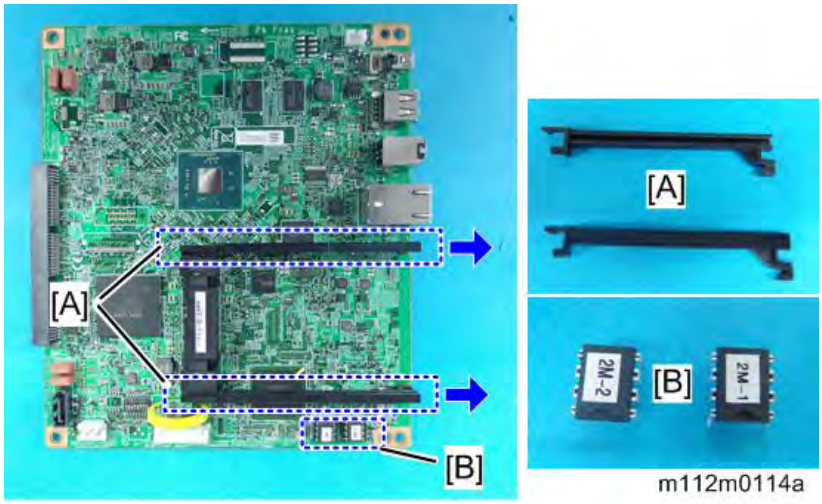
m112m0113

6. Slide off and remove the controller board [A] (×4).



m112m0114

7. Remove the rails [A] and two NVRAMs [B].

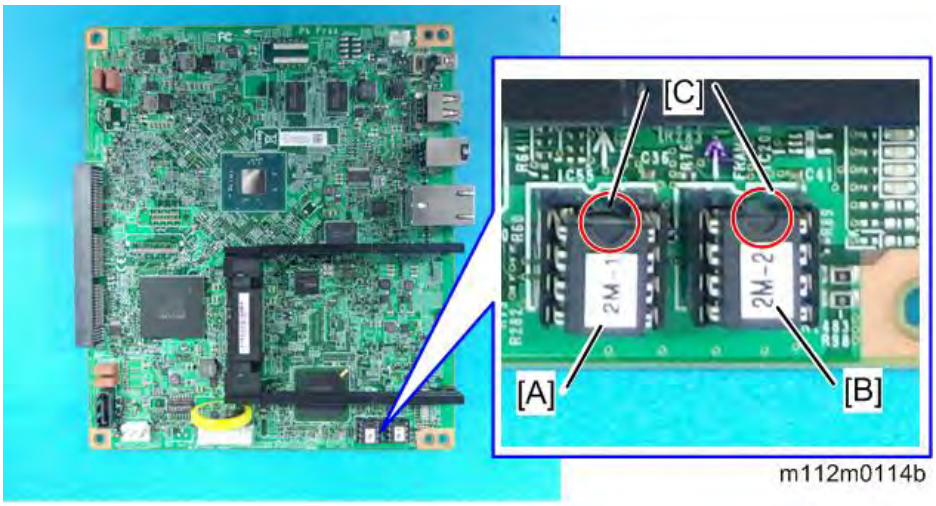


When installing the new controller board

1. Remove the two NVRAMs from the old controller board.
2. Install the removed two NVRAMs on the new controller board.

Note

- There are two NVRAMs, "1" [A] and "2" [B]. Install each NVRAM in the corresponding slot as shown in the photo below.
- Install the NVRAMs so that the mark [C] on the NVRAM is on the upper side when the controller board is installed.



3. Replace the NVRAM if the NVRAM on the old controller board is defective.

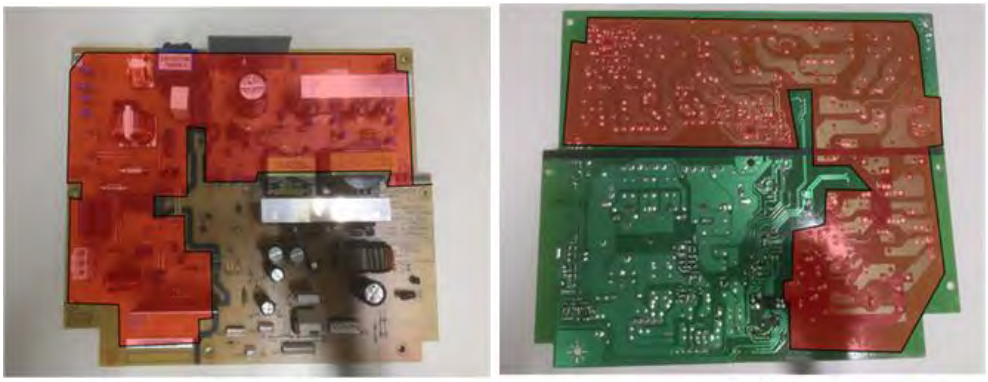
⚠CAUTION

- Keep the NVRAM away from objects that can cause static electricity. Static electricity can damage NVRAM data.
- Make sure that the NVRAM is correctly installed on the controller board.

4.12.5 PSU

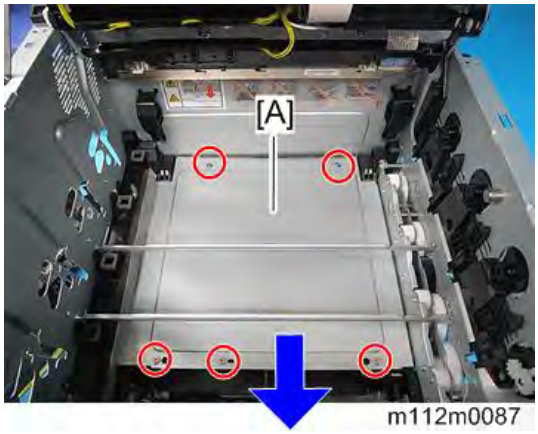
⚠CAUTION

- **NEVER touch** the areas outlined in red in the photos below. This is to prevent electric shock caused by residual charge.
- A residual charge of about 100V-400V remains in the AC circuits on the PSU board for several months, even when the board has been removed from the machine after turning off the machine power and unplugging the power cord.
- The procedure to discharge residual charge from the machine by unplugging the power cord from the AC wall outlet and pressing the main power switch works only for the DC circuits on this board. Residual charge remains in the AC circuits.



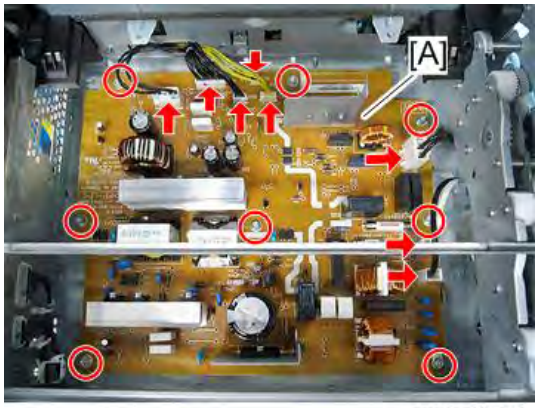
m112m0203

1. Remove the image transfer belt unit. (***Image Transfer Belt Unit***)
2. Remove the PCDUs. (***PCDU***)
3. Remove the bracket [A] (×5).



m112m0087

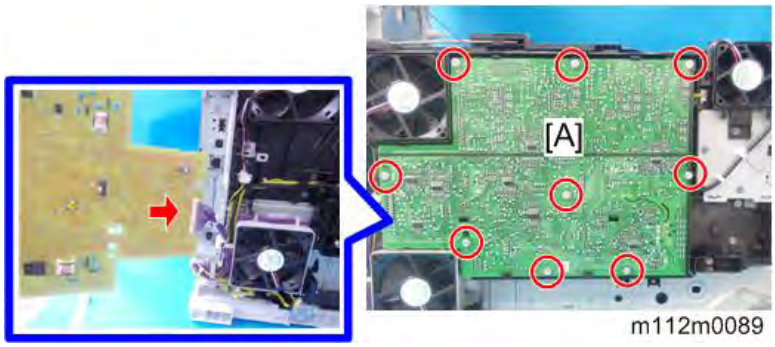
4. Remove the PSU [A] (×8, ×All).



m112m0088

4.12.6 HIGH VOLTAGE POWER SUPPLY BOARD

1. Remove the left cover. (*Left Cover*)
2. Remove the high voltage power supply board [A] (×9, ×1).



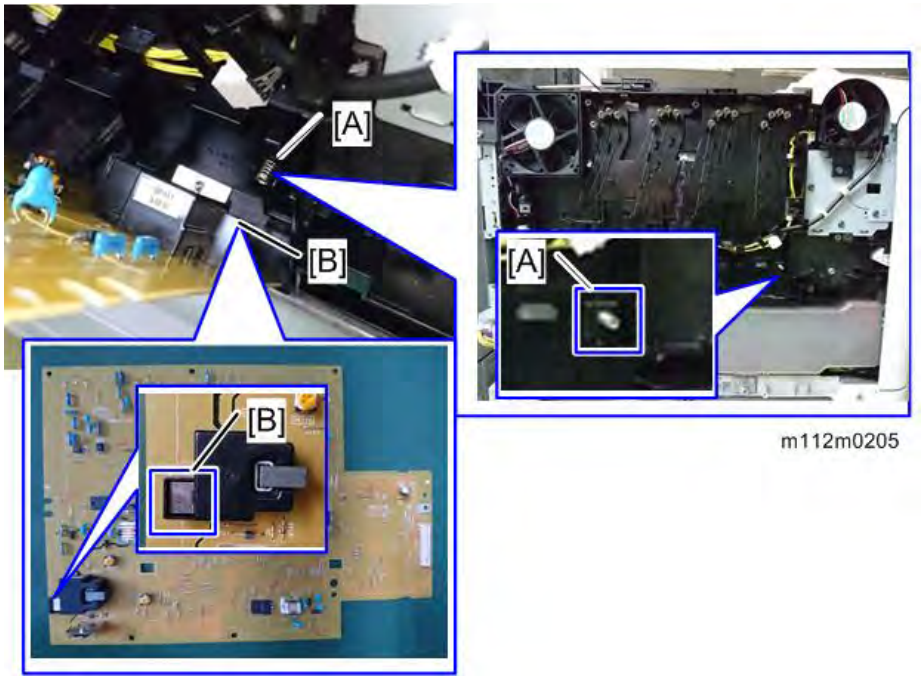
m112m0089

When Installing the New High Voltage Power Supply Board

Take the following into account when installing the high voltage power supply board.

1. Install the board so that the transfer pressure spring [A] firmly contacts with the secondary

transfer output terminal [B], making sure that the spring does not buckle.



2. In B/W mode, print out a test pattern on two pieces of A4 paper consecutively. Then, make sure that there are no abnormalities in the image.

Test pattern printing SPs

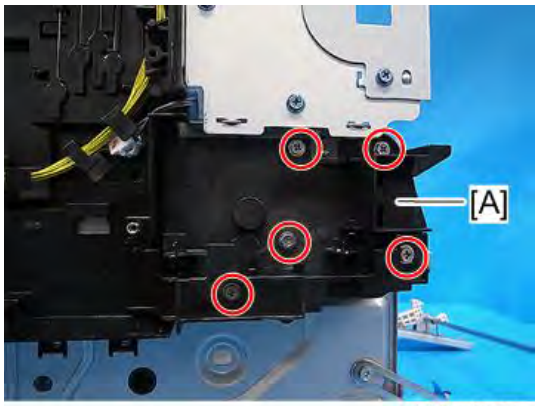
- SP5-903-001 1: Tray1
- SP5-903-002 0: Single
- SP5-903-003 1: A4T
- SP5-903-004 0: BK
- SP5-903-005 11: 2by2
- SP5-903-006 0: Plain Paper
- SP5-903-007 2: 2page
- SP5-903-008 0: Normal
- SP5-903-009: Execute

Note

- For image output, use Engine SP mode and test pattern 2by2.
- If the secondary transfer pressure spring has buckled, a horinzontal black belt may be printed on.

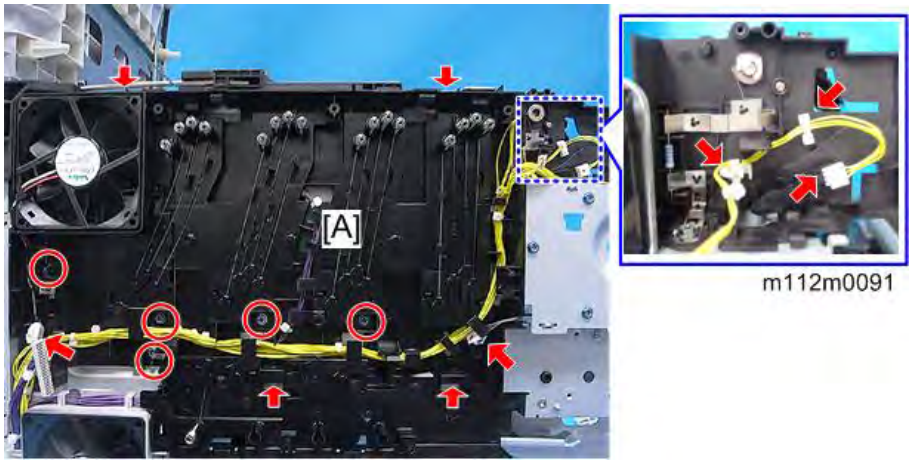
4.12.7 PCDU SENSOR BOARD

1. Remove the high voltage power supply board. (***High Voltage Power Supply Board***)
2. Remove the fusing fan holder. (***Fusing Fan Motor***)
3. Remove the holder [A] (×5).



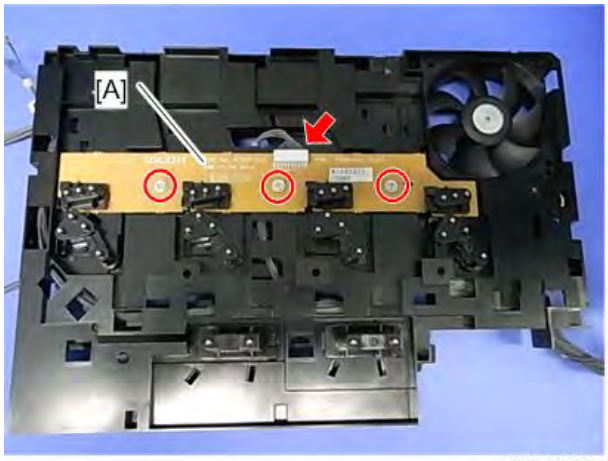
m112m0090

4. Remove the left inner cover [A] (× 5, ×3, x2, hook ×4).



m112m0091

5. Remove the PCDU sensor board [A] (× 3, ×1).



m1099026.jpg

4.12.8 TM (ID) SENSOR

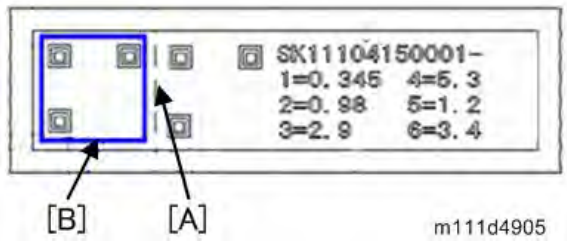
Before TM (ID) sensor replacement

On the TM (ID) sensor head part, there is a barcode label which shows the characteristics of the TM (ID) sensor. Before replacement, you must input these values into SP mode.

Note

- Before replacement, it is recommended that you output SMC all print in case process control/Music cannot complete correctly after replacement.

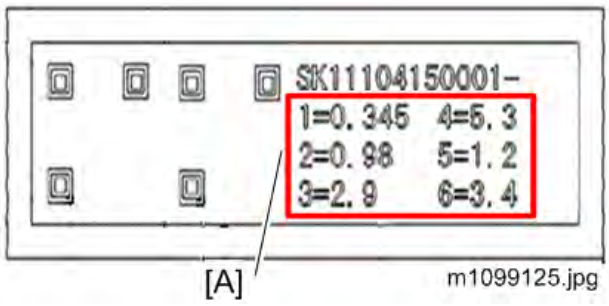
1. Tear off the characteristic value data label supplied with the TM (ID) sensor along perforation [A]. (Leave the QR code [B] on the sensor.)



Note

- Viewed from the front of the machine, the sensor on the left is the TM (ID) sensor: R, and the sensor on the right is the TM (ID) sensor: L. Be careful about this during the following procedure.

Barcode label values



[A]: Characteristic Value

2. Turn the machine switch ON and enter the SP mode.

3. Then input the characteristic values in SP mode as follows.
   Input the values for TM sensor: R in SP3-333 and the values for TM sensor: L in SP3-334 as follows:

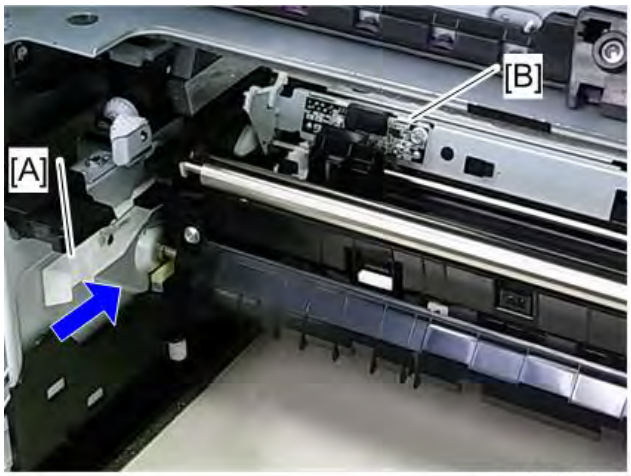
SP No.	Value
3-333-001	Value “1” written on the R sensor label (the sensor on the observer’s left)
3-333-002	Value “2” written on the R sensor label (the sensor on the observer’s left)
3-333-003	Value “3” written on the R sensor label (the sensor on the observer’s left)
3-333-004	Value “4” written on the R sensor label (the sensor on the observer’s left)
3-333-005	Value “5” written on the R sensor label (the sensor on the observer’s left)
3-333-006	Value “6” written on the R sensor label (the sensor on the observer’s left)
3-334-001	Value “1” written on the L sensor label (the sensor on the observer’s right)
3-334-002	Value “2” written on the L sensor label (the sensor on the observer’s right)
3-334-003	Value “3” written on the L sensor label (the sensor on the observer’s right)
3-334-004	Value “4” written on the L sensor label (the sensor on the observer’s right)
3-334-005	Value “5” written on the L sensor label (the sensor on the observer’s right)
3-334-006	Value “6” written on the L sensor label (the sensor on the observer’s right)

4. Initialize the values of the sensitivity correction coefficient of the TM sensor.

SP No.	Default Value
3-330-001	0
3-330-002	0
3-330-003	0
3-330-011	1.2
3-330-012	1.2
3-330-013	1.2

Replacement

1. Remove the image transfer belt unit. (***Image Transfer Belt Unit***)
2. Push the lever [A] to bring up the TM sensor [B].

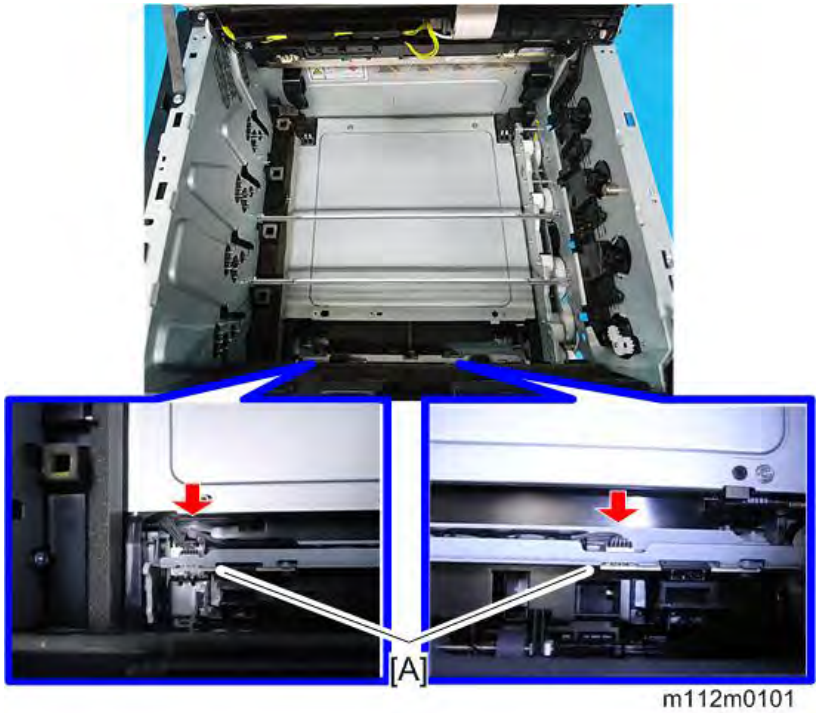


m1099160.jpg

3. Remove the screws (x4).

m1099113.jpg

4. Remove the TM (ID) sensor [A] (×2).



m112m0101

5. Pull the lever [A] to bring down the TM (ID) sensor [B].

m1099161.jpg

Adjustment after the TM (ID) sensor replacement

Turn the main switch ON and then enter the SP mode.

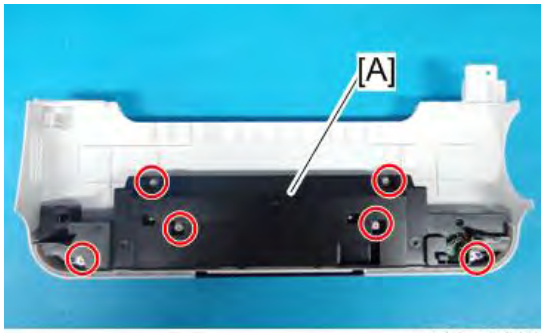
Execute SP3-011-004 (Adjustment manual exe. Full Music / process control)

Note

- If there is something wrong with the image after SP execution, make sure that input values are registered in the correct SPs. If values were input in the wrong SPs, refer to the SMC list and enter the correct values in the correct SPs.

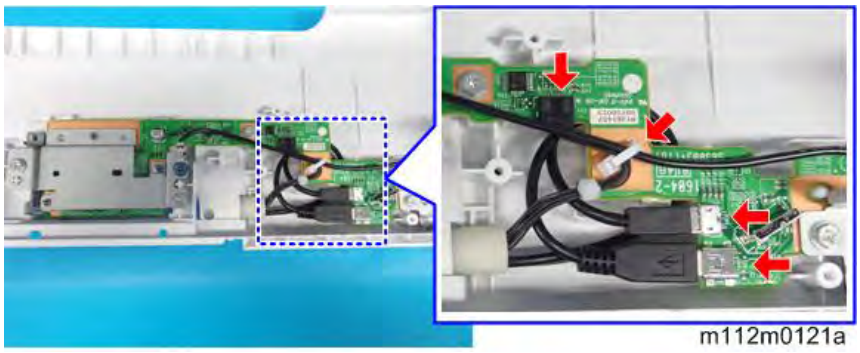
4.12.9 SD/USB BOARD

1. Remove the paper exit cover. (***Paper Exit Cover (with Operation Panel)***)
2. Remove the black cover [A] (×6).

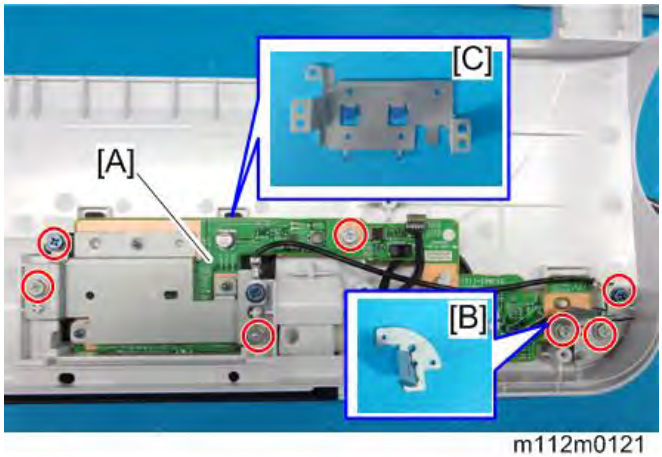


m112m0115

3. Release the cable tie and disconnect 3 connectors (×3, x1).

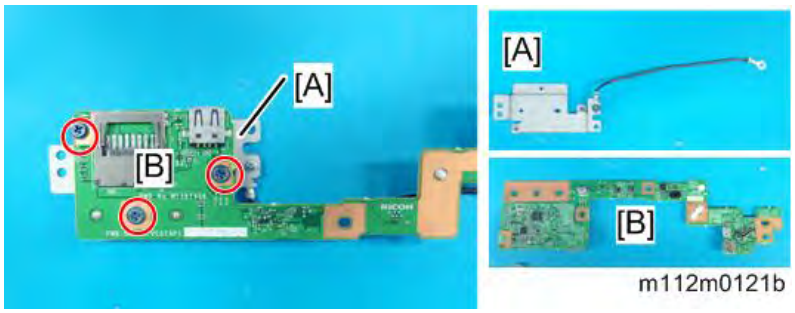

m112m0121a

4. Remove the SD/USB board [A], bracket [B] and shelding [C] (×7).



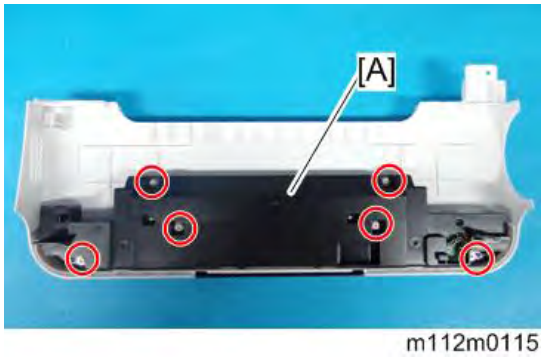
m112m0121

5. Remove the shelding bracket [A] from the SD/USB board [B] (×3).

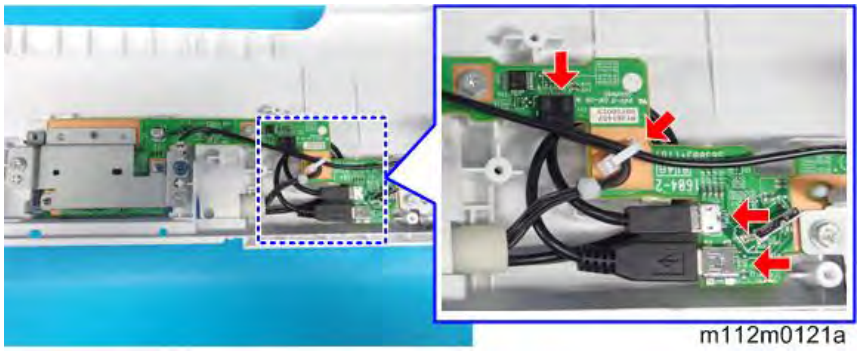


4.12.10 OPERATION PANEL

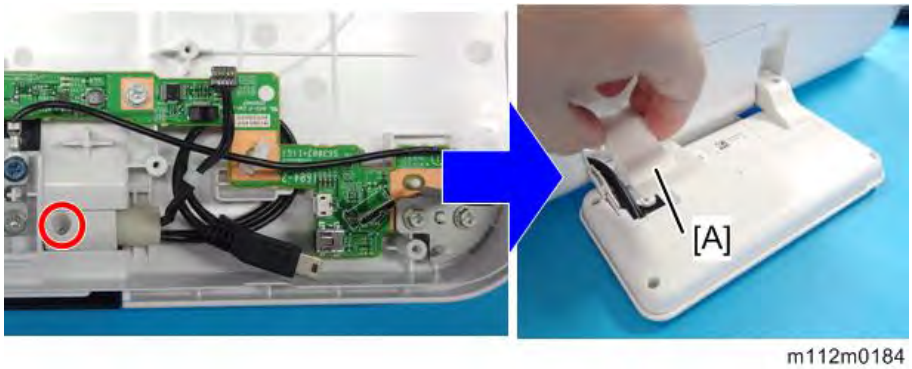
1. Remove the paper exit cover. (***Paper Exit Cover (with Operation Panel)***)
2. Remove the black cover [A] (×6).



3. Release the cable tie and disconnect 3 connectors (×3, x1).



4. Remove the left hinge cover [A] (×1).



5. Remove the right hinge cover [A] (×1).

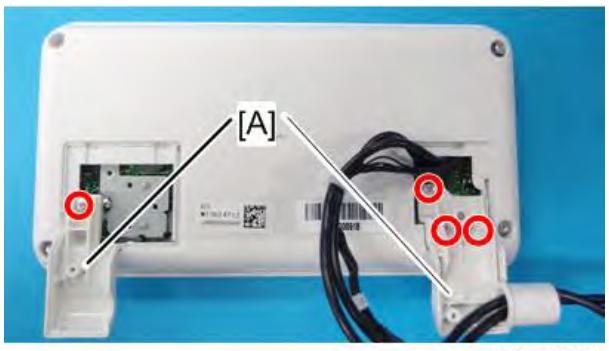
m112m0185

6. Remove the operation panel [A] (×3).

m112m0186

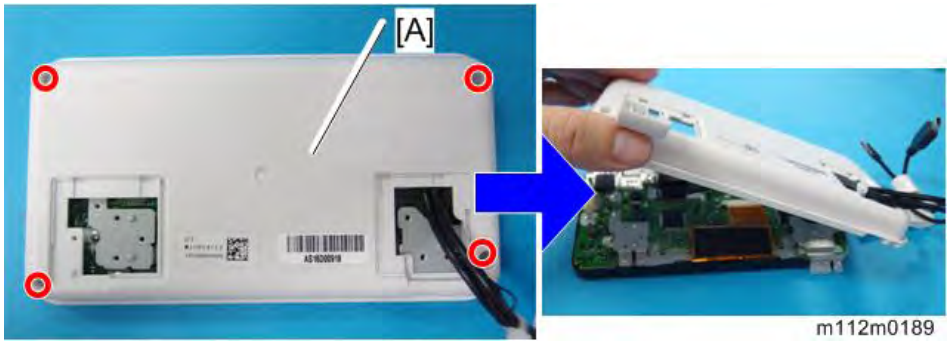
m112m0187

7. Remove the lower hinge covers [A] (×4).



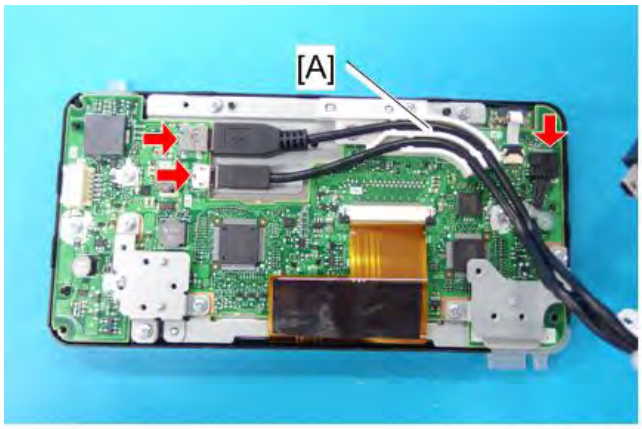
m112m0188

8. Remove the back cover [A] (×4).



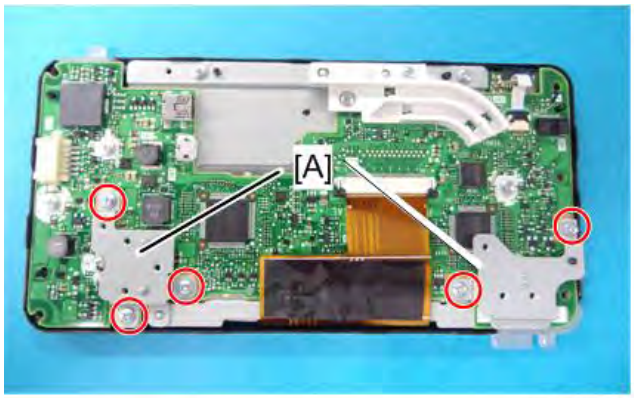
m112m0189

9. Release the cables from the cable guide [A] and disconnect all connectors (×3).



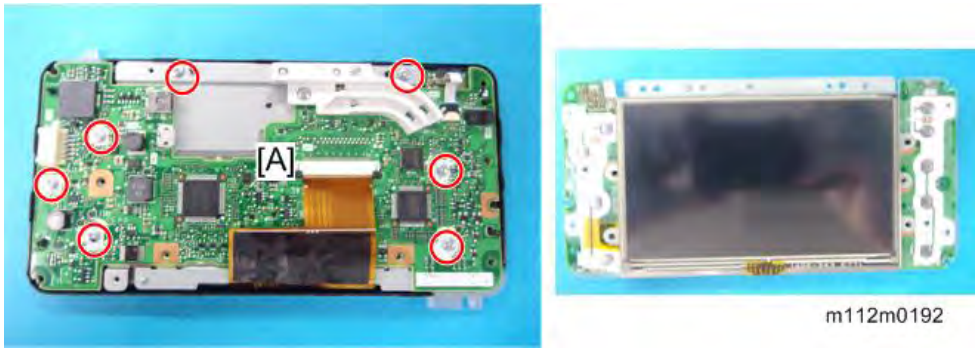
m112m0190

10. Remove two brackets [A] (×5).



m112m0191

11. Remove the LCD panel and the circuit board (×7).



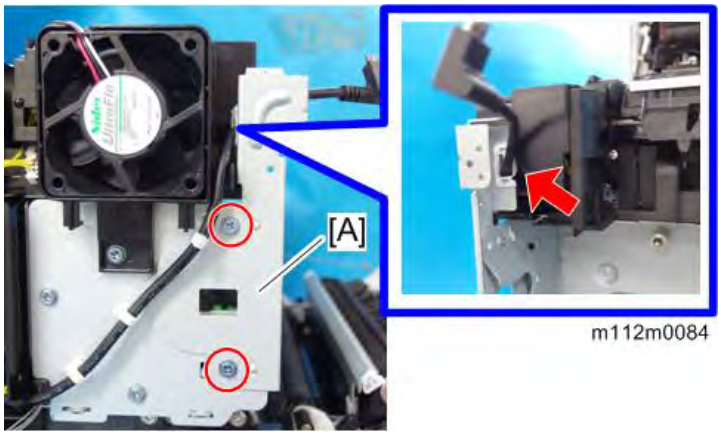
m112m0192

12. Remove all parts from the front cover [A].

m112m0193

4.12.11 FUSING FAN MOTOR

1. Remove the left cover. (***Left Cover***)
2. Remove the bracket [A] (×2, ×1).

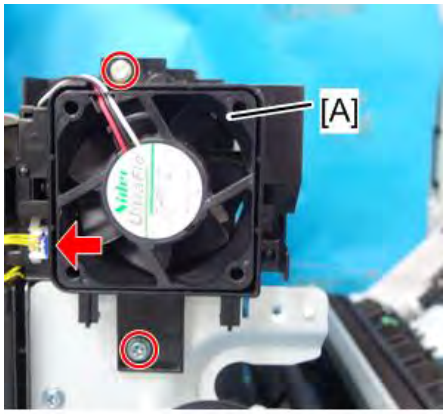


m112m0084

Note

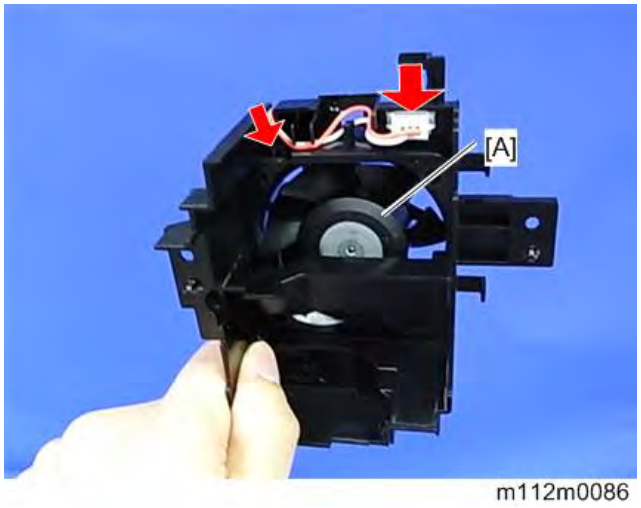
- Caution for Installation:
  Before tightening the screws for the bracket, confirm that the harness is not caught.

3. Remove the fan holder [A] (×2, ×1).



m112m0196

4. Remove the fusing fan motor [A] (×1, hook×1).

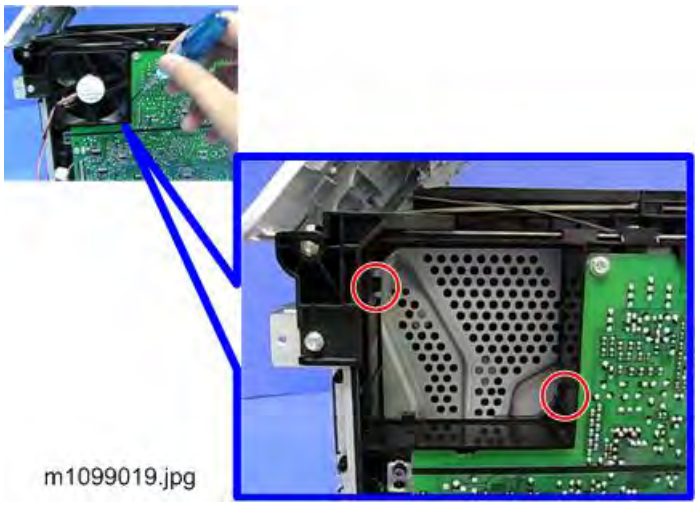


4.12.12 COOLING FAN MOTOR

1. Remove the left cover. (***Left Cover***)
2. Pull out the cooling fan motor [A] (hook ×2).

Note

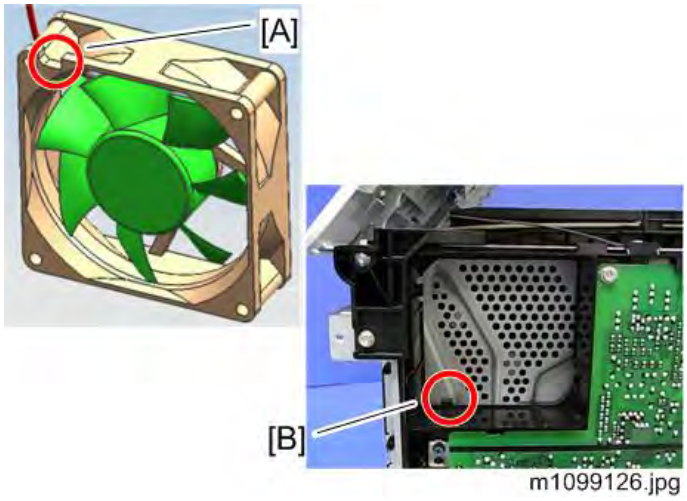
- Release the two hooks holding the fan before pulling. (The hooks are circled in red in the picture shown below.)



3. Remove the connector and then remove the cooling fan motor [A].

Reinstalling the cooling fan motor

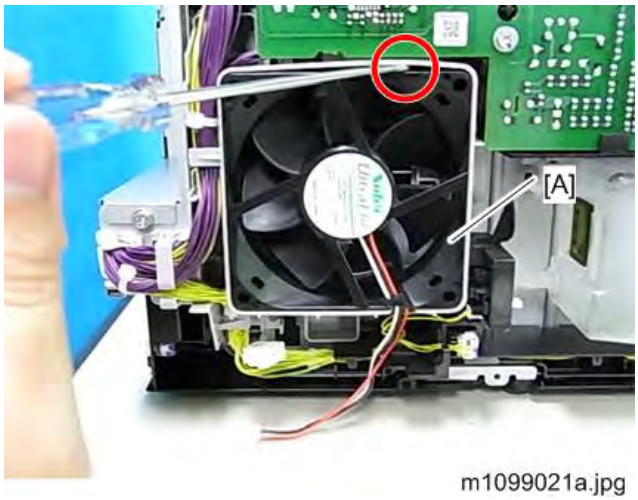
Reinstall the cooling fan motor so that [A] and [B] are put together as shown below.



4.12.13 PSU FAN MOTOR

1. Remove the left cover. (***Left Cover***)
2. Remove the connector (×1).

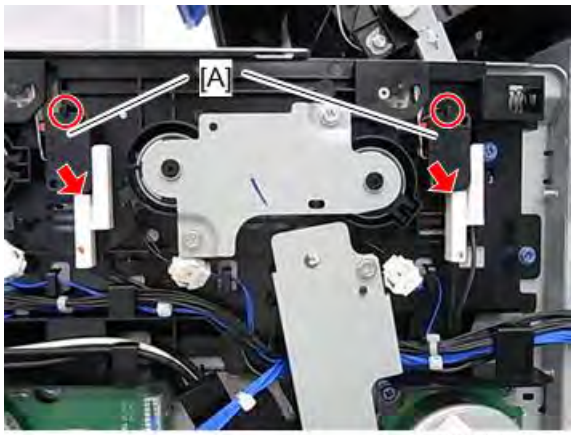
3. Remove the PSU fan motor [A] (hook ×1).



m1099021a.jpg

4.12.14 INTERLOCK SWITCH

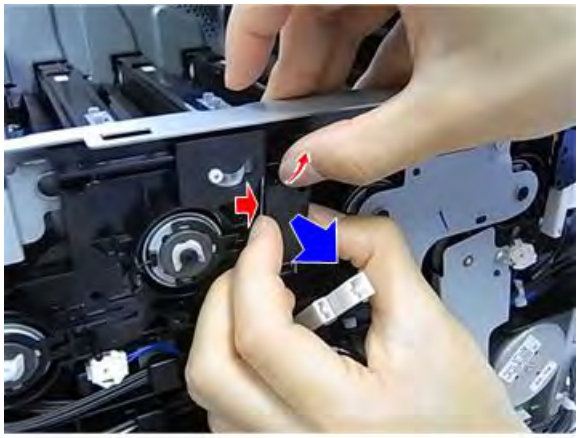
1. Remove the right cover. (***Right Cover***)
2. Remove the interlock switches [A] (×1, hook ×1 each).



m1099035.jpg

Note

- Pull the switch out while pushing the switch and releasing the hook as shown below.



m1099036.jpg

4.12.15 NVRAM

Note

- Replacement and reinstallation procedures for the EEPROM and the NVRAM are included in the "Engine Board" and "Controller Board" replacement procedures. Refer to "Engine Board" or "Controller Board" for details.

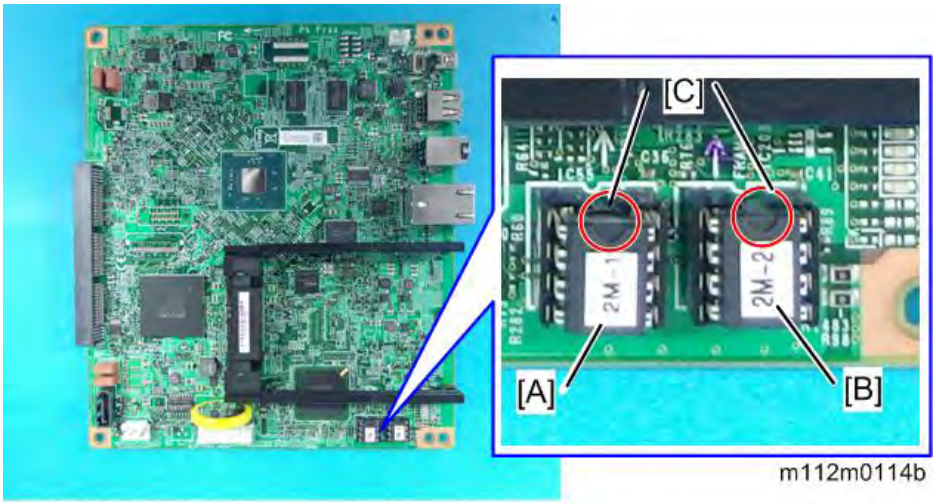
When replacing an old EEPROM or NVRAM with a new one, EEPROM or NVRAM setting is required. Follow the EEPROM or the NVRAM setting procedure described below.

NVRAM on the controller

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Insert an SD card in the lower SD slot.
3. Plug in, and then turn on the main power switch.
4. Start the SP mode.
5. Use SP5-990 to print out the SMC reports (“SP Mode Data” and “Logging Data”) if possible.
6. Use SP5-824-001 to upload the NVRAM data if possible.
7. Turn off the main power switch and unplug the power cord.
8. Replace two NVRAMs on the controller and reassemble the machine (***Controller Board***).

Note

- There are two NVRAMs, "1" [A] and "2" [B]. Install each NVRAM in the corresponding slot as shown in the photo below.
- Install the NVRAMs so that the mark [C] on the NVRAM is on the upper side when the controller board is installed.



m112m0114b

9. Plug in the power cord.
10. Turn on the main power switch.

Important

- When you do this, SC995-02 (Defective NVRAM) will be displayed. However, DO NOT turn off the main power switch. Continue with this procedure.

11. Start the SP mode.
12. Use SP5-825-001 to download the NVRAM data if possible.
13. Make these contract-related settings:
    - Counter Method (SP5-045)
    - Meter-click Charge Mode (SP5-930, 1-007, 5-083)
    - Telephone Number Setting > Fax Telephone Number (SP5-812-002) if the meter charge mode (SP5-930-001) is “ON” (enabled)
    - Counter Size Setting (SP5-104)
14. Turn off the main power switch, and then remove the SD card from the lower slot.
15. Turn on the main power switch.
16. Output the SMC data ("ALL") using SP5-990-001, and make sure that it matches the SMC data you printed out in step 5 above (except for the value of the total counter).

    Note

    - The value of the total counter is reset to “0” when the NVRAM is replaced.
17. Do the process control self-check (SP3-011-001).

    Important

    - Do the following if SP5-824-001 (NVRAM Data Upload) and SP5-825-001 (NVRAM Data Download) cannot be performed for some reason.
    - 1. Manually enter all data on the SMC report (factory settings).

EEPROM on the engine board

When replacing the EEPROM on the Engine Board, please check the following points:

- If a near end alert for the fusing unit, paper transfer roller unit, or PCDU is displayed, replace them with new units before carrying out EEPROM replacement. Not doing so may cause image quality problems or SC490.
- If the Waste Toner Bottle is near full, replace it with a new one. Not doing so may cause toner overflow.
- After replacing the EEPROM, check that there is no image quality problem. If an image quality problem occurs, do not try to fix it by putting the old EEPROM back, but make adjustments so that they are stored in the new EEPROM.

If the EEPROM download/upload feature cannot be used, do the following steps;

1. Login to the machine using the factory SP mode (Cover open).
    - Set these SPs in the factory SP mode.
        1. 5-807-001 “Machine Type Area Selection”<- NA:”2”, EU:”3”, ASIA:”4”, CHN: “5” , TWN:”6” , KOR:”7”
        2. 5-807-002 “Machine Type Model Selection”: “4”
        3. 5-930-001 “Meter Click Charge” <-Set the value on the latest SMC sheet
        4. 5-988-001 “Maintenance ID” <-Set the value on the latest SMC sheet
        5. 5-988-002 “Brand ID” <-Set the value on the latest SMC sheet

6. 5- 811-001 “Machine Info Set: Serial No.”<-Input the 5-811-002 value from the SMC sheet
7. 5-801-002 Execute “Engine Memory Clear”

2. Power OFF, then power ON. Login to the normal SP mode.

- Input values from the latest SMC sheet
  1. 3-333-001 to 3-333-006 “TM (ID) sensor (right) adjustment value”
  2. 3-334-001 to 3-334-006 “TM (ID) sensor (left) adjustment vale”
  3. 1-001-013 to 1-001-024 “Sub scan direction registration”
  4. 1-002-001 to 1-002-006 “Main scan direction registration”
  5. 1-003-001 to 1-003-012 “Paper buckle adjustment”

3. Close Cover, then do the following steps in this order.

1. 2-111-002 Execute “Line position adjustment factory mode”
2. 3-011-001 Execute ”Normal Process Control”
3. 2-185-002 Input “1” in “Margin Position: Base Calculation Flag”
4. 2-111-001 Execute “Line position adjustment normal mode”
5. 2-185-002 Input “1” in “Margin Position: Base Calculation Flag”
6. 2-111-003 Execute “Line position adjustment Black mode”

Ready to use the machine

4.13 ADJUSTMENT AFTER REPLACEMENT

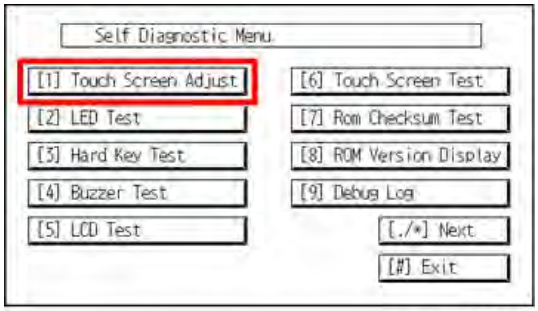
4.13.1 TOUCH SCREEN CALIBRATION

After clearing the memory, or if the touch panel detection function is not working correctly, follow this procedure to calibrate the touch screen.

Note

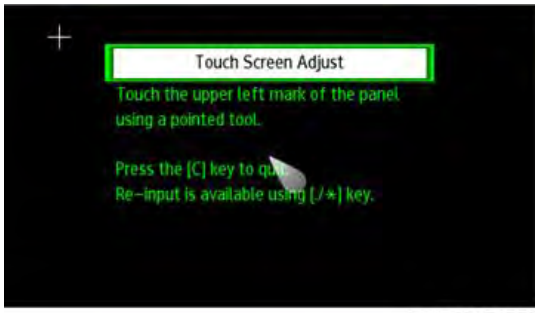
- Do not attempt to use items [2] to [5] and [7] to [9] on the Self-Diagnostic Menu. These items are for design use only.

1. Plug in the AC power cord, and then turn on the main power switch.
2. Press the [Simple Screen] key 4 times, press the [Suspend] key, and press the [Simple Screen] key 4 times to display "Self Diagnostic Menu".
3. Press [[1] Touch Screen Adjust].



w_m1322110

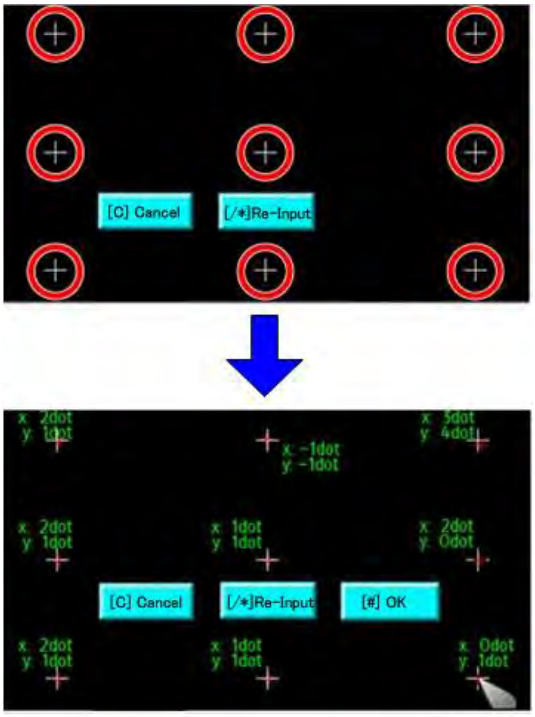
4. Use a pointed (not sharp!) tool to press the mark (+) at the upper left of the screen.



w_m1322111

5. Press in order the lower right, lower left, middle, and upper right of the screen (+).
6. Press [[#] OK] to return the “Self Diagnostic Menu”.
7. Press [[6] Touch Screen Test].

8. Press the 9 points and confirm that each value is within ±5 dots.



w_m111d4904

9. Press [[#] OK] to return the “Self Diagnostic Menu”.

10. Press [[#] Exit] on the screen to save.

SERVICE TABLE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

5. SERVICE TABLE

5.1 SERVICE PROGRAM MODE

Note

- Make sure that the data-in LED is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the printer to process the data.

5.1.1 SP TABLES

See "Appendices" for the following information:
"SP Mode Tables"

5.1.2 ENABLING AND DISABLING SERVICE PROGRAM MODE

Note

- The Service Program Mode is for use by service representatives only so that they can properly maintain product quality. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

Press "Exit" on the LCD twice to return to the user screen.

Note

- To make the settings effective, turn the main power switch off and on after exiting service mode.

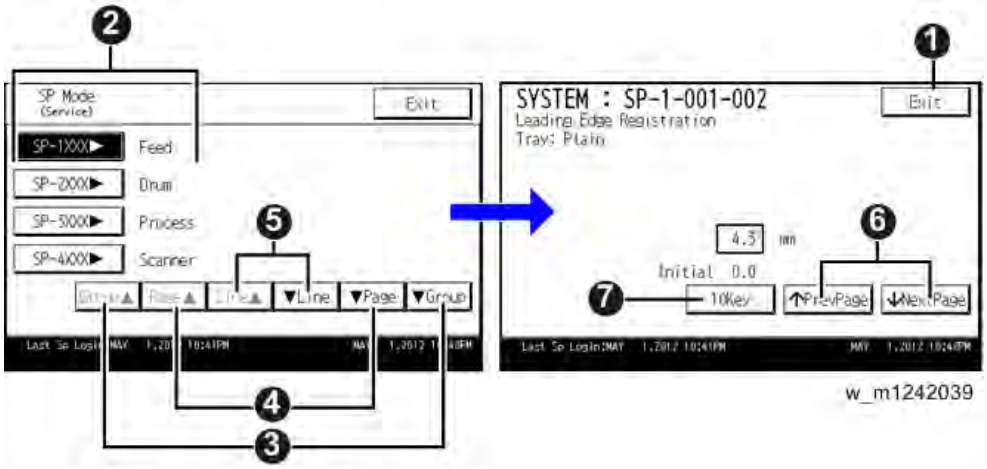
5.1.3 TYPES OF SP MODES

Type	Description
Service SP	SP modes related to the controller/printer functions
Engine SP	SP modes related to the engine functions

Select one of the Service Program modes (Service, or Engine) from the touch panel.

w_m1242040

Here is a short summary of the touch-panel buttons.



w_m1242039

1	Press two times to leave the SP mode and return to the user screen to resume normal operation.
2	Press any Class 1 number to open a list of Class 2 SP modes.
3	Press to scroll the show to the previous or next group.
4	Press to scroll to the previous or next display in segments the size of the screen display (page).
5	Press to scroll the show the previous or next line (line by line).
6	Press to move the highlight on the left to the previous or next selection in the list.
7	Switch to the number key screen. For an SP that requires you to enter numbers, press "10 key" to display the number key screen, enter the number, and then press "OK" to confirm the specified value.

5.1.4 SERVICE MODE LOCK/UNLOCK

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in:
   User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can service the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. Go into the SP mode and set SP5169 to "1" if you must use the printer bit switches.
3. After machine servicing is completed:
   - Change SP5169 from "1" to "0".
   - Turn the machine off and on. Tell the administrator that you have completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

5.2 UPDATING THE FIRMWARE

5.2.1 UPDATING FIRMWARE

Preparation

- If the SD card is blank, copy the entire "romdata" folder onto the SD card.
- If the card already contains the "romdata" folder, copy the "M136" folder onto the card.

If the card already contains folders up to "M136", copy the necessary firmware files (e.g. M136xxxx.fwu) into this folder.

Note

- Do not put multiple machine firmware programs on the same SD card. Copy the only model firmware you want.

Updating Procedure

1. Turn the main power switch off.
2. Remove the slot cover (× 1).
3. Insert the SD card into SD Card Slot 2. Make sure the label on the SD card faces the front side of the machine.
4. Slowly push the SD card into the slot so it locks in place. You will hear it click. Make sure the SD card locks in place.

   Note

   - To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.
5. Disconnect the network cable if the machine is connected to a network.
6. Switch the main power switch on. After about 45 seconds, the initial version update screen appears on the LCD in English.
7. On the screen, touch the button or press the corresponding number key on the operation panel to select the item in the menu that you want to update.

ROM/NEW	What it means
ROM:	Tells you the number of the module and name of the version currently installed. The first line is the module number, the second line the version name.
NEW:	Tells you the number of the module and name version on the SD card. The first line is the module number, the second line the version name.

   Note

   - Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.
8. Select "UpDate (#)" to start the update.

Note

- The progress bar appears on the operation panel.

9. The "Update is Done" message appears on the operation panel after completing the updating. The message differs depending on the firmware that has been updated.
10. Switch the machine main power switch off when you see the "Update is Done" message or follow the procedure that is displayed on the operation panel.
11. Press in the SD card to release it. Then remove it from the slot.
12. Switch the machine on for normal operation.

Error Messages

An error message shows in the first line if an error occurs during the download.
The error code consists of the letter "E" and a number (for example, "E24"). For details, refer to the Error Message Table. (Handling Firmware Update Errors in this section)

Firmware Update Error

If firmware update fails, an error code appears.
For example, E36 reports that the program which you wish to update is not in the machine or the data in the machine you wish to update does not correspond to the data in the card.

Recovery after Power Loss

If the ROM update is interrupted as a result of accidental loss of power while the firmware is updating, then the correct operation of the machine cannot be guaranteed after the machine is switched on again. If the ROM update does not complete successfully for any reason, then in order to ensure the correct operation of the machine, the ROM update error will continue to show until the ROM is updated successfully.
In this case, insert the card again and switch on the machine to continue the firmware download automatically from the card without the menu display.

5.2.2 HANDING FIRMWARE UPDATE ERRORS

An error message shows in the first line if an error occurs during a download. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

Code	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is inserted correctly.
21	Cannot access memory	HDD connection incorrect or replace hard disks.
22	Cannot decompress compressed data	Incorrect ROM data on the SD card, or data is corrupted.
23	Error occurred when ROM	Controller program abnormal. If the second attempt

Code	Meaning	Solution
	update program started	fails, replace controller board.
24	SD card access error	Make sure SD card inserted correctly, or use another SD card.
30	No HDD available for stamp data download	HDD connection incorrect or replace hard disks.
31	Data incorrect for continuous download	Insert the SD card with the remaining data required for the download, the re-start the procedure.
32	Data incorrect after download interrupted	Execute the recovery procedure for the intended module download, then repeat the installation procedure.
33	Incorrect SD card version	Incorrect ROM data on the SD card, or data is corrupted.
34	Module mismatch - Correct module is not on the SD card)	SD update data is incorrect. Acquire the correct data (Japan, Overseas, OEM, etc.) then install again.
35	Module mismatch – Module on SD card is not for this machine	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
40	Engine module download failed	Replace the update data for the module on the SD card and try again, or replace the BCU board.
42	Operation panel module download failed	Replace the update data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the update data for the module on the SD card and try again, or replace the hard disks.
44	Controller module download failed	Replace the update data for the module on the SD card and tray again, or replace controller board.
50	Electronic confirmation check failed	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

5.3 UPLOADING/DOWNLOADING NVRAM DATA

5.3.1 UPLOADING CONTENT OF NVRAM TO AN SD CARD

Do the following procedure to upload SP code settings from NVRAM to an SD card.

Note

- All data that is stored in NV-RAM of the engine and controller is subject to update.

Note

- This data should always be uploaded to an SD card before the NVRAM is replaced.
- Make sure that the write protection of an SD card is unlocked

1. Do SP5-990 (SMC Print) before you switch the machine off. You will need a record of the NVRAM settings if the upload fails.
2. Switch the machine main power switch off.
3. Remove the SD slot cover.
4. Insert the SD card into SD card slot. Then switch the machine on.
5. Execute SP5-824 (NVRAM Data Upload) and then press the “Execute” key.
6. The following files are copied to an NVRAM folder on the SD card when the upload procedure is finished. The file is saved to the following path and filename:
   NVRAM\<serial number>.NV
   Here is an example with Serial Number “K5000017114”:
   NVRAM\K5000017114.NV
7. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

Note

- You can upload NVRAM data from more than one machine to the same SD card.

5.3.2 DOWNLOADING AN SD CARD TO NVRAM

Do the following procedure to download SP data from an SD card to the NVRAM in the machine.

- The NVRAM data download may fail if the SD card with the NVRAM data is damaged, or if the connection between the controller and EGB is defective.
- Do the download procedure again if the download fails.
- Do the following procedure if the second attempt fails:
  Enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.

1. Switch the machine main power switch off.
2. Remove the SD slot cover.
3. Insert the SD card with the NVRAM data into SD Card Slot.
4. Switch the machine main power switch on.
5. Do SP5-825(NVRAM Data Download) and press the “Execute” key.

Note

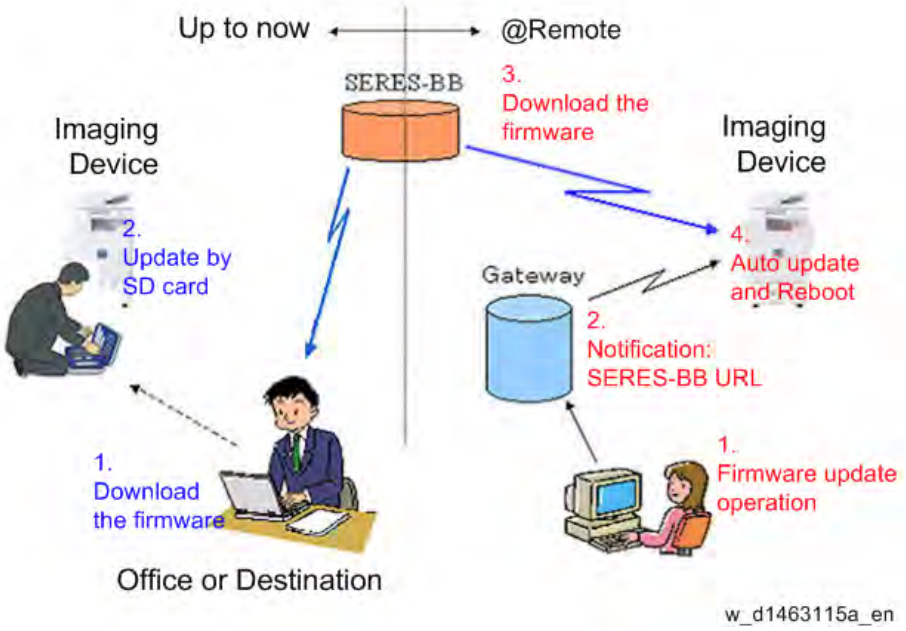
- The serial number of the file on the SD card must match the serial number of the machine for the NVRAM data to download successfully. The download fails if the serial numbers do not match.

This procedure does not download the following data to the NVRAM:

- Total Count
- Total: Full Color
- B&W/Single Color
- Default charge counters for counter display
- External controller information settings (SP5193-001)

5.4 RFU UPDATING THE FIRMWARE

In this machine, software can be updated by remote control using @Remote.



5.4.1 RFU PERFORMABLE CONDITION

RFU is performable for a device which meets the following conditions.

1. The customer consents to the use of RFU.
2. The devise is connected to a network via TCP/IP for @Remote.

5.5 FIRMWARE UPDATE (SMART FIRMWARE UPDATE)

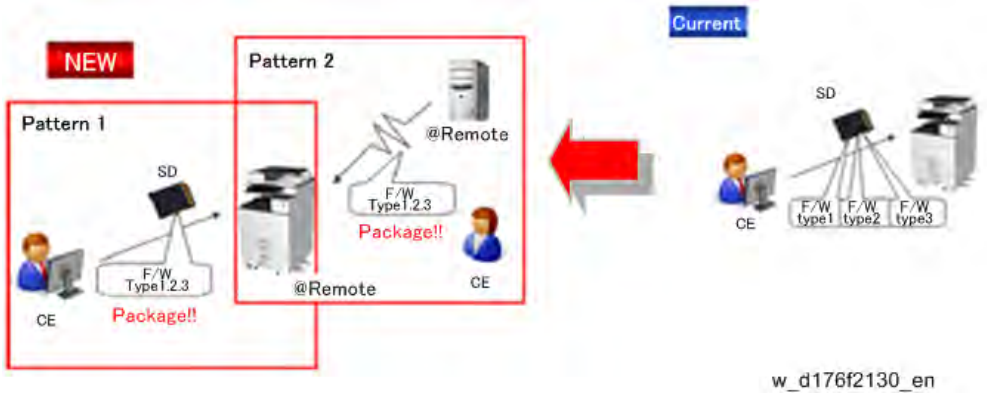
⚠CAUTION

- A HDD unit must be installed on the machine to enable the SFU or the package firmware update via SD card.

5.5.1 OVERVIEW

Each firmware module (such as System/Engine, etc.) used to be updated individually. However, an all-inclusive firmware package (package_ALL) is now available.
There are three ways to update using the firmware package.

- Package Firmware Update via a network: SFU (Smart Firmware Update)
- Package Firmware Update via a remote service: RFU
- Package Firmware Update with an SD card



Package Firmware Update via a network: SFU (Smart Firmware Update)

- There are two methods for SFU.
  - Immediate Update: To update the firmware when visiting
  - Update at the next visit: To set the date and time for downloading. The firmware will be automatically downloaded beforehand and updated at the following visit.
- "Update at the next visit" is recommended since firmware download may take some minutes due to the network condition.

Note

- SFU requires the connection to @Remote via a device which has the embedded @Remote communicating function. When a machine is connected to @Remote via an intermediate device (RC Gate), the SFU function is disabled.

Package Firmware Update via an SD Card

Package firmware update can also be performed using the conventional SD card method by writing the package firmware directly to the SD card.

Types of firmware update files, supported update methods:

	SFU	SD Card	RFU
Individual firmware	N/A	Available	Available
Package firmware	Available	Available	Available

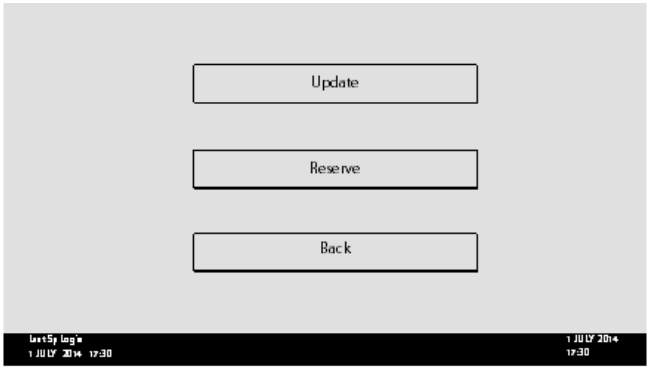
5.5.2 IMMEDIATE UPDATE

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

Note

- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function.
- If an error code is displayed, refer to ***Handing Firmware Update Errors***.

1. Enter the SP mode.
2. Touch [Firmware Update].
   Touch [Update].



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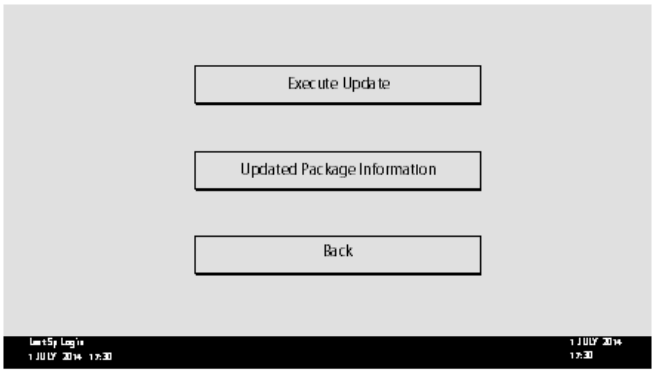
3. Touch [Execute Update].



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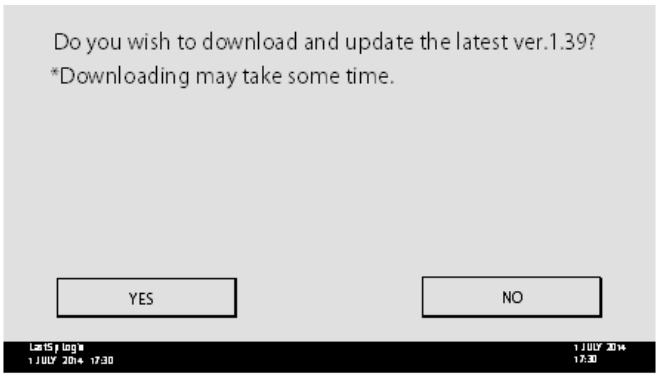
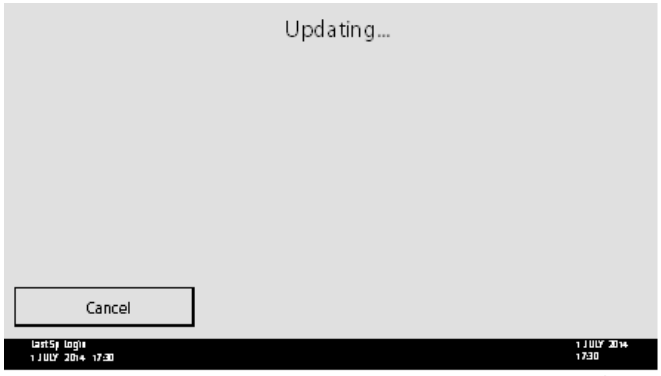
4. Touch [YES].



d197f0514

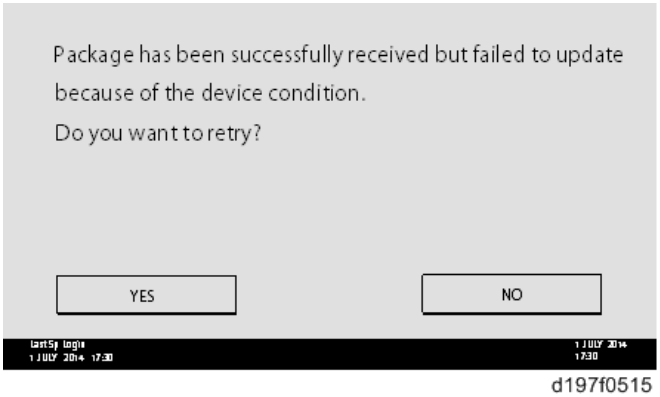
5. The following will be displayed.



d197f0513

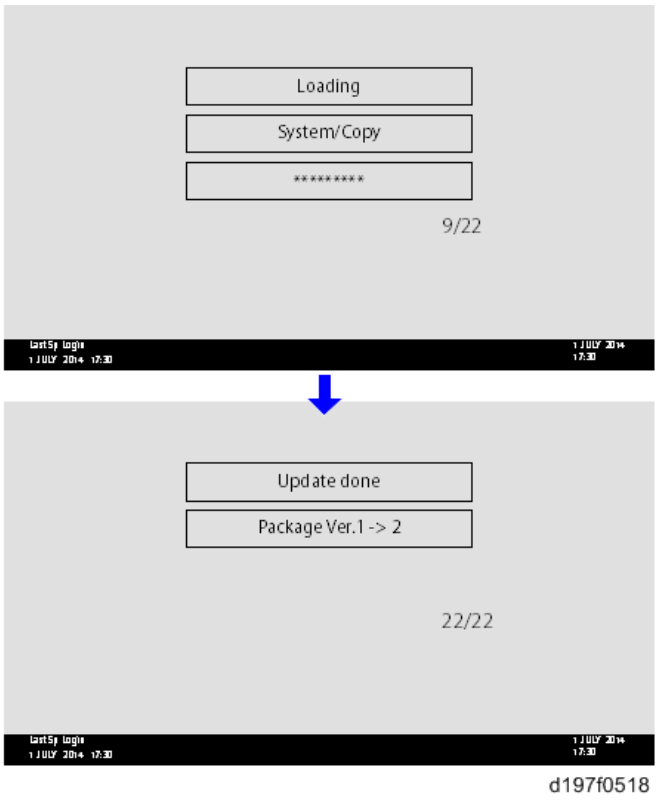
Note

- If the error code E66, which indicates that the download of the firmware has failed, is displayed, go back to step 1.
- Update will be started automatically after the download is finished.
- When the machine is in the update mode, the automatic update is suspended if a print job is started. After the print job is finished, touch [YES] on the display shown below to restart updating.



d197f0515

6. [Update done] is displayed.
   - The machine will automatically reboot itself.



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Note

- The figures at the lower right of the display indicate "Number of updated items/ All items to be updated".

5.5.3 UPDATE AT THE NEXT VISIT (RESERVE)

It is possible to set the machine to download the package firmware which is necessary for SFU in advance, and then perform the actual installation at the next service visit. This saves waiting time for the firmware to download at the service visit.

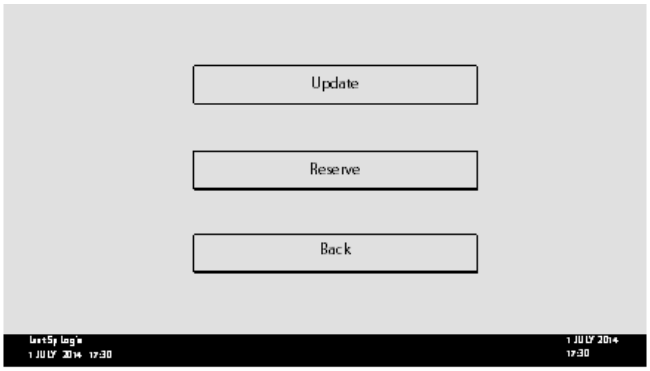
How to Set the Machine to Download Firmware Later (Reserve)

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

Note

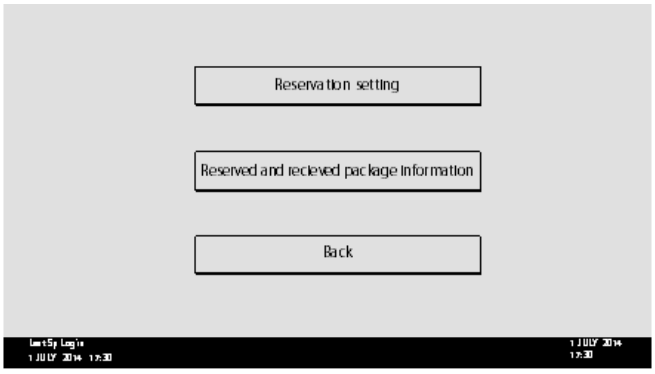
- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function. If an error code is displayed, refer to ***Handing Firmware Update Errors***.

1. Enter the SP mode.
2. Touch [Firmware Update].
   Touch [Reserve].



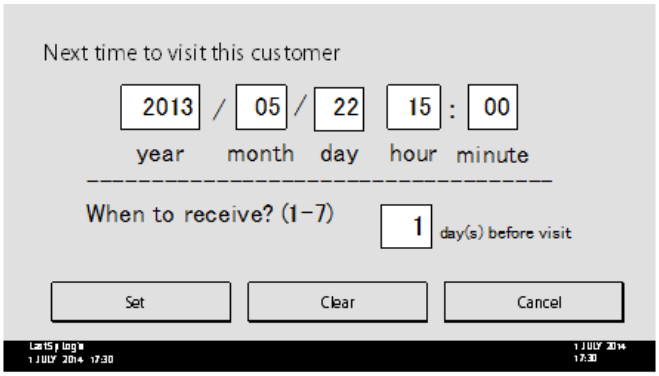
d197f0508

3. Touch [Reservation setting].



d197f0510

4. Enter the dates and times of the next visit and the start of receiving data.
   - "Next time to visit this customer": The package firmware will be automatically downloaded by this time/date.
   - "When to receive? (1-7)": The download of the package firmware will begin this number of days before the next visit.



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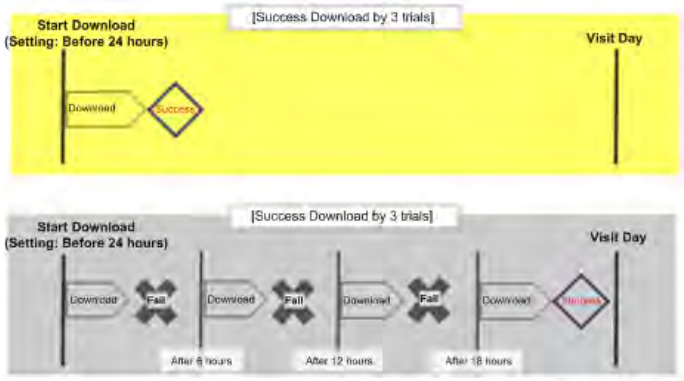
Successful Download

In the two diagrams below, the firmware is set to be downloaded by the day before the next scheduled visit. In the first diagram, the download is successful on the first try. In the second diagram, the download fails three times and is successful on the fourth try.

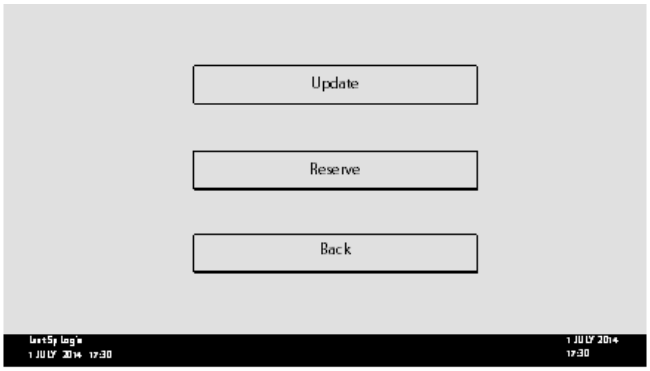


w_d197f0507_en

- If the firmware download fails or cannot be completed due to the network settings/condition, no power to the machine, or other reason, the machine will continue retrying every six hours until the scheduled deadline (up to a maximum of four tries). For example, if the download is set for the day before the next visit, the machine will attempt the download at 24 hours before the visit, and then continue trying every six hours (max. four tries total).
- The retry is only performed in cases when the firmware download has failed.
- If the machine is in Energy Saver mode when the download is scheduled to begin, the download will be performed in the background and the machine/panel will stay in Energy Saver mode.
- The download will continue uninterrupted even if the customer initiates a print job, copy job, fax receiving or other operation while the download is in progress.
- The download will be terminated if the customer turns the power off while the download is in progress.
- If the download cannot be completed successfully by the time of the next scheduled visit, the machine will stop trying to download the firmware.

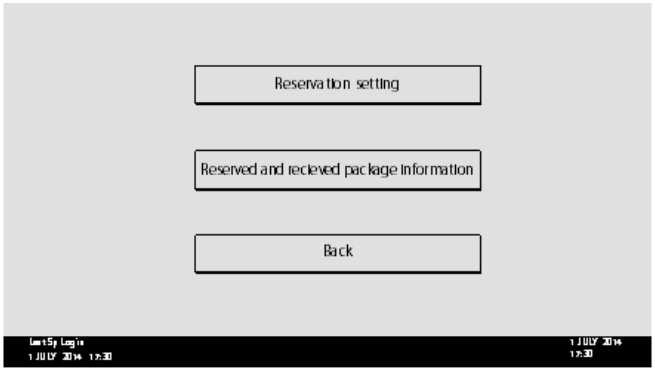
How to Check if the Firmware Downloaded with Reserve

1. Enter the SP mode.
2. Touch [Firmware Update].
   Touch [Reserve].



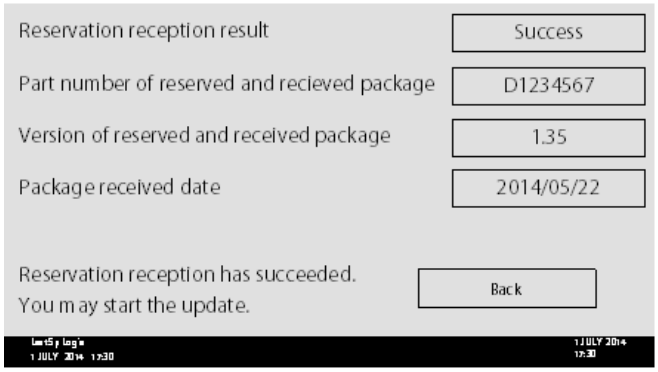
d197f0508

3. Touch [Reserve and received package information].



d197f0510

4. Check the information displayed.
   When the package firmware was downloaded successfully, the details of the download result are displayed as the following picture shows.



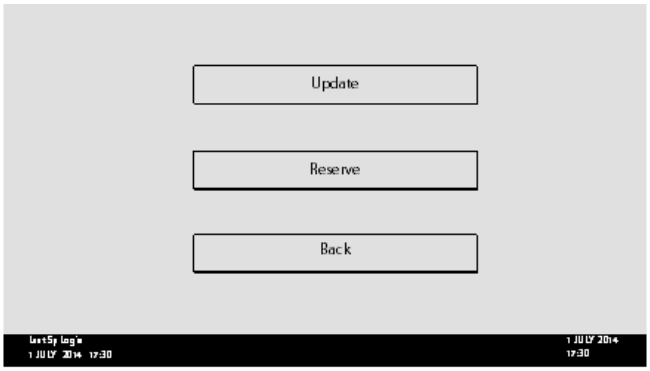
d197f0511

Note

- This information will only be displayed if the reserved firmware has already been downloaded. If not, all the data items are indicated with "-".

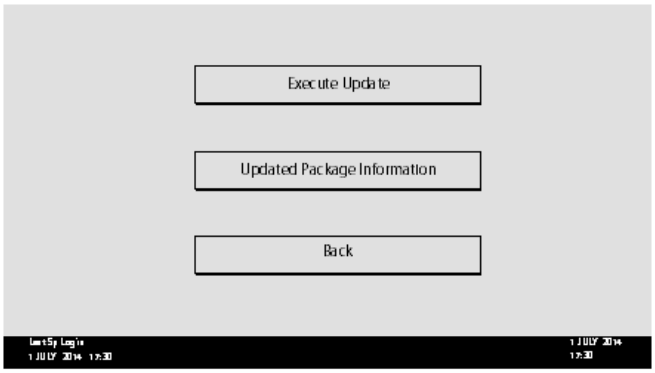
How to Install Firmware Downloaded with Reserve

1. Enter the SP mode.
2. Touch [Firmware Update].
   Touch [Update].



d197f0508

3. Touch [Execute Update].



d197f0509

4. Check the version of the received package firmware, and then touch [YES].
   - Update is started.

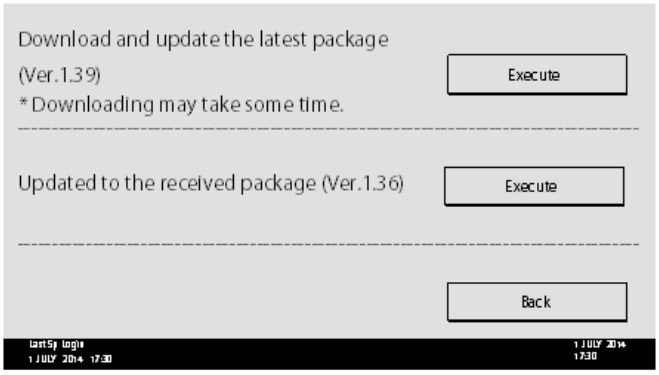
d197f0516

Note

- If the version of the reserved package in the HDD is older than the latest version,

Service Table

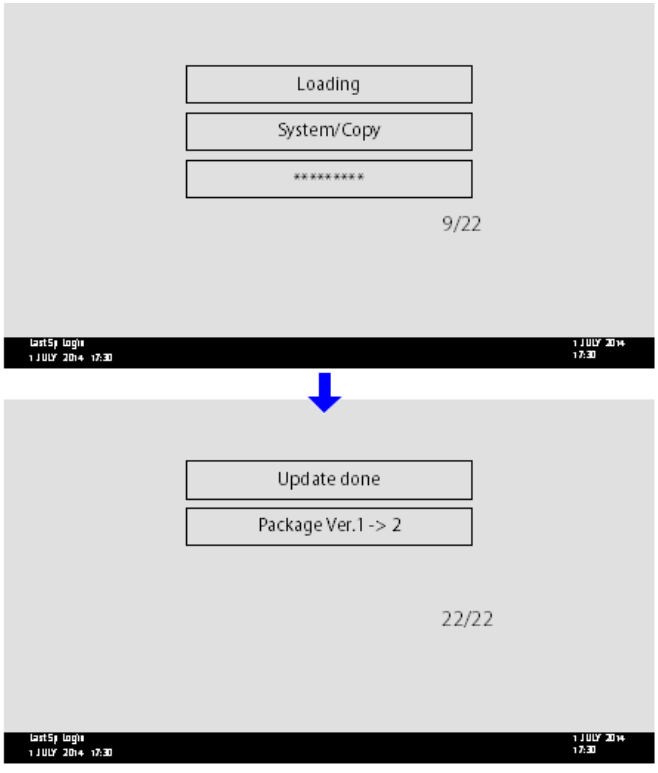
the messages shown in the following picture are displayed.



d197f0517

- If you wish to download the latest version, touch [Execute] beside the message "Download and update the latest package." Then update of the package firmware will be started.
- If you wish to update using the firmware in the HDD (old version), touch [Execute] beside the message "Update to the received package."

5. [Update done] is displayed.
   - The machine will automatically reboot itself.



d197f0518

Note

- The figures at the lower right of the display indicate "Number of updated items/ All items to be updated".

5.5.4 UPDATE VIA SD CARD

Update with an SD card, which is the conventional method, is available if you write the package firmware to the SD card.

Note

- If an error code is displayed, refer to ***Handing Firmware Update Errors***.

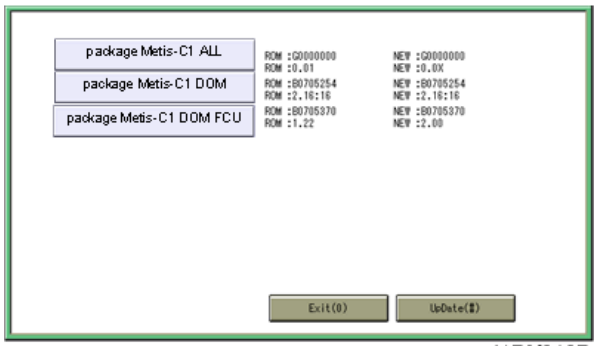
1. Create a new folder in the SD card, and then name it "package".
2. Copy the package firmware (xxxxxxxx.pkg) to this folder.

d197f0504

Important

- If you copy the package firmware into the conventional "romdata" folder, the update will not work.
- Only one version of the package firmware should be copied into the folder. If you copy multiple versions of package firmware to the SD card, the machine will select only one version of the firmware randomly.

3. Turn the power OFF.
4. Remove the slot cover (☞ × 1).
5. Insert the SD card which contains the package into SD card slot 2 (for service).
6. Turn the power ON and touch [Update].



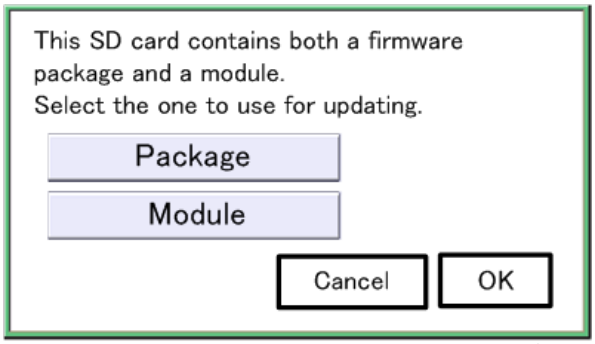
d176f2127

Note

- When the SD card contains both a firmware package and one or more modules, the following display may show up. Select [Package] and touch [OK] to move to

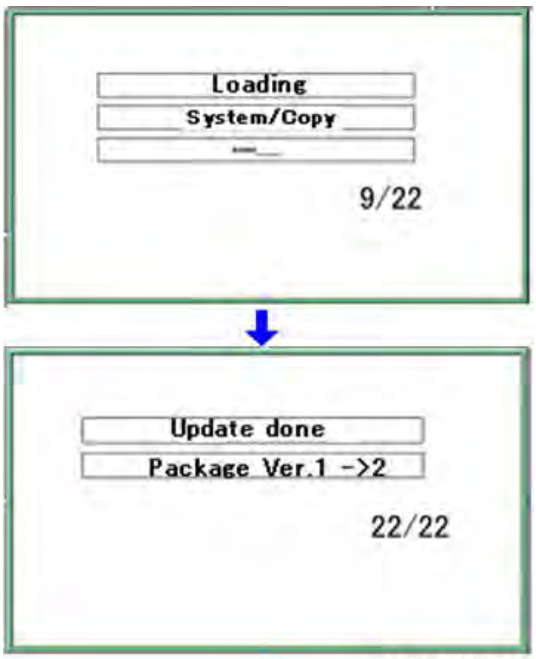
Service Table

step 5 above.



d176f2128

7. Update is started automatically after the package firmware download to the HDD has been completed.
8. When update is completed, "Update done" is displayed.



w_d177z0021a

Note

- The figures at the lower right of the display indicate "Number of updated items/ All items to be updated".

9. Turn the main power switch OFF, and then pull out the SD card from SD card slot 2.
10. Turn the power ON.

5.6 CAPTURING THE DEVICE LOGS

5.6.1 OVERVIEW

Important

- This function is not available on models without a hard disk.

With this feature, you can save debug logs that are stored in the machine (HDD or operation panel) on an SD card. It allows the Customer Engineer to save and retrieve error information for analysis.

The Capturing Log feature can save the following logs.

- Controller device log including operation log
- Engine device log
- Device log of the operation panel.

Important

- In older models, a technician enabled the logging tool after a problem occurred. After that, when the problem had been reproduced, the technician was able to retrieve the device log.
- However, this new feature saves the device logs at the time that problems occur. Then you can copy the logs to an SD card.
- You can retrieve the device logs using a SD card without a network.
- Analysis of the device log is effective for problems caused by the software. Analysis of the device log is not valid for the selection of defective parts or problems caused by hardware.
- Make sure to shut down and reboot the machine once before retrieving the Device Logs. Otherwise, the latest settings may not be collected when the device logs are retrieved.

Types of device logs that can be saved

Type	Storage Timing	Destination (maximum storage capacity)
Controller device log (GW device log) including operation log	• Saved at all times	HDD (4 GB) or SD card connected to the service slot. When the data gets over 4.0 GB, the older data is deleted.
Engine device log	• When an engine SC occurs • When paper feeding/output stop because of a jam	HDD or SD card connected to the service slot (Up to 300 times)

Type	Storage Timing	Destination (maximum storage capacity)
	• When the machine doors are opened during normal operation	
Operation panel log	• When an error related to the operation panel occurs.	Memory in the operation panel

Note

- **Device logs are not saved in the following conditions.**
- When there is no optional HDD.
- While erasing all memory
- While data encryption equipment is installed
- While changing the firmware configuration
- Forced power OFF (accidentally disconnecting the outlet)
- Engine device log while the machine is shut down
- When the power supply to the HDD is off because of energy saving (engine OFF mode /STR mode)
- When one of the following SCs occurs: SC672, SC816, SC819, SC878, SC899, SC859, SC860, SC861, SC863, or SC864

Note

- The following logs are not saved:
- Logs related to the energy saver mode (Engine-off, suspend-mode, or other cases)
- Network communication log
- Logs related to NRS
- Access log for unauthorized users (guests)
- HTTP session timeout log
- Auto log-out log
- IC card related log

Note

- The default save destination is the HDD. Except when it cannot be saved to the HDD for some reason, there is no need to change from the HDD to an SD card.
- If you want to change the save destination to an SD card, do the following.
- Set SP5-858-002 (Collect Machine Info: Save To) to ”1 (SD)”
- Execute SP5-858-003 (Collect Machine Info: Make Log Trace Dir) to make a folder for the log in the SD card.
- Turn the power switch OFF and ON.
- It is recommended to use the SD card (8 GB) provided as a service part. The part number of the SD card that is registered as a service part is "B6455040".

Security of the Operation Log

The following operation logs related to security are not saved.

- User ID
- Password
- IP address
- Telephone number
- Encryption key
- Transition to SP mode

Also the following operation logs are not saved.

- Number keys (0 to 9) on the operation panel
- Soft keyboard on the touch panel display
- External keyboard

5.6.2 RETRIEVING THE DEVICE LOGS VIA OPERATION PANEL

Important

- Retrieve device logs to identify the date of occurrence of the problems and to find details of the problems
- e.g.: At around 8:00 am on March 10, an engine stall occurred. The operation panel does not respond. Turn the main power supply off / on.
- You need to retrieve the device logs dating back three days from the date of the problem.
- Analysis of the device log is effective for problems caused by the software. Analysis of the device log is not valid for the selection of defective parts or problems caused by hardware.

Procedure for Retrieving the Device Log with SD Card

1. Insert the SD card into the slot on the front of the operation panel.

   Note

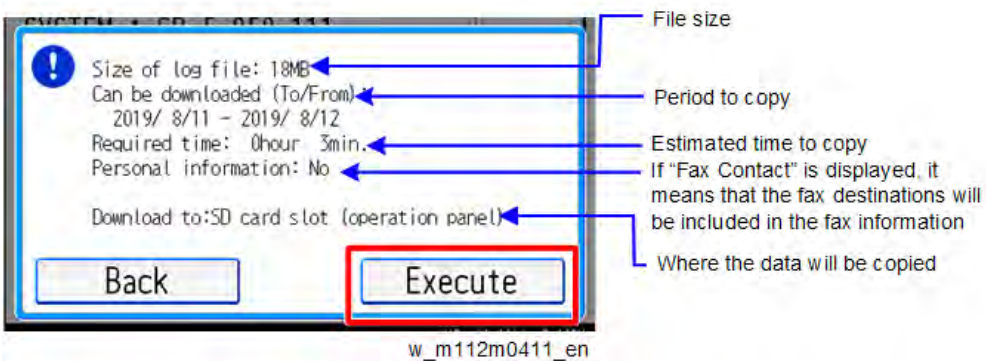
   - It is recommended to use the SD card (2 GBs or 8 GBs) provided as a service part. This is because the log data can be acquired much faster than when using commercially available SD cards.
   - Format the SD card by using SD Formatter from Panasonic before copying the logs: https://www.sdcard.org/downloads/formatter_3/ (free software)
   - Insert the SD card into the machine's service slot instead of the SD slot on the side of the operation panel.
2. Turn ON the main power.
3. Enter SP mode.
4. Specify the date that the problem occurred in SP5-858-101 (Start Date) by setting it to the year-month-day calendar format.

- For example, if a problem occurred on February 1, 2015, the date should be set to "20150201", as shown above.
- Be sure to confirm the date when the problem occurred before obtaining the logs.

5. Specify the number of days to collect the logs in SP5-858-102 (Days of Tracing).
   - "2" is set by default, which is the minimum needed for investigating the problem.
   - A value of "1" to "180" can be set.
6. Execute SP5-858-111 (Acquire All Info & Logs) to copy all of the log types to an SD card.
   It is possible to obtain the logs separately by the following SPs.

SP	Collectable Information and/or Logs
SP5-858-111	All of the information and logs that are collected by executing the SPs from SP5-858-121 to SP5-858-144, and SMC.
SP5-858-121	Configuration page
SP5-858-122	Font page
SP5-858-123	Print settings list
SP5-858-124	Printer Error log
SP5-858-141	Controller log, engine log, operation panel log, and SMC.
SP5-858-142	Controller log
SP5-858-143	Engine log
SP5-858-144	Operation panel log
SP5-992-001	SMC

7. After executing the SP for copying the information and/or logs, a confirmation screen will appear. To proceed with obtaining the information and/or logs, tap "Execute"

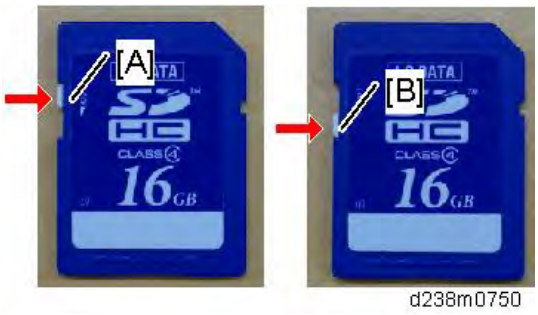


w_m112m0411_en

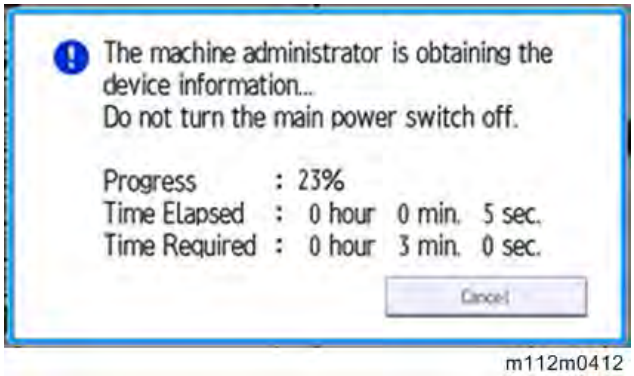
Note

- The approximate time it takes to transfer the debug log is as follows. Transfer time may be affected by the type or format of the SD card.
- Controller device log (GW device log): 2 - 20 minutes
- Engine device log: 2 minutes
- Operation panel device log: 2 - 20 minutes

If the estimated time is not calculated due to an error, an error code will be displayed.

Error Code	Description
-1	Other.
-2	No SD card is inserted in the service slot or in the SD slot on the side of the operation panel. In this case, insert an SD card into either of the SD slots.
-3	The SD card is locked. In this case, unlock the SD card, as shown below.  d238m0750 [A]: Unlocked, [B]: Locked

8. Wait for the information and/or logs to be copied to the SD card.



m112m0412

9. After a message stating that the process has completed appears on the operation panel, confirm that the LED light next to the SD card slot is not flashing and then remove the SD card.

10. Make sure that the SD card access LED is off, then remove the SD card.

Note

- The process of obtaining logs fails in the following cases:
- When the size of the logs to obtain exceeds the amount of space available on the SD card.
- When the SD card is removed while the logs are being copied to it.
- When the SD card is not formatted.
- If 'failed' appears on the touch panel display, turn the power off, and then recover from step 1 again.

5.6.3 RETRIEVING THE DEVICE LOGS VIA WEB IMAGE MONITOR

The device logs can be retrieved via the Web Image Monitor.

1. Access the following URL and logon as an administrator:
   http://[IP address or host name]/web/entry/df/websys/direct/getSysInfo.cgi

d238m0884

2. Specify the date that the problem occurred and the number of days to download the logs, and then click "Download".

d238m0885

Note

- "2" is set by default for "Number of days, including date fault occurred, to obtain".

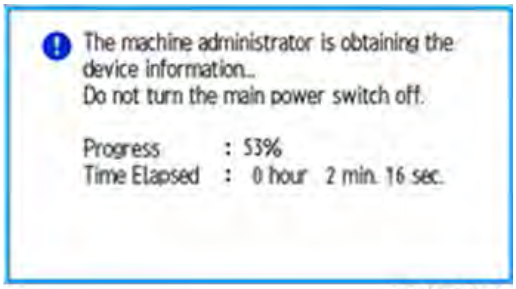
3. The confirmation screen will appear and the information and/or logs will start downloading. To proceed to download the information and/or logs, wait for the open-or-save dialog to

appear.

d238m0886

Note

- To cancel downloading, click "Cancel".
- To reconfigure some settings, click "Download again".
- Operation panel when downloading the logs:



d238m0887

4. After a while, the open-or-save dialog will appear. Specify where to download and save the file.

d238m0888

Note

- The device logs are saved with the file names listed on the following table. These names are the same as the files downloaded with SD card.

Table of file names of the device logs saved

Controller log (mmesg)	/LogTrace/[the model number]/watching/[yyyymmdd_hhmmss]_[a unique value].gz
Engine device log	/LogTrace/[Machine Serial]/engine/[yyyymmdd_hhmmss].gz
Operation panel log	/LogTrace/[the model number]/opepanel/[yyyymmdd_hhmmss].tar.gz
SMC	/LogTrace/[the model number]/smc/[the model number]_[5992XXX]_[yyyymmdd]_[hhmmss].csv
Configuration page	/LogTrace/[the model number]/gps/ConfigrationPage/ConfigrationPage_ [yyyymmdd_hhmmss].csv
Font page	• /LogTrace/[the model number]/gps/FontPage/FontPage_PCL_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[the model number]/gps/FontPage/FontPage_PDF_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[the model number]/gps/FontPage/FontPage_PS_[the page number]_[yyyymmdd_hhmmss].jpg
Print settings list	• /LogTrace/[the model number]/gps/PrintSettingList/PrintSettingList_RPGL_[yyyymmdd_hhmmss].txt • /LogTrace/[the model number]/gps/PrintSettingList/PrintSettingList_RTIFF_[yyyymmdd_hhmmss].csv
Error log	/LogTrace/[the model number]/gps/ErrorLog/[yyyymmdd_hhmmss].csv

5.7 UPDATING JAVAVM

5.7.1 OVERVIEW

Updating Java VM is performed with PC using the update tool.

- Prepare the following items in advance.
  - SD memory card reader/writer
  - PC
- Updating flow is as follows.
  1. Deactivate the SDK applications with Web Image Monitor.
  2. Remove the VM CARD Type P8 from the main machine.
  3. Update Java VM with PC using the update tool.
  4. Install the VM CARD Type P8 to the main machine.
  5. Activate the SDK applications with Web Image Monitor.

Deactivating SDK Applications

1. Log in as the administrator from Web Image Monitor.

2. Take a note of the current heap size setting in [Heap / Stack Size Settings].

- [Device Management] -> [Configuration] -> [Extended Feature Settings] -> [Administrator Tools] -> [Heap / Stack Size Settings]

3. Stop all SDK applications except for Java TM Platform.

1. Display the [Startup Setting] menu.
   - [Device Management] -> [Configuration] -> [Extended Feature Settings] -> [Startup Setting]
2. Check the radio button of the SDK application which status is "Starting Up".
3. Click [Start Up/Stop] to stop the application.
4. "Stop" is displayed in the status column.

Note

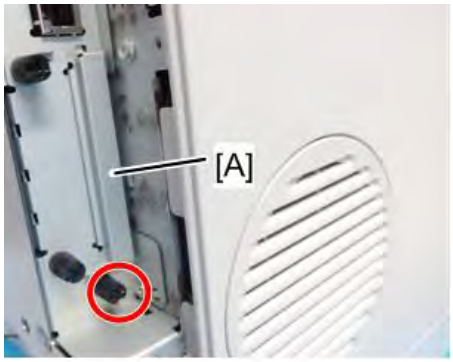
- Do not change the status of Java TM Platform to "Stop".

4. Make sure that "Auto Start" is set to "Off" for each SDK application.

1. Click the [Details] icon ( ) for each SDK application in [Startup Setting].
2. Make sure that "Auto Start" is set to "Off". (Default: On)

5. Turn the main power OFF.

6. Remove the SD card slot cover [A] (Coin screw x 1).



m112m0409

7. Remove VM CARD Type P8 from the SD Card Slot 1 (Upper slot).

Updating JavaVM

1. Insert VM CARD Type P8 into SD memory card reader/writer of your PC.
2. Check that the SD memory card reader/writer is detected on your PC, and then write down the drive letter. (If the SD memory card reader/writer is detected as (F:), the drive letter is "f")
3. Download the update modules from Firmware Download Center.
4. Unzip the downloaded file, and then execute the .exe file.
5. The folder is generated.
6. Execute the .bat file in the folder.
7. Input the drive letter following a message "Please input drive letter of SD card [a - x]: ". (If the SD memory card reader/writer is detected as (F:), input "f")

d255a1520

8. Press the [Enter] key to start updating Java VM.
   It takes 3 minutes to update Java VM.
9. After completing the update, remove VM CARD Type P8 from SD memory card reader/writer of your PC.
10. Insert VM CARD Type P8 into SD Card Slot 1 (Upper slot) of the machine.
11. Reassemble the machine.

Activating SDK Applications

1. Turn the main power ON.

2. Log in as the administrator from Web Image Monitor.

3. Change the setting of "Auto Start" to "On" for each SDK application.

4. Reconfigure the heap size setting in [Heap / Stack Size Settings].

1. Display the [Startup Setting] menu.
   [Device Management] -> [Configuration] -> [Extended Feature Settings] -> [Startup Setting]etting]
2. Click the [Details] icon ( ) for each SDK application.
3. Make sure that "Auto Start" is set to "On". (Default: On)

5. Reconfigure the heap size setting in [Heap / Stack Size Settings].

- [Device Management] -> [Configuration] -> [Extended Feature Settings] -> [Administrator Tools] -> [Heap / Stack Size Settings]

5.8 SMC LIST CARD SAVE FUNCTION

5.8.1 OVERVIEW

SMC List Card Save

- The SMC List Card Save (SP Text Mode) function is used to save the SMC list as CSV files to the SD-card inserted into the lower SD-card slot.

5.8.2 PROCEDURE

1. Turn the main power switch OFF.
2. Insert the SD card into the lower SD-card slot. Then turn the power ON.
3. Enter SP mode.
4. Select "Engine".
5. Select SP-5992 "SP Text Mode".

   SP-5992-xxx (SP Text Mode)

Detail No.	SMC Categories to Save
001	All (Data List)
002	SP (Mode Data List)
004	Logging Data
005	Diagnostic Report
006	Non-Default
007	NIB Summary
026	Printer SP

6. Select a detail SP number shown below to save data on the SD card.
7. Press [EXECUTE].
8. Press [EXECUTE] again to start. Press [CANCEL] to cancel the saving.
9. “It is executing it” is shown on the screen while executing.
10. Wait for 2 to 3 minutes until “Completed” is shown.

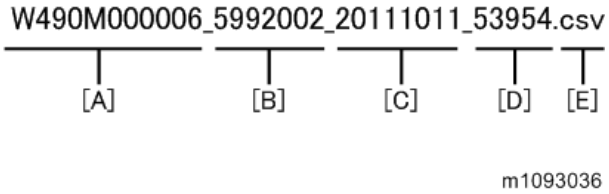
    Note

    - The SMC list saving may take from 2 to 3 minutes to complete.
    - Press [CANCEL] to abort executing.
11. Press [Exit] to exit from SP mode.
12. Press [Exit] to exit from SP mode.

5.8.3 FILE NAMES OF THE SAVED SMC LISTS

The SMC list data saved on the SD-card will be named automatically. A folder named by the machine serial number will be created on the SD card when this function is executed. The file naming rules are as follows.

Example:



A:

Machine serial number (fixed for each machine)

B:

SP number saved in this file.

First four digits (5992) in this part are fixed. The other three digits are the detail SP number(s). Therefore, this file is of SP5-992-002 (SP (Mode Data List)). See the upper SP table for the correspondence between SP detail numbers and the contents.

C:

File creation date

Year/Month/Day (“Zero” will be omitted if each is one digit.)

D:

File creation time

Hour/Minute/Second (“Zero” will be omitted if each is one digit.)

E:

File Extension CSV (Comma Separated Value)

This part is fixed.

Note

- This function can save the SMC list data only to an SD card inserted into the lower SD card slot.

5.8.4 ERROR MESSAGES

SMC List Card Save error message:

- **Failed:**
  FACTOR: Read-only file system, No space left on device.

If an error occurs, pressing “Exit” will cause the device to discard the job and return to the ready state.

5.9 UP/SP DATA IMPORT/EXPORT

5.9.1 OUTLINE

With this machine, you can save and restore the UP/SP setting data on the SD card.
You can import the data from another machine of the same series regardless of its model or option configuration.

5.9.2 UP DATA IMPORT/EXPORT

Data that can be imported and exported

- Printer Features
- Web Image Monitor Setting
- Web Service Settings
- System Settings

Data that cannot be imported or exported

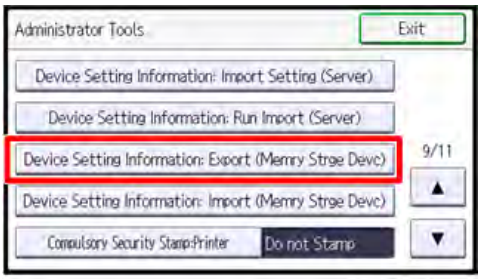
- Some System Settings *1 *2
  *1 The setting for the date, settings that require the device certificate, and settings that need to be adjusted for each machine (for example, image adjustment settings) cannot be imported or exported.
  *2 Settings only for executing functions and settings only for viewing cannot be imported or exported.
- Extended Feature Settings
- Address book
- Programs
- Settings that can be specified via telnet
- @Remote-related data
- Counters
- EFI printer unit settings
- Settings that can only be specified via Web Image Monitor or Web Service (for example, Bonjour, SSDP setting)

Exporting Device Information

This can be exported / imported by an administrator with all privileges.
When exporting SP device information from the control panel, the data is saved on an SD card.

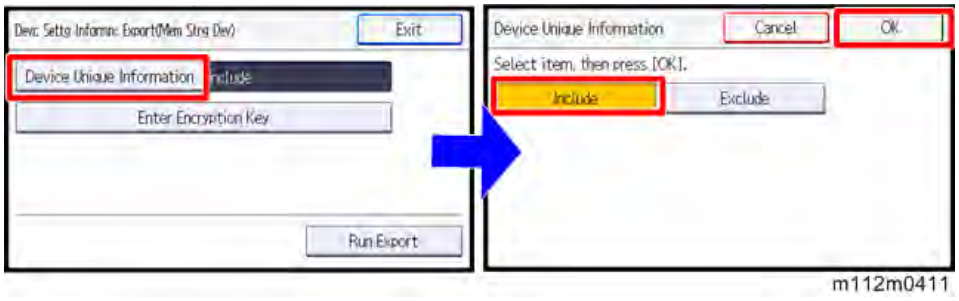
1. Insert an SD card into the media slot on the front of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. Press [User Tools] icon > [System Settings].
4. Press [Administrator Tools].

5. Press [Device Setting Information: Export (Memry Strge Devc)].



6. Set the export conditions.

1. Press [Device Unique Information] to specify whether to [Include] or [Exclude] the device unique information, and then, press [OK].
"Device Unique Information" includes the IP address, host name, etc.



2. Press [Enter Encryption key] to specify an encryption key, and then, press [OK].

7. Press [Run Export].
8. Press [OK].
9. Press [Exit].
10. Log out.

Note

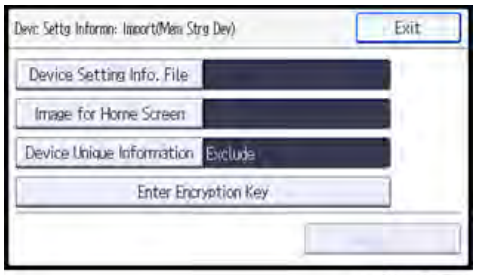
- If export fails, you can check the log for the error. The log is stored in the same location as the exported device setting information file.
- When device Information is periodically imported, it is necessary to create the device setting information file with special software and store it on the web server.

Importing Device Information

This can be exported / imported by an administrator with all privileges.

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the front of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. Press [User Tools] icon > [System Settings].
4. Press [Administrator Tools].
5. Press [Device Setting Information: Import (Memry Strge Devc)].
6. Configure the import conditions.



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- Press [Select] of the [Device Setting Info. File] to select the file(s) to import.
- When inserting a file into a home screen, press [Select] of the [Image for Home Screen] to select the file. You cannot use this setting when using the Smart Operation Panel.
- Press [Device Unique Information] to specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
- Press [Enter the Encryption Key] to enter the key that was specified when the file was exported.

7. Press [Run Import].
8. Press [OK].
9. Press [Exit].

   The machine restarts.

Note

- If import fails, you can check the log for the error. The log is stored in the same location as the exported device setting information file.

5.9.3 SP DATA IMPORT/EXPORT

Data that can be imported and exported

- System SP
- Printer SP

Exporting Device Information

When exporting SP device information from the control panel, the data is saved on an SD card.

1. Insert an SD card into the media slot on the front of the control panel.
2. Enter SP mode.

3. Press SP5-749-001 (Import/Export: Export)
4. Select "Target" SP settings (System/Printer) to be exported.
5. Select "Option" settings (Unique/Secret).

Item	Specification	Note
Unique	Unique information of the machine is included in the exported file if you select "Unique" setting.	**Unique information that can be updated** #1. Items that are to be used to identify the machine. Example: Network Information/ Host name /Mail address assigned to the machine #2. Items for specifying the options equipped on the machine. Example: Lot number for developer Note • Import/export of the host name: Follow the rule to use the default host name (RNP + MAC address) only if the user setting of the host name has not been specified. • If the default host name is imported to the machine on which the host name has been specified, the host name is not overwritten, and an error does not occur. **Unique information that cannot be updated** #1. Items that may cause a problem if imported Example: Serial number / Information related to @Remote / PnP name #2. Items for managing the history of the machine Example: Time and date / Counter information / Installation date #3. Items that vary between each machine even among the same models. Example: Setting values for the Engine
Secret	Secret information is exported if you select "Secret" setting.	**Secret information** #1. Data that cannot be exported without being encrypted. (Exported data is encrypted.) Example: Password / Encryption key / PIN code #2. Confidential information for the customer Example: User name / User ID / Department code

Item	Specification	Note
		/ Emploee number /Mail address / **Phone number** #3. Personal information Example: Document name / Image data #4. Sensitive information for the customer Example: IP address / MAC address / Network parameters / Characters that can be entered #5. Data that can be exported to identify the user without revealing personal information (unless the machine is identified.) Example: Registration number (abbreviated)

* The IP address is exported when both 'Unique' and 'Secret' are selected.

6. Select "Crpt config" setting (Encryption).

Encryption	Select whether to encrypt or not when exporting. If you push the "Encryption" key, you can export secret information.	If the encryption function is used, setting of an encryption key is required by direct input. • Type the arbitrary password using the soft keyboard • Can enter up to 32 characters

7. Press [Execute].
8. Press [OK].

Note

- If data export fails, the details of the error can be viewed in the log.

Importing Device Information

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the front of the control panel.
2. Enter SP mode.
3. Press SP5-749-101(Import/Export: Import)
4. Select a unique setting.
5. Press [Encryption Key], if the encryption key was created when the file was exported.
6. Select an encryption setting.

Unique	If you want to apply the unique information to the target machine, select the "Unique" key.	Refer to the above information.
Encryption	If an encrypted file is selected as the import file, this setting is required.	

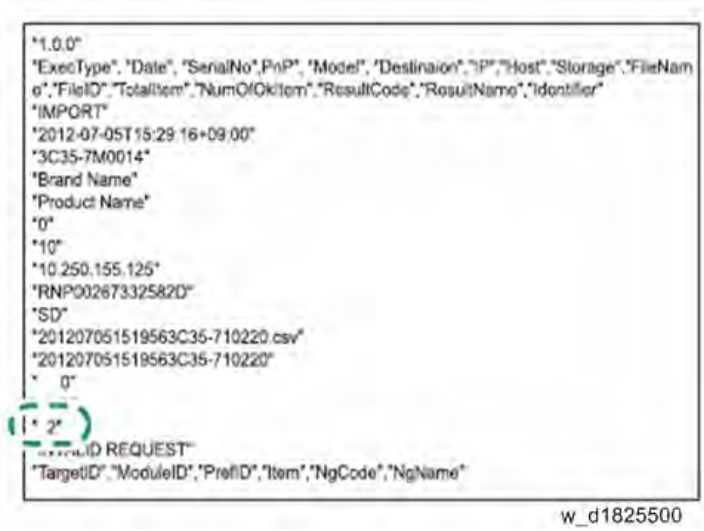
7. Press [Execute].
8. Press [OK].

Note

- If data import fails, the details of the error can be viewed in the log.

5.9.4 POSSIBLE SOLUTIONS FOR IMPORT/EXPORT PROBLEMS

The access log file is created when export/import is executed. The file is stored in the same location as the exported device setting information file.
If an error occurs, check the log's result code in the access log file first. Values other than 0 indicate that an error occurred.
The result code will appear in the circled area illustrated below.
- Example of a log file



If you cannot solve the problem or do not know how to solve it after checking the code, note down the error log entry, then contact your supervisor.

Result Code	Cause	Solutions
2 (INVALID REQUEST)	A file import was attempted between different models or machines with different device configurations.	Import files exported from the same model with the same device configurations.
4 (INVALID OUTPUT DIR)	Failed to write the device information to the destination device.	Check whether the destination device is operating normally.
7(MODULE ERROR)	An unexpected error occurred during import or export.	Switch the power off and then back on, and then try the operation again. If the error persists, contact your supervisor.
8 (DISK FULL)	The available storage space on the external medium is insufficient.	Execute the operation again after making sure there is enough storage space.
9 (DEVICE	Failed to write or read the log file.	Check whether the path to the folder

Result Code	Cause	Solutions
ERROR)		for storing the file or the folder in which the file is stored is missing.
10 (LOG ERROR)	Failed to write the log file. The hard disk is faulty.	Contact your supervisor.
20 (PART FAILED)	Failed to import some settings.	The reason for the failure is logged in "NgCode". Check the code. **Reason for the Error (Ng-Name)** 2. INVALID VALUE The specified value exceeds the allowable range. 3. PERMISSION ERROR The permission to edit the setting is missing. 4. NOT EXIST The setting does not exist in the system. 5. INTERLOCK ERROR The setting cannot be changed because of the system status or interlocking with other specified settings. 6. OTHER ERROR The setting cannot be changed for some other reason.
21 (INVALID FILE)	Failed to import the file because it is in the wrong format in the external medium.	Check whether the file format is correct. The import file should be a CSV file.
22 (INVALID KEY)	The encryption key is not valid.	Use the correct encryption key.

Note

- When exporting device information from the control panel, the data can be saved only on an SD card.
- The file format for exports is CSV.

5.10 CARD SAVE FUNCTION

5.10.1 OVERVIEW

Card Save:

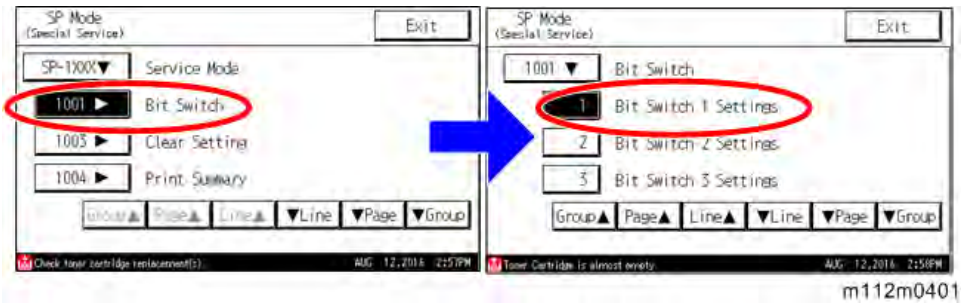
- The Card Save function is used to save print jobs received by the printer on an SD card with no print output. Card Save mode is toggled using printer Bit Switch #1 bit number 4. Card Save will remain enabled until the SD card becomes full, or until all file names have been used.
- Captures are stored on the SD card in the folder /prt/cardsave. File names are assigned sequentially from PRT00000.prn to PRT99999.prn. An additional file PRT.CTL will be created. This file contains a list of all files created on the card by the card save function.
- Previously stored files on the SD card can be overwritten or left intact. Card Save SD has "Add" and "New" menu items.
  - **Card Save (Add):** Appends files to the SD Card. Does not overwrite existing files. If the card becomes full or if all file names are used, an error will be displayed on the operation panel. Subsequent jobs will not be stored.
  - **Card Save (New):** Overwrites files in the card's /prt/cardsave directory.

Limitation:

- Card Save cannot be used with PJL Status Readback commands. PJL Status Readbacks will not work. In addition they will cause the Card Save to fail.

5.10.2 PROCEDURE

1. Turn OFF the main power.
2. Insert the SD card into slot 2 (lower), then turn ON the main power.
3. Enter SP mode.
4. Select the "System SP".
5. Select SP-1001 "Bit Switch" > "Bit Switch 1 Settings".



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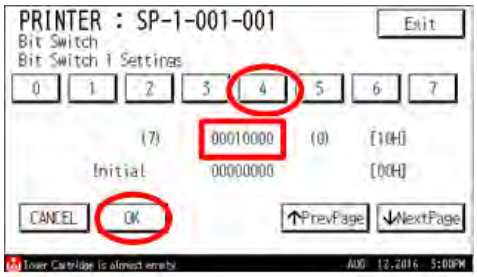
6. Use the "4" key to turn bit 4 ON and then press "OK" to register the change. The result should look like: 00010000. By doing this, Card Save option will appear in the "List/Test

Print" menu.



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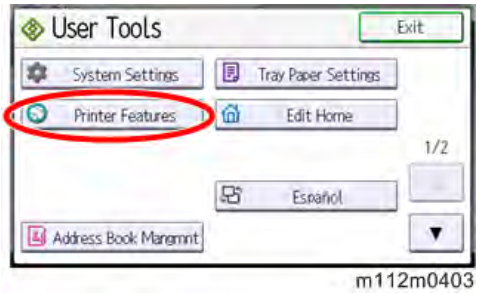
7. Press "Exit" to exit SP Mode.
8. Press the "User Tools" key > "Printer Features".



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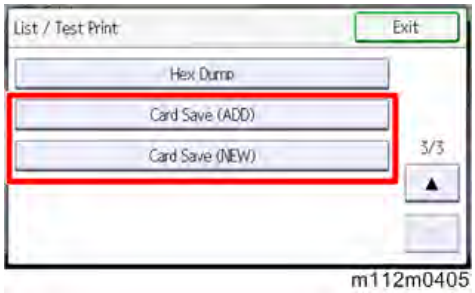
9. Card Save (ADD) and Card Save (NEW) should be displayed on the screen. Select Card Save (Add) or Card Save (New).



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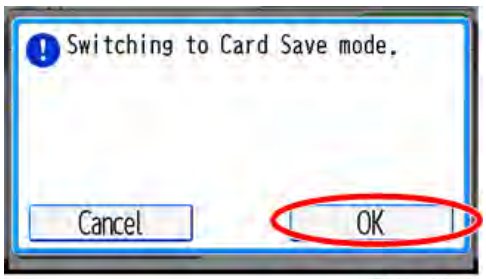
10. Press "OK" and then return to Home screen.



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11. Press the "Printer" icon.

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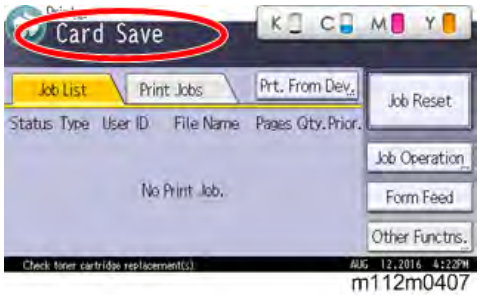
12. "Card Save" is displayed in the top left of the display panel.



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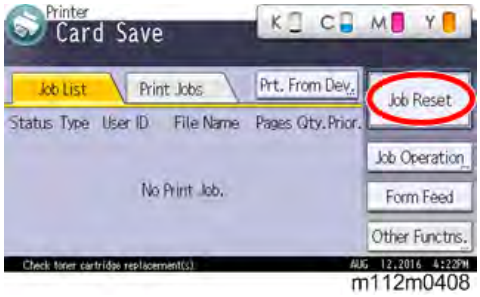
13. Send a job to the printer. The Communicating light should start blinking.
14. As soon as the printer receives the data, it will be stored on the SD card automatically with no print output.
    Nothing is displayed on the screen, indicating that a Card Save operation was successful.
15. Press "Job Reset" to exit Card Save mode.



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16. Change the Bit Switch Settings back to the default 00000000, then press "OK" to register the changes.
17. Remove the SD card after the main power switch is turned OFF.

5.10.3 ERROR MESSAGES

Card Save error messages:

- **Init error:** A card save process (e.g. card detection, change to kernel mode) failed to initialize.
- **Card not found:** Card cannot be detected in the slot.
- **No memory:** Insufficient working memory to process the job.
- **Write error:** Failed to write to the card.
- **Other error:** An unknown error occurred.

If an error occurs, pressing "OK" will cause the device to discard the job and return to the ready state.

TROUBLESHOOTING

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

6. TROUBLESHOOTING

6.1 SELF-DIAGNOSTIC MODE

6.1.1 SELF-DIAGNOSTIC MODE AT POWER ON

As soon as the main machine is powered on, the controller waits for the initial settings of the copy engine to take effect and then starts an independent self-diagnostic test program.
The self-diagnostic test checks the CPU, memory, HDD, and so on. An SC code is displayed if the self-diagnostic program detects any malfunction or abnormal condition. In the case of the error that can start the machine, record it in System Error Log.

6.2 SERVICE CALL

6.2.1 SERVICE CALL CONDITIONS

The "SC Table" section shows the SC codes for controller errors and other errors. The latter (not controller errors) are put into four types. The type is determined by their reset procedures. The table shows the classification of the SC codes.

Key	Definition	Reset Procedure
A	The error involves the fusing unit. The machine operation is disabled. The user cannot reset the error.	Turn the main switch off and on. Reset the SC (set SP5-810-1). Turn the main switch off and on.
B	The error involves one or some specific units. The machine operates as usual, excluding the related units.	Turn the main switch off and on.
C	The error is logged. The SC-code history is updated. The machine operates as usual.	The SC will not show. Only the SC history is updated.
D	The machine operation is disabled. You can reset the machine by turning the main switch off and on. If the error occurs again, the same SC code is displayed.	Turn the main power switch off and on.

6.2.2 LED OPTICS

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
195-00	D	S/N input error
		Compare the product ID code of the product S/N (11 digits).
		The product ID code of the product S/N (11 digits) does not match.
		Re-enter the product S/N.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
230-01 230-02 230-03 230-04	D	FGATE*[1]: Does not turn ON.(01: Bk, 02: C, 03: M, 04: Y)
		GPIO*[2] has not been asserted, although the specified time (200 ms) elapsed after setting JOB to be started and reaching the FGATE assert time.
		• Control Board • Engine Board
		• Turn the power OFF and then ON. • Replace the Engine Board. • Replace the Controller Board.

(*1)FGATE: Signals used between the controller and the engine in order to send the information

about the sub scan length of the page to be printed.

(*2)GPIO: A type of input/output terminal

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
231-01 231-02 231-03 231-04	D	FGATE*1: Does not turn OFF.(01: Bk, 02: C, 03: M, 04: Y)
		GPIO*2 has not been negated, although the specified time (200 ms) elapsed after detecting GPIO*assert and then reaching the expected FGATE negate time. * This is an I/O pin. Such I/O pins can be used for a variety of applications, depending on the setting.
		• Control Board • Engine Board
		• Turn the power OFF and then ON. • Replace the Engine Board. • Replace the Controller Board.

(*1)FGATE: Signals used between the controller and the engine in order to send the information about the sub scan length of the page to be printed.

(*2)GPIO: A type of input/output terminal

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
270-00	D	Write ASIC communication error
		• When the Engine Board could not read the Unique ID of the Writing ASIC properly when starting this machine. • When an Error bit occurred in the communication between the Engine Board and the Writing ASIC.
		The unique ID of the write ASIC was not read normally.
		• Turn the power OFF and then ON. • Replace the Engine Board.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
277-00	D	LEDA communication error: power supply system
		The power supply to LEDA has been cut off due to a blown fuse or other problem.
		Blown fuse
		• Check the FFC. • Turn the power OFF and then ON. • Replace the FFC. • Replace the Engine Board.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
277-01 277-02 277-03 277-04	D	LEDA communication error (01: Bk, 02: C, 03: M, 04: Y)
		Communication between the LED head and engine board has failed.
		• LED Head error • Harness Error
		• Check the FFC. • Turn the power OFF and then ON. • Replace the FFC. • Replace the LED Head • Replace the Engine Board. • Return SP2-1205-020 to the initial value

6.2.3 IMAGE PROCESSING

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
332-01 332-02 332-03 332-04	D	Toner supply feed lock (01: Bk, 02: C, 03: M, 04: Y)
		Under the condition that the Toner Cartridge has not reached the end, an error that no toner is supplied has been detected over n times in succession. n: The value was set at SP3-131-015.
		• Disconnected or broken Toner Supply Solenoid. (Failed to open the toner supply shutter) • Disconnection of Toner Supply Clutch • Failed PCDU. (Toner leak) • Toner clogging
		• Check the connector connection or check for broken wire. • Replace the Toner Supply Solenoid • Replace the PCDU • Replace the Toner Cartridge.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
364-01 364-02 364-03 364-04	D	Toner End Sensor output count error (01: Bk, 02: C, 03: M, 04: Y)
		The output count from the Toner End Sensor indicates an average of 0.
		- Bad connector contact or connector disconnected/wire broken - Failed TE Sensor - LED Head mounting error (incorrect calibration of TE Sensor)
		- Turn the main power of the printer OFF and then ON - Check the connector connection or check for broken wire.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		- Replace the LED Head. - Replace the TE sensor (using the same troubleshooting procedure as for LED).

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
365-01 365-02 365-03 365-04	D	Toner End Sensor upper limit sensor error (01: Bk, 02: C, 03: M, 04: Y)
		The Toner End Sensor still indicates that the remaining amount of toner is at the "upper limit", although 255 g or more toner has been consumed.
		- Stained TE Sensor surface - Failed TE Sensor
		• Turn the main power of the printer OFF and then ON. • Check the connector connection. • Clean/replace the sensor (using the same troubleshooting procedure as for LED).

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
370-01	D	TM(ID) Sensor calibration error (Right)*
		The specular light output voltage (Vsg_reg) of the Right TM (ID) Sensor cannot be calibrated to a value in the target range. Upper limit (initially 2.97 V) Lower limit (initially 2.31V)
		- Disconnected TM(ID) Sensor connector/bad contact - Stained TM(ID) Sensor window - Failed TM(ID) Sensor - Image Transfer Belt loosened or out of place
		• Check the TM(ID) Sensor • Clean the TM(ID) Sensor Detection window • Check the Image Transfer Belt • Replace the TM(ID) Sensor

* This is the sensor on the left as viewed from the front.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
370-02	D	TM(ID) Sensor calibration error (Left)*
		The specular light output voltage (Vsg_reg) of the Left TM(ID) Sensor cannot be calibrated to a value in the target range. Upper limit (initially 2.97 V) Lower limit (initially 2.31V)
		- Disconnected TM(ID) Sensor connector/bad contact - Stained TM(ID) Sensor window - Failed TM(ID) Sensor - Image Transfer Belt loosened or out of place
		• Check the TM(ID) Sensor • Clean the TM(ID) Sensor Detection window • Check the Image Transfer Belt • Replace the TM(ID) Sensor

* This is the sensor on the right as viewed from the front.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
396-01	D	Drum Motor: K Error
		Early Detection • A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Operation Timing • When the motor rotation request or speed change request is issued, the motor is in the stopped state. Motor Stop Timing • A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		- Disconnected connector - Broken signal wire - Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the Drum Motor: K.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
396-	D	Drum Motor: CMY error

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
05		Early Detection • A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Operation Timing • When the motor rotation request or speed change request is issued, the motor is in the stopped state. Motor Stop Timing A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		- Disconnected connector - Broken signal wire - Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the Drum Motor: CMY.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
442-01 442-02 442-03	D	Intermediate transfer contact Sensor error (01: Home position error, 02: Contact error, 03: Non-contact error)
		- Home position error: SC442-01 If the home position is not set within the T4 time after turning ON the feed motor and feed clutch, an error results. - Contact error: SC442-02 If the contact state is not set within the T3 time after turning ON the feed motor and feed clutch, an error results. - Non-contact error: SC442-03 If the non-contact state is not set within the T3 time after turning ON the feed motor and feed clutch, an error results. [Error time T3] SP value: 100 to 25500 ms Initial value: 3000 ms Note: Contact/non-contact error judgment [Error time T4] SP value: 100 to 25500 ms Initial value: 3000 ms Note: Home position error judgment

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		• High motor load • Failed motor • Disconnected connector • Broken harness wire • PSU: +24 V fuse blown • Failed interlock mechanism • Failed Engine Board
		1. Connect and disconnect the Image Transfer Unit 2. Replace the Image Transfer Unit 3. Replace the Engine Board 4. Replace the ITB (Image Transfer Belt) Contact Clutch 5. Replace the Paper Feed Motor

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
490-00	D	Charging/developing: Output error
		The "HVP_ERR1: Output error Sensor signal" is monitored at 20 ms intervals. If 0 (error) is detected ten times in succession (200 ms), the following causes are suspected:
		• Failed PCDU • Failed High Voltage Power Supply (Separation) • Damaged HVP connection harness
		• Replace the PCDU. • Replace the HVP. • Replace the harness.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
491-01	D	Primary/secondary transfer: Output error
		The "HVP_ERR2: Output error Sensor signal" is monitored at 20 ms intervals. If 0 (error) is detected fifty times in succession (1000 ms) (during bias output), the following causes are suspected:
		• Image Transfer Unit error • Transfer Roller error • Damaged HVP connection harness • Noise generated by poor contact of the power supply terminals of the Development Roller

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		• Replace the Image Transfer Unit. • Replace the Transfer Roller • Replace the HVP. • Replace the harness. • Replace the PCDU.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
491-02	D	Disconnected connector: High voltage output error
		The "HVP_ERR2: Output error Sensor signal" is monitored at 20 ms intervals. If 0 (error) is detected ten times in succession (200 ms) (during non-bias output), the following causes are suspected:
		• HVP Connect harness disconnected • Damaged HVP connection harness
		• Check the HVP Connect harness • Replace the HVP connection harness.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
498-00	C	Temperature/humidity Sensor error
		• Temperature Sensor output error: Out of range between 076 V and 2.90 V • Humidity Sensor output error: 2.4 V or more
		- Unmounted Sensor (Unset connector or broken wire) - Failed Sensor
		• Turn the power OFF and then ON. • Check that the connector is set. • Replace the Sensor. • Replace the connector.

6.2.4 PAPER FEED AND FUSING

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
508-00	B	By-pass bottom plate operation error
		The signal from the by-pass bottom plate position Sensor has not changed (that is, the signal has not changed from ON to OFF or vice versa) for two seconds or more after the start of reverse Paper Feed Unit rotation, If the error is detected three times in succession, the appropriate SC number is displayed on the operation panel unit.
		• By-pass bottom plate Sensor connector disconnected or other error • By-pass bottom plate Sensor feeler stuck or other error
		• Turn the power OFF and then ON. • Check and replace the by-pass bottom plate Sensor connector connection. • Replace the by-pass bottom plate Sensor feeler. • Replace the Paper Feed Motor.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
520-02	D	Fusing motor error
		Early Detection • A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Operation Timing • When the motor rotation request or speed change request is issued, the motor is in the stopped state. Motor Stop Timing A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		• Disconnected connector • Broken signal wire • Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the Fusing Motor.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
521-01	B	Bank 1 motor error (Bank: paper tray unit)
		Early Detection • A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Stop Timing A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		• Disconnected connector • Broken signal wire • Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the bank 1 motor.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
521-02	B	Bank 2 motor error (Bank: paper tray unit)
		Early Detection A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Stop Timing A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		• Disconnected connector • Broken signal wire • Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the bank 2 motor.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
521-03	B	Bank 3 motor error (Bank: paper tray unit)
		Early Detection A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Stop Timing

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		• Disconnected connector • Broken signal wire • Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the bank 3 motor.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
530-00	D	Cooling fan error
		The fan motor lock (rotating state) signal is sampled 30 times at 100 ms intervals and the fan goes into an unstable rotating state at least ten times. (No error detection occurs for two seconds after the start of the fan or after changing the speed.)
		• Failed fan motor • Disconnected connector
		• Replace the fan motor. • Check the connector.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
531-00	D	Fusing fan error
		The fan motor lock (rotating state) signal is sampled 30 times at 100 ms intervals and the fan goes into an unstable rotating state at least ten times. (No error detection occurs for two seconds after the start of the fan or after changing the speed.)
		• Failed fan motor • Disconnected connector
		• Replace the fan motor. • Check the connector.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
532-00	D	PSU cooling fan
		The fan motor lock (rotating state) signal is sampled 30 times at 100 ms intervals and the fan goes into an unstable rotating state at least ten times. (No error detection occurs for two seconds after the start of the fan or after changing the speed.)
		• Failed fan motor • Disconnected connector
		• Replace the fan motor. • Check the connector.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
540-00	D	Paper Feed Unit error
		Early Detection • A command to stop the rotation of the motor has been issued right after the power was turned on, but the motor is still rotating. Motor Operation Timing • When the motor rotation request or speed change request is issued, the motor is in the stopped state. Motor Stop Timing A command to stop the rotation of the motor has been issued, but the motor is still rotating.
		• Disconnected connector • Broken signal wire • Excessive motor torque
		• Check the connector connection. • Turn the power OFF and then ON. • Replace the Paper Feed Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
541-00	A	Broken fusing (Center) thermopile wire
		AD value: 0-6 is detected for specified seconds continuously. Detection period: 500 ms, detection frequency: 10 times or more.
		• Broken thermopile wire • Bad connector contact
		• Clear the SP: fusing SC. • Replace the connector. • Replace the thermopile.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542-02	A	Fusing lamp (Center) thermopile not reloaded 1
		The heater(Center) thermopile does not reach 50 deg C 2.9 seconds after the start of heat control (during normal startup control).
		• Stained thermopile lens • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• Clean the thermopile lens. • Replace the thermopile. • Replace the Fusing Unit. • Clear the SP: fusing SC.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542-03	A	Fusing lamp (Center) thermopile not reloaded 2
		The heater (Center) thermistor does not reach the reload temperature 17 seconds after the start of motor rotation.
		• Stained thermopile lens • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• Clean the thermopile lens. • Replace the thermopile. • Replace the Fusing Unit. • Clear the SP: fusing SC.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542-04	A	Fusing lamp (Center) thermopile not reloaded 3
		The heater (Center) thermistor does not reach 100 deg C 7.7 seconds after the start of heat control (during low-temperature start up control).
		• Stained thermopile lens • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• Clean the thermopile lens. • Replace the thermopile. • Replace the Fusing Unit. • Clear the SP: fusing SC.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
543-00	A	Fusing (Center) thermopile high-temperature detected (software)
		The temperature is detected to stay at 230 deg C or higher for one second.
		• Shorted triac (element on the PSU) • Failed Engine Board • Failed fusing thermopile • Failed fusing thermistor • Failed fusing unit
		• Replace the thermopile. • Replace the Fusing Unit. • Replace the PSU. • Replace the Engine Board. • Clear the SP: fusing SC.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
544-00	A	Fusing (Center) thermopile high-temperature detected (hardware)
		The heating (Center) thermistor temperature becomes 250 or higher. (The hardware high-temperature error Sensor flag is detected at 10 ms intervals.)
		• Damaged, shorted triac (element on the PSU) • Failed engine control board • Failed fusing thermopile • Failed fusing thermistor • Abnormal fusing control software behavior
		• Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
545-00	A	Fusing (Center) heater stay ON
		The fusing (Center) heater stays ON for 3 seconds or more when in stand-by state (or the fusing roller is not rotating).
		• Stained thermopile lens • Broken heater wire • The overtemperature prevention mechanism started working
		• Clear the SP: fusing SC. • Clean the thermopile lens. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547-01	D	Zero-crossing error (adhered relay contact)
		When the fusing relay is in an OFF state, a "zero-crossing interrupt request" occurs in 50 ms.
		• Damaged fusing relay (adhered contact) • Failed fusing relay drive circuit
		• Turn the main power OFF and then ON. • Replace the harness. • Replace the PC board. • Replace the PSU.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547-02	D	Zero-crossing error (bad relay contact)
		If a "zero-crossing interrupt request" does not occur within 3 seconds when the fusing relay is in an ON state, an error results.
		• Damaged fusing relay (open contact) • Failed fusing relay drive circuit • PSU fuse (24VS) blown
		• Turn the main power OFF and then ON. • Replace the harness. • Replace the Engine Board. • Replace the PSU. • Replace the fuse.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547-03	D	Zero-crossing error (low frequency error)
		The number of zero-crossing interrupts does not reach a certain value in 500 ms.
		The frequency of the commercial power supply line is unstable.
		• Turn the main power OFF and then ON. • Check the commercial power supply line. • Replace the harness. • Replace the Engine Board. • Replace the PSU.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
551-00	A	Broken fusing (End) thermistor wire
		AD value: 3F9h-3FFh is detected for specified seconds continuously. Detection period: 500 ms, detection frequency: 10 times or more
		• Broken thermistor wire • Bad connector contact
		• Clear the SP: fusing SC. • Check the connector connection. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
552-03	A	Fusing (End) thermistor not reloaded
		The heating (End) thermistor does not reach 60 deg C 12.5 seconds after the start of motor rotation.
		• Deformed or floating thermistor • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• Clear the SP: fusing SC. • Replace the fusing (End) thermistor. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
553-00	A	Fusing (End) thermistor high-temperature detected (software)
		The temperature is detected to stay at 230 deg C or higher for one second.
		• Shorted triac (element on the PSU) • Failed Engine Board • Failed fusing thermopile • Failed fusing thermistor • Failed fusing unit
		• Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
554-00	A	Fusing (End) thermistor high-temperature detected (hardware)
		The heating (End) thermistor temperature becomes 250 or higher. (The hardware high-temperature error Sensor flag is detected at 10 ms intervals.)
		• Damaged, shorted triac (element on the PSU) • Failed engine control board • Failed fusing thermopile • Failed fusing thermistor • Abnormal fusing control software behavior
		• Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
557-00	C	Zero-crossing frequency exceeded
		The number of zero-crossing interrupts exceeds a certain value in 500 ms.
		The frequency of the commercial power supply line is unstable or noise occurs.
		None

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
559-00	A	Fusing jam detected 3 times in succession
		Fusing jam is detected three times in succession.
		Paper is wrapped around the fusing roller.
		CLEAR THE SP: FUSING SC.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
561-00	A	Broken pressure (Center) thermistor wire
		At least ten times, the temperature is detected to stay at 0 deg C or less for 39 seconds.
		• Broken thermistor wire • Bad connector contact
		• CLEAR THE SP: FUSING SC. • Check the connector connection.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		• Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
562-03	A	Pressure (Center) thermistor not reloaded
		The pressure (Center) thermistor does not reach 60 deg C 39 seconds after the start of motor rotation.
		• Deformed or floating thermistor • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• CLEAR THE SP: FUSING SC. • Replace the pressure (Center) thermistor. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
563-00	D	Pressure (Center) thermistor high-temperature detected (software)
		The temperature is detected to stay at 230 deg C or higher for one second.
		• Shorted triac (element on the PSU) • Failed Engine Board • Failed fusing thermopile • Failed fusing thermistor • Failed fusing unit
		• CLEAR THE SP: FUSING SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
564-00	A	Pressure (Center) thermistor high-temperature detected (hardware)
		The pressure (Center) thermistor temperature becomes 250 or higher. (The hardware high-temperature error Sensor flag is detected at 10 ms intervals.)
		• Damaged, shorted triac (element on the PSU) • Failed Engine Board • Failed fusing thermopile

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		• Failed fusing thermistor • Abnormal fusing control software behavior
		• CLEAR THE SP: FUSING SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
571-00	A	Broken pressure (End) thermistor wire
		At least ten times, the temperature is detected to stay at 0 deg C or less for 39 seconds.
		• Broken thermistor wire • Bad connector contact
		• CLEAR THE SP: FUSING SC. • Check the connector connection. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
572-03	A	Pressure (End) thermistor not reloaded
		The pressure (End) thermistor does not reach 60 deg C 38 seconds after the start of motor rotation.
		• Deformed or floating thermistor • Broken heater wire • Input voltage out of range • The overtemperature prevention mechanism started working
		• CLEAR THE SP: FUSING SC. • Replace the pressure (End) thermistor. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
573-00	D	Pressure (End) thermistor high-temperature detected (software)
		The temperature is detected to stay at 230 deg C or higher for one second.
		• Shorted triac (element on the PSU) • Failed Engine Board

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		• Failed fusing thermopile • Failed fusing thermistor • Failed fusing unit
		• CLEAR THE SP: FUSING SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
574-00	A	Pressure (End) thermistor high
		The pressure (End) thermistor temperature becomes 250 deg C or higher. (The hardware high-temperature error Sensor flag is detected at 10ms intervals.)
		• Damaged, shorted triac (element on the PSU) • Failed Engine Board • Failed fusing thermopile • Failed fusing thermistor • Abnormal fusing control software behavior
		• Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

6.2.5 DEVICE COMMUNICATION

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
669-**	D	EEPROM communication error
		An error is notified during EEPOM communication and the printer does not recover after three retries.
		669 - 1 ID error during EEPROM OPEN 669 - 2 Channel error during EEPROM OPEN 669 - 3 Device error during EEPROM OPEN 669 - 4 Communication interrupted error during EEPROM OPEN 669 - 5 Communication timeout error during EEPROM OPEN 669 - 6 Not operating error during EEPROM OPEN 669 - 7 Buffer full during EEPROM OPEN 669 - 11 ID error during EEPROM data write 669 - 12 Channel error during EEPROM data write 669 - 13 Device error during EEPROM data write 669 - 14 Communication interrupted error during EEPROM data write 669 - 15 Communication timeout error during EEPROM data write
		669 - 16 Not operating error during EEPROM data write 669 - 17 Buffer full during EEPROM data write 669 - 18 No error code during EEPROM data write 669 - 19 ID error during EEPROM data read 669 - 20 Channel error EEPROM data read 669 - 21 Device error during EEPROM data read 669 - 22 Communication interrupted error during EEPROM data read 669 – 23 EEPROM Data read: Communication timeout error 669 - 24 Not operating error during EEPROM data read 669 - 25 Buffer full during EEPROM data read 669 - 26 No error code during EEPROM data read
		• Turn the power OFF and then ON. • Replace the EEPROM. • Replace the engine board.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
687-00	D	RAPI-PER receipt failure
		Even though 120 seconds have elapsed after RAPI -PES (request for image transfer) is issued, a RAPI-PER receipt is not received from the controller board.
		Defective controller board/software
		• Turn the main power OFF and then ON. • Replace the controller board.

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
688-00	D	PRREQ signal not asserted
		The print request signal (PRREQ) signal is not asserted within the prescribed time after paper reaches the registration stand-by position,
		• Noise • Engine Board error • Controller Board error
		• Turn the power OFF and then ON • Replace the Engine Board. • Replace the Controller Board.

6.2.6 PERIPHERALS

SC NO.	Pattern	Details (Symptom, Possible Cause, Troubleshooting Procedures)
790-00	D	Maximum number of banks (paper tray units) exceeded error
		When the power is turned ON, the number of mounted paper tray units is detected and the number exceeds three.
		The number of mounted paper tray units exceeds the specifications.
		Reduce the number of mounted paper tray units according to the specifications.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC995-01	D	CPM setting error 1
		Comparison of machine serial number (11 digits) and machine identification code. Details: • Machine serial number cannot be identified because of BICU replacement or malfunctioning. • Machine serial number cannot be identified because of NV-RAM replacement
		Machine serial number (11 digits) or machine identification code does not match.
		• Enter the machine serial number using SP5-811, and then turn the power on/off. • Attach the NV-RAM that was installed previously.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC995-02	D	CPM setting error 2
		Comparison of machine serial number (11 digits) and machine identification code. Details: Machine serial number cannot be identified because of NV-RAM replacement or malfunctioning.
		Machine serial number (11 digits) or machine identification code does not match.
		• Attach the NV-RAM that was installed previously. • Download data on the NV-RAM using SP5-825.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC995-03	D	CPM setting error 3
		Comparison of machine serial number (11 digits) and machine identification code. Details: Unable to recognize machine identification code because the controller was replaced incorrectly or is malfunctioning.
		Machine serial number (11 digits) or machine identification code does not match.
		Replace it with a specified controller.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC995-04	D	CPM setting error 4
		Comparison of machine serial number (11 digits) and machine identification code.
		Machine serial number (11 digits) or machine identification code does not match.
		Return the parts to the original configuration, and then replace them according to the manual.

6.3 SERVICE CALL (CONTROLLER)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC632-00	D	Counter device error 1
		After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.
		Serial line between the optional counter device, the relay board and printer control board is disconnected or damaged.
		• Turn the main power off/on. • Check the serial communication line.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC636-01	D	IC Card Error (Expanded authentication module error)
		Issued when expanded authentication management is set to "ON" but either of the following occur. • There is no expanded authentication module in the machine. • The SD card or the file of the expanded authentication module is broken. • There is no DESS module in the machine.
		• There is no DESS module in the machine (models on which the function is optional). • There is no expanded authentication module in the machine. • The SD card or the file of the expanded authentication module is broken.
		• Set a working SD card/expanded authentication module file. • Install the DESS module. • In the SSP mode set SP5-401-160 to 0. • In the SSP mode, set SP5-401-161 to 0. • Replace the NVRAM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC636-02	D	IC Card Error (Expanded authentication module error)
		The version of the expanded authentication module is not correct.
		Incorrect module version
		Install the correct file of the expanded authentication module.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC641-00	D	Communication error between BCU and Controller board.
		Controller board does not respond after BCU tries to communicate three times. • SC641-01: Timeout error • SC641-02: Retry over • SC641-03: Download error • SC641-04: UART error
		• Controller board software error • Connect error between BCU and Controller board • Engine board software error
		• Check connections between Controller board and BCU. • Turn the main switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-01	C	Remote Service Modem Communication Error (Dialup authentication failure)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Dialup authentication failure
		Check the following SPs. • SP5-816-156 • SP5-816-157

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-04	C	Remote Service Modem Communication Error (dialup failing because of incorrect modem configuration)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Dialup failing because of incorrect modem configuration
		Check if the setting of SP5-816-160 is correct. If it is correct, then there is a software bug.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-05	C	Remote Service Modem Communication Error (insufficient current or connection fault)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Insufficient current or connection fault
		The line is not supported and nothing can be done.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-13	C	Remote Service Modem Communication Error (RC Gate Type M was installed but modem is not present (detected during operation))
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		RC Gate Type M was installed but modem is not present (detected during operation)
		• If a modem board is not installed, install it. • Check again if the modem driver configurations (SP5-816-160, SP5-816-165 to 171, SP5-816-165 to 171) are correct. • If the problem is not solved, replace the modem.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-14	C	Remote Service Modem Communication Error (RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly
		• If a modem board is attached, remove it. • Check if wired/wireless LAN works.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC651-01	C	Illegal Remote Service Dial-up (Chat program parameter error)
		An unexpected error occurred when RC Gate Type M dialed up the NRS Center.
		Software bug
		Logging only.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC651-02	C	Illegal Remote Service Dial-up (Chat program execution error)
		An unexpected error occurred when RC Gate dialed up the NRS Center.
		Software bug
		Logging only.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC652-00	D	Remote service ID2 mismatching
		There was an authentication mismatch between ID2 for @Remote, the controller board, and NVRAM.
		• Used controller board installed • Used NVRAM installed (such action is not allowed.)
		• If this occurs during RC Gate installation: Check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again. • If this occurs after RC Gate installation: Clear the RC Gate install status, check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC653-00	D	Incorrect remote service ID2
		ID2 stored in the NVRAM has either of the following problems. • Number of characters is not 17. • Includes a character that cannot be printed. • All spaces • NULL
		Replace the NVRAM.
		Clear the RC Gate install status, write the common certificate, and then begin installation again.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC670-00	D	Engine start up error

		• Case 1
		  • /ENGRDY signal was not asserted when the machine was turned on or returned from energy saver mode.
		  • /IPURDY signal was not asserted when the machine was turned on or returned from energy saver mode.
		  • EC response was not received within specified time from power on.
		  • PC response was not received within specified time from power on.
		  • SC response was not received within specified time from power on.
		  • Writing to Rapi driver failed (the other party not found through PCI).
		• Case 2
		  • Unexpected down status was detected after /ENGRDY assertion.

		• Case 1
		  • Engine board does not start up.
		• Case 2
		  • Engine board reset unexpectedly.

		Check the connection between the engine board and the controller board. • If it is always reproduced, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. • If reproducibility is low, multiple causes are to be considered, such as software, engine board, controller board, and PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC816-00	[0x0000]	Energy save I/O subsystem error
SC816-01	D	Subsystem error
SC816-02	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-03	D	Transition to STR was denied.
SC816-04	D	Interrupt in kernel communication driver
SC816-05, 6	D	Preparation for transition to STR failed.
SC816-07	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-08	D	Sysarch (LPUX_ENGINE_TIMERCTRL) error
SC816-09	D	Sysarch (LPUX_RETURN_FACTOR_STR) error
SC816-10 to 12	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-13	D	open() error
SC816-14	D	Memory address error
SC816-15 to 18	D	open() error
SC816-19	D	Double open() error
SC816-20	D	open() error
SC816-22	D	Parameter error
SC816-23, 24	D	read() error
SC816-25	D	write () error
SC816-	D	write() communication retry error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
26 to 28		
SC816-29, 30	D	read() communication retry error
SC816-35	D	read() error
SC816-36 to 96	D	Subsystem error
		Energy save I/O subsystem detected some abnormality.
		• Energy save I/O subsystem defective • Energy save I/O subsystem detected a controller board error (non-response). • Error was detected during preparation for transition to STR.
		• Turn the main power off/on. • Replace the controller board.
SC816-99	D	Subsystem error
		Energy save I/O subsystem detected some abnormality.
		• Energy save I/O subsystem defective • Energy save I/O subsystem detected a controller board error (non-response). • Error was detected during preparation for transition to STR. • SC816-99 occurs as a subsystem error except any error from -06 to 96.
		Check if the SC occurs by turning the power OFF then ON. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 1. Update the "System" firmware and the other system firmware modules to the latest version. 2. Disable the STR shift function by SP5-191-001 (Power Str Set). 3. Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC817-00	D	Monitor error: File detection / Digital signature error
		• Bootloader cannot read any of diagnostic module, kernel, or root filesystem. • In a bootloader SD card, the digital signature checking for any of diagnostic module, kernel, or root filesystem is failed.
		• Any of the following items does not exist or is broken: OS Flash ROM, Diagnostic module in SD card, Kernel, Root filesystem • Any of the following items is revised fraudulently: Diagnostic module in

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		SD card, Kernel, Root filesystem
		• ROM update for controller system • Use another booting SD card having a valid digital signature

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC818-00	D	Watchdog timer error
		The system program fell into a bus-hold state or an endless loop of the program interruption occurred, causing other process to stop.
		• System program defective • Controller board defective • Optional board defective
		• Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC819-00	D	Kernel halt error [xxxx]: Detailed error code
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.
	[0x5032]	HAIC-P2 error
		HAIC-P2 decompression error (An error occurred in the ASIC compression/decompression module.)
		• Turn the main power off/on. • Replace the HDD. • Replace the memory • Replace the controller board. • Fix the software
	[0x5245]	Link up error
		Link up transaction between Engine ASIC and Veena was not completed within 100 ms.
		Either one of following message appears on console if Link up error occurs. • RESUME:PCI-Express bus ROOT_DL status error • RESUME:PCI-Express bus DETUP status error Also, error code "0x5245" and detail code ""0x53554D45" -> Link up error" appears on operation panel.
		• Turn the main power OFF/ON.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Replace the controller board or the engine board (IPU, BCU)
	[0x5355]	L2 status time out
		L2 status register between Engine ASIC and Veena was not reached the target value within 1 sec.
		Engine ASIC during operation was rebooted or shifted to energy saving mode. Machine reboots when SC23x, SC30x occurs. If Engine ASIC is working when rebooting (or shifting to the energy saving mode), L2 status value is not on target. The following message appears on console. SUSPEND:PCI-Express L2 Status Check Error Also, error code "0x5355" and detail code ""0x5350454E44" -> L2 status time out" appears on operation panel.
		• Turn the main power OFF/ON. • Replace the controller board or the engine board (IPU, BCU)
	[0x6261]	HDD defective
		6261 6420 6469 7200 00 -> "bad dir"
		Replace the HDD.
	[0x696e]	gwinit processing end
		If the SCS process is ended for some reason
		If an unexpected error occurs at SCS processing end, gwint processing also halts (this result is judged a kernel stop error, by gwinit specification) “0x69742064” -> “init died”
		Turn the main power off/on.
	[0x766d]	VM full error
		Occurs when too much RAM is used during system processing
		"vm_pageout: VM is full"
		Turn the main power off/on.
	[554C]	SATA loader error
		SATA Loader detected mismatch error
		• Software defective • Insufficient memory • Hardware driver defective (RAM, FLASH memory)
		Replace the controller board.
	Console	Other error (characters on operation panel)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
	string	System detected internal mismatch error
		• Software defective • Insufficient memory • Hardware driver defective (RAM, FLASH memory)
		• Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC820-00	D	Self-diagnostics error: CPU [xxxx]: Detailed error code
[0001] to [06FF] [0801] to [4005]		CPU error During the self-diagnosis, the controller CPU detects an error. There are 47 types of error code (0001 to 4005) depending on the cause of the error. The CPU detects an error and displays the specific error code with the program address where the error occurs.
		• System firmware problem • Defective controller
		1. Turn the main power switch off and on. 2. Reinstall the controller system firmware. 3. Replace the controller. When the problem cannot be fixed with the above procedure, the following information displayed on the screen needs to be reported to the technical support center. - SC code - Detailed error code - Program address
[0701] to [070A]		CPU/Memory Error
		• System firmware problem • Defective RAM-DIMM • Defective controller
		• Reinstall the controller system software. • Replace the RAM-DIMM. • Replace the controller.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC821-00	D	Self-diagnostics error: ASIC [xxxx]: Detailed error code
	[0B00]	ASIC register check error
		The write-&-verify check has occurred in the ASIC.
		Defective ASIC device
		Replace the controller board.
	[0D05]	Comparison error of CPU and ASIC timer
		The CPU checks if the ASIC timer works correctly compared with the CPU timer. If the ASIC timer does not function in the specified range, this SC code is displayed.
		• Defective ASIC timer device • Defective CPU device
		Replace the controller board.
	[50A2]	Video bridge device (ASIC) register error
		The CPU detects the video bridge device, but detects error data from the video bridge device.
		Defective I/F between the video bridge device and the controller
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC823-00	B	Self-diagnostics error: NIC [XXXX]: Detailed error code
	[6101]	MAC address check sum error
		The result of the MAC address check sum does not match the check sum stored in ROM. Mismatch of the storage format of MAC address stored in ROM
		• Defective SEEP ROM • Defective I2C bus (connection)
		Replace the controller board.
	[6104]	PHY IC error
		The PHY IC on the controller cannot be correctly recognized.
		• Defective PHY chip • Defective ASIC MII I/F
		Replace the controller board.
	[6105]	PHY IC loop-back error
		An error occurred during the loop-back test for the PHY IC on the

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		controller.
		• PHY chip • Defective MAC of ASIC (SIMAC/COMIC/CELLO) • Defective I/F with the PHY board • Defective solder on the PHY board
		• Check the I/F of the PHY board. • Check the I/F of the controller board. • Replace the PHY board. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC824-00	D	Self-diagnostics error: NVRAM (resident) [XXXX]: Detailed error code
	[1401]	NVRAM verify error
		NVRAM device is missing or NVRAM device is damaged.
		• The NVRAM device is missing. • The NVRAM device is damaged. • NVRAM backup battery exhausted • NVRAM socket damaged
		Replace the NVRAM device.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC827-00	D	Self-diagnostic error: Standard SDRAM DIMM [XXXX]: Detailed error code
	[0201]	Verification error
		Error detected during a write/verify check for the resident RAM (SDRAM DIMM).
		• Loose connection • Defective SDRAM DIMM • Defective controller
		Replace the controller board or RAM DIMM.
	[0202]	Resident memory error
		The SPD values in all RAM DIMM are incorrect or unreadable.
		• Defective RAM DIMM • Defective SPD ROM on RAM DIMM • Defective I2C bus
		Replace the RAM DIMM

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC828-00	D	Self-diagnostic error: ROM [xxxx]: Detailed error code
	[0101]	Check sum error 1
		The boot monitor and OS program stored in the ROM DIMM is checked. If the check sum of the program is incorrect, this SC code is displayed.
		• Defective FLASH ROM device • Defective CPU device
		• Try updating the boot monitor and OS program • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC829-00	D	Self-diagnostic error: Optional RAM [xxxx]: Detailed error code
	[0301] [0401]	Verification error (Optional RAM slot) Error detected during a write/verify check for the optional RAM (SDRAM DIMM).
		• Loose connection • Defective SDRAM DIMM • Defective controller
		• Turn the main power switch off and on. • Replace the SDRAM DIMM. • Replace the controller.
	[0302] [0402]	Memory structure data error (Optional RAM slot) The memory structure data error for the optional RAM (SDRAM DIMM) is detected during self-diagnosis.
		• Defective RAM DIMM • Defective SPD ROM on RAM DIMM • Defective I2C bus
		Replace the RAM DIMM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC835-00	B	Self-diagnostic error: Centronic device [xxxx]: Detailed error code
	[1102]	Verify error
		The loopback connector is connected but check results is an error.
		• IEEE1284 connector error • Centronic loopback connector defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
	[110C]	DMA verify error
		The loopback connector is connected but check results is an error.
		• ASIC device error • IEEE1284 connector error • Centronic loopback connector is defective
		Replace the controller board.
	[1120]	Loopback connector undetected
		Centronic loopback connector is not connected for detailed self-diagnostic test.
		• Centronic loopback connector not connected correctly • Centronic loopback connector is defective • ASIC device is defective
		• Connect the centronic loopback connector • Replace the centronic loopback connector • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC838-00	D	Self-diagnostic Error: Clock Generator [xxxx]: Detailed error code
	[2701]	Verify error
		A verify error occurred when setting data was read from the clock generator via the I2C bus.
		• Defective clock generator • Defective I2C bus • Defective I2C port on the CPU
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC839-00	D	Self-diagnostic Error: Serial Flash [xxxx]: Detailed error code
	[9001]	Serial Flash access error
		Serial Flash memory for certificate cannot be read/writen.
		Defective serial flash memory
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC840-00	D	EEPROM access error
		• During the I/O processing, a reading error occurred. The 3rd reading failure causes this SC code. • During the I/O processing, a writing error occurred.
		• Defective EEPROM
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC841-00	D	EEPROM read data error
		Mirrored data of the EEPROM is different from the original data in EEPROM.
		Data in the EEPROM is overwritten for some reason.
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-00	C	Nand-Flash updating verification error
		SCS write error (verify error) occurred at the Nand-Flash module when remote ROM or main ROM was updated.
		Nand-Flash defective
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-01	B	Insufficient Nand-Flash blocks (threshold exceeded)
		At startup, or when machine returned from low power mode, the Nand-Flash status was read and judged that the number of unusable blocks had exceeded threshold, and then SCS generated the SC code.
		Number of unusable blocks exceeded threshold for Nand-Flash
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-02	B	Number of Nand-Flash block deletions exceeded
		At startup, or when the machined returned from low power mode, the Nand-Flash was read and judged that the number of deleted blocks had exceeded threshold, and then SCS generated this SC code.
		Number of blocks deleted exceeded threshold for Nand-Flash
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC853-00	B	Bluetooth device connection error
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		Always connect the Bluetooth device (USB type) before the machine is turned on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC854-00	B	Bluetooth device disconnected
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		Never remove Bluetooth (USB type) after machine starts

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC855-01	B	Wireless LAN board error (driver attachment failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		• Defective wireless LAN board • Loose connection
		• Turn the main power off/on. • Replace wireless LAN board

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC855-02	B	Wireless LAN board error (driver initialization failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		• Defective wireless LAN board • Loose connection
		• Turn the main power off/on. • Replace wireless LAN board

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-00	A	Data encryption conversion error (Key Setting Error)
		A serious error occurred during an attempt to update the encryption key.
		• USB Flash, other data, corrupted • Communication error caused by electrostatic noise • Controller board defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-01	A	Data encryption conversion error (HDD Key Setting Error)
		A serious error occurred during an attempt to update the encryption key.
		• USB Flash, other data, corrupted • Communication error caused by electrostatic noise • Controller board defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-02	A	Data encryption conversion error (NVRAM Read/Write Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		NVRAM defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-30	A	Data encryption conversion error (NVRAM Before Replace Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Software error such as conversion parameters being invalid.
		• Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-31	A	Data encryption conversion error (Other Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Controller board defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-00	B	Data encryption conversion HDD conversion error
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on.
		• HDD conversion was set with the data encryption key update function, but the HDD was removed. • Machine lost power during data encryption key update • Electrostatic noise, or an HDD error occurred, during data encryption key update, and data was not encrypted.
		• Check HDD connection. • Format the HDD. • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-01	B	Data encryption conversion HDD conversion error (HDD check error)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on.
		• HDD conversion was set with the data encryption key update function, but the HDD was removed. • Machine lost power during data encryption key update • Electrostatic noise, or an HDD error occurred, during data encryption key update, and data was not encrypted.
		• Check HDD connection. • Format the HDD. • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-02	B	Data encryption conversion HDD conversion error (Power failure during conversion)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on. Details: NVRAM/HDD conversion is incomplete.
		Power failure occurred during encryption key update.
		None The display after restart instructs the user to format the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-10	B	Data encryption conversion HDD conversion error (Data read/write command error)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on. Details: Abnormal DMAC return value has been received two or more times (DMAC timeout, serial communication error etc.)
		HDD was not successfully converted during encryption key update due to HDD errors or cable noises.
		• Check HDD connection.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Format the HDD. • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC860-00	B	HDD startup error at main power on (HDD error)

		• The HDD is connected but the driver detected the following errors.
		  • SS_NOT_READY:/* (-2)HDD does not become READY*/
		  • SS_BAD_LABEL:/* (-4)Wrong partition type*/
		  • SS_READ_ERROR:/* (-5)Error occurred while reading or checking the label*/
		  • SS_WRITE_ERROR:/* (-6)Error occurred while writing or checking the label*/
		  • SS_FS_ERROR:/* (-7)Failed to repair the filesystem*/
		  • SS_MOUNT_ERROR:/* (-8)Failed to mount the filesystem*/
		  • SS_COMMAND_ERROR:/* (-9)Drive not responding to command*/
		  • SS_KERNEL_ERROR:/* (-10)Internal kernel error*/
		  • SS_SIZE_ERROR:/* (-11)Drive size too small*/
		  • SS_NO_PARTITION:/* (-12)The specified partition does not exist*/
		  • SS_NO_FILE:/* (-13)Device file does not exist*/
		• Attempted to acquire HDD status through the driver but there has been no response for 300 seconds or more.

		• Unformatted HDD • Label data corrupted • HDD defective
		Format the HDD through SP mode.

No.	Type	Error Name/Error Condition/Major Cause/Solution
SC862-00	D	Number of the defective sector reaches the maximum count
		101 defective sectors are generated at the image storage area in the HDD.
		SC863 occurs during the HDD reading and defective sectors are registered up to 101.
		• Format the HDD with SPSP5-832. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-01	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disklabel area.)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863- 02 to 23	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "**a**" (SC863-02) to partition "**v**" (SC863-23)).
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864- 00	D	HD data CRC error
		During HD operation, the HD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HD.
		HD defective

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864- 01	D	HDD data CRC error
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disklabel area.)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-02 to 23	D	HDD data CRC error
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.
		Bad sectors were generated during operation. (An error occurred in partition "**a**" (SC864-02) to partition "**v**" (SC864-23)).
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-00	D	HD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error).
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-01	D	HDD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in an area that does not belong to a partition, such as the disklabel area.)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-02 to 23	D	HDD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "**a**" (SC865-02) to partition "**v**" (SC865-23)).
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-50	D	HDD time-out error
		The machine does not detect a reply from the HDD during the HDD operation.
		The HDD does not respond to the read/ write command from the machine. (An error occurred in an unknown area.)
		• Check the harness connections between the controller board and HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-51	D	HDD time-out error
		The machine does not detect a reply from the HDD during the HDD operation.
		The HDD does not respond to the read/ write command from the machine. (An error occurred in an area that does not belong to a partition, such as the disklabel area.)
		• Check the harness connections between the controller board and HDD. • Replace the HDD.

No.	Type	Error Name/Error Condition/Major Cause/Solution
SC865-52 to 73	D	HDD time-out error
		The machine does not detect a reply from the HDD during the HDD operation.
		The HDD does not respond to the read/ write command from the machine. (An error occurred in partition "**a**" (SC865-52) to partition "**v**" (SC865-73)).
		• Check the harness connections between the controller board and HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC866-00	B	SD card authentication error
		A license error of an application that is started from the SD card was detected.
		Invalid program data is stored on the SD card.
		Store a valid program data on the SD card.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC867-00	D	SD card removed
		The SD card was removed while the machine is on.
		An application SD card has been removed from the slot (mount point of /mnt/sd0).
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC867-01	D	SD card removed
		The SD card was removed while the machine is on.
		An application SD card has been removed from the slot (mount point of /mnt/sd1).
		Turn the main power off/on.

No.	Type	Error Name/Error Condition/Major Cause/Solution
SC868-**		SD card access error
SC868-00	D	The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd0)
SC868-01	D	The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd1)
		• SD card defective • SD controller defective
		The slot number is displayed in the sub code. The detail code on the SMC print can show the details of the error. • -13 to -3: File system check error • Otherwise (no code, -2) : Device access error
		SD card that starts an application **1.** Turn the main power off and check the SD card insertion status.

No.	Type	Error Name/Error Condition/Major Cause/Solution
		2. If no problem is found, insert the SD card and turn the main power on. 3. If an error occurs, replace the SD card. 4. If the error persists even after replacing the SD card, replace the controller board. ***SD card for users*** 1. In the case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).* ***In case of a device access error*** 1. Turn the main power off and check the SD card insertion status. 2. If no problem is found, insert the SD card and turn the main power on. 3. If an error occurs, use another SD card. 4. If the error persists even after replacing the SD card, replace the controller board.

* Do not format an SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by a Customer Engineer.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC870-00	B	Address Book data error (Anytime: Address Book Error.)
SC870-01	B	Address Book data error (On startup: Media required for storing the Address Book is missing.)
SC870-02	B	Address Book data error (On startup: encryption is configured but the module required for encryption (DESS) is missing.)
SC870-03	B	Address Book data error (Initialization: Failed to generate a file to store internal Address Book.)
SC870-04	B	Address Book data error (Initialization: Failed to generate a file to store delivery sender.)
SC870-05	B	Address Book data error (Initialization: Failed to generate a file to store delivery destination.)
SC870-06	B	Address Book data error (Initialization: Failed to generate a file to store information required for LDAP search.)
SC870-07	B	Address Book data error (Initialization: Failed to initialize entries required for machine operation.)
SC870-08	B	Address Book data error (Machine configuration: HDD is present but the space for storing the Address Book is unusable.)
SC870-09	B	Address Book data error (Machine configuration: Inconsistency in the NVRAM area used for storing settings required for Address Book

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		configuration.)
SC870-10	B	Address Book data error (Machine configuration: Cannot make a directory for storing the Address Book in the SD/USB FlashROM.)
SC870-11	B	Address Book data error (On startup: Inconsistency in Address Book entry number.)
SC870-20	B	Address Book data error (File I/O: Failed to initialize file.)
SC870-21	B	Address Book data error (File I/O: Failed to generate file.)
SC870-22	B	Address Book data error (File I/O: Failed to open file.)
SC870-23	B	Address Book data error (File I/O: Failed to write to file.)
SC870-24	B	Address Book data error (File I/O: Failed to read file.)
SC870-25	B	Address Book data error (File I/O: Failed to check file size.)
SC870-26	B	Address Book data error (File I/O: Failed to delete data.)
SC870-27	B	Address Book data error (File I/O: Failed to add data.)
SC870-30	B	Address Book data error (Search: Failed to obtain data from cache when searching in the machine Address Book. delivery destination/sender.)
SC870-31	B	Address Book data error (Search: Failed to obtain data from cache during LDAP search.)
SC870-41	B	Address Book data error (Cache: failed to obtain data from cache.)
SC870-50	B	Address Book data error (On startup: Detected abnormality of the Address Book encryption status.)
SC870-51	B	Address Book data error (Encryption settings: Failed to create directory required for conversion between plaintext and encrypted text.)
SC870-52	B	Address Book data error (Encryption settings: Failed to convert from plaintext to encrypted text.)
SC870-53	B	Address Book data error (Encryption settings: Failed to convert from encrypted text to plaintext.)
SC870-54	B	Address Book data error (Encryption settings: Detected data inconsistency when reading the encrypted Address Book.)
SC870-	B	Address Book data error (Encryption settings: Failed to delete file when

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
55		changing encryption setting.)
SC870-56	B	Address Book data error (Encryption settings: Failed to erase the file that records the encryption key during an attempt to change the encryption setting.)
SC870-57	B	Address Book data error (Encryption settings: Failed to move a file during an attempt to change the encryption setting.)
SC870-58	B	Address Book data error (Encryption settings: Failed to delete a directory during an attempt to change the encryption setting.)
SC870-59	B	Address Book data error (Encryption settings: Detected a resource shortage during an attempt to change the encryption setting.)
SC870-60	B	Address Book data error (Unable to obtain the on/off setting for administrator authentication.)
		When an error related to the Address Book is detected during startup or operation.
		• Software bug • Inconsistency of Address Book source location (machine/delivery server/LDAP server) • Inconsistency of Address Book encryption setting or encryption key (NVRAM or HDD was replaced individually without formatting the Address Book) • Address Book storage device (SD/HDD) was temporarily removed or hardware configuration does not match the application configuration. • Address Book data corruption was detected.
		• Check the HDD connection. • Initialize all UCS settings and address/authentication information (SP5-846-046). • Initialize the Address Book partition (SP5-832-006).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC872-00	B	HDD mail reception error
		An error was detected on the HDD immediately after the machine was turned on.
		• HDD defective • Power was turned off while the machine used the HDD.
		• Format the HDD (SP5-832-007). • Replace the HDD. When you do the above, the following information will be initialized. • Partly received partial mail messages.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Already-read statuses of POP3-received messages (All messages on the mail server are handled as new messages).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC873-00	B	HDD mail reception error
		An error was detected on the HDD immediately after the machine was turned on.
		• HDD defective • Power was turned off while the machine used the HDD.
		• Format the HDD (SP5-832-007). • Replace the HDD. When you do the above, the following information will be initialized. • Default sender name/password (SMB/FTP/NCP) • Administrator mail address • Scanner delivery history

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC875-01	D	Delete all error (HDD erasure) (hddchack –i error)
SC875-02	D	Delete all error (HDD erasure) (Data deletion failure)
		An error was detected before HDD/data erasure starts. (Failed to erase data/failed to logically format HDD)
		• HDD logical formatting failed. • The modules failed to erase data.
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-00	D	Log Data Error
		An error was detected in the handling of the log data at power on or during machine operation.
		• Damaged log data file. • Log encryption is enabled but encryption module is not installed. • Inconsistency of encryption key between NV-RAM and HDD. • Software bug.
		Try the SC876-01 to -99 solutions listed below. If it is not solved, do the following steps (for when only an HDD is replaced): 1. Disconnect the HDD and turn on the main power.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		2. Execute SP5-801-019. 3. Turn off the main power. 4. Connect the HDD and turn on the main power. 5. Execute SP5-832-004. 6. Turn off the main power. * The following step is to configure the logging/encryption setting again. 7. Turn on the main power. 8. Set SP9-730-002 through -004 to 1. 9. Turn off/on the main power.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-01	D	Log Data Error 1
		An error was detected in the handling of the log data at power on or during machine operation.
		Damaged log data file
		Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-02	D	Log Data Error 2
		An error was detected in the handling of the log data at power on or during machine operation.
		Log encryption is enabled but encryption module is not installed.
		• Replace or set again the encryption module. • Disable the log encryption setting.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-03	D	Log Data Error 3
		An error was detected in the handling of the log data at power on or during machine operation.
		Inconsistency of encryption key between NV-RAM and HDD.
		• Disable the log encryption setting. • Initialize LCS memory (SP5801-019). • Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-04	D	Log Data Error 4
		An error was detected in the handling of the log data at power on or during machine operation.
		• Log encryption key is disabled but the log data file is encrypted. (NVRAM data corruption) • Log encryption key is enabled but the log data file is not encrypted. (NVRAM data corruption)
		Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-05	D	Log Data Error 5
		An error was detected in the handling of the log data at power on or during machine operation.
		• Only the NV-RAM has been replaced with one previously used in another machine. • Only the HDD has been replaced with one previously used in another machine.
		• Attach the original NV-RAM. • Attach the original HDD. • With the configuration that caused the SC, initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-99	D	Log Data Error 99
		An error was detected in the handling of the log data at power on or during machine operation.
		Other causes
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC877-00	B	Data Overwrite Security card error
		The "Auto Erase Memory" function of the Data Overwrite Security is set to on but it cannot be done.
		• Data Overwrite Security option SD card is broken. • Data Overwrite Security option SD card has been removed.
		• If the SD card is broken, prepare a new Data Overwrite Security option SD card and replace the NVRAM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• If the SD card has been removed, turn the main power off and reinstall a working Data Overwrite Security option SD card.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-00	D	TPM authentication error
		TPM electronic recognition failure
		• Update of system module attempted without correct update path • USB flash memory not operating correctly
		Replace the controller board.

Trusted Platform Module

- In computing, Trusted Platform Module (TPM) is both the name of a published specification detailing a secure crypto processor that can store cryptographic keys that protect information, as well as the general name of implementations of that specification, often called the "TPM chip" or "TPM Security Device" (as designated in certain Dell BIOS settings).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-01	D	USB flash error
		There is a problem in the file system of the USB flash memory.
		USB Flash system files corrupted
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-02	D	TPM error
		An error occurred in either TPM or the TPM driver
		TPM not operating correctly
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-03	D	TCSD error
		An error occurred in the TPM software stack.
		• TPM software stack cannot start • A file required by TPM software stack is missing
		Replace the controller board.

No.	Type	Error Name/Error Condition/Major Cause/Solution
SC878-20	D	Random number test error
		An error was detected when a random number table was generated during a self-test. The random number table is generated by TPM (Trusted Platform Module). The table generated by TPM failed the test. TPM (Trusted Platform Module) is a computer chip that can securely store information used to authenticate the platform. This information can include passwords, certificates, and encryption keys.
		TPM is defective
		• Turn the main power OFF/ON. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC881-01	D	Management area error
		• A problem was detected in the software • This error may even occur is an IC card option is not installed.
		• This is caused by accumulation of abnormal authentication information in the software. (User operation will not directly cause it.) • At login Example: When a job is sent to the printer/when logged on from the operation panel/when logged on from a Web browser
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC899-00	D	Software performance error (signal reception end)
		Unknown software error occurred.
		Occurs when an internal program behaves abnormally.
		In case of a hardware defect • Replace the hardware. In case of a software error • Turn the main power off/on. • Try updating the firmware.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC900-00	D	Electrical total counter error
		The total counter contains data that is not a number.
		• NVRAM incorrect type • NVRAM defective or corrupted • Unexpected error from external source • When PRT received signals at SRM, the requested count did not complete.
		Replace the NVRAM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC920-00	B	Printer Error 1 (No response at PM start)
SC920-01	B	Printer Error 1 (Timeout occurred during PM operation)
SC920-02	B	Printer Error 1 (WORK memory not acquired)
SC920-03	B	Printer Error 1 (Filter processing did not start)
SC920-04	B	Printer Error 1 (Filter processing ended abnormally)
		When an error is detected in the application, which makes continued operation impossible.
		• Software bug • Unexpected hardware configuration (such as insufficient memory)
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC921-00	B	Printer application error (Resident font not found)
		Resident font was not found at printer startup.
		Preinstalled font files not found.
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC990-00	D	Software operation error
		Software attempted an unexpected operation.
		• Abnormal variable • Internal parameter error • Insufficient work memory • Hardware error not detected by SC
		• Turn the main power off/on. • Reinstall the software of the controller and BICU board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC991-00	C	Recoverable software operation error
		The software performed an unexpected function and the program cannot continue. Recovery processing allows the program to continue.
		• Abnormal variable • Internal parameter error • Insufficient work memory • Hardware error not detected by SC
		Logging only In order to get more details about SC991: Execute SP5-990 (SP Print Mode) or SP7-403 (SC History) to read the history of the 10 most recent logged errors.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC992-00	D	Undefined Error (No SC Code)
		An error not controlled by the system occurred (the error does not come under any other SC code).
		• Software defective • Incorrect SC code from previous machine
		Turn the main power off/on.

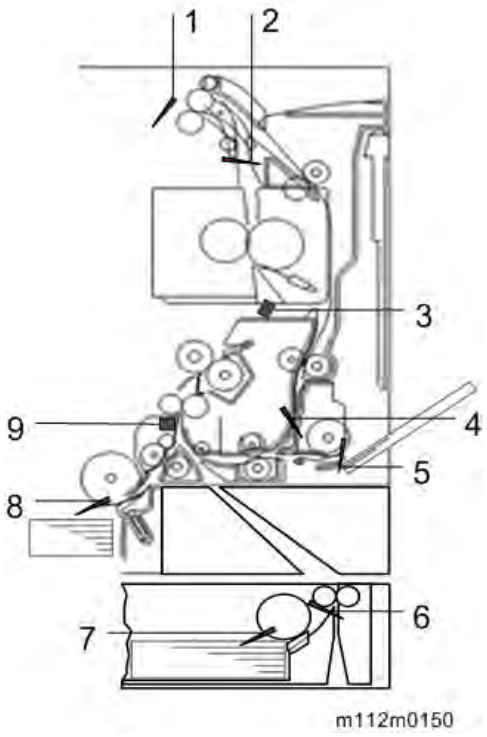
SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC994-00	C	Application Item Error
		The numbers of executed application items on the operation panel reach the maximum limit for the operation panel structure.
		Too many executed application items
		Logging only

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC997-00	D	Application function selection error
		The application selected by the operation panel key operated abnormally (No response, abnormal ending).
		Software bug (mainly the application)
		• Check the optional RAM, DIMM, boards required by the application program. • Check if the combination of downloaded programs are correct.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC998-00	D	Application start error
		• No application was registered to system within a specified time after the main power was turned on. (No application starts/All applications have been terminated abnormally) • Application started but cannot be drawn now for some reason.
		• Software bug (mainly the application) • The optional RAM, DIMM, boards required by the application program. Are not installed correctly.
		• Turn the main power off/on. • Check the optional RAM, DIMM, boards • Check the combination of programs • Replace the controller board.

6.4 JAM DETECTION

6.4.1 SENSOR POSITION



1. Paper Exit Full Sensor
2. Paper Exit Sensor
3. Fusing Entrance Sensor
4. Duplex Sensor
5. Bypass Paper End Sensor
6. Bank Sensor
7. Paper End Sensor (Bank)
8. Paper End Sensor
9. Registration Sensor

6.4.2 JAM CODE

Plotter (Print engine) jam history can be displayed using SP7-507.

- SP7-507-001 "Plotter Jam History: Latest"
- SP7-507-002 "Plotter Jam History: Latest1"
- SP7-507-003 "Plotter Jam History: Latest2"
- SP7-507-004 "Plotter Jam History: Latest3"
- SP7-507-005 "Plotter Jam History: Latest4"
- SP7-507-006 "Plotter Jam History: Latest5"
- SP7-507-007 "Plotter Jam History: Latest6"

- SP7-507-008 "Plotter Jam History: Latest7"
- SP7-507-009 "Plotter Jam History: Latest8"
- SP7-507-010 "Plotter Jam History: Latest9"

Paper Feed

Jam Code	Jam Type	Place Code	Place
003	No Paper Feeding	A1	Front Cover, Paper Feed Tray
024	Not reached the Fusing Entrance Sensor	B	Front Cover
032	Not reached the Paper Exit Sensor	C	Front Cover
087	Didn't pass the Registration Sensor.	B	Front Cover
096	Didn't pass the Paper Exit Sensor.	C	Front Cover

Bypass Tray

Jam Code	Jam Type	Place Code	Place
008	No Paper Feeding	A2	Front Cover (Bypass Tray Open), Bypass Tray
024	Not reached the Fusing Entrance Sensor.	B	Front Cover (Bypass Tray Open), Bypass Tray
032	Not reached the Paper Exit Sensor.	C	Front Cover (Bypass Tray Open), Bypass Tray
087	Didn't pass the Registration Sensor.	B	Front Cover (Bypass Tray Open), Bypass Tray
096	Didn't pass the Paper Exit Sensor.	C	Front Cover

Bank

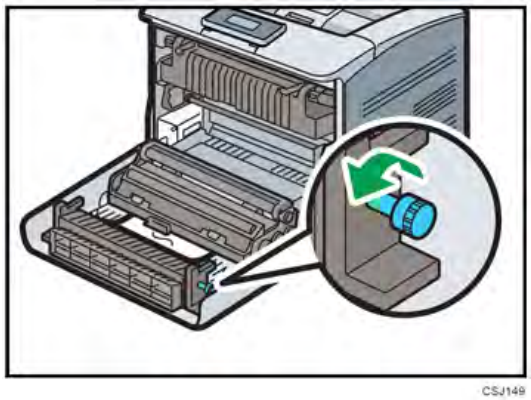
Jam Code	Jam Type	Place Code	Place
004	No Paper Feeding (Tray 2)	Y1	Front Cover, Bank 1
018	Not reached the Tray 2 Sensor.	Y1	Front Cover (Clear the Jam), Bank 1 (Remove the paper)
005	No Paper Feeding (Tray 3)	Y2	Front Cover, Bank 2
019	Not reached the Tray 3 Sensor.	Y2	Front Cover (Clear the Jam), Bank 2 (Remove the paper)
006	No Paper Feeding (Tray 4)	Y3	Front Cover, Bank 3

Jam Code	Jam Type	Place Code	Place
023	Not reached the Registration Sensor.	A1	Front Cover (Clear the Jam), Paper Tray (Remove the paper)

Duplex

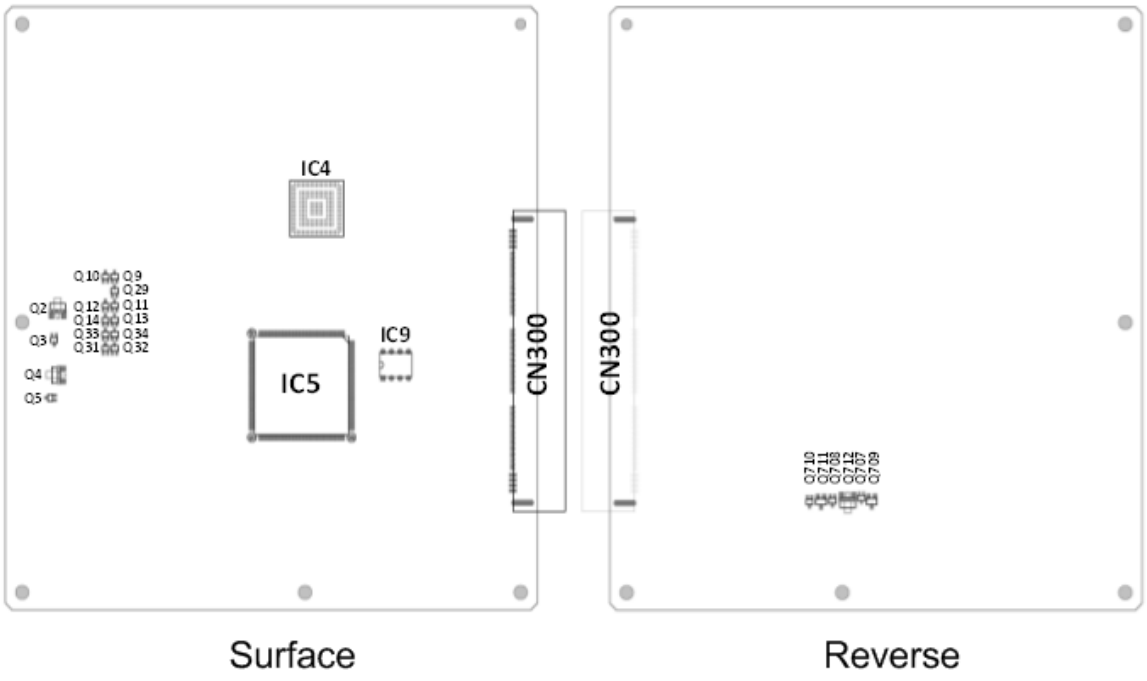
Jam Code	Jam Type	Place Code	Place
009	No Duplex Paper Feeding and Not reached the registration sensor.	Z	Front Cover
038	Not reached the Duplex Sensor.	Z	Front Cover

Jam with Paper Lost



Open the Front Cover, then pull out the jammed paper. Turn the Knob (to help remove the paper).

6.5 ELECTRICAL COMPONENT DEFECTS



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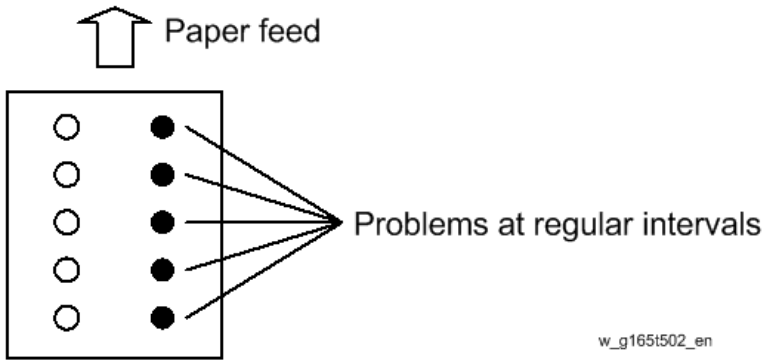
IC No.	Controls this Electrical Component
IC5	Drum Motor: CMY
IC5	Fusing Motor
IC5	Transfer/Transport Motor
IC5	Drum Motor: K
Q2,Q3	Duplex Inverter Solenoid
Q4,Q5	Toner Supply Solenoid
Q710,Q711	Cooling Fan
Q708,Q712	Fusing Fan
Q707,Q709	PSU Cooling Fan
Q9	Registration Clutch
Q10	ITB Contact Clutch
Q11	Toner Supply Clutch (Y)
Q12	Toner Supply Clutch (M)
Q13	Toner Supply Clutch (C)
Q14	Toner Supply Clutch (K)
Q29	Paper Feed Clutch

IC No.	Controls this Electrical Component
Q31	Bypass Feed Clutch
Q32	Duplex Intermediate Clutch
Q34	Bypass Bottom Plate Clutch
Q33	Duplex Paper Exit Clutch

6.6 IMAGE QUALITY

6.6.1 OVERVIEW

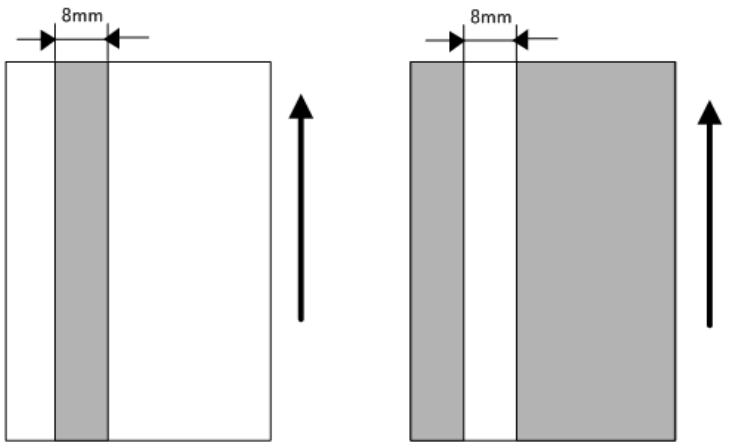
Image problems may appear at regular intervals that depend on the circumference of certain components. The following diagram shows the possible symptoms (black or white dots at regular intervals).



Unit	Parts	Interval *
PCDU	Drum	95mm
	Development Roller	34mm
	Cleaning Roller	30mm
	Charge Roller	30mm
Image Transfer	Image Transfer Belt	750mm
Paper Transfer	Transfer Roller	60mm
Fusing	Fusing Belt	95mm

* The interval may vary depending on the temperature and paper slippage.

Each LED head has 26 LED chips on board, and each chip has a line of LEDs 8mm in length. If a vertical line 8mm in width appears on the image parallel to the direction of paper feed, it may be caused by a broken LED chip. Exchange the LED head with one of the other colors to troubleshoot the symptom.



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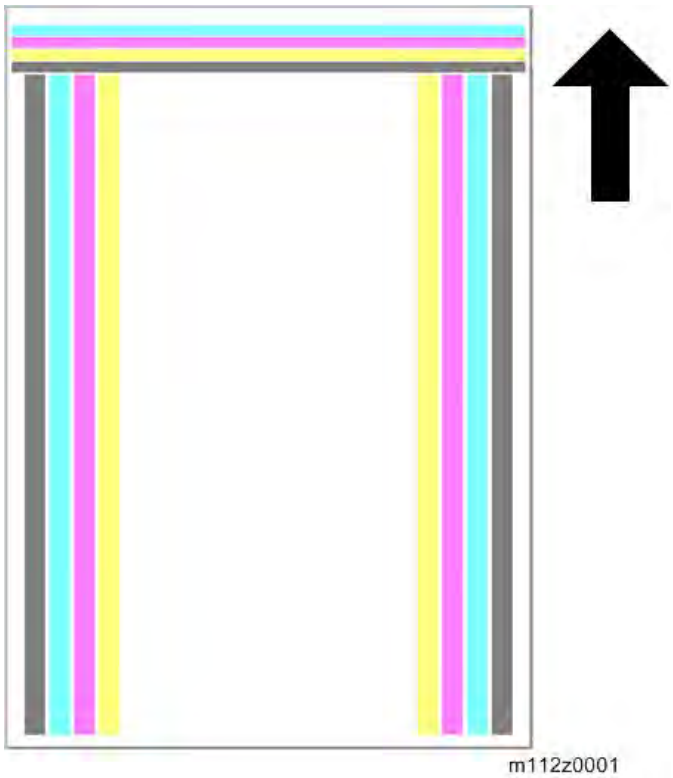
6.6.2 CHECKING A SAMPLE PRINTOUT

Print out a mono-color pattern (all K, C, M, or Y), which will clarify if the cause is a problem with one of the Drum unit, Image transfer belt, image transfer roller, or the fusing unit. A sample page is provided with the printer driver's CD. You can print the sample page from the printer driver's CD. Before printing, you have to adjust the printer driver settings to make the problem become obvious. For details about adjusting the settings, refer to "Printer Driver Setting for Printing a Sample" described below.

- Occurs with 1-3 colors: Drum unit, or LED head failure
- Occurs with all four colors: Image transfer belt, transfer roller or fusing unit failure



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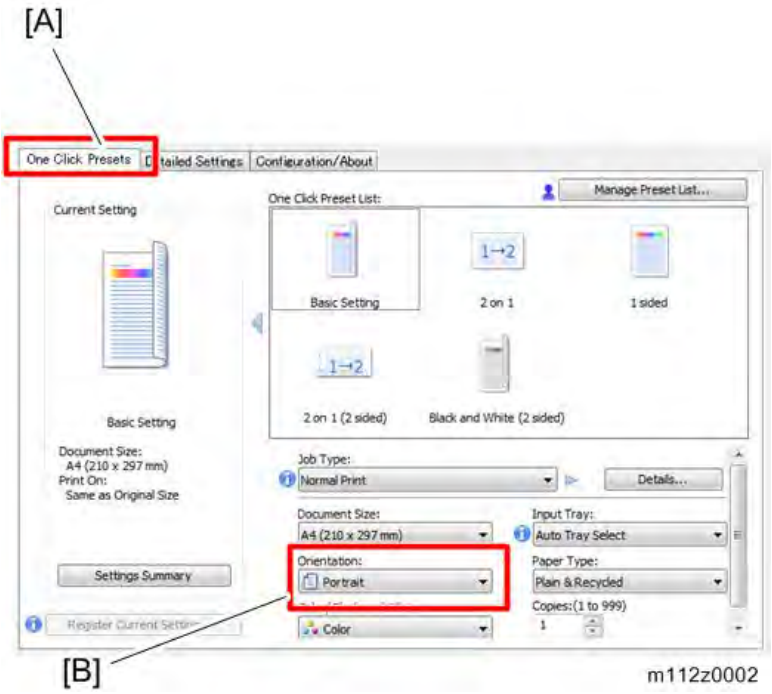
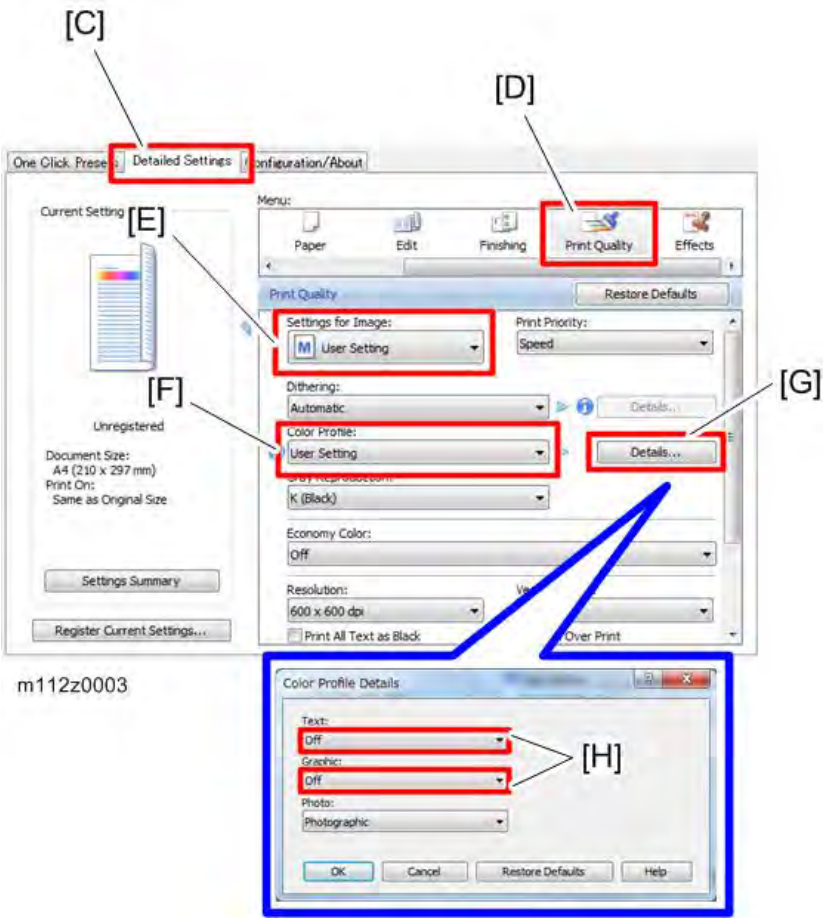
Printer Driver Setting for Printing a Sample

1. Set the sheet (A4 SEF/8.5”×11” SEF).
2. Click "Properties" on the printer driver.
3. Click the "One Click Presets" tab [A] in the printing preferences screen.
4. Select "Portrait" from the pull-down menu in "Orientation" [B].
5. Click the "Detailed Settings" tab [C] in the printing preferences screen.
6. Click "Print Quality" [D] in the Menu.
7. Select "User Setting" from the pull-down menu in "Settings for Image" [E].
8. Select "User Setting" from the pull-down menu in "Color Profile" [F].
9. Press "Details…" [G], and then select "Off" from the pull-down menus [H] in "Text:" and "Graphic:".




[C]
[D]
[E]
[F]
[G]
[H]
Detailed Settings
Menu:
Paper
Edit
Finishing
Print Quality
Effects
Print Quality
Restore Defaults
Settings for Image:
User Setting
Print Priority:
Speed
Dithering:
Automatic
Color Profile:
User Setting
Details...
K (Black)
Economy Color:
Off
Resolution:
600 x 600 dpi
Print All Text as Black
Current Setting
Unregistered
Document Size:
A4 (210 x 297 mm)
Print On:
Same as Original Size
Settings Summary
Register Current Settings...
Color Profile Details
Text:
Off
Graphic:
Off
Photo:
Photographic
OK
Cancel
Restore Defaults
Help
m112z0003

6.7 MOTTLING/UNEVEN TRANSFER

6.7.1 PROBLEM

Due to insufficient transfer ability, mottling/uneven transfer may occur.

6.7.2 CAUSE

This may be due to reasons such as your machine's operation condition (such as the moisture or type of paper), season, and ambient environment (HH condition/LL condition).

6.7.3 SOLUTION

Set [Anti-humidity (Image Dropout Prevention)] to [Active].
User Tools > Maintenance: Print > Anti-humidity (Image Dropout Prevention)
If the problem persists, it may be possible to temporarily evade the problem by changing the paper type and paper thickness settings. The paper type settings can be specified using the machine's control panel, so provide customer guidance accordingly.
User Tools > System Settings > Tray Paper Settings > Paper Type: (tray name) > Paper Type/Paper Thickness

6.7.4 REFERENCE (TRANSFER VOLTAGE CONTROL SPECIFICATIONS)

Toner transferability varies according to the ratio between the areas of the paper and the transfer belt, so transfer voltage control is adjusted to stabilize image quality. Paper transfer current setting is adjusted according to the paper width.

Paper Size Classification

Classification	Regular size	Custom size
S1	A4 SEF, B4 SEF, A5 LEF, B5 LEF,LT SEF	Width: 210 mm or more
S2	A5 SEF, B5 SEF, A6 LEF, B6 LEF	Width: 148 mm – 210 mm
S3	A6 SEF, B6 SEF, Letter	Width: Less than 148 mm

Paper Size Classification: S1

Paper type: Plain Paper/Recycled Paper/Color Paper/Letterhead/Label Paper/Preprinted Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thin Paper	Side 1	56-65g/m^2	Standard	14	15	21	17	20	36
	Side 2		12		18	22	23	26	22
Plain Paper 1 (Non-Recycled Paper)	Side 1	66-74g/m^2	Standard	11	15	17	18	25	27
	Side 2		15		15	17	20	15	23
Plain Paper 1 (Recycled Paper)	Side 1	66-74g/m^2	Standard	12	13	15	27	27	30
	Side 2		15		13	18	20	25	26
Plain Paper 2 (Non-Recycled Paper)	Side 1	75-90g/m^2	Standard	15	16	17	20	20	20
	Side 2		15		16	17	15	20	25
Plain Paper 2 (Recycled Paper)	Side 1	75-90g/m^2	Standard	12	13	15	27	27	30
	Side 2		15		13	18	20	25	26
Middle Thick Paper	Side 1	91-128g/m^2	Medium	9	9	8	15	18	17
	Side 2		9		12	10	10	13	10
Thick Paper 1	Side 1	129-163g/m^2	Medium	11	9	12	20	23	25
	Side 2		11		9	12	12	15	30
Thick Paper 2	Side 1	164-220g/m^2	Medium	10	9	11	15	18	15
	Side 2		-		-	-	-	-	-

Paper type: Coated Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thick Paper 1	Side 1	129-163g/m^2	Medium	10	15	15	16	16	16
	Side 2		11		15	15	13	17	15
Thick Paper 2	Side 1	164-220g/m^2	Medium	9	12	9	12	12	14
	Side 2		10		13	13	10	13	13

Paper type: Glossy Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
-	Side 1		Medium	10	15	20	13	18	31
	Side 2		10		14	20	10	14	31

Paper type: Envelope

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thick Paper 1	Side 1	129-163g/m^2	Medium	7	12	15	7	12	15
	Side 2								
Thick Paper 2	Side 1	164-220g/m^2	Medium	7	12	15	7	12	15
	Side 2		-		-	-	-	-	-

Paper type: Special Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Special Paper 1	Side 1	55-90g/m^2	Standard	16	15	15	18	16	17
	Side 2		12		16	18	15	19	20
Special Paper 2	Side 1	91-163g/m^2	Medium	7	7	9	7	7	9
	Side 2		7		7	9	7	9	10
Special Paper 3	Side 1	164-220g/m^2	Medium	7	7	7	8	8	8
Special Paper 4	Side 1	56-90g/m^2	Standard	11	15	17	18	25	27
	Side 2		15		15	17	20	15	23
Special Paper 5	Side 1	56-90g/m^2	Standard	11	15	17	18	25	27
	Side 2		15		15	17	20	15	23

Paper Size Classification: S2

Touch panel model: Paper type: Plain Paper/Recycled Paper/Color Paper/Letterhead/Label Paper/Preprinted Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thin Paper	Side 1	56-65g/m^2	Standard	20	28	54	25	33	50
	Side 2		20		33	58	37	52	55
Plain Paper 1 (Non-Recycled Paper)	Side 1	66-74g/m^2	Standard	23	33	37	28	38	42
	Side 2		23		38	59	46	52	64
Plain Paper 1 (Recycled Paper)	Side 1	66-74g/m^2	Standard	31	34	47	36	39	52
	Side 2		31		34	57	36	39	62
Plain Paper 2 (Non-Recycled Paper)	Side 1	75-90g/m^2	Standard	25	32	42	30	37	47
	Side 2		25		37	47	30	42	52
Plain Paper 2 (Recycled Paper)	Side 1	75-90g/m^2	Standard	31	34	47	36	39	52
	Side 2		31		34	57	36	39	62
Middle Thick	Side 1	91-128g/m^2	Medium	15	26	36	20	31	41

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	MM	HH	LL	MM	HH
Paper	Side 2		15		26	66	20	31	71
Thick Paper 1	Side 1	129-163g/m^2	Medium	21	36	31	26	41	36
	Side 2		19		36	68	24	41	73
Thick Paper 2	Side 1	164-220g/m^2	Medium	17	21	18	19	24	26
	Side 2								

Paper type: Coated Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	MM	HH	LL	MM	HH
Thick Paper 1	Side 1	129-163g/m^2	Medium	15	23	31	20	28	36
	Side 2		15		23	60	20	28	65
Thick Paper 2	Side 1	164-220g/m^2	Medium	13	16	22	18	21	27
	Side 2		13		16	70	18	21	75

Paper type: Glossy Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	MM	HH	LL	MM	HH
-	Side 1		Medium	18	16	26	23	21	31
	Side 2		18		16	65	23	21	70

Paper type: Envelope

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	MM	HH	LL	MM	HH
Thick Paper 1	Side 1	129-163g/m^2	Medium	17	27	27	17	27	27
	Side 2								
Thick Paper 2	Side 1	164-220g/m^2	Medium	17	27	27	17	27	27
	Side 2								

Paper type: Special Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	MM	HH	LL	MM	HH
Special Paper 1	Side 1	55-90g/m^2	Standard	15	22	37	28	27	42
	Side 2		13		26	32	25	40	32
Special Paper 2	Side 1	91-163g/m^2	Medium	10	24	18	10	29	23
	Side 2		10		26	29	16	33	36
Special Paper 3	Side 1	164-220g/m^2	Medium	9	21	18	12	24	26
Special Paper 4	Side 1	56-90g/m^2	Standard	23	33	37	28	38	42
	Side 2		23		38	59	46	52	64
Special Paper 5	Side 1	56-90g/m^2	Standard	23	33	37	28	38	42
	Side 2		23		38	59	46	52	64

Paper Size Classification: S3

Touch panel model: Paper type: Plain Paper/Recycled Paper/Color Paper/Letterhead/Label Paper/Preprinted Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thin Paper	Side 1	56-65g/m^2	Standard	27	37	59	32	42	64
	Side 2		22		45	80	54	66	102
Plain Paper 1 (Non-Recycled Paper)	Side 1	66-74g/m^2	Standard	25	34	47	30	39	52
	Side 2		31		42	72	57	73	106
Plain Paper 1 (Recycled Paper)	Side 1	66-74g/m^2	Standard	35	37	45	40	42	50
	Side 2		35		37	75	40	42	80
Plain Paper 2 (Non-Recycled Paper)	Side 1	75-90g/m^2	Standard	30	30	52	35	35	57
	Side 2		30		30	85	35	35	90
Plain Paper 2 (Recycled Paper)	Side 1	75-90g/m^2	Standard	35	37	45	40	42	50
	Side 2		35		37	75	40	42	80
Middle Thick Paper	Side 1	91-128g/m^2	Medium	18	35	35	23	40	40
	Side 2		18		40	85	23	45	90
Thick Paper 1	Side 1	129-163g/m^2	Medium	21	20	25	26	25	30
	Side 2		21		20	105	26	25	110
Thick Paper 2	Side 1	164-220g/m^2	Medium	25	29	20	27	31	22
	Side 2								

Paper type: Coated Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thick Paper 1	Side 1	129-163g/m^2	Medium	13	27	40	18	32	45
	Side 2		13		27	90	18	32	95
Thick Paper 2	Side 1	164-220g/m^2	Medium	11	20	30	16	25	35
	Side 2		11		20	85	16	25	90

Paper type: Glossy Paper

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
-	Side 1		Medium	23	20	30	28	25	35
	Side 2		23		20	95	28	25	100

Paper type: Envelope

Paper Thickness	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Thick Paper 1	Side 1	129-163g/m^2	Medium	17	27	37	17	27	37
	Side 2								
Thick Paper 2	Side 1	164-220g/m^2	Medium	17	27	37	17	27	37
	Side 2								

Paper type: Special Paper

Paper Thicknessl	Side 1/ Side 2	Paper Weight	Print Speed	Black Mode			Color Mode		
				LL	**MM**	**HH**	**LL**	**MM**	**HH**
Special Paper 1	Side 1	55-90g/m^2	Standard	25	34	47	21	39	52
	Side 2		21		42	45	35	61	47
Special Paper 2	Side 1	91-163g/m^2	Medium	13	20	19	16	25	30
	Side 2		22		40	43	23	40	48
Special Paper 3	Side 1	164-220g/m^2	Medium	15	29	20	15	31	22
Special Paper 4	Side 1	56-90g/m^2	Standard	25	34	47	30	39	52
	Side 2		31		42	72	57	73	106
Special Paper 5	Side 1	56-90g/m^2	Standard	25	34	47	30	39	52
	Side 2		31		42	72	57	73	106

6.8 ADJUST THE CHANGE OF COLOR

6.8.1 PROBLEM

At the time of installation and soon after changing the PCDU, the following may occur:

- In half-tone images with low gradation, problems such as insufficient density and inadequate tone may occur. Furthermore, the density of halftone images may increase while in use.

6.8.2 CAUSE

This occurs because of variation in characteristics of components (for development) on the initial use of the PCDU. The density of half-tone images with low gradation is unstable only on the initial use.

6.8.3 SOLUTION

1. Execute [Auto Image Density Adjustment & Colour Calibration] in the user mode.
2. If the adjustment by [Auto Image Density Adjustment & Colour Calibration] is insufficient, perform adjustment manually by referring to the color gradation correction sheet.

6.8.4 CORRECT THE COLOR GRADATION AUTOMATICALLY

This procedure varies between models depending on the control panel specifications (whether the panel is a four-line panel or touch panel). Read the section for your model.

1. Press the [User Tools] key.
2. [Maintenance: Image] > [Auto Image Density Adjustment & Colour Calibration] > [Adjustment and Calibration]
3. Select the resolution as follows.
   1st time: 600 x 600 (1-bit)
   2nd time: 600 x 600 (2-bit)
   3rd time: 600 x 600 (4-bit)
   4th time: 1200 x 1200 (1-bit)
4. Press [OK]
5. Successful completion at first to third execution => Return to Step 3. Successful completion at fourth execution => Complete

Note

- If the execution has failed => In SP mode, check the execution results of MUSIC and process control to identify the cause of the problem.

6.8.5 SETTING GRADATION CORRECTION VALUES

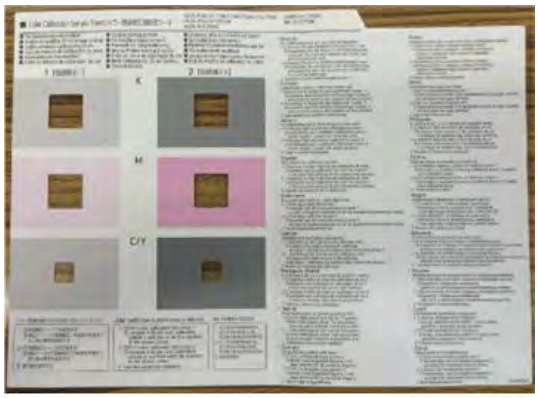
Note

- Before performing this procedure, be sure to execute [Auto Image Density Adjustment & Colour Calibration].

Overview

The color gradation correction sheet is a tool for assessing whether the machine is printing images accurately when receiving customer complaints on the tone of printed images, and making corrections accordingly.

Color gradation correction sheet



m111d6701

Procedure

1. Print test pattern 1.
   [User Tools] key > [Maintenance: Image] > [Color Calibration] > [Print Test Pattern 1 for Calibration]
2. Compare the printed test pattern of gradation correction sheet 1 with the color sample and select the numbers matching the color.

   Note

   - As the initial setting, the color values for K, M, and C/Y are set to 3, 3, and 3/3. Cyan and yellow are set as a combined value of C/Y. For example, the following pattern indicates C=5 and Y=2.

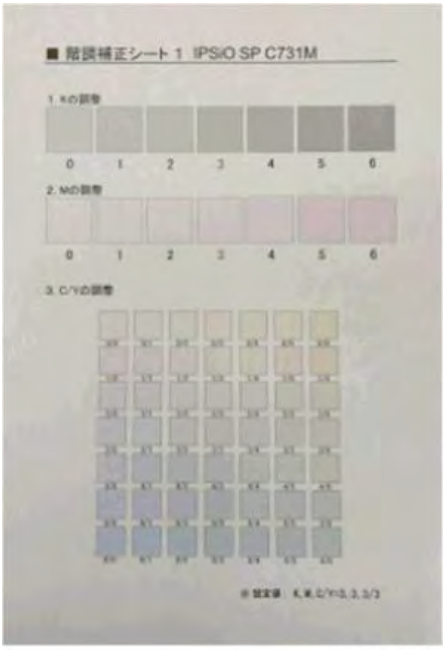
m111d6702

3. After entering the values, print the test pattern of graduation correction sheet and compare it with the color sample.

Troubleshooting

4. Check that the setting is correct and save the setting.
5. Perform gradation correction 2 according to Steps 2 to 4.

Gradation correction sheet (sample)



m111d6703

6.9 WHEN SC491-01 IS DISPLAYED

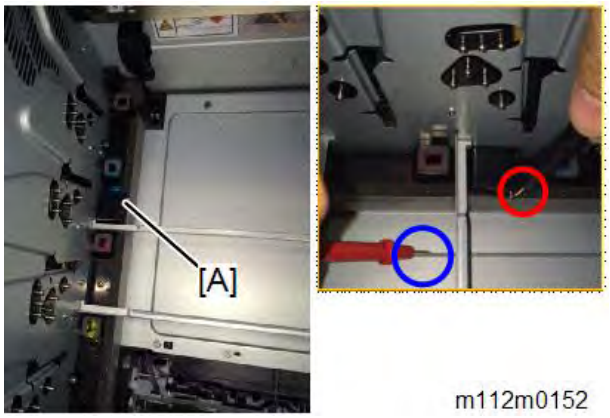
6.9.1 SUMMARY

If SC491-01 (Primary/secondary transfer: Output error) appears, it is mainly due to problems with the image transfer belt unit, transfer roller, high voltage power supply (HVP), or terminals of the development roller. This section explains how to examine the ITB unit, transfer roller unit, and HVP.

6.9.2 EXAMINING COMPONENTS

Examining the HVP

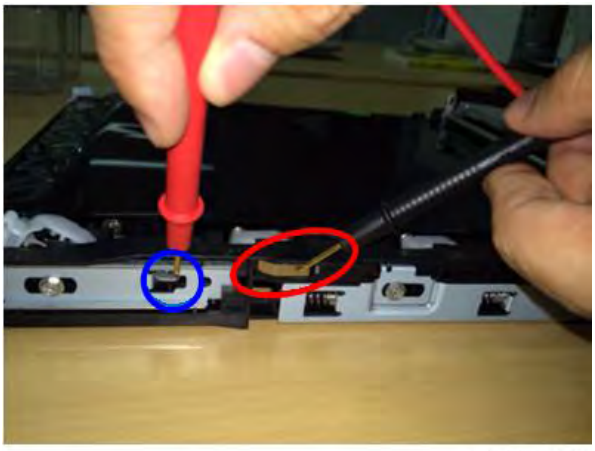
Check for a short circuit in the machine [A]. If it is conducting, the HVP is faulty.
(Red circle: power terminal, Blue circle: body)



m112m0152

Examining the ITB Unit

Check for a short circuit in the ITB. If it is conducting, the ITB Unit is faulty.
(Red circle: power terminal, Blue circle: ITB)



m111d6705

Examining the Transfer Roller Unit

Check for a short circuit in the Transfer Roller. If it is not conducting, check if the transfer roller and electrode plate are in contact.

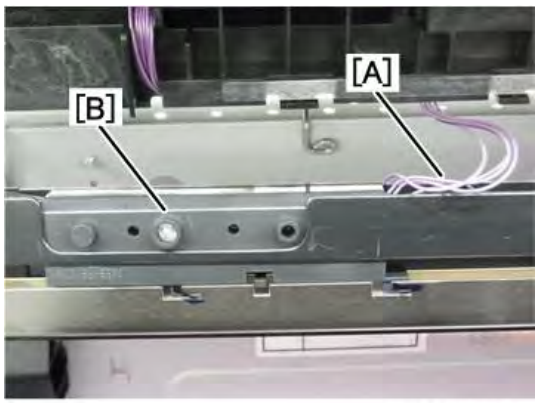
m111d6706

6.10 WHEN SC365/SC332 IS DISPLAYED

6.10.1 SC365

Cause

The toner sensor [B] fails to light because the sensor harness [A] is broken.



m111d6707

Solution

1. Enter the SP mode, then execute SP3-017-001 (TnrRmnSnsFc).
2. Check the output count of each color toner in the following SPs.
   SP3-411-005: SnsOutCntAvK
   SP3-411-006: SnsOutCntAvY
   SP3-411-007: SnsOutCntAvM
   SP3-411-008: SnsOutCntAvC

   Note

   - If the sensor output count is "0 times", the harness is likely to be broken.
3. Replace the sensor harness of the corresponding color.

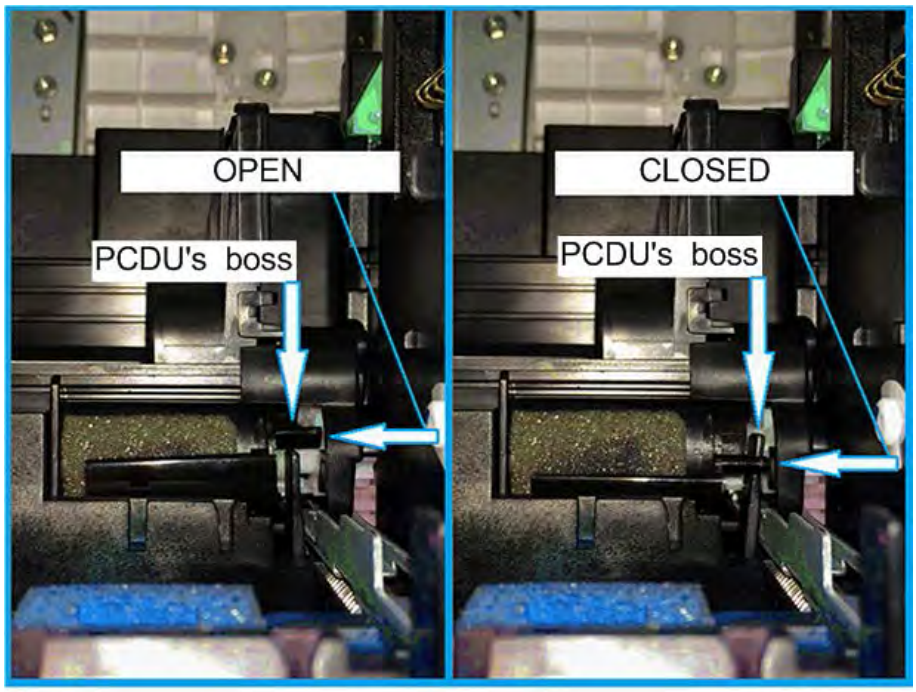
6.10.2 SC332

Problem

- SC332-** (Toner supply feed lock (01: Bk, 02: C, 03: M, 04: Y) occurs during operation.
- The machine can be restored temporarily by switching it off and then back on. The problem reoccurs after printing a number of pages.

Cause

- The PCDU's protruding part (at the right of the shutter) fails to lift the shutter and the shutter stays closed, failing to supply toner to the PCDU, resulting in SC detection.



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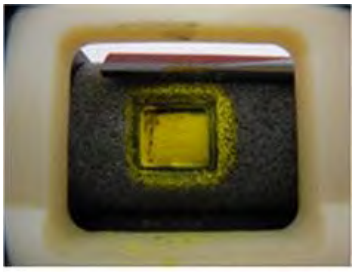
- The toner cartridge gear [A] and the middle cover gear [B] are not connected, failing to supply toner to the PCDU, resulting in SC detection.

m112m0155

- Toner has clogged in the toner supply port of the toner cartridge.

Note

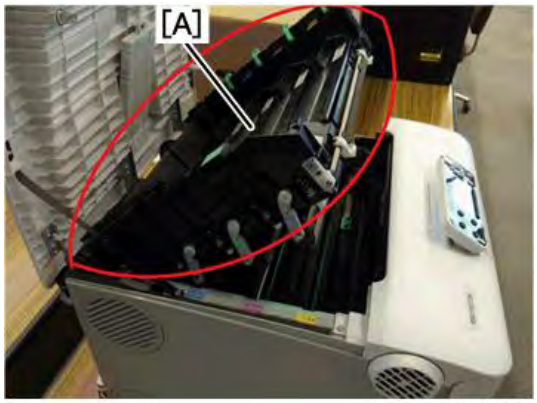
  - Open the toner cartridge's outer and inner shutters and check the toner supply port. If the toner is clogged, it will not come out even if you hold the cartridge with the supply port facing down and the shutter open.



m111d6709

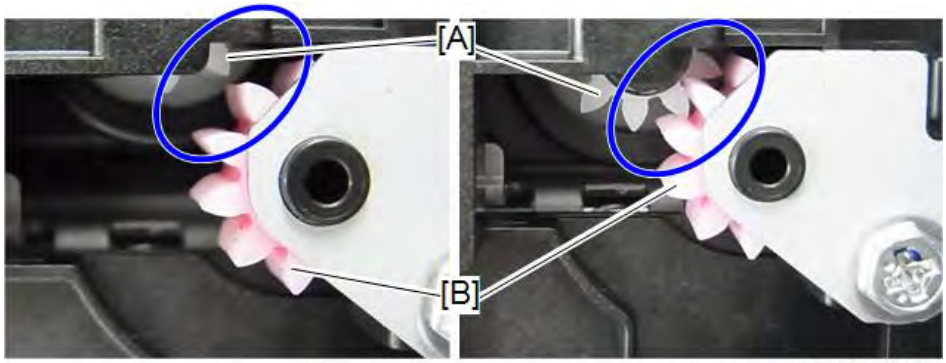
Solution

1. Reinstall the toner cartridge with the middle cover closed [A] to make sure that the shutter is properly lifted.



m111d6710

2. Open the middle cover and make sure that the toner cartridge gear [A] and the middle cover gear [B] are engaged.
(Left: not engaged, Right: engaged)



m112m0156

3. Eliminate the toner clogging in the supply port of the toner cartridge, shake the toner well, and then reinstall the cartridge.
4. If the problem persists even after performing Steps 1 and 2, replace both the PCDU and the toner cartridge.

Checking Toner Supply to PCDU

1. Execute SP3-017-001 (TnrRmnSnsFc) and SP3-017-002 (TnrRmnSnsBk).
2. Execute the SPs below, and then check the category of the LED used for the toner-end sensor for each color.

Toner End Sensor	SP	No. to be identified/LED category
BK	3-244-009	29: Category 1 31: Category 2 27: Category 3
C	3-244-016	9: Category 1 5: Category 2 4: Category 3

Toner End Sensor	SP	No. to be identified/LED category
M	3-244-015	21: Category 1 20: Category 2 16: Category 3
Y	3-244-014	24: Category 1 23: Category 2 20: Category 3

3. Check the output count of each color toner in the following SPs.
   - SP3-411-005: SnsOutCntAvK
   - SP3-411-006: SnsOutCntAvY
   - SP3-411-007: SnsOutCntAvM
   - SP3-411-008: SnsOutCntAvC
4. The amount of the toner is adequate if the [SnsOutCnt] values are within the range of the following table:

Middle-temperature, Middle-humidity conditions (23C 50%)

LED Category	Category 1		Category 2		Category 3	
	Min.	Max.	Min.	Max.	Min.	Max.
Bk	12	30	15	30	12	27
C	9	30	5	29	4	30
M	21	30	20	31	16	25
Y	24	37	23	37	20	37

High-temperature, High-humidity conditions (27C 80%)

LED Category	Category 1		Category 2		Category 3	
	Min.	Max.	Min.	Max.	Min.	Max.
Bk	10	29	10	31	10	27
C	16	37	20	37	20	37
M	20	37	15	30	14	28
Y	26	37	20	37	16	37

Low-temperature, Low-humidity conditions (10C 15%)

LED Category	Category 1		Category 2		Category 3	
	Min.	Max.	Min.	Max.	Min..	Max.
Bk	14	34	14	34	14	34
C	14	35	16	35	15	35
M	16	29	16	27	11	27
Y	19	30	19	30	14	25

Note

- If the value exceeds the maximum limit, the toner is insufficient. In such a case,

replenish the toner in the following SP modes (the amount will be sufficient by replenishing up to 6 times):

Related SPs

SP3-015-003: TnrSplyK

SP3-015-004: TnrSplyY

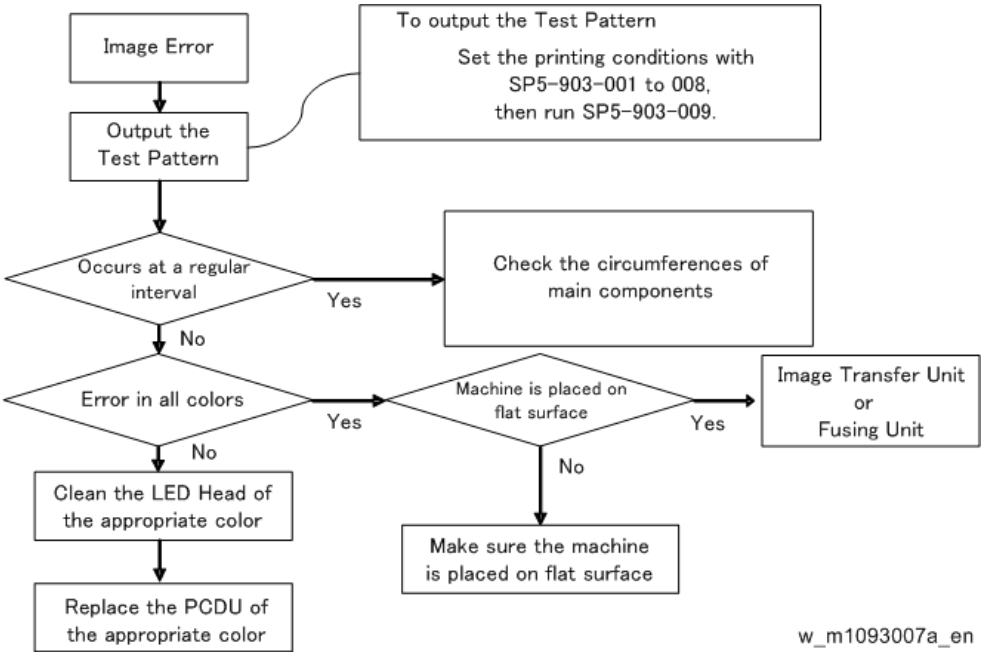
SP3-015-005: TnrSplyM

SP3-015-006: TnrSplyC

Note

- After replenishing the toner, be sure to execute SP3-017-001 (TnrRmnSnsFc) and SP3-017-002 (TnrRmnSnsBk). Otherwise, the report of the toner amount will not be updated.

6.11 OTHER PROBLEMS

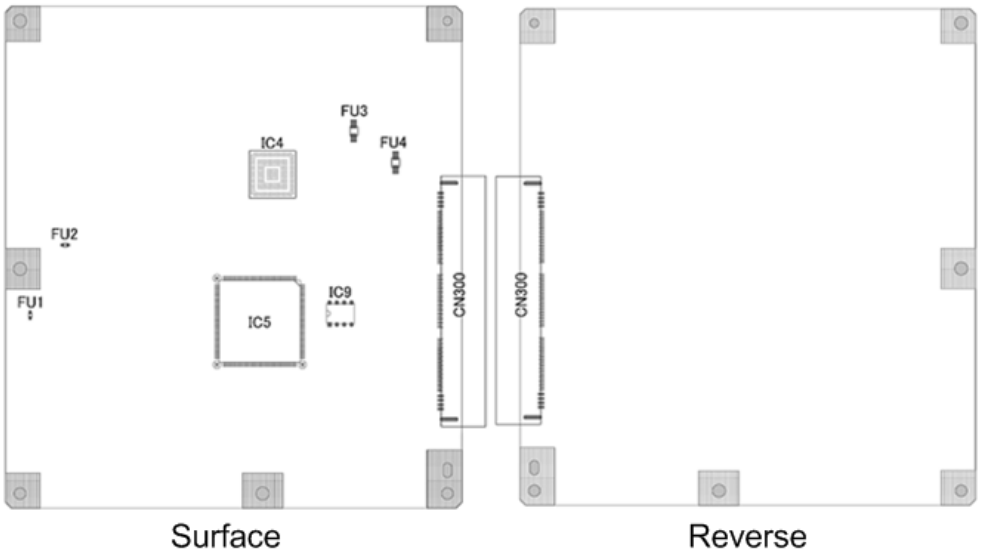


Unit	Parts	Interval*
PCDU	Drum	95mm
	Development Roller	34mm
	Cleaning Roller	30mm
	Charge Roller	30mm
Image Transfer	Image Transfer Belt	750mm
Paper Transfer	Transfer Roller	60mm
Fusing	Fusing Belt	95mm

* The interval may vary depending on the temperature and paper slippage.

6.12 BLOWN FUSE CONDITIONS

6.12.1 EGB FUSES



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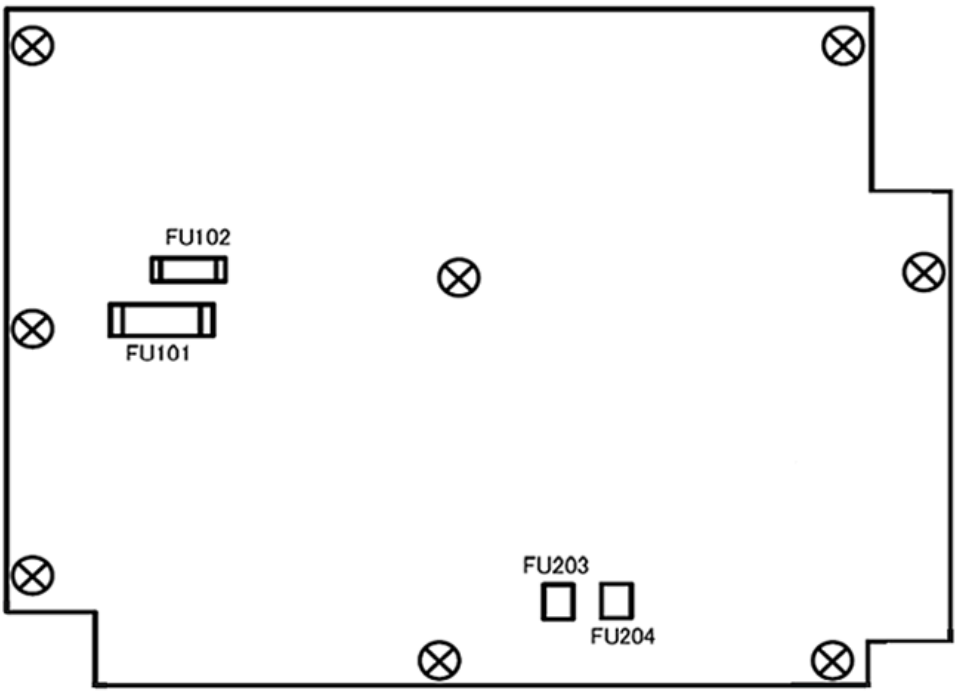
FU No.	Fuse	Function	Symptom, Cause, Action
FU1	Microfuse	Overcurrent protection for Toner Supply Solenoid circuit	Symptom • Toner is not supplied even though the remaining Toner in the Toner Cartridge is sufficient and supplying is performed. Cause • There is a short in the solenoid, or a Fuse blows caused by the GND short in the Harness. Action • Replace the EGB
FU2	Microfuse	Overcurrent protection for Duplex Inverter Solenoid circuit	Symptom • Duplex is not performed properly. Cause • There is a short in the solenoid, or a Fuse blows caused by the GND short in the Harness. Action

FU No.	Fuse	Function	Symptom, Cause, Action
			• Replace the EGB
FU3	Microfuse	Overcurrent protection for LED Power supply	Symptom • LED error Cause • Harness (+5V_LED) is shorted to GND. • Fuse blows caused by the GND short in the Harness. Action • Replace the Operation Panel or EGB
FU4	Microfuse	Overcurrent protection for Operation Panel	Symptom • The Operation Panel does not work even though the power is turned on. Cause • Harness (+5VX_OPU) is shorted to GND. • Fuse blows caused by the GND short in the Harness. Action • Replace the Operation Panel or EGB

6.12.2

6.12.3 PSU FUSES



m112m0137

FU No.	Fuse	Function	Symptom, Cause, Action
FU101	Ceramic tube Fuse	Overcurrent protection for the Fusing Heater circuit	Symptom • Fusing errors occur. Cause • The harness of the Fusing became shorted with GND. • Broken Fusing circuit in the PSU Action • Replace the PSU
FU102	Ceramic tube Fuse	Overcurrent protection for the Power circuit	Symptom • The power cannot be turned on. Cause • Varistor 4 has shorted out because of excess voltage, which resulted in excess current flow, causing a FU102 blowout. • Primary circuit of the PSU is shorted with GND. • Broken the Primary circuit of PSU Action • Replace the PSU

Blown Fuse Conditions

FU No.	Fuse	Function	Symptom, Cause, Action
FU203	Microfuse	Protection for the secondary side Harness of the +24V _LPS output	Symptom • Engine does not start even though the power of the main body is turned on. Cause • The overcurrent protection equipment of the PSU suffered a breakdown and the +24V_LPS output became shorted with GND. Action • Replace the PSU
FU204	Microfuse	Protection for the secondary side Harness of the +24VS_LPS output	Symptom • Problems occur, including Process Control error, Jam; an image is not generated; and Toner supply is not carried out. Cause • The overcurrent protection equipment of the PSU suffered a breakdown and the +24VS_LPS output became shorted with GND. Action • Replace the PSU

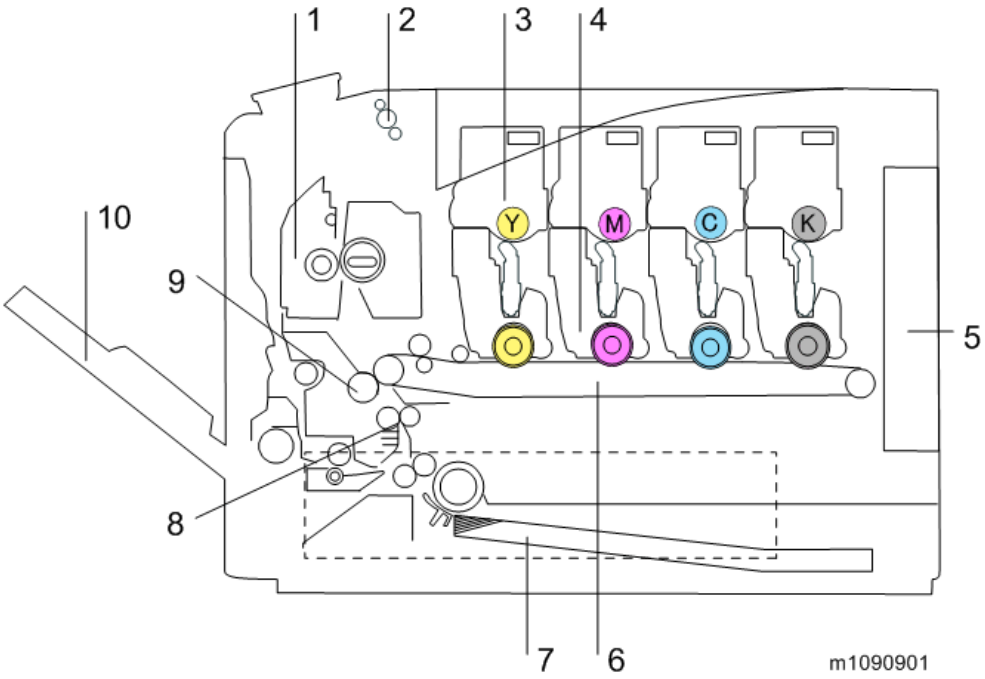
DETAILED DESCRIPTIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

7. DETAILED DESCRIPTIONS

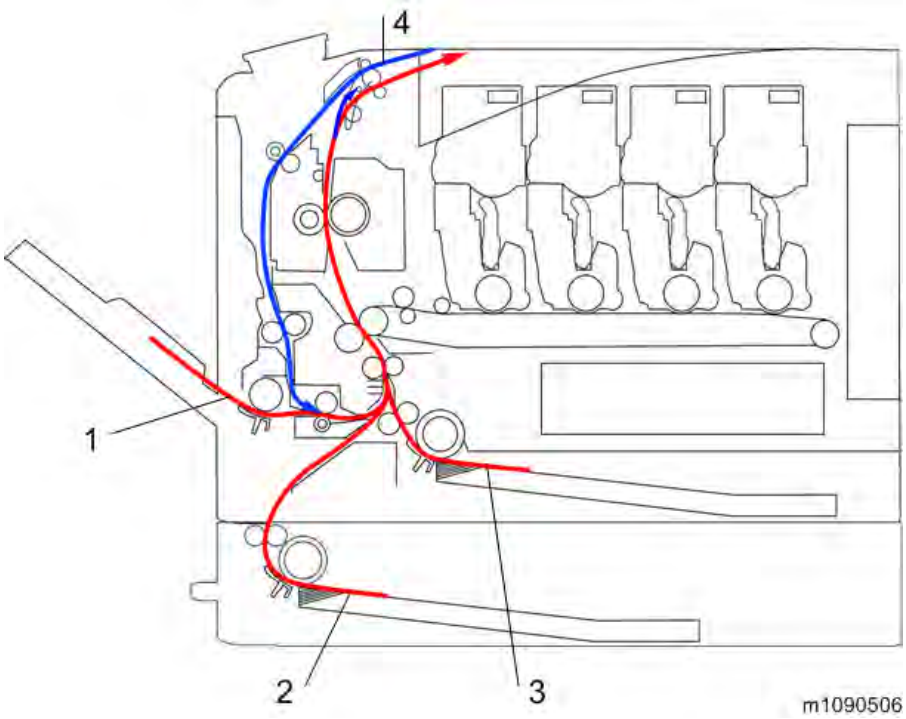
7.1 PRODUCT OVERVIEW

7.1.1 COMPONENT LAYOUT



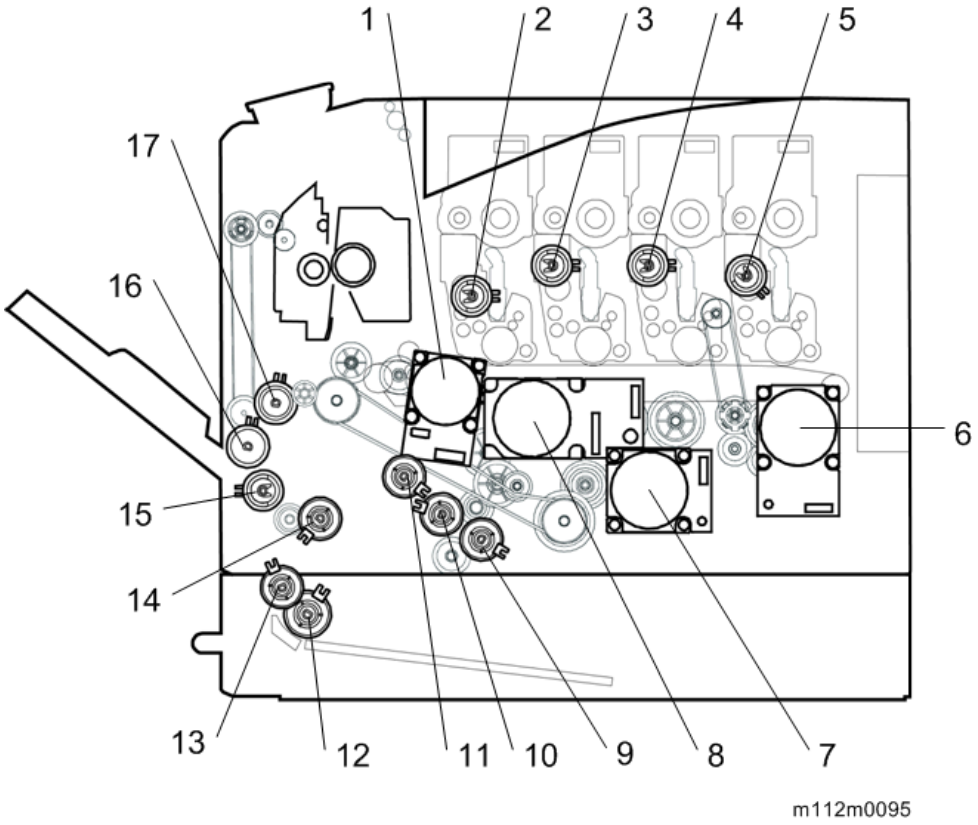
No.	Description	No.	Description
1	Fusing Unit	6	Image Transfer Belt Unit
2	Paper Exit/Reverse Roller	7	Paper Feed Tray
3	Toner Cartridge	8	Registration Roller
4	PCDU	9	Paper Transfer Roller
5	Engine Board/Controller Board	10	Bypass Tray Unit

7.1.2 PAPER PATH



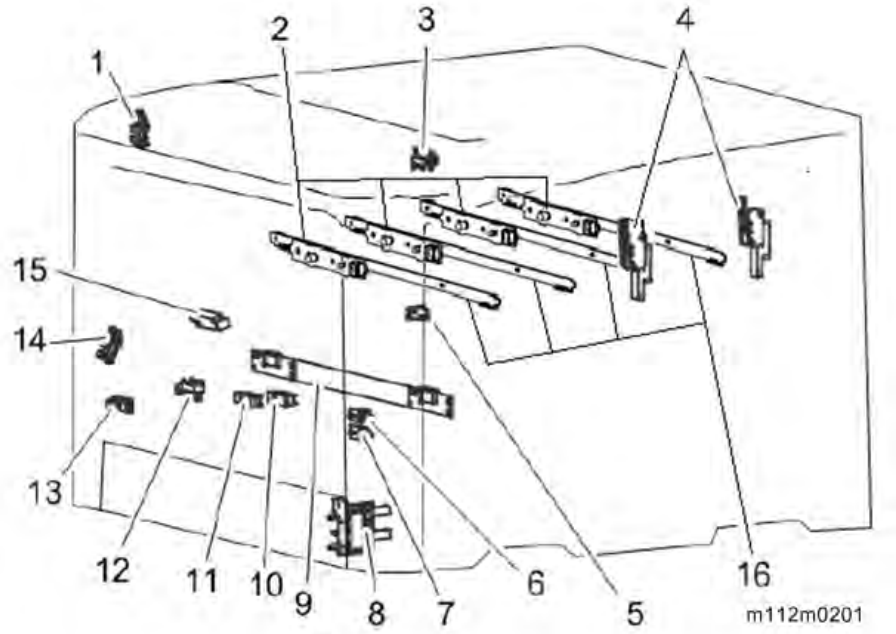
No.	Description	No.	Description
1	Bypass Tray	3	Standard Paper Feed Tray
2	Optional Paper Feed Tray	4	Duplex Feed Path

7.1.3 DRIVE LAYOUT



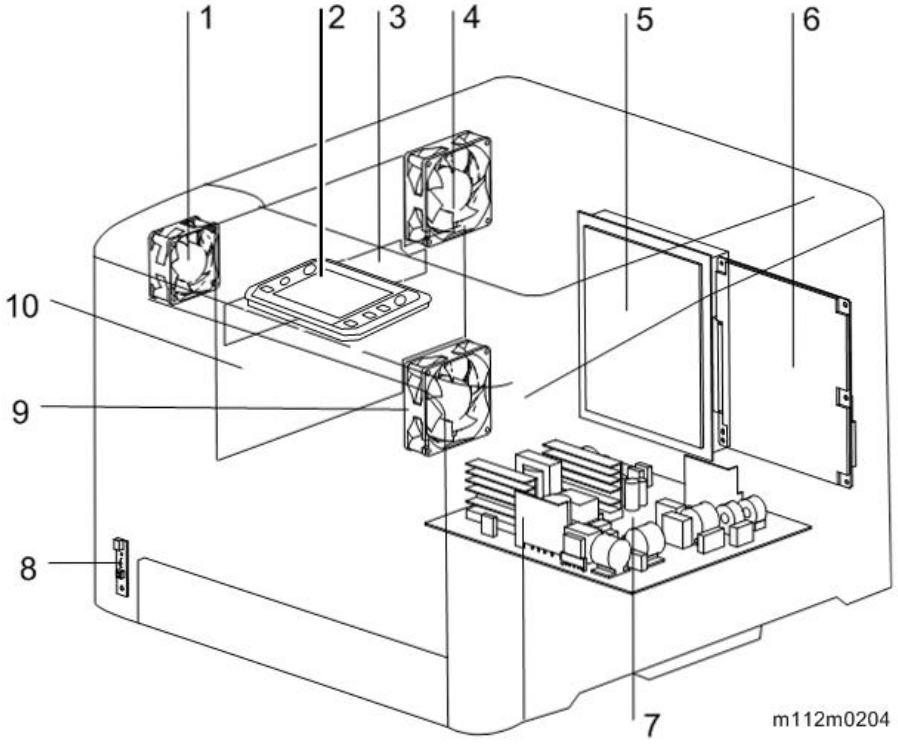
No.	Description	No.	Description
1	Transfer/Transport Motor	10	Paper Feed Clutch
2	Toner Supply Clutch (Y)	11	Registration Clutch
3	Toner Supply Clutch (M)	12	Optional Paper Feed Clutch
4	Toner Supply Clutch (C)	13	Grip Roller Clutch
5	Toner Supply Clutch (K)	14	Duplex Paper Exit Clutch
6	Drum Motor: K	15	Bypass Feed Clutch
7	Fusing Motor	16	Bypass Bottom Plate Clutch
8	Drum Motor: CMY	17	Duplex Intermediate Clutch
9	ITB Contact Clutch		

7.1.4 ELECTRICAL COMPONENTS 1



No.	Description	No.	Description
1	Paper exit sensor	9	TM(ID) Sensor
2	Toner end sensor	10	Registration Sensor
3	Paper exit full sensor	11	Duplex Sensor
4	Interlock switch	12	Bypass Paper End Sensor
5	ITB Contact Switch	13	Bypass Bottom Plate Home Position Sensor
6	Waste Toner Bottle Set Switch	14	Paper End Sensor
7	Waste Toner Full Sensor	15	Fusing Entrance Sensor
8	Paper Size Switch (3pins)	16	Discharge Lamp

7.1.5 ELECTRICAL COMPONENTS 2



No.	Description	No.	Description
1	Fusing Fan	6	EGB
2	Operation Panel	7	PSU
3	New PCDU Detection Board	8	Main Power Switch
4	Cooling Fan	9	PSU Fan
5	CTL	10	HVP

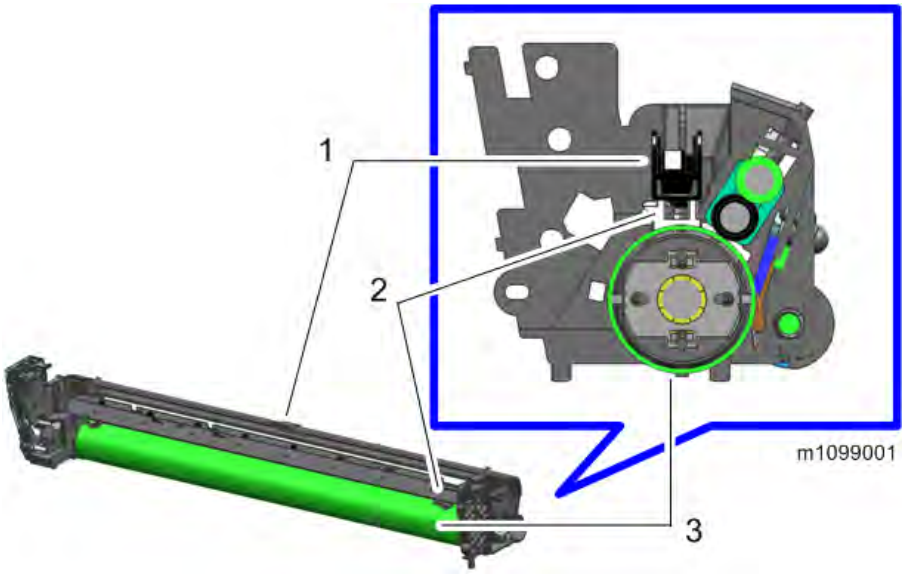
7.2 LED UNIT

7.2.1 GENERAL DESCRIPTIONS

LED writing method is superior to LD writing method in unit-downsizing, noise reduction, and energy saving.

Four LED heads are installed on the inner cover and the each PCDU is set in the specified location (on the drum) automatically when the inner cover closes. Among four color LED heads (cyan, magenta, black, yellow), no distinction are there between for black and for the other colors.

The writing process uses only the LED head, but the focus distance adjustment is performed by the LED head contacting on the LED spacer which is on the drum.



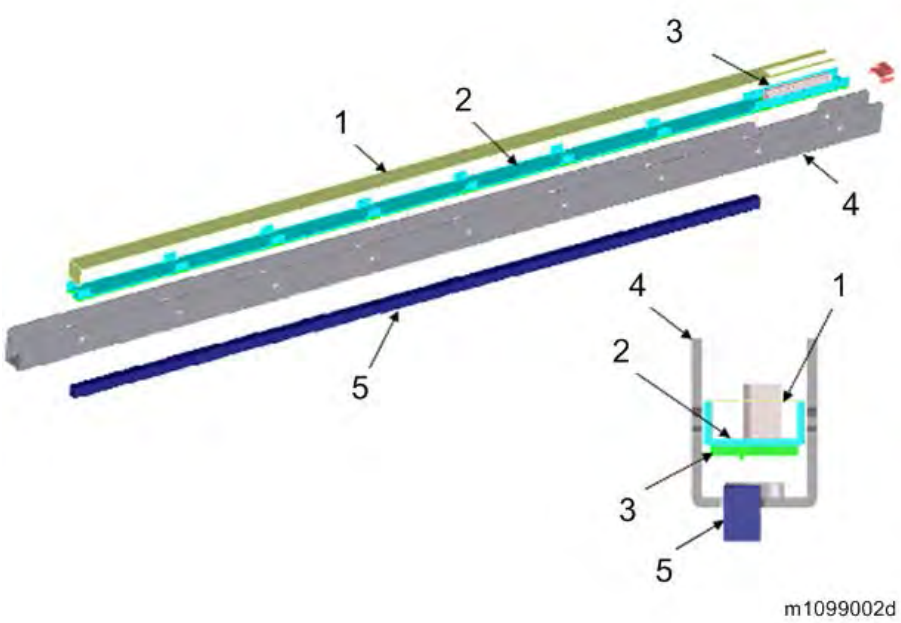
1. **LED Head**
2. **LED Spacer**
3. **OPC**

Note

- All LED heads use the same parts so you can swap them with one another for troubleshooting purpose.
- The LED spacer contacts on the drum, where the drum wears out gradually as it rotates. If worn PCDU (out of lifetime) is used, its focus turns to be blurry gradually.

LED Head Components

The LED head is composed of the following parts. You cannot replace each part but the whole LED head.

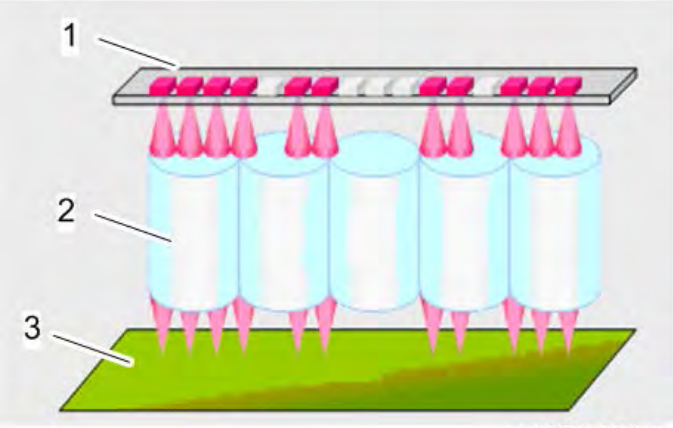


1. **Sheet**
2. **Base**
3. **LED Board**
4. **Frame**
5. **SLA (SELFOC LENS ARRAY)**

7.2.2 MECHANISMS

Writing method

One-dimensional array of tiny LED that is able to write in 1200 dpi. The emitted light is focused by the SLA (SELFOC LENS ARRAY) for writing.



1. **LED Board**
2. **SLA (SELFOC LENS ARRAY)**
3. **OPC**

LED Head

One LED head has 26 LED chips. This chip mounts 8mm luminous element on itself.

Note

- If a vertical line 8mm in width appears on the image parallel to the direction of paper feed, it may be caused by a broken LED chip.

LED Positioning

The LED head contacts the spacer on the drum in order to hold and adjust a distance (focal length) from the PCDU (slide-move method).

Note

- The LED spacer contacts on the drum, where the drum wears out gradually as it rotates. If worn PCDU (out of lifetime) is used, its focus turns to be blurry gradually.

Image Position Adjustment

You can adjust printing position from each tray with [Registration] in Menu. At this time, the following controls are done as the adjustment in the machine;

- Horizontal Scan: Adjusted by moving the whole image position.
- Vertical Scan: Adjusted by changing the light-emission timing.

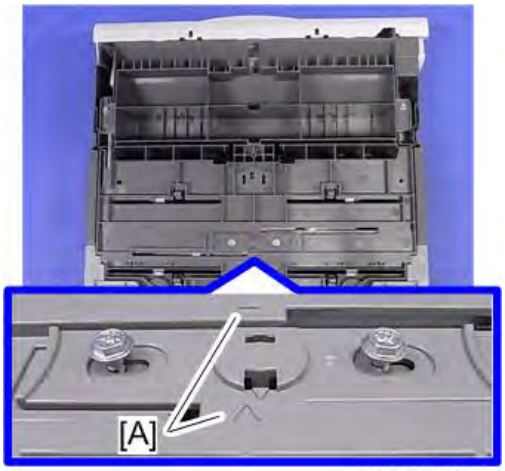
Note

- There is no mechanical adjustment as LD writing has.
- Writing applies to the extent of the LED head to the horizontal direction. Hence if you want to adjust printing position to more extensive area than the one that is within setting range in [Registration], adjust paper position in the feed tray.

In paper position adjustment in the feed tray, you can adjust horizontal registration by loosening the screws on the bottom of the tray, and then moving the holder to right or left (up to 2mm).

Note

- When default (±0) position, the holder position is the triangle marked area [A] in the picture below.



m1099180.jpg

LED Light Volume Adjustment

Adjusts the LED light volume by holding the data stored in the EEPROM on the LED head.

Adjustment at Replacement

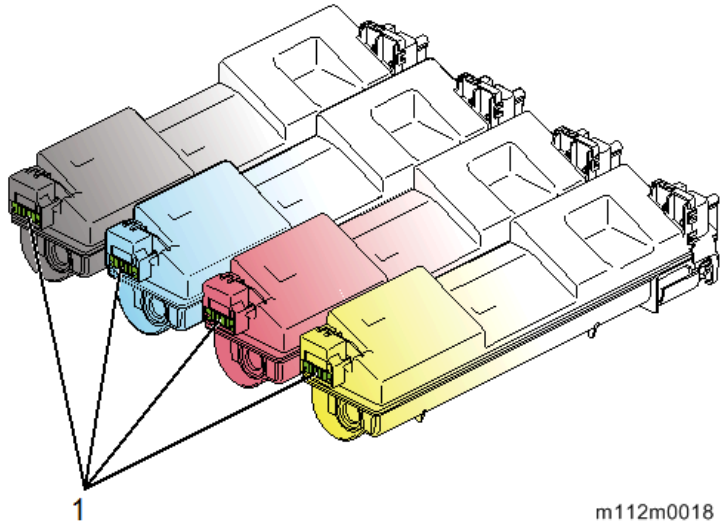
Adjustment at LED head replacement is not needed due to the EEPROM on the LED board. This ROM contains light volume adjustment data.

7.3 TONER CARTRIDGE, PCDU (PHOTO CONDUCTOR DEVELOPMENT UNIT)

7.3.1 OVERVIEW

Toner Cartridge

- Each Toner Cartridge contains the toner bottle and toner supply mechanisms.
- Projections on the right side of the toner cartridge ensure each cartridge is always inserted into the correct position. The Toner Cartridges are arranged in order of Y, M, C, and K as viewed from the front of the machine.
- The Shutter of each Toner Cartridge has a dual protection mechanism: mechanical and software. The Shutter of each Toner Cartridge is operated by the Toner Supply Solenoid.
- Each Toner Cartridge has an ID chip (memory chip) that contains information such as product information and the number of prints.



1. ID chip

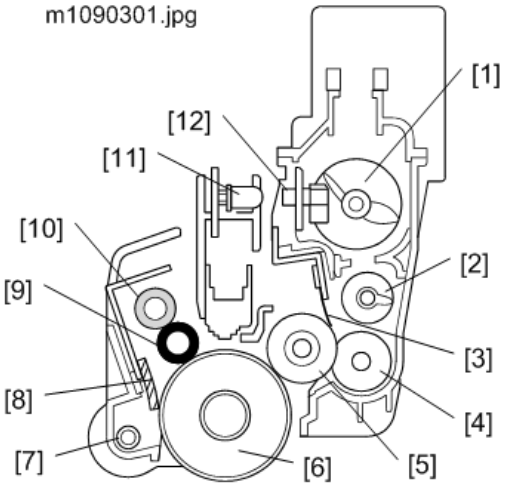
ID chip information

ID chip information can be checked when in SP mode.

SP No.	Item
SP7-931	Toner Bottle Bk
SP7-932	Toner Bottle C
SP7-933	Toner Bottle M
SP7-934	Toner Bottle Y

PCDU

The PCDU section consists of four mechanisms: charge, photoconduction, development, and cleaning.



1. Upper Mixing Coil
2. Lower Mixing Coil
3. Development Blade
4. Toner Supply Roller
5. Development Roller
6. OPC
7. Waste Toner Collection Coil
8. OPC Cleaning Blade
9. Charge Roller
10. Charge Roller Cleaner
11. Toner End Sensor
12. Toner End Detection Window

7.3.2 MECHANISM

Toner Cartridge

Toner Supply

The toner supply clutch turns ON and a coil in the toner cartridge rotates to transfer toner to the bottle tap and then the PCDU. Toner which falls into the PCDU is transferred to the development section by the upper mixing coil.

New Unit Detection

The machine reads the ID chip to detect the status of the cartridge.

Toner Near End (TNE) / Toner End (TE) Detection

The TE sensor is mounted on the LED unit. It monitors toner supply through the TNE detection window

TNE is detected when the TE sensor on the LED unit detects non-supply of toner after the toner supply count by the software has exceeded the specified amount.

When TNE is detected, TNE information is written to the ID chip. TE information is written to the chip when the TE sensor detects TE.

Note

- SC332 is detected when the TE sensor on the LED unit detects non-supply of toner before by toner supply count by the software exceeds the specified amount.

The number of prints that can be made after toner near end (Rough indication)

Normal (Before 5 days): 475pages

Notify Later (Before 3 days): 285pages

Notify Sooner (Before 7 days): 665pages

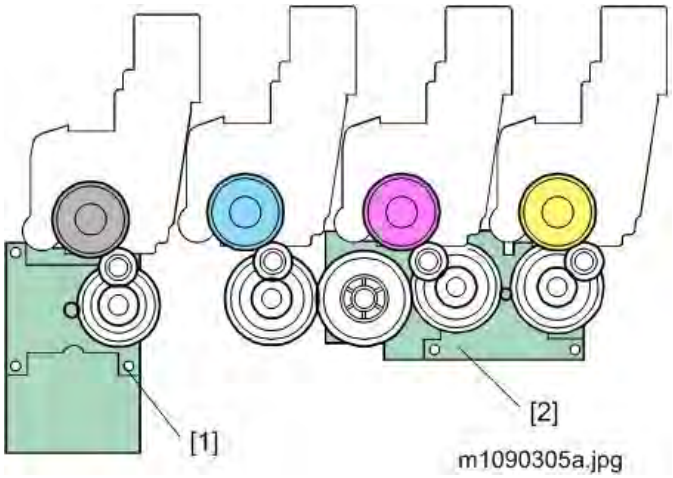
*Users can set “Normal/ Notify Sooner/ Notify Later”. The default is “Normal”.

*The number of prints is a reference value for the following conditions: “A4, SEF, Color ratio 50%, Each color 5% on the original, Serial printing”. The actual amount (replacement cycle) fluctuates due to conditions such as: “paper size, paper type, page orientation, contents of original, P/J, and the number of times that process control and MUSIC are done”.

PCDU

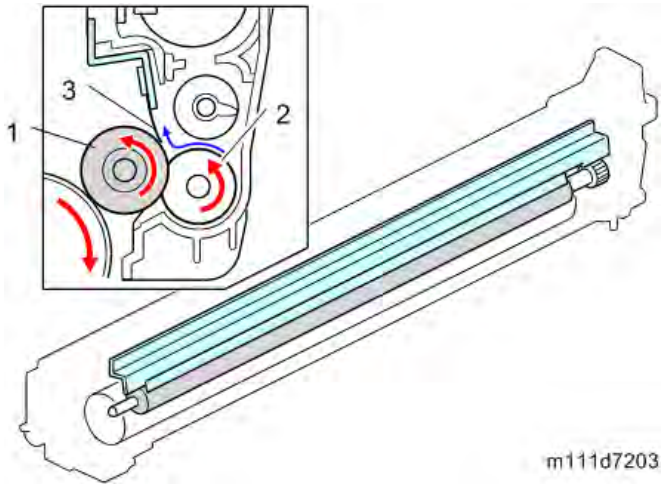
Drive

The PCDUs are driven by the black imaging motor [1], and the color imaging motor [2].



Development

The development mechanism contains the development roller [1], the toner supply roller [2], and the development blade. The toner supply roller [2] provides the development roller [1] with toner. The electrostatic latent image on the surface of the PCDU takes on toner and turns into a visible toner image. The development blade [3] keeps the toner attached on the development roller [1] flat.



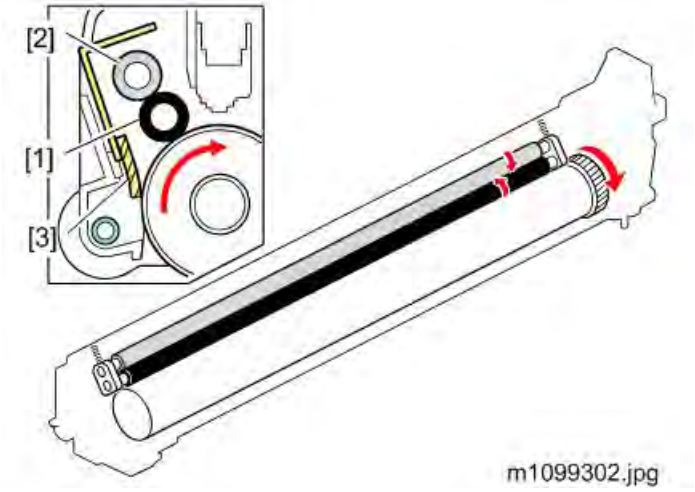
Note

- There is an idler gear between the drive gears of the development roller and toner supply roller to make them rotate in the same direction.

Charge, Charge roller cleaning, OPC Cleaning

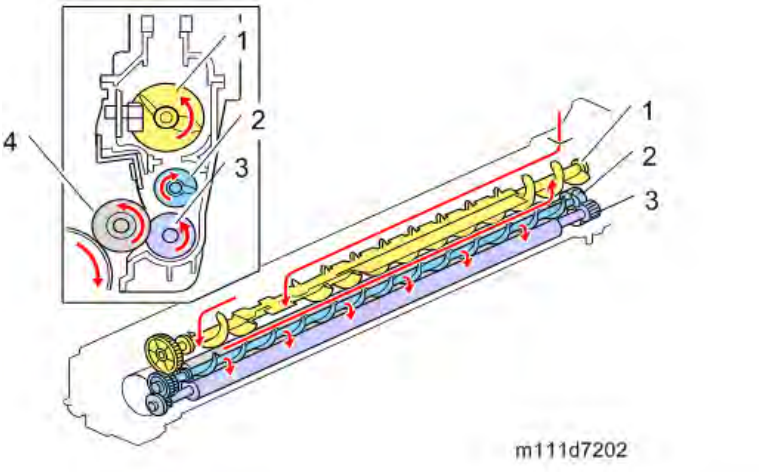
This machine uses a charge roller [1]. The charge roller gives the drum surface a negative charge. The high voltage supply board, which is at the left side of the machine, applies dc and ac voltage (at a constant current) to the roller. The ac voltage helps to make sure that the charge given to the drum is as constant as possible.

The machine automatically controls the charge roller voltage when process control is done. The charge roller cleaner [2] which always touches the charge roller, cleans the charge roller. The OPC cleaning blade [3] removes the waste toner on the OPC.



Toner Mixing

The toner moves as shown in the following drawing. The upper mixing coil [1] moves the toner to the left side. The lower mixing coil [2] moves toner to the right side. Finally, the toner supply roller [3] supplies toner to the development roller [4].



Note

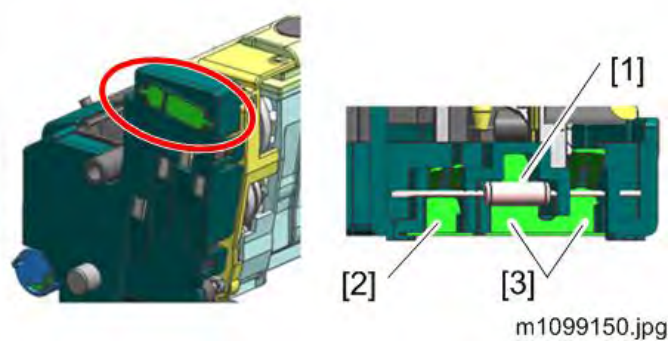
- There is an idler gear between the drive gears of the development roller and toner supply roller to make them rotate in the same direction.

Waste toner

Toner waste within each PCDU is collected by the waste toner collection coil and sent down to the waste toner bottle.

New PCDU detection, and Set detection

A terminal mounted on the side of the cover detects when a new PCDU is inserted. If a new PCDU comes into contact with the three-point terminal, a fuse is opened, and the machine detects the new PCDU.

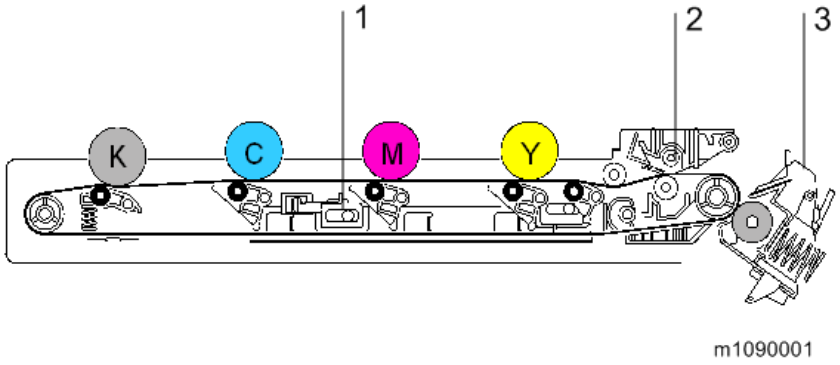


1. Fuse Resistance
2. New PCDU Detection
3. Set Detection and New PCDU Detection

7.4 IMAGE TRANSFER

7.4.1 OVERVIEW

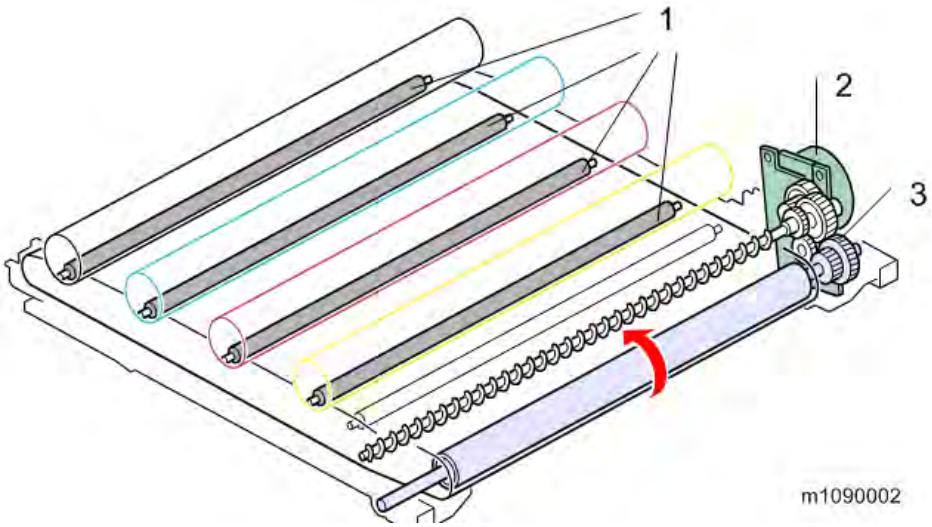
The transfer section consists of three units: the Image Transfer Unit, the Image Transfer Belt Cleaning Unit, and the Transport Unit.



m1090001

1. Image Transfer Unit
2. Image Transfer Belt Cleaning Unit
3. Transport Unit

7.4.2 IMAGE TRANSFER BELT UNIT

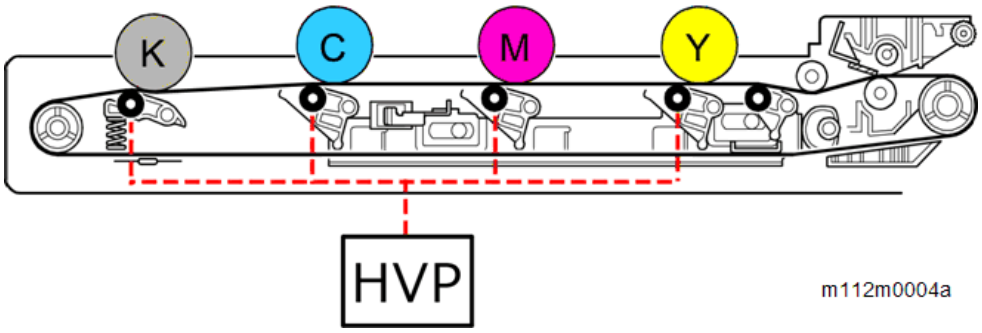


m1090002

1. Image Transfer Belt Rollers
2. ITB/Transport Motor
3. ITB Drive Roller

Drive and Transfer Belt Roller Bias

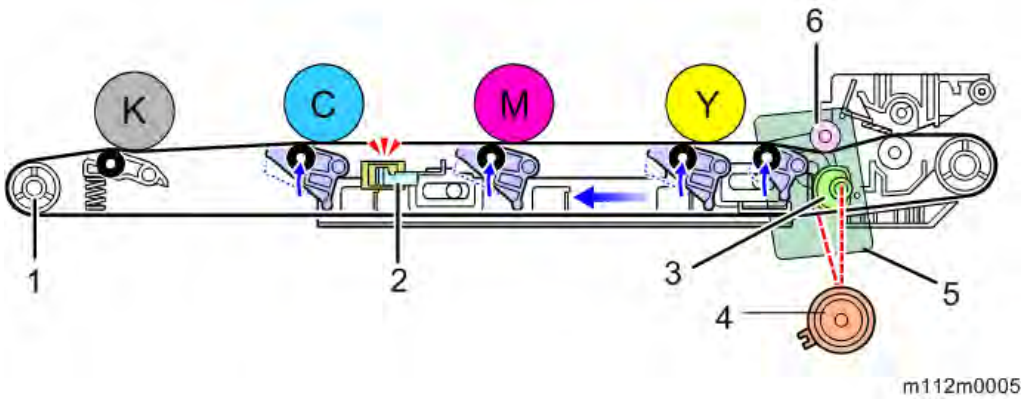
The ITB/Transport Motor drives the ITB Drive Roller via a gear to drive the Image Transfer Belt. The same bias is applied to the Image Transfer Belt Roller for each color from HVP in 1 system.



Transfer Belt Contact

The Transfer Belt Contact Clutch turns on to transfer the drive from the ITB/Transport Motor to the Contact Cam. The contact cam raises and lowers the Image Transfer Belt Rollers to move the Image Transfer Belt into contact and away from the color PCDUs. The color OPC drums (cyan, magenta and yellow) do not contact the Image Transfer Belt when the machine makes a black and white print..

Regardless of whether the color OPC drums are contacting the Image Transfer Belt or not, the tension roller maintains the tension of the belt.

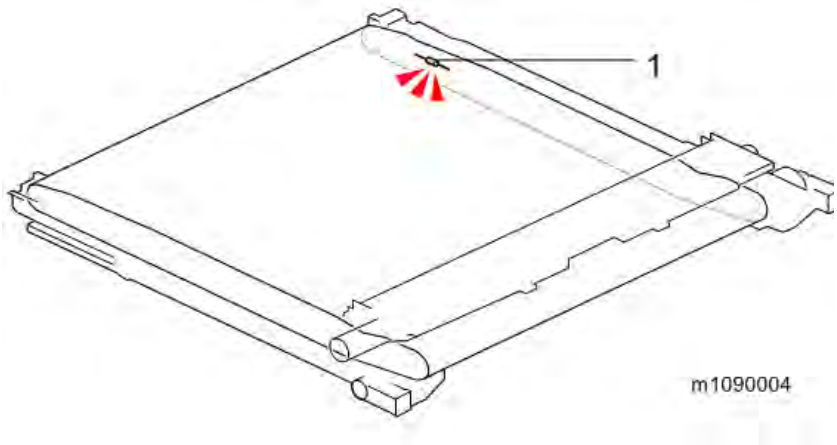


1. Tension Roller
2. Transfer Belt Contact Sensor
3. Contact Cam
4. Transfer Belt Contact Clutch
5. ITB/Transport Motor
6. Belt Guide Roller

New ITB Unit Detection

The machine checks for replacement detection at the following three times:

- Turning on the Main power
- Returning from sleep mode
- Closing the Front Cover or Upper Cover



1. Fuse

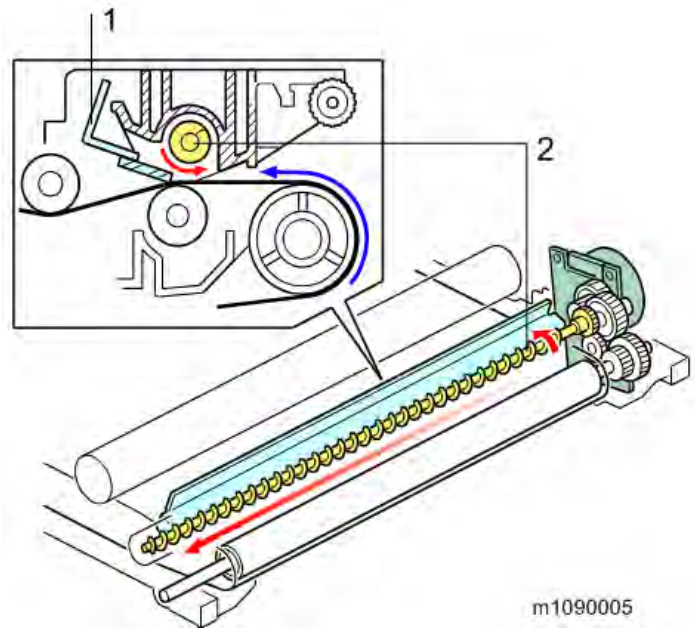
Note

- The fuse for the new unit detection is only fitted with supplies. The service parts do not have a fuse and require counter reset.

7.4.3 IMAGE TRANSFER BELT CLEANING

Overview

The Image Transfer Belt is cleaned by the transfer cleaning blade. Any remaining toner that is scraped off is conveyed to the left side of the unit via the waste toner transport coil.

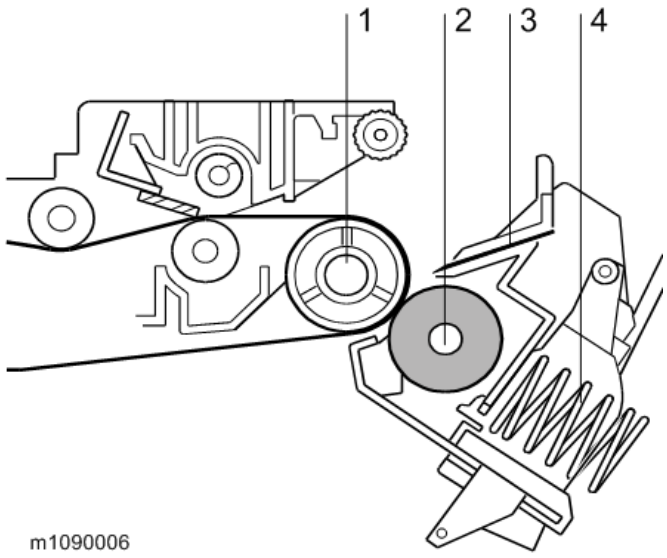


1. Image Transfer Belt Cleaning Blade
2. Waste Toner Transport Coil

7.4.4 TRANSFER ROLLER

Overview

The image is transferred from the Image Transfer Belt to the paper by applying a bias to the Transfer roller.



1. Transfer Belt Drive Roller
2. Paper Transfer Roller
3. Discharge Plate
4. Transfer Pressure Spring

Drive

The paper transfer roller rotates in conjunction with the Transfer Belt Drive Roller, which is its drive source.

Power Transfer bias

Paper transfer roller is charged by HVP (high voltage power supply).

Separation and Transport

Transfer Roller

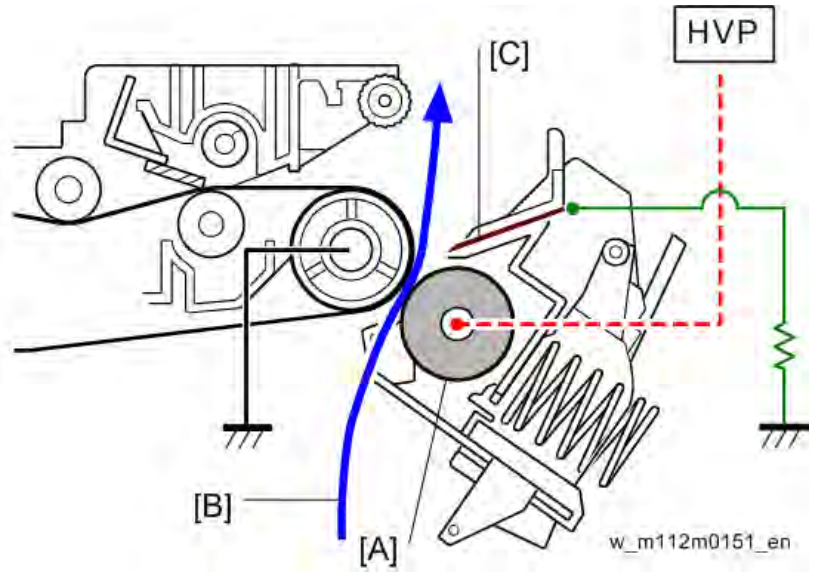
The paper transfer roller [A] is always pressed against the image transfer belt by pressure from a transfer pressure spring. The paper transfer roller moves the toner image from the transfer belt to the paper. When the transfer belt rotates, the paper transfer roller also rotates.

Paper Transfer Bias

The high voltage power supply (HVPS) supplies electricity to the transfer roller. The transfer roller is positively charged.

Discharge Plate

The transfer unit has a discharge plate [C] above the paper transfer roller. The discharge plate removes charge that was applied to the paper during paper transfer. This helps paper move away from the paper transfer roller. The discharge plate [C] is grounded to GND via the resistor.



Paper Transfer Roller Cleaning

Toner may transfer to the paper transfer roller surface following a paper jam or if the paper is smaller than the image. Periodic cleaning of the paper transfer roller is required to prevent this toner from migrating back to the rear of new printouts.

The machine cleans the paper transfer roller at the following times:

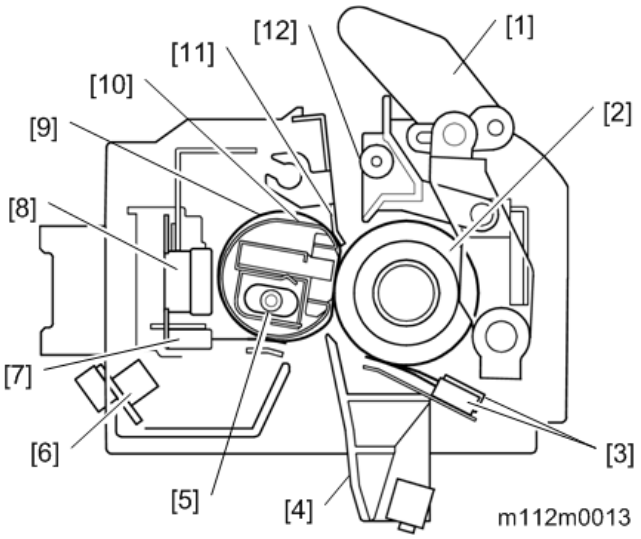
- After initial power on.
- After clearing of a copy jam

The PSU first supplies a negative cleaning current (about -4 μA) to the paper transfer roller, causing negatively charged toner on the paper transfer roller to move back to the image transfer belt. It then applies a positive cleaning current (+5 μA) to the paper transfer roller, causing any positively charged toner to migrate back to the image transfer belt.

7.5 FUSING

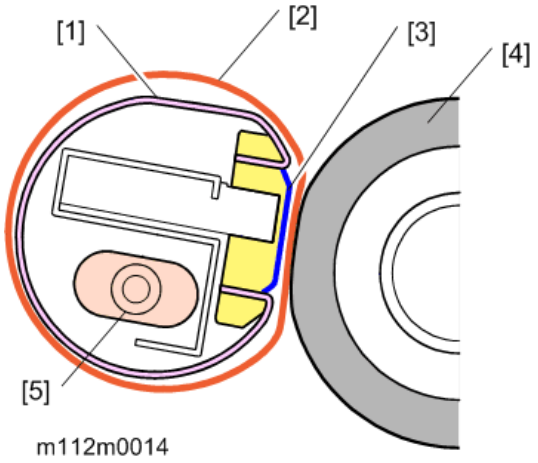
7.5.1 GENERAL DESCRIPTION

A Color QSU (Quick Start Up) fusing method is adopted in this machine, in which a fusing belt is heated by two fusing lamps in a heating pipe. This method contributes to energy saving and various paper type availability. The larger nip band reduces image blurring.



1. Pressure Release Lever
2. Pressure Roller
3. Pressure Roller Thermistors (Center/End)
4. Fusing Entrance Guide
5. Fusing Lamp
6. Thermopile
7. Thermistor (At the end of the fusing belt)
8. Thermostat
9. Fusing Belt
10. Heating Pipe
11. Stripper Plate
12. Fusing Exit Guide

QSU (Quick Start Up) Fusing Method

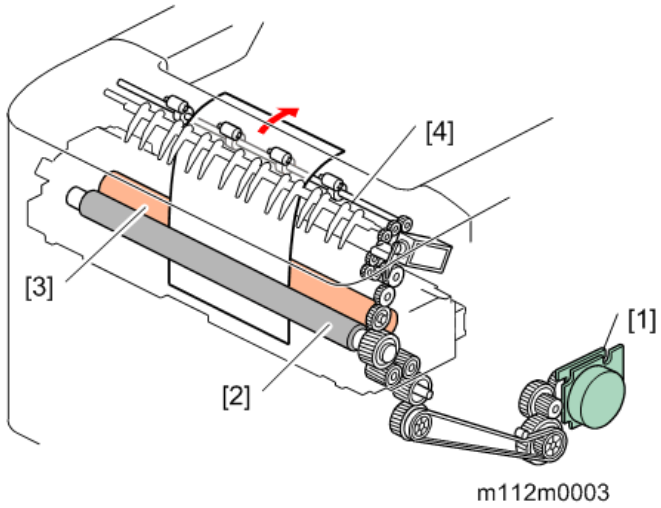


1. **Heating Pipe**
   Conducts heat from the fusing lamps to the fusing belt.
2. **Fusing Belt**
   The fusing belt is rotated by friction with the pressure roller. The space between the heating pipe and the fusing belt is lubricated to reduce friction, so that the belt will rotate smoothly.
3. **Nip Band Shaping Parts**
   Located beneath the fusing belt to shape the nip band where the fusing belt contacts the pressure roller.
4. **Pressure Roller**
   The pressure roller is driven by the fusing motor. At the contact with the fusing belt, the pressure roller fuses the image to the paper and feeds the paper out of the fusing unit.
5. **Fusing Lamp**
   This is comprised of one halogen heater heating the center and both ends.

7.5.2 DRIVE MECHANISM

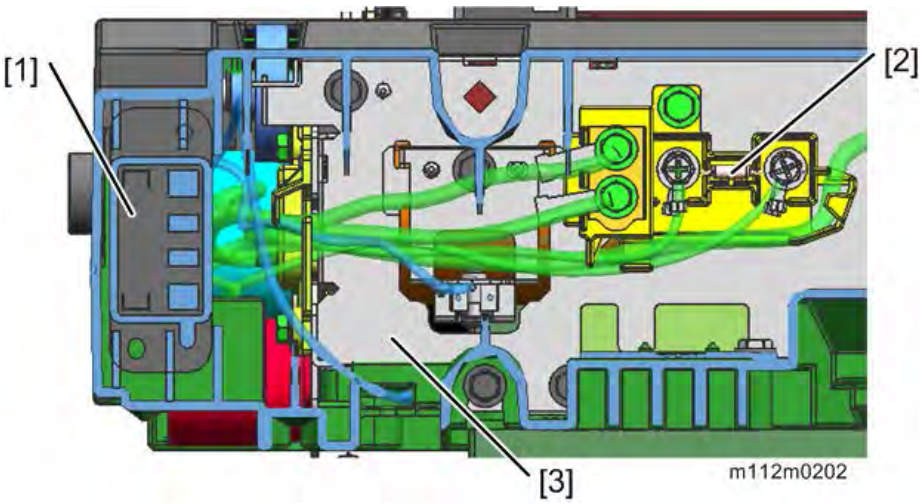
Drive Mechanism

The fusing motor [1] drives the fusing unit (Pressure Roller [2], Fusing Belt [3]) and the exit roller [4] through gears and a timing belt.



New Unit Detection

New unit detection for the fusing unit is performed with a current fuse which is installed on the rear frame of the fusing unit.



1. Drawer
2. Current Fuse
3. Rear Frame of the Fusing unit

Pressure Release Mechanism

A pressure release mechanism is installed in order to facilitate paper removal in case of paper jam in the fusing unit. The pressure lever is released when the front cover opens, and the pressure roller separates from the fusing belt due to a spring.

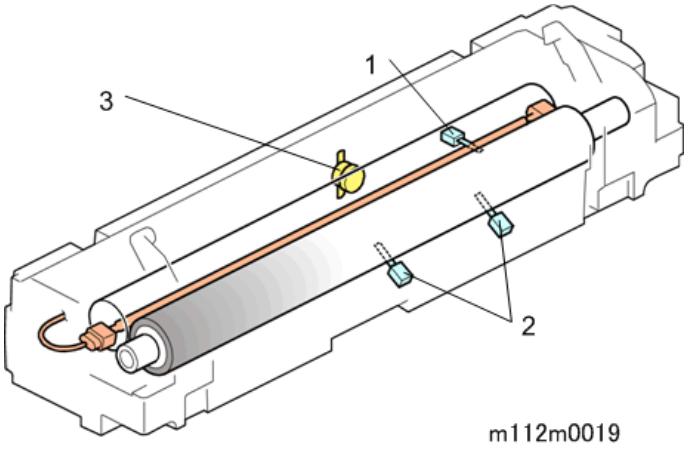
7.5.3 THERMAL CONTROL MECHANISM

Thermal Control Method

PID control (Phase control) and ON/OFF control is adopted as a fusing temp.control method.

Heating Temp., Press Temp. Detection

The contact thermistor (End) [1] detects fusing belt temp. Contact thermistors (Center / End) [2] detect pressure roller temp. Thermostat [3] is installed as a safety switch detecting a malfunction of the heating pipe.



Temperature Control

The fusing lamps heat and increase fusing temp. after machine power ON. When fusing Temp. reaches pre-rotation temp., the pressure roller to heat its surface equally and raise fusing temp. up to reload temp.
Fusing temp. increases to paper passable temp. when printing.
The pressure roller rotates (pre-rotation) to prevent overshooting after printing.

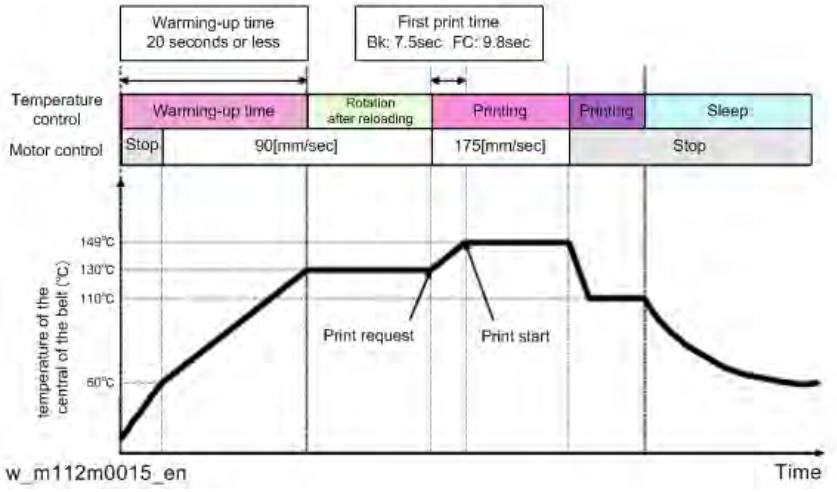
Warming Up Mode	Fusing warming up begins after machine switch ON. Fusing lamps heat without rotation until those temp. reach “pre-rotation start temp.”. (To heat the grease between the heating pipe and fusing belt until the motor can rotate.) The fusing motor becomes ON and keeps fusing temp. to “start-up target temp.”
Print Mode	The fusing belt starts to rotate and increases fusing temp. up to “print ready target temp.”. The fusing lamps turn OFF to stop heating before the last sheet of the job completes to pass through the fusing nip band. This is to save energy and to prevent temperature overshoot after printing. This mode changes to the wait mode after a certain time passes by.
Wait Mode	The fusing lamps and the fusing motor turn OFF after a certain time passes from fusing print ready condition. At regular intervals, The fusing motor rotates intermittently at slow speed within print ready mode.

	The fusing motor stops within Sleep Mode.

List of print speed, temperature and paper weight

Paper type	Print speed	Paper weight(g/m^2)	Fusing Temperature	
Thin	Standard	56-65	FC	146
			BW	142
Standard 1	Standard	66-74	FC	149
			BW	145
Standard 2	Standard	75-90	FC	153
			BW	148
Recycled	Standard	66-90	FC	149
			BW	145
Middle Thick	Middle	91-128	FC	140
			BW	137
Thick 1	Middle	129-163	FC	147
			BW	144
Thick 2	Middle	164-220	FC	145
			BW	142
Special 1	Standard	56-90	FC	149
			BW	144
Special 2	Middle	91-163	FC	154
			BW	149
Special 3	Middle	164-220	FC	154
			BW	149
Special 4	Standard	56-90	FC	149
			BW	145
Special 5	Standard	56-90	FC	149
			BW	145
Envelope	Middle	-		140
Postcard	Middle	-		147
Label Paper	Middle	-	FC	147
			BW	144
Coated Paper	Middle	-	FC	147
			BW	144

Graph of Temperature Control



Details of the special temperature control operation

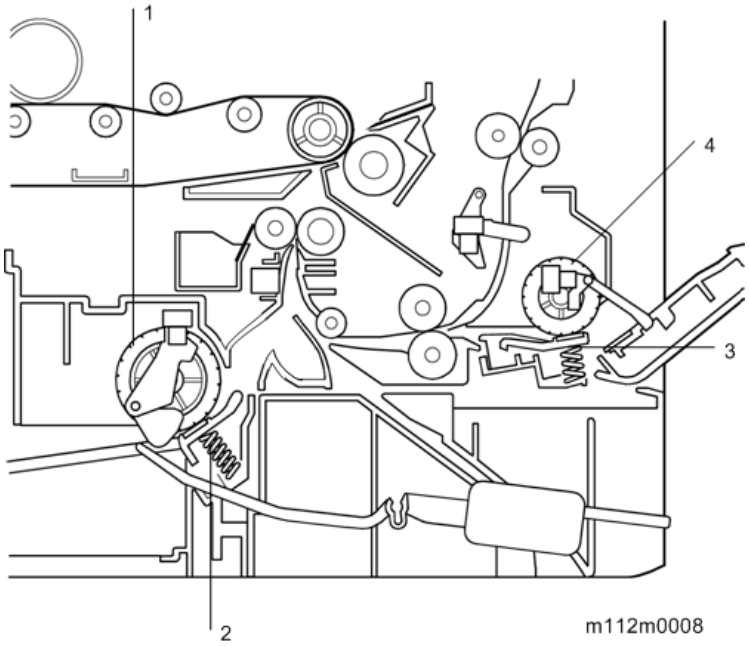
NO.	Purpose	Operation Details		
1	Curl Reduction Mode	Enable this mode to reduce paper curls in a high-humidity environment. Enabling this function may decrease the print speed for the first print due to the pre-rotation of the fusing unit. For productivity-minded customers, assign a high value in the SP mode(SP1-113-012) to minimize the decrease in productivity.(25 - 100%) Alternatively, assign a high value in the SP mode (SP1-113-006) to increase the temperature of the pressure roller. (0 - 50 deg C)	UP	Enabling this mode forces a decrease in productivity and a rotation before printing to be conducted before starting any job in a high-humidity environment. Enabling this mode may shorten the life of PCDU, Image Transfer Unit, Fusing Unit by 75% when used in a high-humidity environment.
2	Water Drop Reduction Mode	Set pre-rotation time for the fusing unit in SP1-118-002 (0 - 99sec) to avoid water droplet patterns (droplets deposited on one side causing white patches to be generated on the other side	UP	Enabling this mode forces a rotation before printing to be conducted before starting any job that involves duplex printing. Enabling this mode may shorten the life of Fusing

NO.	Purpose	Operation Details		
		during printing) in duplex printing.		Unit by 77% when used in a low temperature environment.
3	Prevention of roller distortion during a long-term period of non-usage	When releasing Sleep mode and maintaining Standby (110 deg C) for a long time, conduct a minute-rotation of the roller at 136° every hour.	Default	In Sleep mode, no minute-rotations are operated.

7.6 PAPER FEED

7.6.1 OVERVIEW

Paper Feed



1. Paper Feed Roller
2. Friction Pad
3. Bypass Feed Roller
4. Bypass Friction Pad

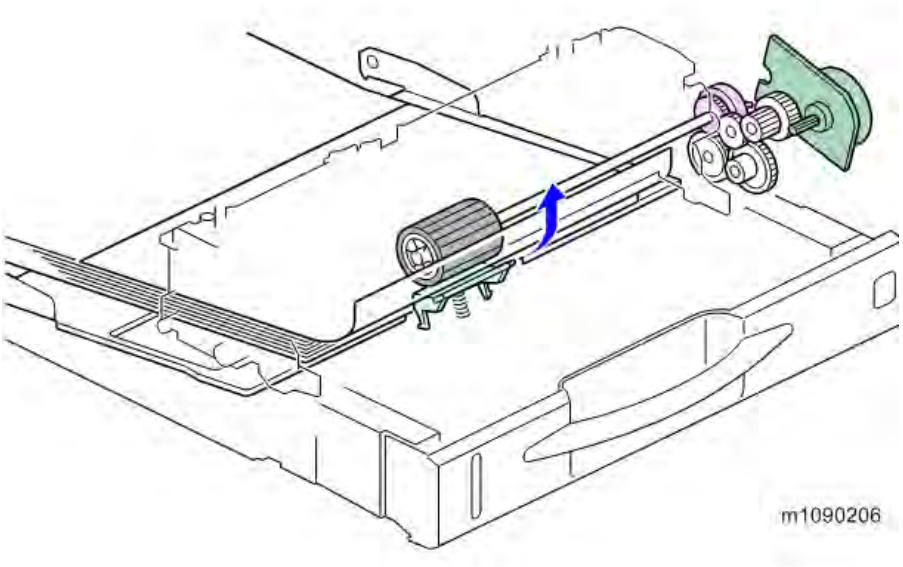
This machine has a paper tray and a bypass tray.

The separation mechanism deploys the Friction pad system for both the Paper feed tray and the Bypass feed tray.

7.6.2 MECHANISM

Paper Feeding

Upon receiving the paper feed signal, the Paper Feed Clutch is turned on to rotate the Paper Feed Roller.
Only the sheet on the top in the Cassette is fed out by the Friction Pad.
When the paper fed into the machine activates the Registration Sensor, the Paper Feed Clutch is turned off. Once the toner pattern formed on the transfer belt is moved to the right position, the Registration Clutch is turned on to transport the paper to the Image Transfer Unit.

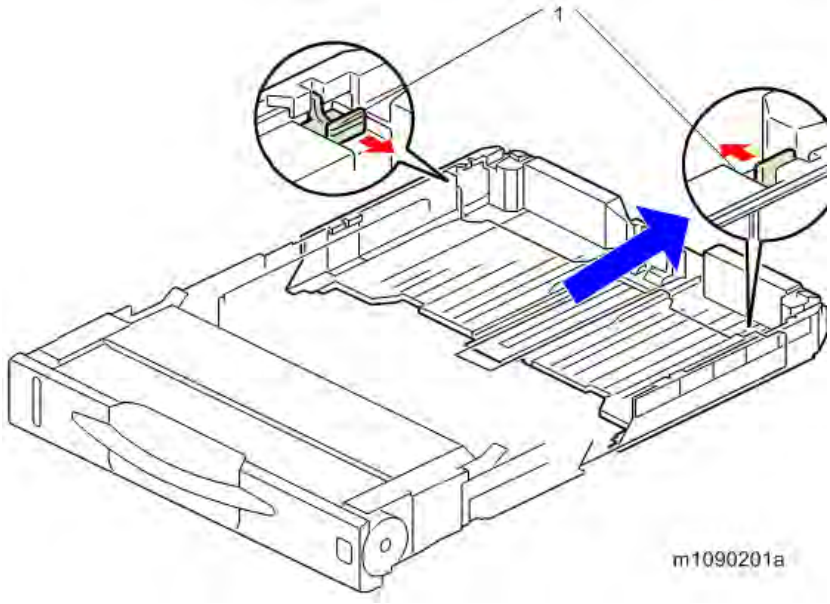


Paper Volume Detection

If the Paper Feed Tray becomes empty, the tip of the Paper End Filler contacts the cut-out area of the base plate, thereby turning on the Paper End Detection Sensor at the rear end of the End Filler.

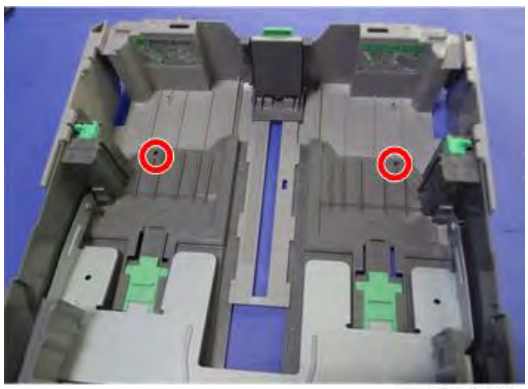
Adjustable Cassette

When shipped from the factory, the paper sizes that can be loaded in the cassette consist of those up to the A4 portrait size. To support paper sizes larger than A4 portrait, unlock the Tray Extension Lock [1] to extend the Tray.



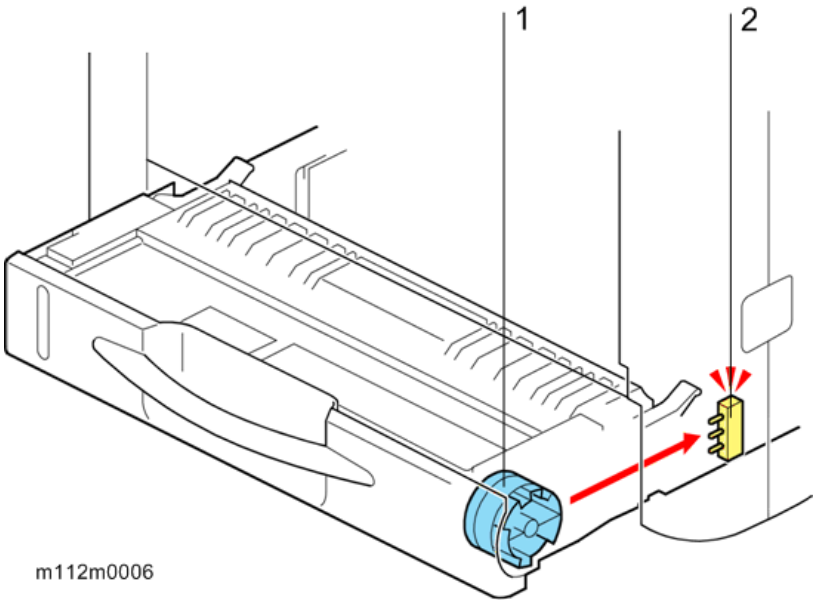
Note

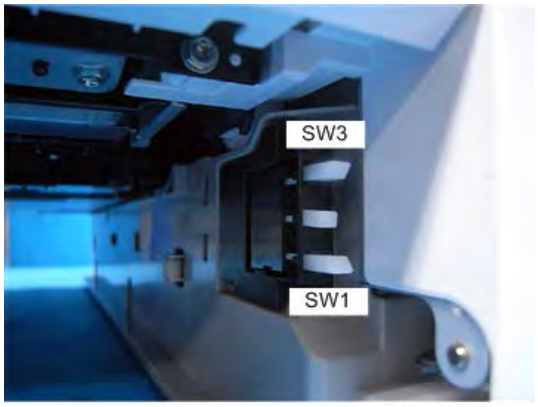
- Fix the extended tray with screws at the points indicated by red circles in the image (M3 x10 x2 (Part No.: 04583010N)).


m112m0414

Paper size detection

The paper size is detected by a combination of three detection switches on a Paper Size Detection Sensor [2]. The switches are operated by the Size Detection Dial [1] located on the right side of the Paper Feed Tray.



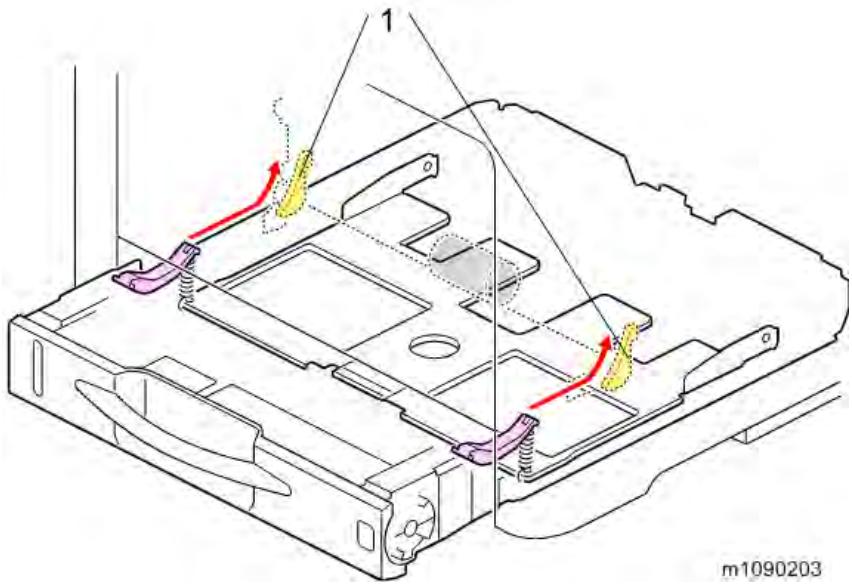


Paper size detect combination (Switch is pressed:L)

	SW 1	SW 2	SW 3	Paper Size
1	L	L	L	A4 SEF
2	L	H	L	A5 SEF
3	H	L	L	A6 SEF
4	H	H	L	Legal SEF
5	L	L	H	Letter SEF
6	L	H	H	Custom Size
7	H	L	H	HalfLetter_SEF
8	H	H	H	Paper cassette is not set.

Paper Feed Tray Bottom Plate lifting mechanism

When you slide the Paper Feed Tray into the unit, the Bottom Plate Arm [1] is slid along the SlopeGuide of the Main Frame, and then the Paper Feed Tray is pushed upward by the Spring. As a result, the lifted Paper Feed Tray presses the sheet on the top in the tray against the Paper Feed Roller.



Bypass Tray paper feed operation

When the paper feed signal is received by the Bypass Feed Tray, the Bypass Bottom plate is lifted up, and then the Bypass Feed Clutch is turned on to rotate the Bypass Feed Roller.
Only the sheet on the top in the Bypass Feed Tray is fed out by the Friction pad. Once the paper is fed out, the Duplex Exit Clutch is turned on to transport the paper to the same transport path as the path used for the paper from the Paper Feed Tray. When the paper fed into the machine activates the Registration Sensor, the Bypass Feed Clutch is turned off. Once the toner pattern formed on the transfer belt is moved to the right position, the Registration Clutch is turned on to transport the paper to the Image Transfer Unit.

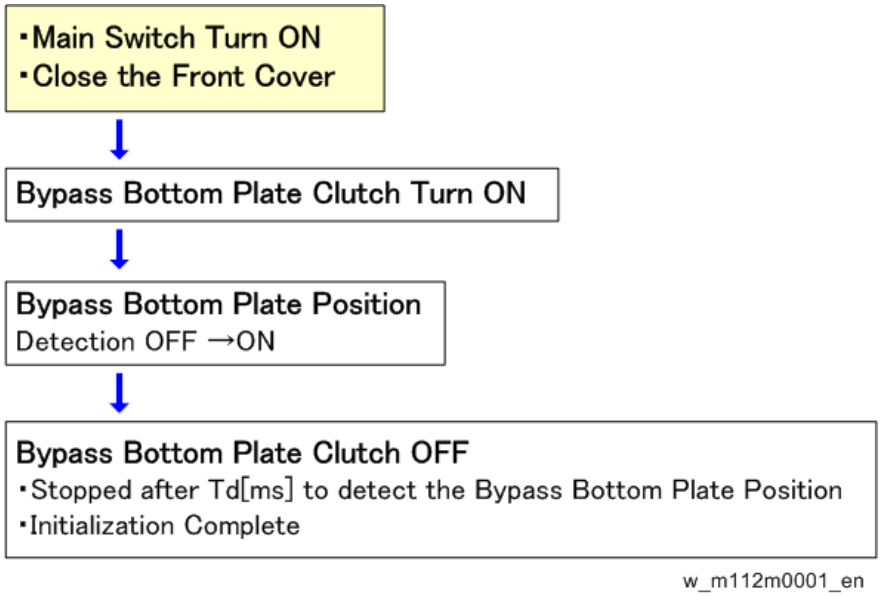
Bypass Feed Tray automatic lifting system

The Bypass Tray Bottom Plate is equipped with an automatic lifting system.
When the Bypass Bottom Plate Clutch turns on, the drive force is transmitted to the bottom plate lifting system of the bypass tray. Once the drive is transferred to the system, the Cam on the left as you face the Machine starts rotating to lift the bottom plate up and down. The Feeler that operates simultaneously with the Cam is mounted on the left side of the Cam. The up and down movement of the bottom plate is detected by the bottom plate position detection sensor when the Feeler turns the sensor on and off.

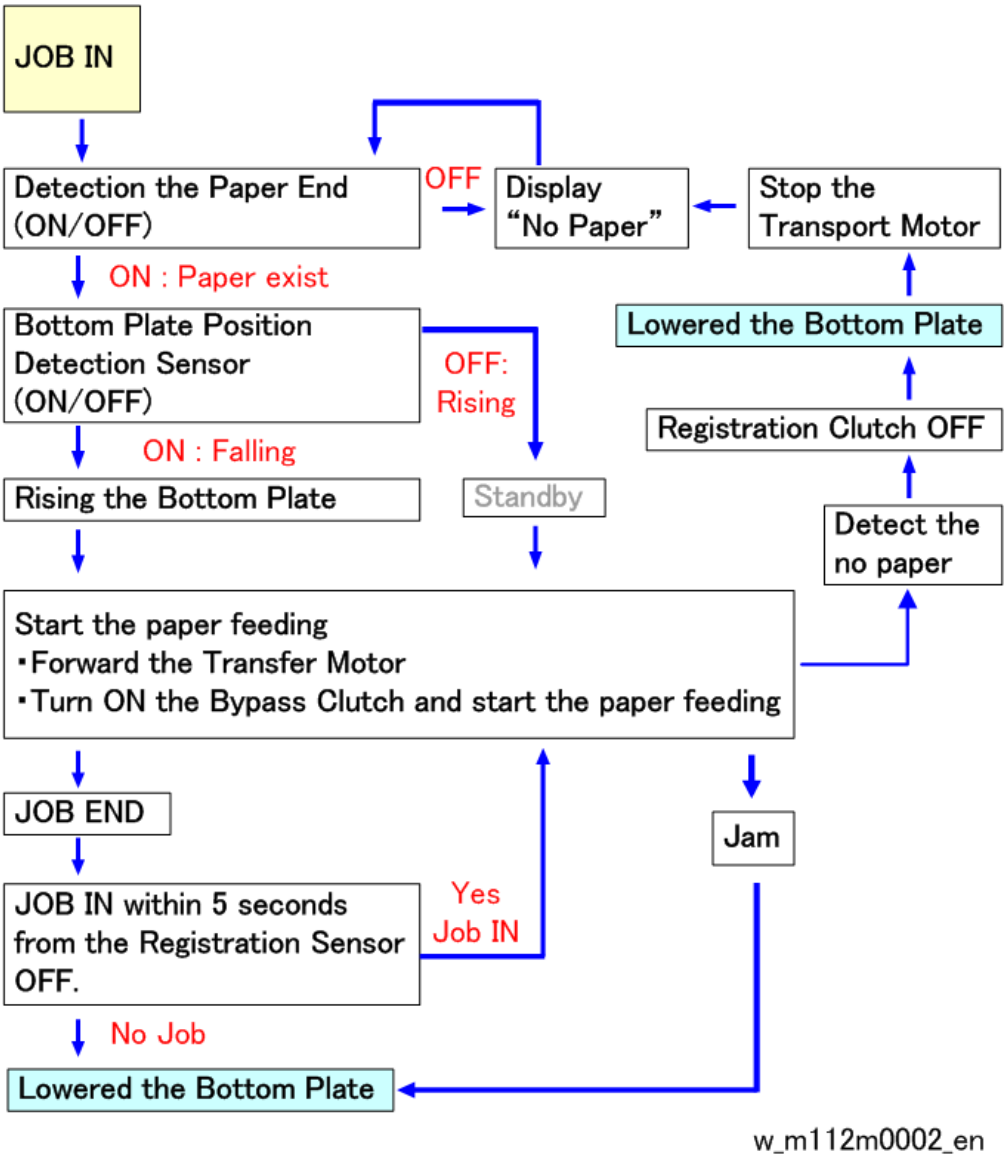
Bottom Plate Position Detection Sensor

ON: Bottom Plate is down
OFF: Bottom Plate is rising

Bypass Bottom Plate Control Sequence



Bottom Plate Rising/Falling Control



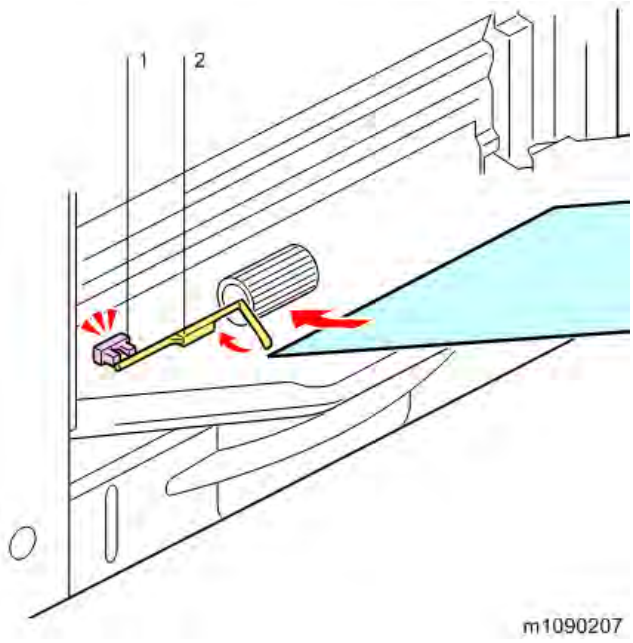
Bypass Paper Set Detection / End Detection

The Paper Feed Tray has a Paper Detection Feeler [2] and a Bypass Paper End Sensor [1]. When paper is loaded into the tray, the Bypass Paper End Sensor is turned ON (allowing the light beam to pass through) to detect the Paper End.

Bypass Paper End Sensor

ON: Bottom Plate is down

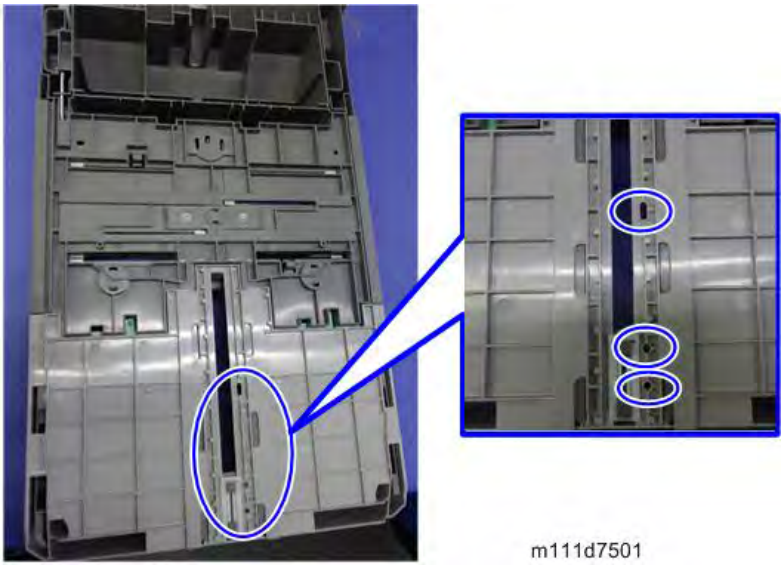
OFF: Bottom Plate is rising



End fence and side fences

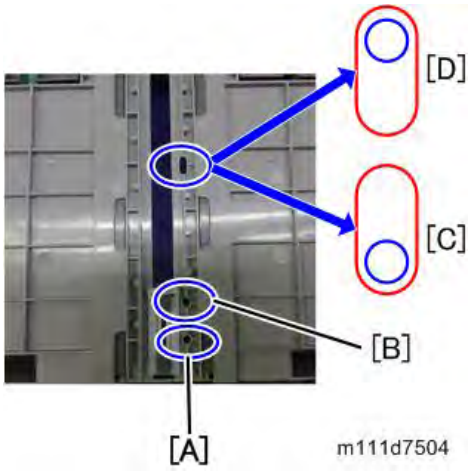
There are five screw holes so that the end fence and side fences can be fixed in place.
This is useful for ensuring that the paper guides will not move when the size of the paper to be used is fixed.

End fence



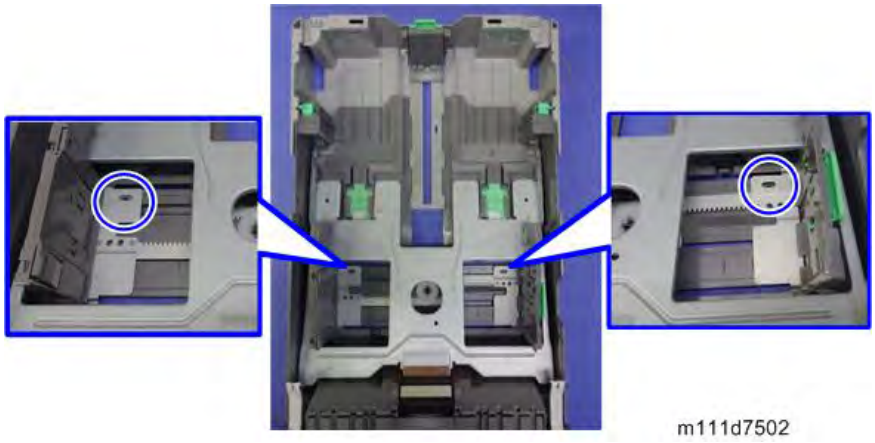
Note

- Fixable paper sizes are shown below.



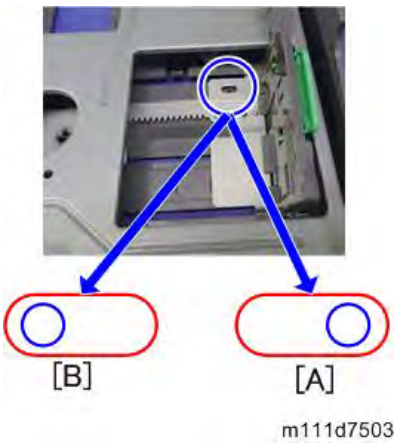
- [A]: Normal: A4 SEF / Extension: LG SEF
- [B]: Normal: LT SEF
- [C]: Normal: HLT SEF
- [D]: Normal: A5 SEF

Side fences



Note

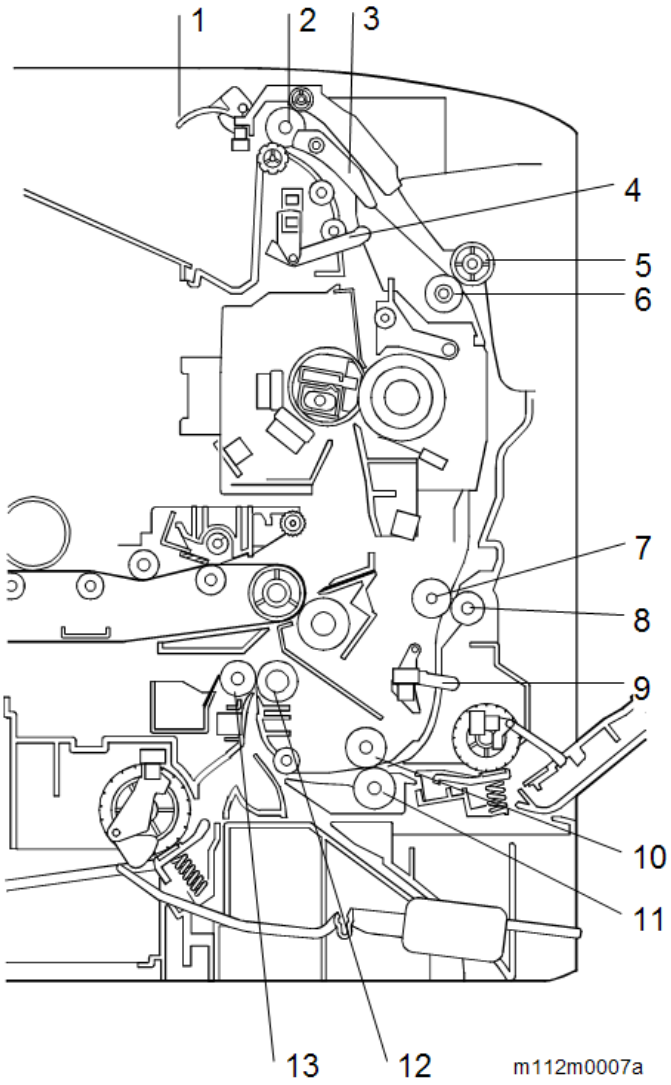
- Fixable paper sizes are shown below.



- [A]: A4 SEF
- [B]: LG SEF/LT SEF

7.7 PAPER TRANSPORT

7.7.1 OVERVIEW



1. Paper Exit Full Sensor Feeler
2. Paper Exit/Reverse Roller
3. Junction Gate
4. Paper Exit Sensor Feeler
5. Duplex Entrance Roller (Drive)
6. Duplex Entrance Roller (Driven)
7. Duplex Intermediate Roller (Driven)
8. Duplex Intermediate Roller (Drive)
9. Duplex Sensor Feeler
10. Duplex Exit Roller (Driven)
11. Duplex Exit Roller (Drive)
12. Registration Roller (Drive)

13. Registration Roller (Driven)

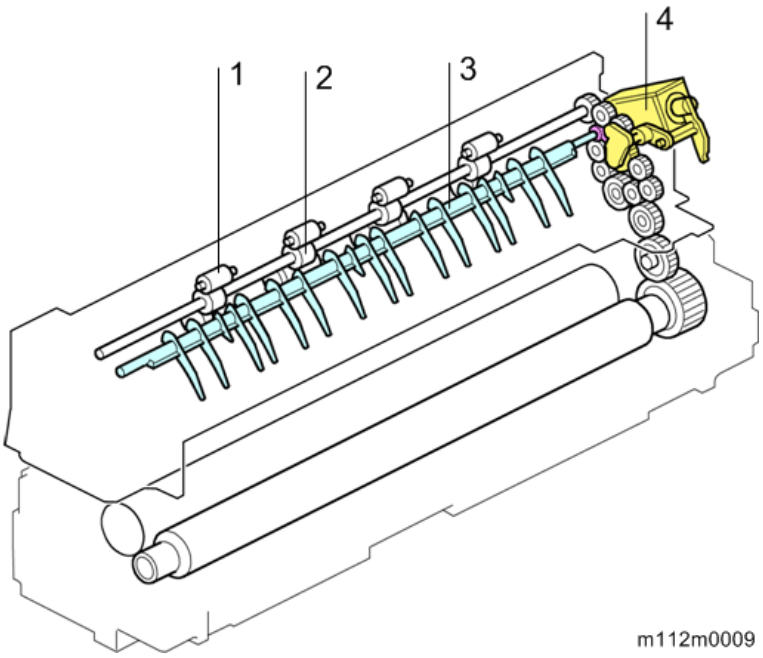
7.7.2 MECHANISM

Duplex

The duplex printing feature of this machine adopts the Paper Exit/Reverse/Duplex method, whereby switching of the Duplex Junction Pawl and forward reverse control of the Paper Exit/Reverse Roller allow the sheet to Switch Back.
In duplex printing, the front end of the sheet with the first side printed is pulled into the Paper Exit/Reverse Roller when the Duplex Junction Pawl is switched, and the Paper Exit/Reverse Roller rotates in the reverse direction. After the rear end of the sheet passes through the Paper Exit Sensor, the Duplex Junction Pawl returns to its original position before the sheet is completely discharged and the rotation direction of the Paper Exit/Reverse Roller switches back to normal. The sheet is then sent to the Duplex Transport path.
Next, after the second side is printed, the sheet printed on two sides is discharged into the Paper Exit Tray.

Paper Exit

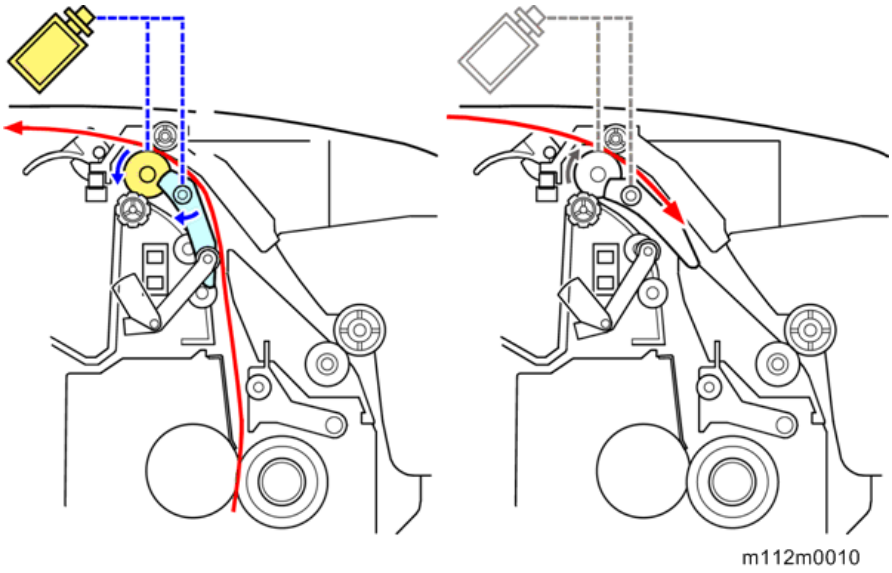
The Paper Exit Unit has a Paper Exit Sensor Feeler. The Paper Exit Sensor detects if there is a sheet of paper in the output tray by detecting the orientation of the Paper Exit Senser Feeler.
When printing one-sided copy, the paper passes under the Duplex Junction Pawl and is then transported to the Paper Exit/Reverse Roller before being ejected.
When printing two-sided copy, on the other hand, the paper passes over the Duplex Junction Pawl and the Paper Exit/Reverse Roller, and thereby the unit performs a switchback. When the height of the paper stacked in the Paper Exit Tray exceeds a certain level, the Paper Full Sensor detects that the paper height in the output tray has reached the limit by sensing the position of the Paper Full Sensor Filler, and then the printing operation is stopped.



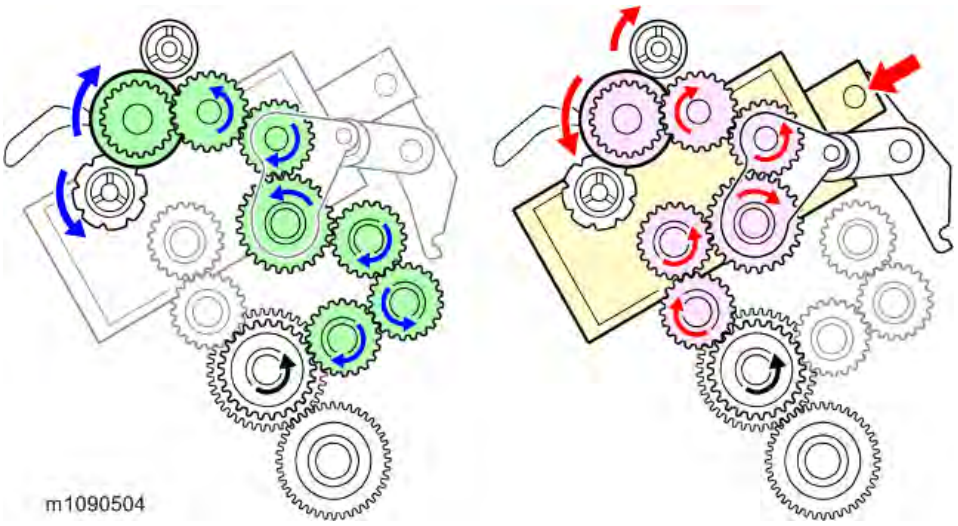
1. Driven Roller (Relay)
2. Paper Exit/Reverse Roller
3. Junction Gate
4. Duplex Inverter Solenoid

Operation of the Paper Exit/Duplex in Duplex printing

Duplex action



Duplex Inverter Solenoid and Gear Driving



Duplex Productivity

Printing Speed

- Plain Paper, Recycled Paper, Colored Paper, Letterhead, Preprinted Paper, Label Paper
  - Base linear velocity: Thin, Plain paper 1, Plain paper 2
  - Medium linear velocity: Medium Cardboard, Cardboard 1, Cardboard 2
- Special Paper
  - Base linear velocity: Special Paper
  - Medium linear velocity: Special Paper
  - Low linear velocity: Special Paper
- Coated Paper
  - Medium linear velocity: Coated paper, Cardboard 1, Cardboard 2
- Envelopes
  - Medium linear velocity: Cardboard 1, Cardboard 2

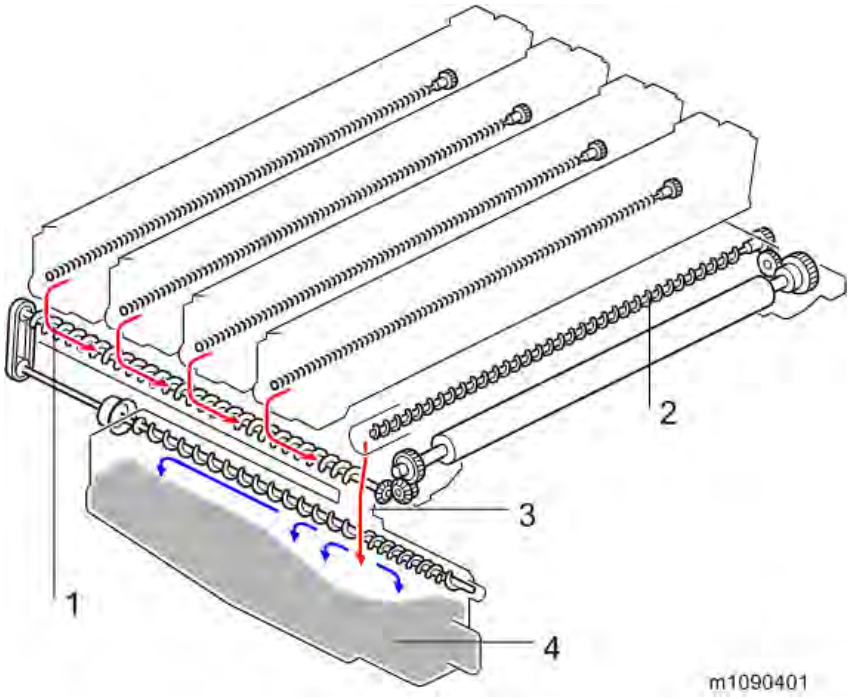
Print speed of Duplex printing

This machine ejects or reverses paper with one drive roller. The same roller does exit and reverse, so route switching for the next sheet cannot begin before the current sheet has been fed out. Because of this, productivity for A4 and LT size duplex printing drops to 90%.

7.8 WASTE TONER

7.8.1 OVERVIEW

Toner waste collected from the PCDUs is conveyed down to the waste toner duct [1], and then to the front of the unit by a coil, and from there, it is finally moved down to the waste toner bottle.
Toner waste collected from the Image Transfer Belt Unit is conveyed to the left side of the unit by the ITB waste toner collection coil [2] and then down to the waste toner bottle [4] via the same opening [3] as that used for toner waste collected from the PCDUs.



7.8.2 MECHANISM

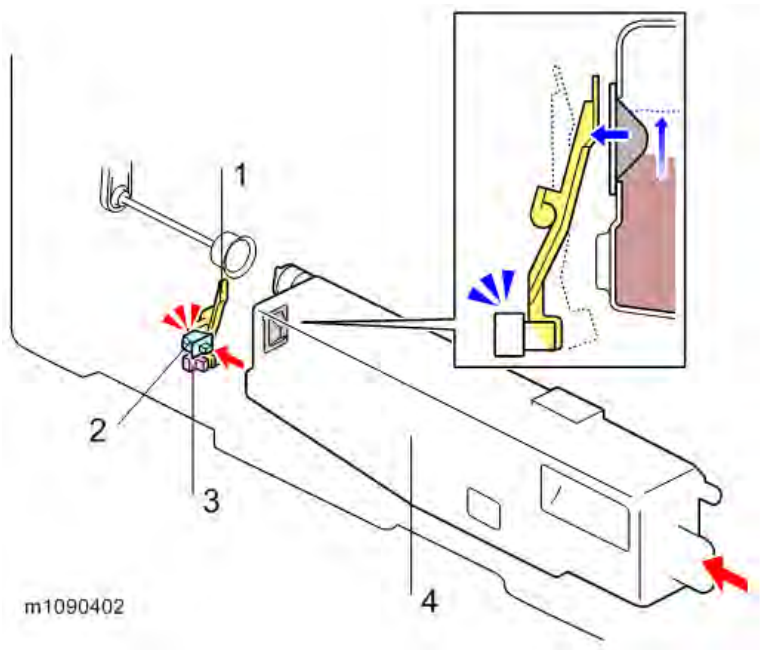
The ITB waste toner collection coil is driven via the drive roller in the Image transfer Unit.
The coil in the waste toner duct is driven via the gear on the left of the Image transfer Unit and then the main unit gear (bevel gear).
Toner waste is conveyed from the farthest position of the coil to the waste toner bottle via the timing belt to rotate the coil inside the bottle.

Waste toner bottle set detection

The machine does not have a Waste Toner Bottle replacement detection feature.
If the Waste Toner Bottle Toner Full Sensor is switched to the OFF state when the Waste Toner Set Sensor is in the ON state, the machine indicates that the waste toner bottle is usable.

Waste Toner Bottle Near Full/ Full Detection

When the amount of Waste toner exceeds a certain volume, the rubber part at the back of the Waste Toner Bottle is inflated by the pressure of the toner inside and pushes the feeler. As a result, the Waste Toner Bottle Full Sensor is switched to the ON position (intercepting the light beam), and then the machine detects the waste toner bottle as being near full.
After detecting this near–full state, the machine detects waste toner bottle as being full using a pixel count.
The settings for the pixel count can be changed in the UP and SP mode.



1. Feeler
2. Waste Toner Bottle Sensor
3. Waste Toner Bottle Full Sensor
4. Waste Toner Bottle

Note

- The rubber parts are covered with Yellow toner. It is a lubricant and must not be wiped off with any type of solvent including alcohol.

Number of sheets that can be printed after indicating Near End (reference value)

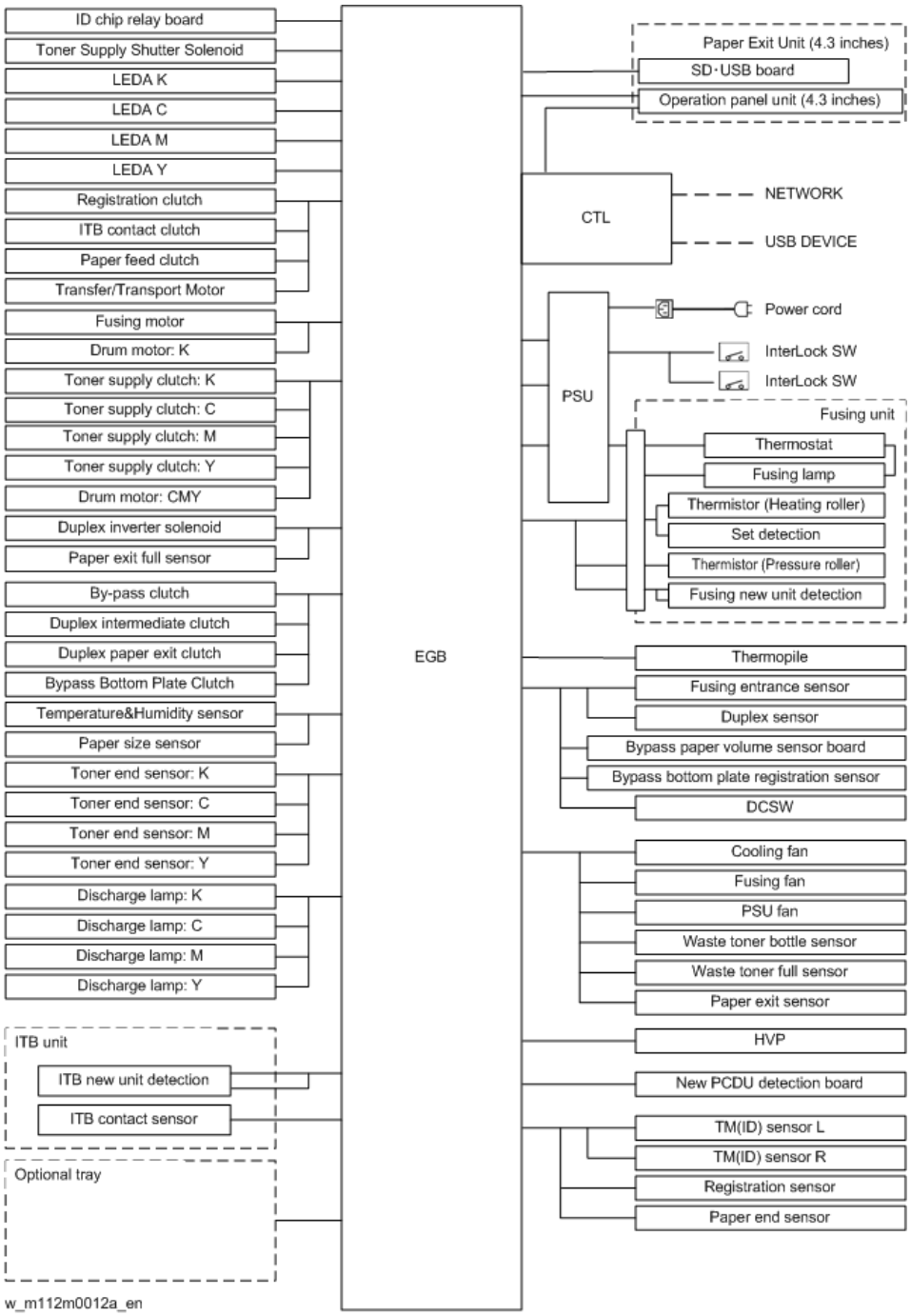
- Normal (Before 5 days): 475pages
- Notify Later (Before 3 days): 285pages
- Notify Sooner (Before 7 days): 665pages

Note

- For the timing of the indication, users can select Normal, Short notice, or Early notice. The default is “Normal”.
- The number of sheets that can be printed is a reference value when performing continuous printing of A4-size portrait originals at a color density of 5% for each color and at a color printing rate of 50%.
- The actual replacement frequency depends on usage, and is influenced by factors including paper size, paper type, paper feed direction, content, the number of sheets continuously printed per job and adjustments to maintain the quality of printing.

7.9 ELECTRICAL COMPONENTS

7.9.1 BLOCK DIAGRAM



7.9.2 BOARD FUNCTIONALITIES

EGB (Engine Board)

This controls the Engine, the controller interface, image processing, MUSIC (Mirror Unit for Skew and Interval Correction), input/output, interfaces with the optional units, and the operation panel. MUSIC is also called Automatic Line Position Adjustment.

CTL (Controller Board)

This controls the interface between the OPU and EGB, and applications. The controller connects to the EGB through the PCI Bus (Peripheral Component
Interconnect Bus).

PSU (Power Supply Unit)

This unit supplies the DC voltages to the machine.

HVP (High Voltage Power supply)

This unit converts DC voltage to high potential supplies.

New PCDU Detection Board

This unit detects it whether PCDU is new and whether each PCDU has been set.

SD/USB Board

Connects the USB memory and SD card.

ID Chip Relay Board

Relays the data from the ID Chips of the Toner cartridges.

DC Switch

Controls On/Off the DC voltage supply

Toner End Detection Board

This unit detects the amount of remaining toner.

7.10 PROCESS CONTROL

7.10.1 OVERVIEW

Process Control

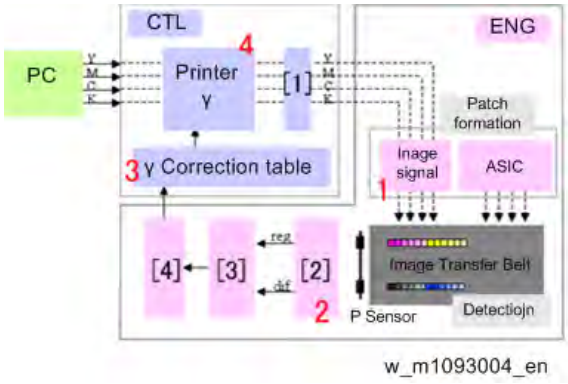
Process Control controls the image process to keep the image density as accurate as possible.

7.10.2 MUSIC (MIRROR UNIT FOR SKEW AND INTERVAL CORRECTION)

This machine has the ability to create a correction pattern. It measures the image position and corrects the writing position.

IBACC

IBACC (sensing on Intermediate Belt type of inner ACC) is a function of correcting the halftone on the Image Transfer Belt. In previous tone corrections, you have printed a test chart, compared it with the Color Tone Correction Value Setting Sheet and adjusted the tone manually. As IBACC forms patches on the Image transfer belt unit, all operations can be completed within the printer. Flow the correction operation is as follows.



1. Tone Processing
2. P Sensor
3. Adhesion amount conversion
4. Density conversion

1. Patch formed on the Image Transfer Belt

2. Density sensed by the P sensor

3. Create the Gamma correction table

4. Setting the Gamma correction table

7.10.3 PROCESS CONTROL SELF-CHECK

Operations			FC mode	Bk priority mode
Rotation before image forming operation (CTL state is up)			2.5sec	2.5sec
Power ON	Default		-	-
	Change of environment		Process Control/MUSIC	Mono MUSIC (*1)
Recover from sleep mode	By the panel operation	Default	-	-
		Change of environment /After 48 hours from the previous printing	-	-
	By the print request(Mono)	Default	-	-
		Change of environment /After 48 hours from the previous printing	Process Control/MUSIC	Process Control/MUSIC
	By the print request(Color)		Process Control/MUSIC	Mono MUSIC (*1)
Close Cover	Default		-	-
	Change of environment		Process Control/MUSIC	Mono MUSIC (*1)
Before color job	Default		-	-
	Change of environment		Process Control	Process Control
	Number of pages printed		MUSIC(every 400 pages)	MUSIC(every 400 pages)
During the color job	Default		-	-
	Number of pages printed		Process Control(every 300 pages)/MUSIC(every 450pages)	Process Control(every 300 pages)/MUSIC(every 450pages)
After color job	Default		-	-
	Number of pages printed		Process Control (every 250pages)	Mono Process Control (every 450 pages)
Before	Default		-	-

Operations		FC mode	Bk priority mode
Monochrome job	Change of environment	Process Control	-
	Number of pages printed	MUSIC (every 400 pages)	Mono MUSIC (*1) (every 400 pages)
During the Monochrome job	Default		
	Number of pages printed	Process Control(every 500 pages)/MUSIC (every 450 pages)	Mono Process Control (every 500 pages)/Mono MUSIC (every 450 pages)
After Monochrome job	Default	-	-
	Number of pages printed	Process Control (every 450 pages)	Mono Process Control (every 450 pages)
Manual operation from the Driver/Operation panel		Process Control/MUSIC	Process Control/MUSIC
etc	exchange the K PCDU	Process Control/MUSIC + Image Transfer Unit cleaning	Mono Process Control/Mono MUSIC (*1) + Image Transfer Unit cleaning
	exchange the YMC PCDU	Process Control/MUSIC + Image Transfer Unit cleaning	-
	Print after 48hour interval	Process Control/MUSIC	Mono MUSIC (*1)
	Supply the Recovery K toner	Process Control	Mono Process Control
	Supply the Recovery YMC toner	Process Control	-
	exchange the Transfer belt	Process Control/MUSIC	Mono Process Control/Mono MUSIC

*1 Mono (Monochrome) MUSIC is defined as the alignment of the position of Bk margin.

Related SP settings

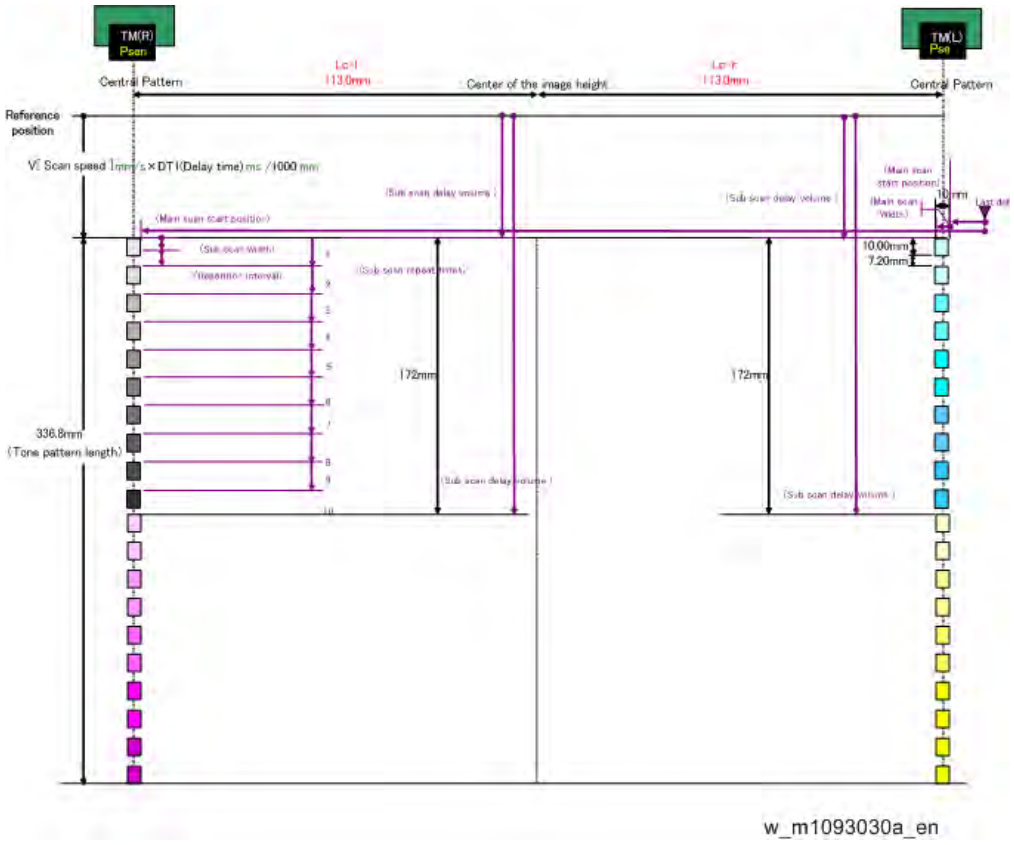
- Process Control: SP3-529-006, SP3-529-007
- MUSIC : SP2-193-020, SP2-193-019

IBACC (Execution Method)

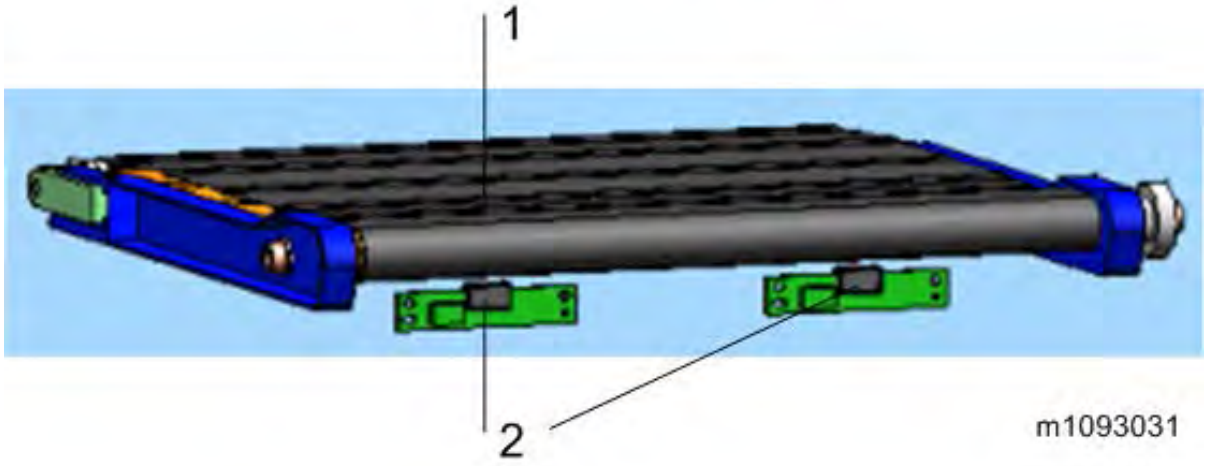
With the IBACC procedure, which is included in the user menu under “Auto Color Calibration” users can perform calibration whenever they need to. When “Automatic Color Calibration process” is selected, adjustments are executed in the order MUSIC, Process Control and IBACC.

7.10.4 SENSOR CONFIGURATION

TM(ID) Sensor are attached to the main unit facing the transfer belt. In this machine, two small TM(ID) Sensor consisting of a Sensor Head on a circuit board are located on each side of the main unit. Both sensors are used when executing the Process Control/IBACC/MUSIC.
A bar code label incorporating a unique value specific to each sensor (ID Sensor test value) is attached to the Sensor Head of the TM(ID) Sensor. The ID Sensor test value, which is used to detect the level of adherence of the Color Toner on the transfer belt, is configured for the SP settings in the main unit during the quality assurance process. When a TM(ID) Sensor has been replaced in the market, you will need to manually input a set value in the SP. For instructions on how to input the value in the SP, see “TM(ID) Sensor” in the “Replacement and Adjustment” chapter.



w_m1093030a_en

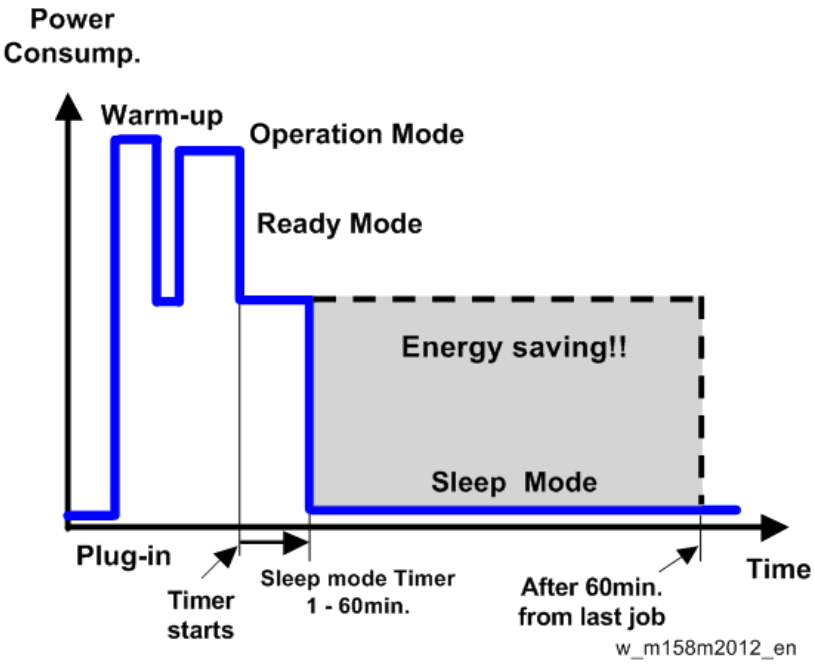


1. Image Transfer Belt
2. TM(ID) Sensor

7.11 ENERGY SAVE

7.11.1 ENERGY SAVER MODES

Customers should use energy saver modes properly, to save energy and protect the environment.



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 60 min., the grey area will disappear, and no energy is saved before 60 min. expires.

Sleep Mode Setting

Sleep Mode Timer

(User Tools > System Settings > Timer Settings > Sleep Mode Timer)
After a specified period has passed, or the [Energy Saver] key is pressed, the printer enters Sleep Mode in order to conserve energy.
Specify the time to elapse before Sleep Mode.
The time can be set from 1 to 60 minutes, using the number keys.
Default:"1" minute(s)
Depending on which Embedded Software Architecture application is installed on it, the printer might take longer than indicated to enter Sleep Mode.

Ready State After Printing

(User Tools > System Settings > Administrator Tools > Ready State After Printing)
You can specify the state the printer return to after printing documents during Sleep Mode.
Default: [Control Panel Off (Energy Saving)]

- Control Panel On
  The printer does not return to Sleep Mode and the [Home] screen appears on the control panel.
- Control Panel Off (Energy Saving)
  The printer returns to Sleep Mode.

Eco Night Mode

User Tools > System Settings > Administrator Tools > Eco Night Sensor
The ECO Night Sensor (ambient light sensor) enables the printer to automatically turn off and on the main power when changes in the ambient light level are detected.
The user can specify how the printer performs when the ECO Night Sensor detects changes in the ambient light level.
When Weekly Timer is set to [Daily] or [Day of the Week], the printer does not turn on even if [ECO Night Sensor] is set to [Auto Power Off and On] and the time for turning on the main power specified in [Timer to Turn On] elapses.
Default: [Auto Power Off Only]

- Auto Power Off Only
  The printer turns off the main power when the ECO Night Sensor detects a low ambient light level.
- Auto Power Off and On
  The printer turns off the main power when a decrease in the ambient light level is detected. It turns on the main power when an increase in the ambient light level is detected.
- Inactive
  The ECO Night Sensor is disabled.

Timer to Turn Off

Specify how long the printer waits to turn off the main power when the ECO Night Sensor detects a low ambient light level.
The timer is reset when:

- The sensor detects changes in the ambient light level.
- Any key on the control panel is pressed or printing is performed.
- The main power switch is turned on.
- The printer configuration screen is displayed on the control panel.
- The printer settings are changed using Web Image Monitor.
- The printer settings are imported or exported.

- A program is downloaded.
- The printer resumes Fusing Unit Off mode.
- The printer enters Sleep mode.

Default: [120 minutes]

- 1 minute
- 5 minutes
- 30 minutes
- 60 minutes
- 120 minutes

Timer to Turn On

Specify how long the printer waits before it turns on the main power when the ECO Night Sensor detects an increase in the ambient light level.

The timer is reset when:

- The sensor detects changes in the ambient light level.
- The ECO Night Sensor setting is changed.
- The main power is turned on.
- The printer enters Sleep mode.

Default: [1 minute]

- 1 minute
- 5 minutes
- 30 minutes
- 60 minutes
- 120 minutes

Brightness Sensor Level

Brightness Sensor Level to Turn Off

Set the brightness threshold for the sensor to turn off the main power.

Default: 0

0 (Dark) - 15 (Bright)

Level 0 (Very dark): Equivalent to a moonlit night

Level 5 (Dark): Equivalent to a dimly-lit room

Level 7 (Dim): Equivalent to a room at sunset

Level 9 (Bright): Equivalent to a brightly lit room at night

Level 15 (Very bright): Equivalent to a sunlit room

Brightness Sensor Level to Turn On

Set the brightness threshold for the sensor to turn on the main power.

Default: 8

0 (Dark) - 15 (Bright)

Level 0 (Very dark): Equivalent to a moonlit night

Level 5 (Dark): Equivalent to a dimly-lit room
Level 7 (Dim): Equivalent to a room at sunset
Level 9 (Bright): Equivalent to a brightly lit room at night
Level 15 (Very bright): Equivalent to a sunlit room

Weekly Timer

(User Tools > System Settings > Timer Settings > Weekly Timer)
The user can set the timer for the printer to turn off and on the main power or to enter and exit Sleep mode every day or on specified days of the week.
When Weekly Timer is set to [Daily] or [Day of the Week], the printer does not turn on even if [ECO Night Sensor] is set to [Auto Power Off and On] and the time for turning on the main power specified in [Timer to Turn On] elapses.
Default: [Inactive]

- Daily
- Day of the Week
- Inactive

Weekly Timer Code

Set a password (up to eight digits) for Weekly Timer. Once the password is set, the screen requiring the password is displayed while the printer is turned off or in Sleep mode by Weekly Timer. Enter the password to turn on the printer or recover the printer from Sleep mode.
If you set Weekly Timer Code to [Off], you do not need to enter a password to recover the printer.
Default: [Off]

Weekly Timer Schedule

Specify when Weekly Timer takes effect (up to six settings).

Timer Suspension Period

Specify the period when the printer does not turn on the main power with the Weekly Timer settings.
During the period specified in [Timer Suspension Period], the Weekly Timer Code is canceled at the time the printer turns on the main power with the Weekly Timer settings. If the printer is turned off during the period specified in [Timer Suspension Period], the Weekly Timer setting to turn on the main power is disabled until the printer is turned on manually.

Fusing Off Mode

User Tools > System Settings >Timer Settings > Fusing Unit Off Mode (Energy Saving) On/Off

The user can specify whether the printer enters Fusing Unit Off mode or not.

Default: [Off]

- On
  Turn on Fusing Unit Off mode. This setting further reduces power consumption, but the printer may take longer to recover from Fusing Unit Off mode.
- Off
  Turn off Fusing Unit Off mode.

Exit Fusing Unit Off Mode

Specify the condition for the printer to exit Fusing Unit Off mode.

Default: [On Printing]

- On Printing
  The printer exits Fusing Unit Off mode when printing is performed.
- On Operating Control Panel
  The printer exits Fusing Unit Off mode when any key on the control panel is pressed.

Fusing Unit Off Mode Timer

Specify the period of time the printer waits before entering Fusing Unit Off mode.

The timer is reset if any key on the control panel is pressed or printing is performed.

Default: [10 seconds]

Set the time from 10 seconds to 240 minutes, using the number keys.

The Fusing Unit Off Mode Timer is reset when:

- A print is performed
- A cover is opened when [Exit Fusing Unit Off Mode] is set to [On Printing]
- Any key on the operating panel is pressed when [Exit Fusing Unit Off Mode] is set to [On Operating Control Panel]

Return to Stand-by Mode

Sleep Mode

Recovery time: 10 sec.

Eco Night Sensor, Weekly timer

Recovery time: 20 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Sleep Mode timer is not too long. Try with a shorter setting first, such as 5 min., then go to a longer one (such as 15 min.) if the customer is not satisfied.
- If the Sleep Mode timer is all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.
- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

7.11.2 ENERGY SAVE EFFECTIVENESS

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-003: Panel off mode (Not used in this model)
- 8941-004: Low power mode
- 8941-005: Sleep mode

With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.
- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

Machine Date	Power Consumption (W): Data: a	SP8941: Machine Status	Start Time: (min.) Data: b	End Time: (min.) Data: c	Time Differences (Data: b - Data: c) (min.) Data: d	Power Consumption (Data: a x Data: d) (Wmin.) Data: e
Operating mode	NA: 543W EU: 565W	001: Operating Time	21089	21386	21386	NA: 161271 EU: 167805
Ready mode (stand by)	51W	002: Standby Time	306163	308046	308046	96033
Energy mode (Panel off)	1W or less	003: Energy Save Time	0	0	0	0

Machine Date	Power Consumption (W): Data: a	SP8941: Machine Status	Start Time: (min.) Data: b	End Time: (min.) Data: c	Time Differences (Data: b - Data: c) (min.) Data: d	Power Consumption (Data: a x Data: d) (Wmin.) Data: e
Low power mode	20W or less	004: Low power Time	71386	71386	75111	74500
Sleep mode	1W or less	005: Off mode Time	508776	508776	520377	11601
Total Time of Data: d (min.)					17506	
Total Time of Data: d/60min. (Hour)					291.7667	
Total Power Consumption of Data: e (Wmin.)						NA: 343405 EU: 349939
Total Power Consumption of Data: e /60min./1000W (KWH)						NA:5.72342 EU: 5.83232

M136
SERVICE MANUAL APPENDICES

M136 APPENDICES

TABLE OF CONTENTS

APPENDIX:
SPECIFICATIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. APPENDIX: SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

Items		Specification
Speed	Print Speed	1-sided: 30ppm (A4/LT SEF) 2-sided: 28ppm (A4/LT SEF)
	First Print	Black: 6.9 sec. or less(A4/LT SEF) Full Color: 8.9 sec. or less (A4/LT SEF)
	Warm-up	22 sec or less
Controller Spec	Processor	RM7035C-533MHz
	Memory	2GB
	Resolution	600x600dpi, 600x1200dpi equivalent, 600x2400 equivalent, 1200x1200dpi
	Interface	<Standard> Gigabit Ethernet (1000/100/10BASE-T), USB2.0, USB2.0-Host <Option> IEEE1284/ECP, IEEE802.11a/b/g/n
	Language	<Standard> PCL6/5c, PostScript3, PDF Direct <Option> PictBridge, IPDS
	Font	IRIPS: 93 fonts PS 3: 136 fonts (Option)
	Operating Systems	WindowsVista/7/8/8.1/10, Server2003/2008/2012 MacOS (X10.5 or later) *PS only, MetaFrame/CPS/XenApp, Novell Netware(v6.5 or later) *Need Netware option
	Network Protocols	TCP/IP, IPX/SPX (Netware Option)

Items		Specification
Machine Size	Dimensions	400 x 515 x 387 mm (15.7 x 20.3 x 15.2 inch) *Except projection size like as handle of paper feed tray 411 x 515 x 762 mm (15.7 x 20.3 x 30 inch) *Include projection size
	Weight	Under 32kg

Items		Specification
Paper	Input Paper Capacity (80g/m^2, 20lb.Bond)	Standard Tray: 500 sheets Bypass Tray: 100 sheets Optional Tray: 500 sheets, 250 sheets Max: Up to 2100 sheets (Standard tray + 3 Optional Trays + Bypass)
	Paper Size *: Dial setting available	<Standard Tray> A4*, B5, A5*, B6, A6*, Legal*, Letter*, HLT*, Executive, F, Foolscap, Folio, 16K, Custom size: Min.: 82.6 x 148 mm (3.25" x5.83") Max.: 216 x 356 mm (8.50" x 14.0") <Bypass Tray> A4, B5, A5, B6, A6, Legal, Letter, HLT, Executive, F, Foolscap, Folio, 16K Custom size: Min.: 64 x 127 mm (2.52" x 5") Max.: 216 x 1260 mm (8.5" x 49.6") <Optional Tray> A4*, B5*, A5*, Legal*, Letter*, HLT*, Executive, F, Foolscap, Folio, 16K, Custom size: Min.: 139.7 x 210 mm (5.5"x8.27") Max.: 216 x 356 mm (8.50" x 14.0")

Items		Specification
Paper	Paper Handling	Standard Tray: 56-220g/m^2 Bypass Tray: 56-220g/m^2 Optional Tray: 56-220g/m^2 Duplex: 56-163g/m^2
	Paper Type	<Standard Tray> Plain paper 1 to 2, Recycled paper, Middle thick paper, Thick paper 1 to 2, Thin paper, Special paper 1 to 3, Color paper, Letterhead, Preprinted, Labels, Bond, Cardstock, Coated paper: Gloss Print, Envelope <Bypass Tray> Plain paper 1 to 2, Middle thick paper, Thick paper 1 to 3, Thin paper, Special paper 1 to 3, Color paper, Letterhead, Preprinted, Bond, Cardstock, Label paper, Coated paper, Envelope, <Optional Tray> Plain paper 1 to 2, Middle thick paper, Thick paper 1 to 2, Thin paper, Special paper 1 to 3, Color paper, Letterhead, Preprinted, Bond, Cardstock, Label paper, Coated paper
	Output Paper Capacity (80g/m^2, 20lb. Bond)	Up to 200 sheets

Items		Specification
Power	Power Requirement	US: 120-127V/60Hz EU, Asia, China: 220-240V/50/60Hz
	Maximum Power Consumption	US: 1500W EU, Asia: 1500W China: 1500W

1.2 SUPPORTED PAPER SIZES

1.2.1 PAPER FEED

Paper	Size (W x L)	Standard Tray	Optional Tray	Bypass Tray	Duplex
A4 SEF	210 x 297 mm	A	A	C	D
A4 LEF	297 x 210 mm	N	N	N	N
B5 SEF	182 x 257 mm	B	A	C	D
B5 LEF	257 x 182 mm	N	N	N	N
A5 SEF	148 x 210 mm	A	A	C	D
A5 LEF	210 x 148 mm	B	N	C	D
B6 SEF	128 x 182 mm	B	N	C	D
B6 LEF	182 x 128 mm	N	N	C	N
A6 SEF	105 x 148 mm	A	N	C	D
A6 LEF	148 x 105 mm	N	N	N	N
LG SEF	8.5 x 14 inch	A	A	C	D
LG LEF	14 x 8.5 inch	N	N	N	N
Foolscap SEF	8.5 x 13 inch	B	B	C	D
Foolscap LEF	13 x 8.5 inch	N	N	N	N
LT SEF	8.5 x 11 inch	A	A	C	D
LT LEF	11 x 8.5 inch	N	N	N	N
GovermentLG SEF	8.25 x 14 inch	B	N	C	D
GovermentLG LEF	14 x 8.25 inch	N	N	N	N
Folio SEF	8.25 x 13 inch	B	B	C	D
Folio LEF	13 x 8.25 inch	N	N	N	N
F/GL SEF	8 x 13 inch	B	B	C	D
F/GL LEF	13 x 8 inch	N	N	N	N
Eng Quatro SEF	8 x 10 inch	B	N	C	D
Eng Quatro LEF	10 x 8 inch	N	N	N	N
Exective SEF	7.25 x 10.5 inch	B	B	C	D
Exective LEF	10.5 x 7.25 inch	N	N	N	N
HLT SEF	5.5 x 8.5 inch	A	A	C	D
HLT LEF	8.5 x 5.5 inch	N	N	C	N
Com10 SEF	4.125 x 0.5 inch	B	N	C	N
Monarch SEF	3.875 x 7.5 inch	B	N	C	N
C5 SEF	162 x 229 mm	B	N	C	N
C5 LEF	229 x 162 mm	N	N	N	N
C6 SEF	114 x 162 mm	B	N	C	N

Paper	Size (W x L)	Standard Tray	Optional Tray	Bypass Tray	Duplex
DL SEF	110 x 220 mm	B	N	C	N
16K SEF	195 x 267 mm	B	B	C	D
16K LEF	267 x 195 mm	N	N	N	N
8.5” x 12” SEF	8.5 x 12 inch	B	B	C	D
8.5” x 13.4” SEF	8.5 x 13.4 inch	B	B	C	D

Remarks: Standard Tray, Optional Tray

A	Supported and the size is molded in the tray. Need to set the dial to the paper size and select the paper size by driver.
B	Supported but size is not molded in the tray. Need to set the dial “*” and select the paper size by operation panel and driver.
N	Not supported.

Remarks: Bypass Tray

C	Supported. Need to select the Bypass Tray and the paper size on operation panel and driver.
N	Not supported.

Remarks: Duplex

D	Supported.
N	Not supported.

Custom Paper Size

Size	Standard Tray	Optional Tray	Bypass Tray	Duplex
Width (mm)	82.6 - 216.0	139.7- 216.0	64 - 216	100 - 216
Length (mm)	148 - 356	210 - 356	127 - 1260	148 - 356
Width (inch)	3.25 - 8.50	5.5 - 8.5	2.52 - 8.50	3.94 - 8.50
Length (inch)	5.83 - 14.00	7.17 - 14.00	5.0 - 49.6	5.83 - 14.00

1.2.2 PAPER EXIT

Paper	Size (W x L)	Output Tray
A4 SEF	210 x 297 mm	D
A4 LEF	297 x 210 mm	N
B5 SEF	182 x 257 mm	D
B5 LEF	257 x 182 mm	N
A5 SEF	148 x 210 mm	D
A5 LEF	210 x 148 mm	D
B6 SEF	128 x 182 mm	D
B6 LEF	182 x 128 mm	D
A6 SEF	105 x 148 mm	D
A6 LEF	148 x 105 mm	N
LG SEF	8.5 x 14 inch	D
LG LEF	14 x 8.5 inch	N
Foolscap SEF	8.5 x 13 inch	D
Foolscap LEF	13 x 8.5 inch	N
LT SEF	8.5 x 11 inch	D
LT LEF	11 x 8.5 inch	N
GovermentLG SEF	8.25 x 14 inch	D
GovermentLG LEF	14 x 8.25 inch	N
Folio SEF	8.25 x 13 inch	D
Folio LEF	13 x 8.25 inch	N
F/GL SEF	8 x 13 inch	D
F/GL LEF	13 x 8 inch	N
Eng Quatro SEF	8 x 10 inch	D
Eng Quatro LEF	10 x 8 inch	N
Exective SEF	7.25 x 10.5 inch	D
Exective LEF	10.5 x 7.25 inch	N
HLT SEF	5.5 x 8.5 inch	D
HLT LEF	8.5 x 5.5 inch	D
Com10 SEF	4.125 x 0.5 inch	D
Monarch SEF	3.875 x 7.5 inch	D
C5 SEF	162 x 229 mm	D
C5 LEF	229 x 162 mm	N
C6 SEF	114 x 162 mm	D
DL SEF	110 x 220 mm	D
16K SEF	195 x 267 mm	D
16K LEF	267 x 195 mm	N

Paper	Size (W x L)	Output Tray
8.5” x 12” SEF	8.5 x 12 inch	D
8.5” x 13.4” SEF	8.5 x 13.4 inch	D

Remarks: Output Tray

D	Supported.
N	Not supported.

Custom Paper Size

Size	Output Tray
Width (mm)	64 - 216
Length (mm)	127 - 1260
Width (inch)	2.52 - 8.50
Length (inch)	5.0 - 49.6

1.3 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer lets you select the components you want to install.

1.3.1 PRINTER DRIVERS

For printing, install a printer driver on your computer. The following drivers are included on the CD-ROM:

Operating System*1	Printer Drivers		
	PCL 5c/5e	PCL 6	PostScript 3
Windows Vista *2	✓	✓	✓
Windows 7 *3	✓	✓	✓
Windows 8 *4	✓	✓	✓
Windows 8.1 *5	✓	✓	✓
Windows 10 *6	✓	✓	✓
Windows Server 2003 *7	✓	✓	✓
Windows Server 2008 *8	✓	✓	✓
Windows Server 2012 *9	✓	✓	✓
Mac OS X *10	-	-	✓

✓: Supported

- : Not Supported

*1 Printer drivers support both 32-bit and 64-bit Windows.

*2 Microsoft Windows Vista Ultimate/Microsoft Windows Vista Enterprise/Microsoft Windows Vista Business/Microsoft Windows Vista Home Premium/Microsoft Windows Vista Home Basic

*3 Microsoft Windows 7 Home Premium/Microsoft Windows 7 Professional/Microsoft Windows 7 Ultimate/Microsoft Windows 7 Enterprise

*4 Microsoft Windows 8 Standard/Microsoft Windows 8 Professional/Microsoft Windows 8 Enterprise

*5 Microsoft Windows 8.1 Standard/Microsoft Windows 8.1 Professional/Microsoft Windows 8.1 Enterprise

*6 Microsoft Windows 10 Home/Microsoft Windows 10 Pro/Microsoft Windows 10 Enterprise/ Microsoft Windows 10 Education

*7 Microsoft Windows Server 2003 Standard Edition/Microsoft Windows Server 2003 Enterprise Edition/ Microsoft Windows Server 2003 R2 Standard Edition/Microsoft Windows Server 2003 R2 Enterprise Edition

*8 Microsoft Windows Server 2008 Standard/Microsoft Windows Server 2008 Enterprise/Microsoft Windows Server 2008 R2 Standard/Microsoft Windows Server 2008 R2 Enterprise

*9 Microsoft Windows Server 2012 Foundation/Microsoft Windows Server 2012 Essentials/ Microsoft Windows Server 2012 Standard/Microsoft Windows Server 2012 R2 Foundation/Microsoft Windows Server 2012 R2 Essentials/ Microsoft Windows Server 2012 R2 Standard
*10 Mac OS X 10.5 or later

1.3.2 UTILITY SOFTWARE

The following utilities are available.

Software	Description
Device Manager NX Lite	A PC Client based application program that monitors and manages up to 250 networked print devices.
Device Manager NX Accounting	
DeskTopBinder-SmartDeviceMonitor for Client	A printer management utility for client users. A utility for peer-to-peer printing over a NetBEUI or TCP/IP network. A peer-to-peer print utility over a TCP/IP network. This provides the parallel printing and recovery printing features. This is provided on the printer drivers CD-ROM.
Remote Communication Gate A	A communication device that enables digital MFPs and printers to be connected to the communication server in the maintenance center.

1.4 OPTIONAL EQUIPMENT

1.4.1 PAPER FEED UNIT TK1230 (M407)

Capacity	250 sheets × 1 tray
Paper Weight	56-220g/m^2 (16-59lb)
Paper Size	A4*, B5*, A5*, Legal*, Letter*, HLT*, Executive, F, Foolscap, Folio, 16K, 8.5"x12", 8.5"x13.4" Custom size: Min. 139.7mm x 210mm (5.5"x8.27") Max. 216mm x 356mm (8.50" x 14.0")
Dimensions (W x D x H)	400 x 515 x 95 mm
Weight	5.6kg

* Supported and the size is automatically detected

1.4.2 PAPER FEED UNIT TK1240 (M408)

Capacity	500 sheets x 1 tray
Paper Weight	56-220g/m^2 (16-59lb)
Paper Size	A4*, B5*, A5*, Legal*, Letter*, HLT*, Executive, F, Foolscap, Folio, 16K, 8.5"x12", 8.5"x13.4" Custom size: Min. 139.7mm x 210mm (5.5"x8.27") Max. 216mm x 356mm (8.50" x 14.0")
Dimensions (W x D x H)	400 × 515 × 123 mm (15.8 × 20.3 × 4.9 inches)
Weight	6.1kg

* Supported and the size is automatically detected

1.4.3 CONTROLLER OPTIONS

- Hard Disk Drive Option Type P12
- IEEE 802.11 Interface Unit Type M24
- IEEE 1284 Interface Board Type M19
- USB Device Server Option Type M19
- Camera Direct Print Card Type P10
- VM CARD Type P8 (*1)
- XPS Direct Print Option Type P12
- PostScript3 Unit Type P12

*1: HDD is required when Java-VM is used.

APPENDIX:

PM TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

2. APPENDIX: PM TABLES

2.1 PREVENTIVE MAINTENANCE

2.1.1 USER REPLACEABLE ITEMS

Item	Yield
Toner Cartridge	• BK: Approx. 7K, 3K (Starter) • CMY: Approx. 6K, 2.5K (Starter)
PCDU	BK: Approx. 15K prints/ unit CMY: Approx. 12K prints/ unit
Fusing Unit	Approx. 150k prints/ unit
Image Transfer Belt Unit	Approx. 100k prints/ unit
Paper Transfer Roller Unit	Approx. 100k prints/ unit
Air Filter	Approx. 100K prints
Waste Toner Bottle	Approx. 13K prints

Condition:

1. An A4 (8.5"x11")/ 5% chart is used.
2. The condition is standard temperature and humidity.
3. These replacement timings may change depending on the circumstances and printing conditions.
4. The replacement timings are measured by 3P/J. (Regarding the waste toner bottle, the printer is used 50% for both color and black-and-white printing. Regarding the toner cartridge and PCDU, the printer is used 100% for both color and black-and-white printing.)

2.1.2 YIELD ITEMS

The following items are not user replaceable items. However, replacement at its yield is required for the following items to maintain the printing operation.

Item	Yield
Paper Feed Roller (Mainframe & Paper Feed Unit)	Approx. 180k prints/ piece
Separation Pad (Mainframe & Paper Feed Unit)	Approx. 180k prints/ piece
Friction Pad (Paper Feed Unit)	Approx. 180k prints/ piece
Paper Feed Roller(Bypass)	Approx. 100k prints/ piece
Friction Pad(Bypass)	Approx. 100k prints/piece

2.1.3 SERVICE MAINTENANCE

To enable the machine for the maintenance by the service technician, the meter-click charge mode must be set to "1 (On)" with SP5930-001.

Also, make the following settings for meter-click charge mode depending on the type of service contract:

SP5930-010, 014, 016 (Supply End Option.), SP1007-002, 004, 006 (PDCU, Image Transfer Belt, Fusing unit: Remaining Supply Display), SP5083 (LED Light Switch)

PM items serviced by the service technician are designated as user replaceable items and yield items.

The following table shows the expected yield values for PM items when replacing them by the service technician with the meter-charge mode on.

Item	Yield
PCDU	BK: Approx. 23K prints/ unit CMY: Approx. 18K prints/ unit
Fusing Unit	180K prints/ unit
Image Transfer Belt Unit	115K prints/ unit
Paper Transfer Roller Unit	115K prints/ unit
Air Filter	115K prints
Waste Toner Bottle	13K prints

The replacement timing for the customer maintenance is set earlier than the target yield for the service maintenance in order to ensure that the parts of the machine are replaced before an image problem occurs.

2.1.4 PREVENTIVE MAINTENANCE ITEMS

Chart: A4 (LT)/5%

Mode: 3 prints/job

Ratio: 50%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

Mainframe

Item	100K	180K	EM	Remarks
Optics				
LED lens cleaning			C	Clean when replacing the PCDU
Paper Feed				
Paper Feed Roller	C	R		Damp cloth, dry cloth
Friction Pad	C	R		Dry cloth
Registration Roller	C			Damp cloth, dry cloth Do not use alcohol
Registration Sensor	C			Blower brush, dry cloth
Vertical Transport Roller	C			Blower brush, dry cloth
Bypass Feed Roller	R/C			Damp cloth, dry cloth
Bypass Friction Pad	R/C			Dry cloth
Paper Path				
Paper Exit Roller	C			Damp cloth, dry cloth
Reverse Roller	C			Damp cloth, dry cloth
Fusing Entrance Sensor	C			Blower brush, dry cloth
Duplex				
Duplex Entrance Roller	C			Damp cloth, dry cloth
Duplex Intermediate Roller	C			Damp cloth, dry cloth
Duplex Exit Roller	C			Damp cloth, dry cloth

APPENDIX:

ENGINE SP MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3. APPENDIX: ENGINE SP MODE TABLES

3.1 ENGINE SP TABLES-1

3.1.1 SP1-XXX (FEED)

1001	**[Leading Edge Reg]** Leading Edge Registration (Tray or By-pass, Paper Type, Process Speed) Process Speed: LowSpd: Low Speed, HlfSpd: Half speed, NorSpd: Normal speed		
	Note • Adjusts the leading edge registration by changing the registration motor operation timing for each mode. • Increasing a value: an image is moved to the trailing edge of paper. • Decreasing a value: an image is moved to the leading edge of paper. It is recommended that these service programs are set up by the user program.		
1-001-001	Tray1	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-002	By-pass	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-003	Duplex	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-004	Tray2	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-005	Tray3	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-006	Tray4	*ENG	[0 to 9 / **0** / 0.1 mm/step]
1-001-013	Tray1:Std Spd **(DFU)**	*ENG	[-9 to 9 / **1.4** / 0.1 mm/step]
1-001-014	Tray1:Mid SpdA **(DFU)**	*ENG	[-9 to 9 / **2.3** / 0.1 mm/step]
1-001-015	Tray1:Low Mid SpdB **(DFU)**	*ENG	[-9 to 9 / **3.2** / 0.1 mm/step]
1-001-016	By-pass:Std Spd **(DFU)**	*ENG	[-9 to 9 / **1.9** / 0.1 mm/step]
1-001-017	By-pass:Mid SpdA **(DFU)**	*ENG	[-9 to 9 / **3.2** / 0.1 mm/step]
1-001-	ByPas:Mid SpdB **(DFU)**	*ENG	[-9 to 9 / **4.1** / 0.1 mm/step]

018			
1-001-019	Duplex:Std Spd **(DFU)**	*ENG	[-9 to 9 / **1.9** / 0.1 mm/step]
1-001-020	Duplex:Mid SpdA **(DFU)**	*ENG	[-9 to 9 / **3.4** / 0.1 mm/step]
1-001-021	Duplex: Mid SpdB **(DFU)**	*ENG	[-9 to 9 / **0** / 0.1 mm/step]
1-001-022	Tray2/3/4:Std Spd **(DFU)**	*ENG	[-9 to 9 / **0.9** / 0.1 mm/step]
1-001-023	Tray2/3/4:Mid SpdA **(DFU)**	*ENG	[-9 to 9 / **1.9** / 0.1 mm/step]
1-001-024	Tray2/3/4:Mid SpdB **(DFU)**	*ENG	[-9 to 9 / **1.9** / 0.1 mm/step]

1002	**[Side-to-Side Reg]** Side-to-Side Registration Adjustment		
	Adjusts the side-to-side registration for each mode. This SP changes the laser main scan start position and it is recommended that these service programs are set up by the user program.		
1-002-001	Tray1	*ENG	[-5 to 5 / **0** / 0.1 mm/step]
1-002-002	By-pass	*ENG	[-5 to 5 / **0** / 0.1 mm/step]
1-002-003	Duplex	*ENG	[-5 to 5 / **0** / 0.1 mm/step]
1-002-004	Tray2	*ENG	[-5 to 5 / **-1.1** / 0.1 mm/step]
1-002-005	Tray3	*ENG	[-5 to 5 / **-1** / 0.1 mm/step]
1-002-006	Tray4	*ENG	[-5 to 5 / **-1** / 0.1 mm/step]

1003	**[Paper Buckle]** Paper Buckle Adjustment (Tray or By-pass, Paper Type, Process Speed)		
	Adjusts the amount of paper buckle at the registration roller by changing the paper feed timing.		
1-003-001	Tray1:Std Spd	*ENG	[-9 to 9 / **-0.5** / 0.1 mm/step]
1-003-002	Tray1:Mid SpdA	*ENG	[-9 to 9 / **-1** / 0.1 mm/step]
1-003-003	Tray1:Mid SpdB	*ENG	[-9 to 9 / **0** / 0.1 mm/step]
1-003-004	By-pass:Std Spd	*ENG	[-9 to 9 / **1.5** / 0.1 mm/step]
1-003-005	By-pass:Mid SpdA	*ENG	[-9 to 9 / **-1** / 0.1 mm/step]
1-003-006	By-pass:Mid SpdB	*ENG	[-9 to 9 / **-1** / 0.1 mm/step]
1-003-007	Dpulex:Std Spd	*ENG	[-9 to 9 / **-0.5** / 0.1 mm/step]
1-003-008	Duplex:Mid SpdA	*ENG	[-9 to 9 / **-1** / 0.1 mm/step]
1-003-009	Duplex:Mid SpdB	*ENG	[-9 to 9 / **0** / 0.1 mm/step]
1-003-010	Tray2/3/4:Std Spd	*ENG	[-9 to 9 / **-1** / 0.1 mm/step]
1-003-011	Tray2/3/4:Mid SpdA	*ENG	[-9 to 9 / **0** / 0.1 mm/step]
1-003-012	Tray2/3/4:Mid SpdB	*ENG	[-9 to 9 / **0** / 0.1 mm/step]

1004	**[Feed Assist Mode]**		
1-004-001	Execute Pattern	*ENG	[0 or 1 / **0** / 1 /step] 0:Function OFF 1: Function ON
1-004-002	Tray1	*ENG	[0 to 3 / **0** / 1 /step] 0:OFF 1:ON at all paper types 2:ON at Thick Paper 1 to 3 3: ON at Thick Paper 2 and 3

1-004-003	By-pass	*ENG	[0 to 3 / **0** / 1 /step] 0:OFF 1:ON at all paper types 2:ON at Thick Paper 1 to 3 3: ON at Thick Paper 2 and 3
1-004-005	After Jam	*ENG	[0 or 1 / **0** / 1 /step] 0:Always ON 1:ON after paper jam occurs
1-004-006	Lower ppm	*ENG	[60 to 99 / **60** / 1 %/step]
	Adjusts the upper limit of maximum slippage. (Productivity: 60% at 250 mm)		

1101	**[Reload Permit Set] DFU**		
1-101-001	Idling Start Temp	*ENG	[50 to 60 / **50** / 1 deg/step]
1-101-002	ReloadTemp:Center	*ENG	[120 to 155 / **140** / 1 deg/step]
1-101-003	ReloadTemp:Press	*ENG	[50 to 80 / **70** / 1 deg/step]
1-101-004	Delta:Cld:Ctr	*ENG	[20 to 50 / **20** / 1 deg/step]
1-101-005	Delta:Cld:End	*ENG	[55 to 80 / **80** / 1 deg/step]
1-101-006	Delta:Cld:PrssCtr	*ENG	[0 to 30 / **30** / 1 deg/step]
1-101-007	Rotation Time:Cld	*ENG	[0 to 10 / **2** / 0.1 sec/step]
1-101-008	Delta:Hot:Ctr	*ENG	[20 to 50 / **30** / 1 deg/step]
1-101-009	Delta:Hot:End	*ENG	[55 to 70 / **55** / 1 deg/step]
1-101-010	Delta:Hot:PrssCtr	*ENG	[0 to 30 / **20** / 1 deg/step]
1-101-011	Rotation Time:Hot	*ENG	[0 to 10 / **2** / 0.1 sec/step]
1-101-012	Delta:BW1:Ctr	*ENG	[20 to 50 / **20** / 1 deg/step]
1-101-013	Delta:BW1:End	*ENG	[55 to 80 / **80** / 1 deg/step]
1-101-014	Delta:BW1:PrssCtr	*ENG	[0 to 30 / **30 /** 1 deg/step]
1-101-015	Rotation Time:BW1	*ENG	[0 to 10 / **2** / 0.1 sec/step]
1-101-101	Delta:BW2:Ctr	*ENG	[20 to 100 / **20** / 1 deg/step]
1-101-102	Delta:BW2:End	*ENG	[55 to 100 / **80** / 1 deg/step]
1-101-103	Delta:BW2:PrssCtr	*ENG	[0 to 50 / **40** / 1 deg/step]
1-101-104	Rotation Time:BW2	*ENG	[0 to 10 / **1.4** / 0.1 sec/step]
1-101-105	ReloadTemp:C:BW2	*ENG	[120 to 155 / **140** / 1 deg/step]
1-101-106	ReloadTemp:P:BW2	*ENG	[50 to 80 / **70** / 1 deg/step]
1-101-151	Delta:Low:Ctr	*ENG	[20 to 50 / **20** / 1 deg/step]
1-101-152	Delta:Low:End	*ENG	[55 to 70 / **65 /** 1 deg/step]
1-101-153	Delta:Low:PrssCtr	*ENG	[0 to 30 / **10** / 1 deg/step]
1-101-154	Rotation Time:Low	*ENG	[0 to 10 / **2** / 0.1 sec/step]
1-101-200	Delta:Cld:PrssEnd	*ENG	[0 to 30 / **30** / 1 deg/step]

1-101-201	Delta:Hot:PrssEnd	*ENG	[0 to 30 / **20** / 1 deg/step]
1-101-202	Delta:BW1:PrssEnd	*ENG	[0 to 30 / **30** / 1 deg/step]
1-101-203	Delta:BW2:PrssEnd	*ENG	[0 to 50 / **40** / 1 deg/step]
1-101-204	Delta:Low:PrssEnd	*ENG	[0 to 30 / **10** / 1 deg/step]

1102	**[Feed Permit Set] DFU**		
	Specified the settings of the paper feeding timing.		
1-102-001	LowDlt:Ctr	*ENG	[0 to 30 / **15** / 1 deg/step]
1-102-002	LowDlt:End	*ENG	[40 to 80 / **80** / 1 deg/step]
1-102-003	UpDlt:Ctr	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-004	UpDlt:End	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-005	LowDlt:PrssCtr	*ENG	[40 to 100 / **85** / 1 deg/step]
1-102-006	Rotation Time	*ENG	[0 to 3 / **0** / 0.1 sec/step]
1-102-007	LowDlt:CtrEx	*ENG	[0 to 30 / **25** / 1 deg/step]
1-102-008	LowDlt:EndEx	*ENG	[40 to 80 / **65** / 1 deg/step]
1-102-009	UpDlt:CtrEx	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-010	UpDlt:EndEx	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-011	LowDlt:PrssCtrEx	*ENG	[40 to 100 / **75** / 1 deg/step]
1-102-012	Rotation Time:Ex	*ENG	[0 to 3 / **0** / 0.1 sec/step]
1-102-013	LowDlt:CtrEx2	*ENG	[0 to 100 / **80** / 1 deg/step]
1-102-014	LowDlt:EndEx2	*ENG	[40 to 80 / **80** / 1 deg/step]
1-102-015	UpDlt:CtrEx2	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-016	UpDlt:EndEx2	*ENG	[0 to 20 / **15** / 1 deg/step]
1-102-017	LowDlt:PrssCtrEx2	*ENG	[40 to 100 / **85** / 1 deg/step]
1-102-018	Rotation Time:Ex2	*ENG	[0 to 4 / **2.1** / 0.1 sec/step]
1-102-019	Feed Permit Time	*ENG	[0 to 200 / **60** / 1 sec/step]
1-102-030	Start:PTmp:Ctr	*ENG	[0 to 100 / **10** / 1 deg/step]
1-102-040	Judging Temp:C	*ENG	[0 to 150 / **102** / 1 deg/step]
1-102-041	Judging Time	*ENG	[0 to 3 / **2** / 0.1 sec/step]
1-102-042	Feed Permit Ex	*ENG	[0 to 30 / **0** / 1 sec/step]
1-102-050	LowDlt:PrssEnd	*ENG	[40 to 100 / **85** / 1 deg/step]
1-102-051	UpDlt:PrssEnd	*ENG	[100 to 200 / **125** / 1 deg/step]
1-102-052	LowDlt:PrssEndEX	*ENG	[40 to 100 / **75** / 1 deg/step]
1-102-053	UpDlt:PrssEndEX	*ENG	[100 to 200 / **125** / 1 deg/step]
1-102-054	LowDlt:PrssEndEX2	*ENG	[40 to 100 / **85** / 1 deg/step]
1-102-055	UpDlt:PrssEndEX2	*ENG	[100 to 200 / **125** / 1 deg/step]

1105	**[Print Target Temp] DFU**		
	(Printing Mode, Roller Type, [Color], Simplex/Duplex) Roller Type > Center and Ends: Heating roller, Pressure > Pressure roller Paper Type > Plain, Thin, Thick, OHP, Middle Thick, Special, Postcard		
1-105-001	Plain1:FC:Center	*ENG	[130 to 170 / **149** / 1 deg/step]
1-105-002	Plain1:BW:Center	*ENG	[130 to 170 / **145** / 1 deg/step]
1-105-003	Plain2:FC:Center	*ENG	[130 to 170 / **153** / 1 deg/step]
1-105-004	Plain2:BW:Center	*ENG	[130 to 170 / **148** / 1 deg/step]
1-105-005	Thin:FC:Center	*ENG	[130 to 170 / **146** / 1 deg/step]
1-105-006	Thin:BW:Center	*ENG	[130 to 170 / **142** / 1 deg/step]
1-105-009	M-Thick:FC:Center	*ENG	[130 to 170 / **140** / 1 deg/step]
1-105-010	M-Thick:BW:Center	*ENG	[130 to 170 / **137** / 1 deg/step]
1-105-011	Thick1:FC:Center	*ENG	[130 to 170 / **147** / 1 deg/step]
1-105-012	Thick1:BW:Center	*ENG	[130 to 170 / **144** / 1 deg/step]
1-105-015	Thick2:FC:Center	*ENG	[130 to 170 / **147** / 1 deg/step]
1-105-016	Thick2:BW:Center	*ENG	[130 to 170 / **144** / 1 deg/step]
1-105-017	Spe1:FC:Center	*ENG	[130 to 170 / **149** / 1 deg/step]
1-105-018	Spe1:BW:Center	*ENG	[130 to 170 / **144** / 1 deg/step]
1-105-019	Spe2:FC:Center	*ENG	[130 to 170 / **154** / 1 deg/step]
1-105-020	Spe2:BW:Center	*ENG	[130 to 170 / **149** / 1 deg/step]
1-105-021	Plain1:Glo:Center	*ENG	[120 to 170 / **130** / 1 deg/step]
1-105-025	Env:Center	*ENG	[130 to 170 / **145** / 1 deg/step]
1-105-027	Thick3:FC:Center	*ENG	[130 to 170 / **149** / 1 deg/step]
1-105-028	Thick3:BW:Center	*ENG	[130 to 170 / **144** / 1 deg/step]
1-105-029	Thick4:FC:Center	*ENG	[0 to 200 / **154** / 1 deg/step]
1-105-030	Thick4:BW:Center	*ENG	[0 to 200 / **149** / 1 deg/step]
1-105-031	Spe3:FC:Center	*ENG	[130 to 170 / **154** / 1 deg/step]
1-105-032	Spe3:BW:Center	*ENG	[130 to 170 / **149** / 1 deg/step]
1-105-033	Env:Low:Center	*ENG	[120 to 170 / **140** / 1 deg/step]
1-105-035	Card:Center	*ENG	[120 to 170 / **147** / 1 deg/step]
1-105-041	OHP:Center	*ENG	[140 to 180 / **160** / 1 deg/step]
1-105-043	Label1:FC:Center	*ENG	[130 to 170 / **147** / 1 deg/step]
1-105-044	Label1:BW:Center	*ENG	[130 to 170 / **144** / 1 deg/step]
1-105-045	Label2:FC:Center	*ENG	[130 to 170 / **140** / 1 deg/step]
1-105-046	Label2:BW:Center	*ENG	[130 to 170 / **137** / 1 deg/step]
1-105-101	Plain1:FC:Press	*ENG	[50 to 150 / **120** / 1 deg/step]
1-105-102	Plain1:BW:Press	*ENG	[50 to 150 / **120** / 1 deg/step]

1-105-103	Plain2:FC:Press	*ENG	[50 to 150 / **120** / 1 deg/step]
1-105-104	Plain2:BW:Press	*ENG	[50 to 150 / **120** / 1 deg/step]
1-105-105	Thin:FC:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-106	Thin:BW:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-109	M-Thick:FC:Press	*ENG	[50 to 150 / **145** / 1 deg/step]
1-105-110	M-Thick:BW:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-111	Thick1:FC:Press	*ENG	[100 to 150 / **150** / 1 deg/step]
1-105-112	Thick1:BW:Press	*ENG	[100 to 150 / **150** / 1 deg/step]
1-105-115	Thick2:FC:Press	*ENG	[100 to 160 / **150** / 1 deg/step]
1-105-116	Thick2:BW:Press	*ENG	[100 to 160 / **150** / 1 deg/step]
1-105-117	Spe1:FC:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-118	Spe1:BW:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-119	Spe2:FC:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-120	Spe2:BW:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-121	Plain1:Glo:Press	*ENG	[50 to 150 / **105** / 1 deg/step]
1-105-125	Env:Press	*ENG	[50 to 150 / **135** / 1 deg/step]
1-105-127	Thick3:FC:Press	*ENG	[100 to 160 / **145** / 1 deg/step]
1-105-128	Thick3:BW:Press	*ENG	[100 to 160 / **145** / 1 deg/step]
1-105-129	Thick4:FC:Press	*ENG	[0 to 200 / **120** / 1 deg/step]
1-105-130	Thick4:BW:Press	*ENG	[0 to 200 / **120** / 1 deg/step]
1-105-131	Spe3:FC:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-132	Spe3:BW:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-133	Env:Low:Press	*ENG	[50 to 150 / **140** / 1 deg/step]
1-105-135	Card:Press	*ENG	[50 to 150 / **150** / 1 deg/step]
1-105-141	OHP:Press	*ENG	[50 to 150 / **125** / 1 deg/step]
1-105-143	Label1:FC:Press	*ENG	[100 to 150 / **150** / 1 deg/step]
1-105-144	Label1:BW::Press	*ENG	[100 to 150 / **150** / 1 deg/step]
1-105-145	Label2:FC::Press	*ENG	[100 to 160 / **145** / 1 deg/step]
1-105-146	Label2:BW::Press	*ENG	[100 to 160 / **145** / 1 deg/step]

1107	**[Stdby Target Temp] DFU**		
1-107-001	PreHeat1:Center	*ENG	[100 to 120 / **110** / 1 deg/step]
1-107-002	PreHeat1:Press	*ENG	[100 to 120 / **110** / 1 deg/step]
1-107-007	PrintReady:Center	*ENG	[120 to 150 / **130** / 1 deg/step]
1-107-008	PrintReady:Press	*ENG	[100 to 150 / **110** / 1 deg/step]

1108	[Aftr Rld/PtTrgtTmp] DFU		
1-108-001	Center	*ENG	[100 to 150 / **130** / 1 deg/step]
1-108-002	Press	*ENG	[100 to 150 / **110** / 1 deg/step]
1-108-011	Center:BW2	*ENG	[100 to 150 / **140** / 1 deg/step]
1-108-012	Press:BW2	*ENG	[100 to 150 / **110** / 1 deg/step]

1109	[Upper Limit Temp] DFU		
1-109-001	BootRecovery:Heat	*ENG	[160 to 200 / **180** / 1 deg/step]
1-109-002	BootRecovery:Prss	*ENG	[160 to 200 / **180** / 1 deg/step]
1-109-003	Other:Heat	*ENG	[170 to 200 / **190** / 1 deg/step]
1-109-004	Other:Prss	*ENG	[170 to 200 / **190** / 1 deg/step]

1110	[Flicker mode] DFU		
1-110-001	Flicker mode	*ENG	[0 or 1 / **0** / 1 /step]
	Set it to "1" (1) when the AFCI breaker is tripped. At the same time, also set the 1-135-001(Inrush Control) to "1" (ON).		

1111	[Env.Crrct:Fusing] DFU		
1-111-001	Temp:Thresh:Low	*ENG	[10 to 20 / **17** / 1 deg/step]
1-111-002	Temp:Thresh:High	*ENG	[20 to 40 / **30** / 1 deg/step]
1-111-003	LowCorrection	*ENG	[0 to 10 / **0** / 1 deg/step]
1-111-004	HighCorrection	*ENG	[0 to 10 / **0** / 1 deg/step]
1-111-005	Print:LowCorrect	*ENG	[0 to 10 / **5** / 1 deg/step]
1-111-006	Print:HighCorrect	*ENG	[0 to 10 / **0** / 1 deg/step]
1-111-007	Prnt:LowCrrct:Sp	*ENG	[0 to 20 / **8** / 1 deg/step]
1-111-008	Prnt:HighCrrct:Sp	*ENG	[0 to 20 / **0** / 1 deg/step]

1112	[ImageTempCorrect] DFU		
1-112-001	Temp:Level1	*ENG	[-10 to 0 / **0** / 1 deg/step]
1-112-002	Temp:Level2	*ENG	[-30 to 0 / **-10** / 1 deg/step]

1113	[Curl Correction]		
1-113-001	Execute Pattern	*ENG	[0 or 1 / **0** / 1 /step] 0: OFF 1: ON (No Decurl)
	If it is set to On, printing speed goes 20% down and warming up time for the first print will take another 1 min.		
1-113-004	TmpDlt:PrssM-Hum **(DFU)**	*ENG	[0 to 50 / **40** / 1 deg/step]
1-113-005	TmpDlt:PrssH-Hum **(DFU)**	*ENG	[0 to 50 / **40** / 1 deg/step]
1-113-006	TmpDlt:PrssH-HumS **(DFU)**	*ENG	[0 to 50 / **0** / 1 deg/step]
1-113-008	CPM:M-humid **(DFU)**	*ENG	[0 to 100 / **100** / 1 %/step]
1-113-009	CPM:H-humid **(DFU)**	*ENG	[0 to 100 / **100** / 1 %/step]
1-113-010	Paper Width:A **(DFU)**	*ENG	[0 to 300 / **128.5** / 0.1 mm/step]
1-113-011	Paper Width:B **(DFU)**	*ENG	[0 to 300 / **182** / 0.1 mm/step]
1-113-012	CPM:H-humid:S **(DFU)**	*ENG	[0 to 100 / **50** / 1 %/step]

1114	[HeatStorageStatus] DFU		
1-114-001	Temp:Thresh:Press	*ENG	[50 to 100 / **75** / 1 deg/step]

1115	[Target Temp Crrct] DFU		
1-115-001	Temp:Delta:End	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-002	Pri:Delta:End	*ENG	[-10 to 10 / **0** / 1 deg/step]
1-115-003	Stdby:Delta:End	*ENG	[-10 to 10 / **0** / 1 deg/step]
1-115-010	Pri:Del:Ple1:FC	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-011	Pri:Del:Ple1:BW	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-012	Pri:Del:Ple2:FC	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-013	Pri:Del:Ple2:BW	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-014	Pri:Del:Thin:FC	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-015	Pri:Del:Thin:BW	*ENG	[-10 to 10 / **10** / 1 deg/step]
1-115-016	Pri:Del:Ple1:BW2	*ENG	[-10 to 10 / **5** / 1 deg/step]

1-115-017	Pri:Del:Ple2:BW2	*ENG	[-10 to 10 / **5** / 1 deg/step]
1-115-020	Pri:Del:End:Ssize	*ENG	[-10 to 10 / **0** / 1 deg/step]

1116	**[StorageFBCrrct] DFU**		
1-116-001	ONOFF Switch Temp	*ENG	[0 to 2 / **2** / 1 /step] 0: OFF 1: ON (BW) 2: ON (BW/FC)
1-116-011	Time Out	*ENG	[0 to 500 / **0** / 1 sec/step]
1-116-021	Delay:Std:FC1	*ENG	[0 to 20000 / **0** / 1 msec/step]
1-116-022	Delay:Std:BW1	*ENG	[0 to 20000 / **0** / 1 msec/step]
1-116-031	Delay:Std:FC2	*ENG	[0 to 20000 / **0** / 1 msec/step]
1-116-032	Delay:Std:BW2	*ENG	[0 to 20000 / **0** / 1 msec/step]
1-116-041	PressStandardTemp	*ENG	[0 to 200 / **99** / 1 deg/step]
1-116-042	TmpCrrctLowLimit	*ENG	[-30 to 0 / **-3** / 1 deg/step]
1-116-043	TmpCrrctHighLimit	*ENG	[0 to 30 / **0** / 1 deg/step]
1-116-051	PprThickCoef:Nm1	*ENG	[0 to 100 / **17** / 1 /step]
1-116-052	PprThickCoef:Nm2	*ENG	[0 to 100 / **17** / 1 /step]
1-116-141	PressStandardTemp	*ENG	[0 to 200 / **0** / 1 deg/step]
1-116-142	CrrctLowLimitBW2	*ENG	[-30 to 0 / **0** / 1 deg/step]
1-116-143	CrrctHighLimitBW2	*ENG	[0 to 200 / **0** / 1 deg/step]
1-116-151	PprThickCoef1:BW2	*ENG	[0 to 200 / **0** / 1 /step]
1-116-152	PprThickCoef2:BW2	*ENG	[0 to 200 / **0** / 1 /step]

1117	**[Repeat Temp Crrct] DFU**		
1-117-001	Control Time 1:A	*ENG	[0 to 300 / **64** / 1 sec/step]
1-117-002	Control Time 2:A	*ENG	[0 to 300 / **120** / 1 sec/step]
1-117-003	Temp:Center:1:A	*ENG	[-20 to 20 / **-4** / 1 deg/step]
1-117-004	Temp:End:1:A	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-005	Temp:Center:2:A	*ENG	[-20 to 20 / **-8** / 1 deg/step]
1-117-006	Temp:End:2:A	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-011	Control Time 1:B	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-012	Control Time 2:B	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-013	Temp:Center:1:B	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-014	Temp:End:1:B	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-015	Temp:Center:2:B	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-016	Temp:End:2:B	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-021	Control Time 1:C	*ENG	[0 to 300 / **0** / 1 sec/step]

1-117-022	Control Time 2:C	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-023	Temp:Center:1:C	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-024	Temp:End:1:C	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-025	Temp:Center:2:C	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-026	Temp:End:2:C	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-027	Control Time 1:D	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-028	Control Time 2:D	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-029	Temp:Center:1:D	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-030	Temp:End:1:D	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-031	Temp:Center:2:D	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-032	Temp:End:2:D	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-033	Control Time 1:E	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-034	Control Time 2:E	*ENG	[0 to 300 / **0** / 1 sec/step]
1-117-035	Temp:Center:1:E	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-036	Temp:End:1:E	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-037	Temp:Center:2:E	*ENG	[-20 to 20 / **0** / 1 deg/step]
1-117-038	Temp:End:2:E	*ENG	[-20 to 20 / **0** / 1 deg/step]

1118	**[Water Drop Reduce]**		
1-118-001	Execute Pattern	*ENG	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
	Reduces image missing by the water drop on the paper path. Note • If “0” is selected, 1st duplex print start from ready mode or process control/MUSIC will be delayed about 20 sec.		
1-118-002	RotaionTime:1 **(DFU)**	*ENG	[0 to 99 / **99** / 1 sec/step]
1-118-003	RotationTime:0 **(DFU)**	*ENG	[0 to 30 / **10** / 1 sec/step]

1119	**[Pre Temp Crrct] DFU**		
1-119-001	Temp:Center:A4Y	*ENG	[-10 to 20 / **0** / 1 deg/step]
1-119-002	Temp:End:A4Y	*ENG	[-10 to 20 / **0** / 1 deg/step]
1-119-003	Temp:Center:B5Y	*ENG	[-10 to 20 / **0** / 1 deg/step]
1-119-004	Temp:End:B5Y	*ENG	[-10 to 20 / **0** / 1 deg/step]

1121	[SwRotate Strt/Stp] DFU		
1-121-001	Time:After Reload	*ENG	[0 to 200 / **100** / 1 sec/step]
1-121-002	Time:After Recov	*ENG	[0 to 20 / **10** / 1 sec/step]
1-121-003	Time:After Job	*ENG	[0 to 30 / **30** / 1 sec/step]
1-121-004	Press:AfterReload	*ENG	[0 to 160 / **160** / 1 deg/step]
1-121-005	End:AfterPrint:A3	*ENG	[150 to 200 / **190** / 1 deg/step]
1-121-006	End:AfterPrt:LTL	*ENG	[150 to 200 / **190** / 1 deg/step]
1-121-008	StrtTp:OverTpPrev	*ENG	[150 to 200 / **190** / 1 deg/step]
1-121-009	RotatTm:OvrTpPrev	*ENG	[10 to 30 / **17** / 1 sec/step]
1-121-010	End:AfterPrt:B5T	*ENG	[50 to 150 / **100** / 1 deg/step]
1-121-011	End:AfterPrt:A6T	*ENG	[50 to 150 / **100** / 1 deg/step]
1-121-012	End:AfterPrt:B6T	*ENG	[60 to 160 / **110** / 1 deg/step]
1-121-023	HeatOFF:Sto:AfRld	*ENG	[0 to 50000 / **3000** / 1 msec/step]
1-121-024	HeatOFF:AfterPrt	*ENG	[0 to 50000 / **3000** / 1 msec/step]
1-121-025	HeatOFF:BW2	*ENG	[0 to 50000 / **0** / 1 msec/step]
1-121-026	HeatOFF:Over:Stp	*ENG	[0 to 50000 / **3000** / 1 msec/step]
1-121-030	MotorOFF::Stp	*ENG	[500 to 50000 / **1500** / 1 msec/step]
1-121-031	MotorOFF::Stp:BW2	*ENG	[500 to 50000 / **3000** / 1 msec/step]

1122	[StdbyRotationSet] DFU		
1-122-001	Rotation Interval	*ENG	[0 to 240 / **60** / 1 min/step]
1-122-002	Rotation Time	*ENG	[0 to 10000 / **600** / 1 msec/step]

1124	[CPM Down Setting] DFU		
1-124-001	Low:Down Temp.	*ENG	[-30 to 0 / **-15** / 1 deg/step]
1-124-002	Low:Up Temp.	*ENG	[-20 to 0 / -**10** / 1 deg/step]
1-124-003	Low:1CPM	*ENG	[10 to 100 / **50** / 1 %/step]
1-124-004	Low:2CPM	*ENG	[10 to 100 / **25** / 1 %/step]
1-124-006	High:1CPM	*ENG	[10 to 100 / **50** / 1 %/step]
1-124-007	High:2CPM	*ENG	[10 to 100 / **25** / 1 %/step]
1-124-009	High:1CPMDown:A3	*ENG	[0 to 225 / **180** / 1 deg/step]
1-124-010	High:2CPMDown:A3	*ENG	[0 to 225 / **190** / 1 deg/step]
1-124-012	H:1CPMD:A4	*ENG	[0 to 225 / **190** / 1 deg/step]
1-124-013	H:2CPMD:A4	*ENG	[0 to 225 / **208** / 1 deg/step]
1-124-014	High:1CPMDown:A6	*ENG	[0 to 225 / **180** / 1 deg/step]
1-124-015	High:2CPMDown:A6	*ENG	[0 to 225 / **190** / 1 deg/step]
1-124-020	High:1CPMDown:crd	*ENG	[0 to 225 / **180** / 1 deg/step]

1-124-021	High:2CPMDwn:crd	*ENG	[0 to 225 / **190** / 1 deg/step]
1-124-022	High:1CPMDown:env	*ENG	[0 to 225 / **180** / 1 deg/step]
1-124-023	High:2CPMDown:env	*ENG	[0 to 225 / **190** / 1 deg/step]
1-124-024	Judging Interval	*ENG	[1 to 250 / **10** / 1 sec/step]
1-124-100	H:1CPMD:A4:P	*ENG	[0 to 225 / **170** / 1 deg/step]
1-124-101	H:2CPMD:A4:P	*ENG	[0 to 225 / **180** / 1 deg/step]
1-124-103	H:1CPMD:B5:P	*ENG	[0 to 225 / **110** / 1 deg/step]
1-124-104	H:2CPMD:B5:P	*ENG	[0 to 225 / **155** / 1 deg/step]
1-124-106	H:1CPMD:A6:P	*ENG	[0 to 225 / **115** / 1 deg/step]
1-124-107	H:2CPMD:A6:P	*ENG	[0 to 225 / **160** / 1 deg/step]
1-124-120	H:1CPMD:post:P	*ENG	[0 to 225 / **105** / 1 deg/step]
1-124-121	H:2CPMD:post:P	*ENG	[0 to 225 / **180** / 1 deg/step]
1-124-122	H:1CPMD:env:P	*ENG	[0 to 225 / **105** / 1 deg/step]
1-124-123	H:2CPMD:env:P	*ENG	[0 to 225 / **160** / 1 deg/step]
1-124-200	Start:DownTime	*ENG	[0 to 100 / **20** / 1 sec/step]

1125	**[Press TmpFBCorrect] DFU**		
1-125-004	Delay:Std:FC	*ENG	[0 to 20000 / **3978** / 1 msec/step]
1-125-005	Delay:Std:BW	*ENG	[0 to 20000 / **2779** / 1 msec/step]
1-125-006	Delay:Middle:FC	*ENG	[0 to 20000 / **8113** / 1 msec/step]
1-125-007	Delay:Middle:BW	*ENG	[0 to 20000 / **5781** / 1 msec/step]
1-125-008	Delay:Low:FC	*ENG	[0 to 20000 / **12369** / 1 msec/step]
1-125-009	Delay:Low:BW	*ENG	[0 to 20000 / **8872** / 1 msec/step]
1-125-020	ONOFFSw:Rotations	*ENG	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON
1-125-051	GainA:Low	*ENG	[0 to 100 / **3.45** / 0.01 /step]
1-125-052	GainB:Low	*ENG	[-5000 to 5000 / **-305** / 1 /step]
1-125-053	GainA:Normal	*ENG	[0 to 100 / **3.45** / 0.01 /step]
1-125-054	GainB:Normal	*ENG	[-5000 to 5000 / **-305** / 1 /step]
1-125-061	Moter:LowLimit	*ENG	[-5 to 0 / **-1.2** / 0.1 %/step]
1-125-062	Moter:HighLimit	*ENG	[0 to 5 / **0.3** / 0.1 %/step]

1131	[ContPrtModeSwitch] DFU		
1-131-001	ContPrtModeSwitch	*ENG	[0 to 2 / **0** / 1 /step] 0: Productivity Mode 1: Fusing Quality 1 2: Fusing Quality 2

1132	[MaxDutySwitch] DFU		
1-132-001	ControlSwitch	*ENG	[0 or 1 / **0** / 1 /step] 0: Fixed Duty 1: Power Control

1133	[LstPprHeatOffCtrl] DFU		
1-133-001	OffTime:Std:FC	*ENG	[0 to 20000 / **538** / 1 msec/step]
1-133-002	OffTime:Std:BW	*ENG	[0 to 20000 / **538** / 1 msec/step]
1-133-003	OffTime:Middle:FC	*ENG	[0 to 20000 / **1047** / 1 msec/step]
1-133-004	OffTime:Middle:BW	*ENG	[0 to 20000 / **1047** / 1 msec/step]
1-133-005	OffTIme:Low:FC	*ENG	[0 to 20000 / **1570** / 1 msec/step]
1-133-006	OffTime:Low:BW	*ENG	[0 to 20000 / **1570** / 1 msec/step]
1-133-007	OffTime:Std:BW2	*ENG	[0 to 20000 / **538** / 1 msec/step]

1135	[Inrush Control]		
1-135-001	Inrush Control	*ENG	[0 or 1 / **0** / 1/step]
	Set it to "1" (ON) when the AFCI breaker is tripped. At the same time, also set the 1-110-001(Flicker mode) to "1" (ON).		

1141	[FusingSCErrorInfo]		
	Displays the information when an SC code was issued.		
1-141-001	SC Number	*ENG	Displays the issued SC number. [0 to 999 / - / 1 /step]
1-141-002	SC Number Detail	*ENG	Displays the detail of issued SC number. [0 to 255 / - / 1 /step]
1-141-101	SC Temp:Sens1	*ENG	[0 to 255 / - / 1 deg/step]
1-141-102	SC Temp:Sens2	*ENG	[0 to 255 / - / 1 deg/step]
1-141-103	SC Temp:Sens3	*ENG	[0 to 255 / - / 1 deg/step]
1-141-104	SC Temp:Sens4	*ENG	[0 to 255 / - / 1 deg/step]
1-141-151	SC Pre1Temp:Sens1	*ENG	[0 to 255 / - / 1 deg/step]
1-141-152	SC Pre1Temp:Sens2	*ENG	[0 to 255 / - / 1 deg/step]

1-141-153	SC Pre1Temp:Sens3	*ENG	[0 to 255 / **-** / 1 deg/step]
1-141-154	SC Pre1Temp:Sens4	*ENG	[0 to 255 / **-** / 1 deg/step]
1-141-201	SC Pre2Temp:Sens1	*ENG	[0 to 255 / **-** / 1 deg/step]
1-141-202	SC Pre2Temp:Sens2	*ENG	[0 to 255 / **-** / 1 deg/step]
1-141-203	SC Pre2Temp:Sens3	*ENG	[0 to 255 / **-** / 1 deg/step]
1-141-204	SC Pre2Temp:Sens4	*ENG	[0 to 255 / **-** / 1 deg/step]

1148	**[Full Detected]**		
1-148-001	OFF / ON	*ENG	[0 or 1 / **1** / 1/step]
	Selects the full detection function of output bin On/Off. • 0: Invalid • 1: Activate		

1149	**[Wait Time] DFU**		
1-149-001	Duplex	*ENG	[0 to 120 / **20** / 5 sec/step]

1152	**[Nip Band Check] DFU**		
1-152-001	Execute	ENG	[- / **-** / -] [Execute]
1-152-002	Pre-idling Time	*ENG	[0 to 999 / **600** / 1 sec/step]
1-152-003	Stop Time	*ENG	[0 to 100 / **20** / 1 sec/step]
1-152-004	Feed Time	*ENG	[1750 to 2200 / **1937** / 1 msec/step]

1153	**[LowTemp:StartUp] DFU**		
1-153-001	Temp:Thresh1	*ENG	[0 to 30 / **5** / 1 deg/step]
1-153-002	Temp:Thresh2	*ENG	[0 to 30 / **17** / 1 deg/step]
1-153-003	Temp:Target	*ENG	[50 to 100/ **100** / 1 deg/step]
1-153-005	Temp:RotateThresh	*ENG	[0 to 50 / **30** / 1 deg/step]
1-153-006	Judging Temp	*ENG	[0 to 100 / **60** / 1 deg/step]
1-153-010	Time:HeatStorage1	*ENG	[0 to 60 / **60** / 1 sec/step]
1-153-011	Time:HeatStorage2	*ENG	[0 to 60 / **15** / 1 sec/step]
1-153-020	ETemp:Thresh1	*ENG	[0 to 30 / **5** / 1 deg/step]
1-153-021	ETemp:Thresh2	*ENG	[0 to 30 / **17** / 1 deg/step]

1159	[Fusing Jam]		
1-159-001	SC Detection	*ENG	[0 or 1 / **0** / 1 /step]
	If the fusing jam occurred 3 times continuously, this SP can set if it detects SC or not. • 0: Not detects SC • 1: Detects SC		

1801	[MoterSpeedAdjust] DFU		
1-801-001	FeedMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-002	FeedMot Middle 1	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-003	FeedMot Middle 2	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-004	FeedMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-005	BkOpcMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-006	BkOpcMot Middle	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-007	BkOpcMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-008	FcOpcMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-009	FcOpcMot Middle	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-010	FcOpcMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-011	TransMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-012	TransMot Middle	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-013	TransMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-014	FusingMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-015	FusingMot Middle1	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-016	FusingMot Middle2	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-017	FusingMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-018	BankMot Plain	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-019	BankMot Middle	ENG	[-10 to 10 / **0** / 0.05 %/step]
1-801-020	BankMot Thick	ENG	[-10 to 10 / **0** / 0.05 %/step]

3.2 ENGINE SP TABLES-2

3.2.1 SP2-XXX (DRUM)

2101	[System Setting] DFU		
2-101-001	SSCG On/Off	*ENG	[0 or 1 / **1** / 1 /step]
2-101-002	SSCG Down/Center	*ENG	[0 or 1 / **1** / 1 /step]
2-101-003	SSCG Rate	*ENG	[0 to 1023 / **246** / 1 /step]
2-101-004	SSCG Freq	*ENG	[0 to 3 / **0** / 1 /step]
2-101-005	Video I/F	*ENG	[0 to 3 / **3** / 1 /step]

2102	[Line speed] DFU		
2-102-008	Normal	*ENG	[0 to 16383 / **3531** / 1 clk_w/step]
2-102-009	Hail	*ENG	[0 to 16383 / **6850** / 1 clk_w/step]
2-102-010	Low	*ENG	[0 to 16383 / **10258** / 1 clk_w/step]

2103	[ColorRegistration] DFU		
2-103-011	Sub Line: Bk	*ENG	Adjusts sub line registration manually. [-472 to 472 / **0** / 1 line /step]
2-103-012	Sub Line: C	*ENG	
2-103-013	Sub Line: M	*ENG	
2-103-014	Sub Line: Y	*ENG	
2-103-015	Main Dot: Bk	*ENG	Adjusts main dot registration manually. [-188 to 188 / **0** / 1 dot /step]
2-103-016	Main Dot: C	*ENG	
2-103-017	Main Dot: M	*ENG	
2-103-018	Main Dot: Y	*ENG	

2104	[Low power mode] DFU		
2-104-019	Shift judgment	*ENG	[0 or 1 / **1** / 1 /step]

2105	[LEDA] DFU		
2-105-020	CommClockDivRatio	*ENG	[0 to 1023 / **64** / 1 /step]

2106	[LEDA Setting]		
	Sets the LEDA light-emission time.		
2-106-021	Stbwd normal Bk	ENG	[0 to 65535 / **0** / 1 ns/step]
2-106-022	Stbwd normal C	ENG	
2-106-023	Stbwd normal M	ENG	
2-106-024	Stbwd normal Y	ENG	
2-106-025	Stbwd half/low Bk	ENG	[0 to 65535 / **0** / 1 ns/step]
2-106-026	Stbwd half/low C	ENG	
2-106-027	Stbwd half/low M	ENG	
2-106-028	Stbwd half/low Y	ENG	
2-106-029	Stbwd Elmt normal	ENG	[0 to 65535 / **0** / 1 ns/step]
2-106-030	Stbwd Elmt half	ENG	
2-106-031	Stbwd Elmt low	ENG	
2-106-036	Stbitv normal	*ENG	[0 to 4095 / **439** / 1 clk_w /step] **DFU**
2-106-037	Stbitv half	*ENG	[0 to 4095 / **854** / 1 clk_w /step] **DFU**
2-106-038	Stbitv low	*ENG	[0 to 4095 / **1280** / 1 clk_w /step] **DFU**

2107	[Check sum err cnt] DFU		
2-107-039	Bk	*ENG	[0 to 65535 / **0** / 1 /step]
2-107-040	C	*ENG	
2-107-041	M	*ENG	
2-107-042	Y	*ENG	

2108	[ColorShiftCorrect] DFU		
2-108-043	Main C	*ENG	[-188 to 188 / **0** / 1 dot/step]
2-108-044	Main M	*ENG	
2-108-045	Main Y	*ENG	
2-108-046	Sub Bk	*ENG	[-472 to 472 / **0** / 1 line/step]
2-108-047	Sub C	*ENG	
2-108-048	Sub M	*ENG	
2-108-049	Sub Y	*ENG	
2-108-050	F-Phase normal Bk	*ENG	[0 to 16383 / **1** / 1 clk_w/step]
2-108-051	F-Phase normal C	*ENG	
2-108-052	F-Phase normal M	*ENG	

2-108-053	F-Phase normal Y	*ENG	
2-108-054	F-Phase half Bk	*ENG	[0 to 16383 / **1** / 1 clk_w/step]
2-108-055	F-Phase half C	*ENG	
2-108-056	F-Phase half M	*ENG	
2-108-057	F-Phase half Y	*ENG	
2-108-058	F-Phase low Bk	*ENG	[0 to 16383 / **1** / 1 clk_w/step]
2-108-059	F-Phase low C	*ENG	
2-108-060	F-Phase low M	*ENG	
2-108-061	F-Phase low Y	*ENG	

2109	**[MUSIC Detect] DFU**		
2-109-062	Edge Thresh	*ENG	[0 to 65535 / **27235** / 1 /step]

2110	**[Test Pattern]**			
	Generates the test pattern.			
2-110-003	Pattern Selection	*ENG		[0 to 14 / **0** / 1 /step]
	0	None	8	SGrid
	1	V 1Line	9	20mm SGrid
	2	H 1Line	10	1by1
	3	V 2Line	11	2by2
	4	H 2Line	12	4by4
	5	V Grid	13	Full Dot
	6	H Grid	14	Belt
	7	20mm Grid	-	-

2111	**[Line Position Adj]**		
	Executes the fine line position adjustment.		
2-111-001	Normal Mode	ENG	[- / **-** / -]
2-111-002	Factory Mode	ENG	[Execute]
2-111-003	Black mode	ENG	

2116	**[MUSIC Mode] DFU**		
2-116-001	Skew	*ENG	[0 to 2 / **2** / 1 /step] 0: Curve OFF 1: All OFF 2: Curve ON
2-116-002	Bow	ENG	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF

2181	[Skew Correction]		
	The following SPs display the result of MUSIC for the skew correction.		
2-181-003	C	*ENG	[-64 to 63 / **0** / 1 line/step]
2-181-021	M	*ENG	
2-181-039	Y	*ENG	
2-181-061	Bk	*ENG	
2-181-100	Curve Table	*ENG	[0 to 9 / **4** / 1 /step] **DFU**

2182	[MUSIC Pattern] DFU		
2-182-040	Pattern Offset	*ENG	[-236 to 236 / **0** / 1 dot/step]
2-182-041	Width	*ENG	[0 to 236 / **118** / 2 dot/step]
2-182-042	Cycle	*ENG	[-236 to 236 / **0** / 1 dot/step]

2183	[MUSIC Condition]		
	Displays the result of position detection pattern.		
2-183-001	Posipattern FC R	*ENG	[0 to 65535 / **0** / 1 /step]
2-183-002	Posipattern FC L	*ENG	
2-183-003	Posipattern Bk R	*ENG	
2-183-004	Posipattern BK L	*ENG	

2185	[Margin Position] DFU		
2-185-001	Mode	*ENG	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF
2-185-002	Base Cal Flag	*ENG	[0 or 1 / **0** / 1 /step] 0:None, 1:Need
2-185-011	Position FC Base	*ENG	[0 to 65535 / **0** / 1 /step]
2-185-012	Position Bk Base	*ENG	
2-185-021	Correct FC	*ENG	[-32768 to 32768 / **0** / 1 /step]
2-185-022	Correct Bk	*ENG	

2193	[MUSIC Condition]		
2-193-017	Judge Mode	*ENG	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF **DFU**
2-193-018	Power On Mode	*ENG	[0 or 1 / **1** / 1 /step] 0: Run, 1: None **DFU**

2-193-019	Run Per Pages	*ENG	[0 to 65535 / **400** / 1 pages/step] **DFU**
2-193-020	Forced Per Pages	*ENG	[0 to 65535 / **450** / 1 pages/step] **DFU**
2-193-021	Normal Request	*ENG	[0 or 1 / **0** / 1 /step] 0: None, 1: Need **DFU**
2-193-022	Black Request	*ENG	[0 or 1 / **0** / 1 /step] 0: None, 1: Need **DFU**
2-193-023	Normal Pagecount	*ENG	[0 to 65535 / **0** / 1 page/step] Displays page counter since alignment adjustment is executed in normal mode.
2-193-024	Black Pagecount	*ENG	[0 to 65535 / **0** / 1 pages/step] Displays page counter since alignment adjustment is executed in BW mode.
2-193-025	Judge Factor	*ENG	[0 to 255 / **0** / 1 /step] Displays judge factor for MUSIC.
2-193-026	Normal Temp	*ENG	[-128 to 127 / **0** / 1 deg/step] Environment temperature when alignment adjustment is executed in normal mode.
2-193-027	Black Temp	*ENG	[-128 to 127 / **0** / 1 deg/step] Environment temperature when alignment adjustment is executed in BW mode.
2-193-028	Bk Mode Request	*ENG	[0 or 1 / **1** / 1/step]

2194	**[MUSIC Result]**		
	-		
2-194-007	Run Result	*ENG	[0 to 0xFFFFFFFF / **0** / 1 /step] Displays the run result of alignment adjustment.
2-194-013	Normal Run Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the execution number of alignment adjustment in normal mode.
2-194-014	Normal Fail Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the failed number of alignment adjustment in normal mode.
2-194-015	Factory Run Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the execution number of alignment adjustment

			in factory mode.
2-194-016	Factory Fail Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the failed number of alignment adjustment in factory mode.
2-194-017	Margin Run Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the execution number of alignment adjustment in BW mode.
2-194-018	Margin Fail Num	*ENG	[0 to 65535 / **0** / 1 time/step] Displays the failed number of alignment adjustment in BW mode.

2196	**[MUSIC Pattern] DFU**		
2-196-001	Pattern Num	*ENG	[1 to 16 / **8** / 1 set/step]

2221	**[LEDA Disp]**		
2-221-001	Averagevolume Bk	ENG	Displays the average light intensity data of LEDA. [0 to 65535 / **0** / 1 /step]
2-221-002	Averagevolume C	ENG	
2-221-003	Averagevolume M	ENG	
2-221-004	Averagevolume Y	ENG	
2-221-005	Serial num Bk	ENG	Displays LEDA serial numbers. [0 to 255 / **0** / 1 /step]
2-221-006	Serial num C	ENG	
2-221-007	Serial num M	ENG	
2-221-008	Serial num Y	ENG	
2-221-009	LEDA Pow Err Bk	ENG	Displays the flag indicator of LEDA power error. [0 or 1 / **0** / 1 /step]
2-221-010	LEDA Pow Err C	ENG	
2-221-011	LEDA Pow Err M	ENG	
2-221-012	LEDA Pow Err Y	ENG	

2222	**[LEDA Energy] DFU**		
2-222-001	Normal Bk	*ENG	[0 to 1605 / **500** / 1 nJ/cm^2/step]
2-222-002	Normal C	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]
2-222-003	Normal M	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]
2-222-004	Normal Y	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]
2-222-005	half/low Bk	*ENG	[0 to 1605 / **500** / 1 nJ/cm^2/step]
2-222-006	half/low C	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]
2-222-007	half/low M	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]
2-222-008	half/low Y	*ENG	[0 to 1605 / **707** / 1 nJ/cm^2/step]

2302	[Env Correct]		
2-302-001	Crrnt Env Display	ENG	[0 to 7 / **0** / 1 /step]
	Displays the environmental compartments of high pressure control. 0: SSL 1: LL 2: ML 3: MM 4: MH 5: HH1 6: HH2 7: HH3		
2-302-002	Temp Thresh	*ENG	[-5 to 50 / **5** / 1 deg/step] **DFU**
2-302-003	Abs Hum:Thresh 1	*ENG	[0.00 to 100.00 / **4.00** / 0.01 g/m^3/step] **DFU**
2-302-004	Abs Hum:thresh 2	*ENG	[0.00 to 100.00 / **8.00** / 0.01 g/m^3/step] **DFU**
2-302-005	Abs Hum:Thresh 3	*ENG	[0.00 to 100.00 / **13.50** / 0.01 g/m^3/step] **DFU**
2-302-006	Abs Hum:thresh 4	*ENG	[0.00 to 100.00 / **17.50** / 0.01 g/m^3/step] **DFU**
2-302-007	Abs Hum:thresh 5	*ENG	[0.00 to 100.00 / **24.00** / 0.01 g/m^3/step] **DFU**
2-302-008	Abs Hum:thresh 6	*ENG	[0.00 to 100.00 / **30.00** / 0.01 g/m^3/step] **DFU**

2311	[Paper Intvl Cur] DFU		
2-311-001	Trans2 Current	*ENG	[0 to 255 / **1** / 1 μA/step]

2326	[Trans2 CL Bias] DFU		
2-326-001	PLUS:Spd 1:MM	*ENG	[0 to 255 / **0** / 1 μA/step]
2-326-002	PLUS:Spd 2:MM	*ENG	
2-326-003	PLUS:Spd 3:MM	*ENG	
2-326-004	PLUS:Spd 1:HH	*ENG	
2-326-005	PLUS:Spd 2:HH	*ENG	
2-326-006	PLUS:Spd 3:HH	*ENG	
2-326-007	PLUS:Spd 1:LL	*ENG	
2-326-008	PLUS:Spd 2:LL	*ENG	
2-326-009	PLUS:Spd 3:LL	*ENG	
2-326-010	MINUS:Spd 1:MM	*ENG	[0 to 255 / **0** / 1 x10V/step]
2-326-011	MINUS:Spd 2:MM	*ENG	
2-326-012	MINUS:Spd 3:MM	*ENG	
2-326-013	MINUS:Spd 1:HH	*ENG	
2-326-014	MINUS:Spd 2:HH	*ENG	
2-326-015	MINUS:Spd 3:HH	*ENG	

2-326-016	MINUS:Spd 1:LL	*ENG	
2-326-017	MINUS:Spd 2:LL	*ENG	
2-326-018	MINUS:Spd 3:LL	*ENG	
2-326-019	MODE4:Spd 1:MM	*ENG	[0 to 255 / **0** / 1 μA/step]
2-326-020	MODE4:Spd 2:MM	*ENG	
2-326-021	MODE4:Spd 3:MM	*ENG	
2-326-022	MODE4:Spd 1:HH	*ENG	
2-326-023	MODE4:Spd 2:HH	*ENG	
2-326-024	MODE4:Spd 3:HH	*ENG	
2-326-025	MODE4:Spd 1:LL	*ENG	
2-326-026	MODE4:Spd 2:LL	*ENG	
2-326-027	MODE4:Spd 3:LL	*ENG	

2351	**[Trans1 Bias] DFU**		
2-351-003	OPC low Bias	*ENG	[20 to 200 / **20** / 1x10V/step]
2-351-008	Bk Fixed	ENG	[0 to 255 / **0** / 1x10V/step]
2-351-009	Y Fixed	ENG	[0 to 255 / **0** / 1x10V/step]
2-351-010	M Fixed	ENG	[0 to 255 / **0** / 1x10V/step]
2-351-011	C Fixed	ENG	[0 to 255 / **0** / 1x10V/step]
2-351-012	adj:Spd1:MM:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-013	adj:Spd1:HH1:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-014	adj:Spd1:LL:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-015	adj:Spd2:MM:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-016	adj:Spd3:MM:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-017	adj:Spd2:HH1:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-018	adj:Spd3:HH1:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-019	adj:Spd2:LL:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-020	adj:Spd3:LL:FC	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-021	adj:Spd1:MM:BK	ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-022	adj:Spd1:HH1:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-023	adj:Spd1:LL:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-024	adj:Spd2:MM:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-025	adj:Spd3:HH1:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-026	adj:Spd2:HH1:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-027	adj:Spd3:HH1:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-028	adj:Spd2:LL:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]
2-351-029	adj:Spd3:LL:BK	*ENG	[-127 to 127 / **0** / 1x10V/step]

2401	[Separate Bias] DFU		
2-401-001	Spd1:1st:THIN	*ENG	[0 to 255 / **0** / 1 x100V/step]
2-401-002	Spd1:2nd:THIN	*ENG	
2-401-003	Spd1:1st:NORMAL1	*ENG	
2-401-004	Spd1:2nd:NORMAL1	*ENG	
2-401-005	Spd1:1st:NORMAL2	*ENG	
2-401-006	Spd1:2nd:NORMAL2	*ENG	[0 to 255 / **0** / 1 x100V/step]
2-401-007	Spd2:1st:THICK2	*ENG	
2-401-008	Spd2:2nd:THICK2	*ENG	
2-401-009	Spd3:1st:THICK3	*ENG	
2-401-010	Spd3:2nd:THICK3	*ENG	

2402	[Separate Env Adj] DFU		
2-402-001	LL	*ENG	[0 to 255 / **0** / 1 %/step]
2-402-002	MM	*ENG	
2-402-003	HH1	*ENG	

2403	[Separate Sub Adj] DFU		
2-403-001	HEAD_L1	*ENG	[0 to 255 / **0** / 1 %/step]
2-403-002	L1_TAIL	*ENG	[0 to 255 / **0** / 1 %/step]
2-403-003	L1	*ENG	[-40.0 to 471.0 / **0.0** / 0.1 mm/step]

2404	[Separate Timing] DFU		
2-404-001	Start Adj	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-404-002	Stop Adj	*ENG	[-127 to 127 / **0** / 1 mm/step]

2405	[Separate:Head Adj] DFU		
2-405-001	Spd1:1st:THIN	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-405-002	Spd1:2nd:THIN	*ENG	
2-405-003	Spd1:1st:NORMAL1	*ENG	
2-405-004	Spd1:2nd:NORMAL1	*ENG	
2-405-005	Spd1:1st:NORMAL2	*ENG	
2-405-006	Spd1:2nd:NORMAL2	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-405-007	Spd2:1st:THICK1	*ENG	
2-405-008	Spd2:2nd:THICK1	*ENG	
2-405-009	Spd3:1st:THICK3	*ENG	
2-405-010	Spd3:2nd:THICK3	*ENG	

2406	[Separate:Tail Adj] DFU		
2-406-001	Spd1:1st:THIN	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-406-002	Spd1:2nd:THIN	*ENG	
2-406-003	Spd1:1st:NORMAL1	*ENG	
2-406-004	Spd1:2nd:NORMAL1	*ENG	
2-406-005	Spd1:1st:NORMAL2	*ENG	
2-406-006	Spd1:2nd:NORMAL2	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-406-007	Spd2:1st:THICK1	*ENG	
2-406-008	Spd2:2nd:THICK1	*ENG	
2-406-009	Spd3:1st:THICK3	*ENG	
2-406-010	Spd3:2nd:THICK3	*ENG	

2408	[Trans2:MM] DFU		
2-408-001	Spd1:1st:S1:K:N	*ENG	Paper width S1 ≥ 279mm
2-408-002	Spd1:2nd:S1:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-003	Spd1:1st:S1:C:N	*ENG	
2-408-004	Spd1:2nd:S1:C:N	*ENG	
2-408-005	Spd1:1st:S2:K:N	*ENG	Paper width 210mm ≤ S2 < 279mm
2-408-006	Spd1:2nd:S2:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-007	Spd1:1st:S2:C:N	*ENG	
2-408-008	Spd1:2nd:S2:C:N	*ENG	
2-408-009	Spd1:1st:S3:K:N	*ENG	Paper width 148mm ≤ S3 < 210mm
2-408-010	Spd1:2nd:S3:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-011	Spd1:1st:S3:C:N	*ENG	
2-408-012	Spd1:2nd:S3:C:N	*ENG	
2-408-013	Spd1:1st:S4:K:N	*ENG	Paper width S4 < 148mm
2-408-014	Spd1:2nd:S4:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-015	Spd1:1st:S4:C:N	*ENG	
2-408-016	Spd1:2nd:S4:C:N	*ENG	
2-408-017	Spd1:1st:S1:K:PC	*ENG	Paper width S1 ≥ 279mm
2-408-018	Spd1:2nd:S1:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-019	Spd1:1st:S1:C:PC	*ENG	
2-408-020	Spd1:2nd:S1:C:PC	*ENG	
2-408-021	Spd1:1st:S2:K:PC	*ENG	Paper width 210mm ≤ S2 < 279mm
2-408-022	Spd1:2nd:S2:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-023	Spd1:1st:S2:C:PC	*ENG	
2-408-024	Spd1:2nd:S2:C:PC	*ENG	
2-408-025	Spd1:1st:S3:K:PC	*ENG	Paper width 148mm ≤ S3 < 210mm

2-408-026	Spd1:2nd:S3:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-027	Spd1:1st:S3:C:PC	*ENG	
2-408-028	Spd1:2nd:S3:C:PC	*ENG	
2-408-029	Spd1:1st:S4:K:PC	*ENG	Paper width S4 < 148mm
2-408-030	Spd1:2nd:S4:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-031	Spd1:1st:S4:C:PC	*ENG	
2-408-032	Spd1:2nd:S4:C:PC	*ENG	
2-408-033	Spd2:1st:S1:K:T1	*ENG	Paper width S1 ≥ 279mm
2-408-034	Spd2:2nd:S1:K:T1	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-035	Spd2:1st:S1:C:T1	*ENG	
2-408-036	Spd2:2nd:S1:C:T1	*ENG	
2-408-037	Spd2:1st:S2:K:T1	*ENG	Paper width 210mm ≤ S2 < 279mm
2-408-038	Spd2:2nd:S2:K:T1	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-039	Spd2:1st:S2:C:T1	*ENG	
2-408-040	Spd2:2nd:S2:C:T1	*ENG	
2-408-041	Spd2:1st:S3:K:T1	*ENG	Paper width 148mm ≤ S3 < 210mm
2-408-042	Spd2:2nd:S3:K:T1	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-043	Spd2:1st:S3:C:T1	*ENG	
2-408-044	Spd2:2nd:S3:C:T1	*ENG	
2-408-045	Spd2:1st:S4:K:T1	*ENG	Paper width S4 < 148mm
2-408-046	Spd2:2nd:S4:K:T1	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-047	Spd2:1st:S4:C:T1	*ENG	
2-408-048	Spd2:2nd:S4:C:T1	*ENG	
2-408-049	Spd3:1st:S1:K:T3	*ENG	Paper width S1 ≥ 279mm
2-408-050	Spd3:2nd:S1:K:T3	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-051	Spd3:1st:S1:C:T3	*ENG	
2-408-052	Spd3:2nd:S1:C:T3	*ENG	
2-408-053	Spd3:1st:S2:K:T3	*ENG	Paper width 210mm ≤ S2 < 279mm
2-408-054	Spd3:2nd:S2:K:T3	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-055	Spd3:1st:S2:C:T3	*ENG	
2-408-056	Spd3:2nd:S2:C:T3	*ENG	
2-408-057	Spd3:1st:S3:K:T3	*ENG	Paper width 148mm ≤ S3 < 210mm
2-408-058	Spd3:2nd:S3:K:T3	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-059	Spd3:1st:S3:C:T3	*ENG	
2-408-060	Spd3:2nd:S3:C:T3	*ENG	
2-408-061	Spd3:1st:S4:K:T3	*ENG	Paper width S4 < 148mm
2-408-062	Spd3:2nd:S4:K:T3	*ENG	[0 to 200 / **0** / 1 µA/step]
2-408-063	Spd3:1st:S4:C:T3	*ENG	

2-408-064	Spd3:2nd:S4:C:T3	*ENG	

2409	**[Trans2:HH] DFU**		
2-409-001	Spd1:1st:S1:K:N	*ENG	Paper width S1 ≥ 279mm
2-409-002	Spd1:2nd:S1:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-003	Spd1:1st:S1:C:N	*ENG	
2-409-004	Spd1:2nd:S1:C:N	*ENG	
2-409-005	Spd1:1st:S2:K:N	*ENG	Paper width 210mm ≤ S2 < 279mm
2-409-006	Spd1:2nd:S2:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-007	Spd1:1st:S2:C:N	*ENG	
2-409-008	Spd1:2nd:S2:C:N	*ENG	
2-409-009	Spd1:1st:S3:K:N	*ENG	Paper width 148mm ≤ S3 < 210mm
2-409-010	Spd1:2nd:S3:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-011	Spd1:1st:S3:C:N	*ENG	
2-409-012	Spd1:2nd:S3:C:N	*ENG	
2-409-013	Spd1:1st:S4:K:N	*ENG	Paper width S4 < 148mm
2-409-014	Spd1:2nd:S4:K:N	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-015	Spd1:1st:S4:C:N	*ENG	
2-409-016	Spd1:2nd:S4:C:N	*ENG	
2-409-017	Spd1:1st:S1:K:PC	*ENG	Paper width S1 ≥ 279mm
2-409-018	Spd1:2nd:S1:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-019	Spd1:1st:S1:C:PC	*ENG	
2-409-020	Spd1:2nd:S1:C:PC	*ENG	
2-409-021	Spd1:1st:S2:K:PC	*ENG	Paper width 210mm ≤ S2 < 279mm
2-409-022	Spd1:2nd:S2:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-023	Spd1:1st:S2:C:PC	*ENG	
2-409-024	Spd1:2nd:S2:C:PC	*ENG	
2-409-025	Spd1:1st:S3:K:PC	*ENG	Paper width 148mm ≤ S3 < 210mm
2-409-026	Spd1:2nd:S3:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-027	Spd1:1st:S3:C:PC	*ENG	
2-409-028	Spd1:2nd:S3:C:PC	*ENG	
2-409-029	Spd1:1st:S4:K:PC	*ENG	Paper width S4 < 148mm
2-409-030	Spd1:2nd:S4:K:PC	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-031	Spd1:1st:S4:C:PC	*ENG	
2-409-032	Spd1:2nd:S4:C:PC	*ENG	
2-409-033	Spd2:1st:S1:K:T1	*ENG	Paper width S1 ≥ 279mm
2-409-034	Spd2:2nd:S1:K:T1	*ENG	[0 to 200 / **0** / 1 µA/step]
2-409-035	Spd2:1st:S1:C:T1	*ENG	

2-409-036	Spd2:2nd:S1:C:T1	*ENG	
2-409-037	Spd2:1st:S2:K:T1	*ENG	Paper width 210mm ≤ S2 < 279mm
2-409-038	Spd2:2nd:S2:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-039	Spd2:1st:S2:C:T1	*ENG	
2-409-040	Spd2:2nd:S2:C:T1	*ENG	
2-409-041	Spd2:1st:S3:K:T1	*ENG	Paper width 148mm ≤ S3 < 210mm
2-409-042	Spd2:2nd:S3:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-043	Spd2:1st:S3:C:T1	*ENG	
2-409-044	Spd2:2nd:S3:C:T1	*ENG	
2-409-045	Spd2:1st:S4:K:T1	*ENG	Paper width S4 < 148mm
2-409-046	Spd2:2nd:S4:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-047	Spd2:1st:S4:C:T1	*ENG	
2-409-048	Spd2:2nd:S4:C:T1	*ENG	
2-409-049	Spd3:1st:S1:K:T3	*ENG	Paper width S1 ≥ 279mm
2-409-050	Spd3:2nd:S1:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-051	Spd3:1st:S1:C:T3	*ENG	
2-409-052	Spd3:2nd:S1:C:T3	*ENG	
2-409-053	Spd3:1st:S2:K:T3	*ENG	Paper width 210mm ≤ S2 < 279mm
2-409-054	Spd3:2nd:S2:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-055	Spd3:1st:S2:C:T3	*ENG	
2-409-056	Spd3:2nd:S2:C:T3	*ENG	
2-409-057	Spd3:1st:S3:K:T3	*ENG	Paper width 148mm ≤ S3 < 210mm
2-409-058	Spd3:2nd:S3:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-059	Spd3:1st:S3:C:T3	*ENG	
2-409-060	Spd3:2nd:S3:C:T3	*ENG	
2-409-061	Spd3:1st:S4:K:T3	*ENG	Paper width S4 < 148mm
2-409-062	Spd3:2nd:S4:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-409-063	Spd3:1st:S4:C:T3	*ENG	
2-409-064	Spd3:2nd:S4:C:T3	*ENG	

2410	**[Trans2:LL] DFU**		
2-410-001	Spd1:1st:S1:K:N	*ENG	Paper width S1 ≥ 279mm
2-410-002	Spd1:2nd:S1:K:N	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-003	Spd1:1st:S1:C:N	*ENG	
2-410-004	Spd1:2nd:S1:C:N	*ENG	
2-410-005	Spd1:1st:S2:K:N	*ENG	Paper width 210mm ≤ S2 < 279mm
2-410-006	Spd1:2nd:S2:K:N	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-007	Spd1:1st:S2:C:N	*ENG	

2-410-008	Spd1:2nd:S2:C:N	*ENG	
2-410-009	Spd1:1st:S3:K:N	*ENG	Paper width 148mm ≤ S3 < 210mm
2-410-010	Spd1:2nd:S3:K:N	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-011	Spd1:1st:S3:C:N	*ENG	
2-410-012	Spd1:2nd:S3:C:N	*ENG	
2-410-013	Spd1:1st:S4:K:N	*ENG	Paper width S4 < 148mm
2-410-014	Spd1:2nd:S4:K:N	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-015	Spd1:1st:S4:C:N	*ENG	
2-410-016	Spd1:2nd:S4:C:N	*ENG	
2-410-017	Spd1:1st:S1:K:PC	*ENG	Paper width S1 ≥ 279mm
2-410-018	Spd1:2nd:S1:K:PC	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-019	Spd1:1st:S1:C:PC	*ENG	
2-410-020	Spd1:2nd:S1:C:PC	*ENG	
2-410-021	Spd1:1st:S2:K:PC	*ENG	Paper width 210mm ≤ S2 < 279mm
2-410-022	Spd1:2nd:S2:K:PC	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-023	Spd1:1st:S2:C:PC	*ENG	
2-410-024	Spd1:2nd:S2:C:PC	*ENG	
2-410-025	Spd1:1st:S3:K:PC	*ENG	Paper width 148mm ≤ S3 < 210mm
2-410-026	Spd1:2nd:S3:K:PC	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-027	Spd1:1st:S3:C:PC	*ENG	
2-410-028	Spd1:2nd:S3:C:PC	*ENG	
2-410-029	Spd1:1st:S4:K:PC	*ENG	Paper width S4 < 148mm
2-410-030	Spd1:2nd:S4:K:PC	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-031	Spd1:1st:S4:C:PC	*ENG	
2-410-032	Spd1:2nd:S4:C:PC	*ENG	
2-410-033	Spd2:1st:S1:K:T1	*ENG	Paper width S1 ≥ 279mm
2-410-034	Spd2:2nd:S1:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-035	Spd2:1st:S1:C:T1	*ENG	
2-410-036	Spd2:2nd:S1:C:T1	*ENG	
2-410-037	Spd2:1st:S2:K:T1	*ENG	Paper width 210mm ≤ S2 < 279mm
2-410-038	Spd2:2nd:S2:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-039	Spd2:1st:S2:C:T1	*ENG	
2-410-040	Spd2:2nd:S2:C:T1	*ENG	
2-410-041	Spd2:1st:S3:K:T1	*ENG	Paper width 148mm ≤ S3 < 210mm
2-410-042	Spd2:2nd:S3:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-043	Spd2:1st:S3:C:T1	*ENG	
2-410-044	Spd2:2nd:S3:C:T1	*ENG	
2-410-045	Spd2:1st:S4:K:T1	*ENG	Paper width S4 < 148mm

2-410-046	Spd2:2nd:S4:K:T1	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-047	Spd2:1st:S4:C:T1	*ENG	
2-410-048	Spd2:2nd:S4:C:T1	*ENG	
2-410-049	Spd3:1st:S1:K:T3	*ENG	Paper width S1 ≥ 279mm
2-410-050	Spd3:2nd:S1:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-051	Spd3:1st:S1:C:T3	*ENG	
2-410-052	Spd3:2nd:S1:C:T3	*ENG	
2-410-053	Spd3:1st:S2:K:T3	*ENG	Paper width 210mm ≤ S2 < 279mm
2-410-054	Spd3:2nd:S2:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-055	Spd3:1st:S2:C:T3	*ENG	
2-410-056	Spd3:2nd:S2:C:T3	*ENG	
2-410-057	Spd3:1st:S3:K:T3	*ENG	Paper width 148mm ≤ S3 < 210mm
2-410-058	Spd3:2nd:S3:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-059	Spd3:1st:S3:C:T3	*ENG	
2-410-060	Spd3:2nd:S3:C:T3	*ENG	
2-410-061	Spd3:1st:S4:K:T3	*ENG	Paper width S4 < 148mm
2-410-062	Spd3:2nd:S4:K:T3	*ENG	[0 to 200 / **0** / 1 μA/step]
2-410-063	Spd3:1st:S4:C:T3	*ENG	
2-410-064	Spd3:2nd:S4:C:T3	*ENG	

2412	**[Trans2:Correct] DFU**		
2-412-001	PrintRatio:Txt:C1	*ENG	[0 to 100 / **80** / 1 %/step]
2-412-002	Time Adj:T1	*ENG	[0 to 100 / **100** / 1 %/step]
2-412-003	Time Adj:T2	*ENG	[0 to 100 / **90** / 1 %/step]
2-412-004	Time Adj:T3	*ENG	[0 to 100 / **90** / 1 %/step]
2-412-005	Time Adj:T4	*ENG	[0 to 100 / **85** / 1 %/step]
2-412-006	Time Adj:T5	*ENG	[0 to 100 / **85** / 1 %/step]
2-412-007	Timing:1st	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-412-008	Timing:Other	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-412-009	Head	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-412-010	Tail	*ENG	[-127 to 127 / **0** / 1 mm/step]
2-412-011	High Humid paper	*ENG	[0 or 1 / **0** / 1 /step] 0: Normal, 1: High Humid
2-412-021	Special1:FC:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-022	Special1:FC:2nd	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-023	Special1:Bk:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-024	Special1:Bk:2nd	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-025	Special2:FC:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]

2-412-026	Special2:FC:2nd	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-027	Special2:Bk:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-028	Special2:Bk:2nd	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-029	Special3:FC:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]
2-412-030	Special3:Bk:1st	*ENG	[-127 to 127 / **0** / 1 μA /step]

2500	**[Engine Setting]**		
2-500-001	Mode1	ENG	[- / **-** / -]
2-500-002	Mode2	ENG	[Execute]
2-500-003	Mode3	ENG	
2-500-004	Mode4	ENG	
2-500-005	Mode5	ENG	
2-500-006	Mode6	ENG	[- / **-** / -]
2-500-007	Mode7	ENG	[Execute]
2-500-008	Mode8	ENG	
2-500-009	Mode9	ENG	
2-500-010	Mode10	ENG	
2-500-011	Data UC1	*ENG	[0 to 255 / **0** / 1 /step]
2-500-012	Data UC2	*ENG	**Not used**
2-500-013	Data UC3	*ENG	
2-500-014	Data UC4	*ENG	
2-500-015	Data UC5	*ENG	
2-500-016	Data SC1	*ENG	[-128 to 127 / **0** / 1 /step]
2-500-017	Data SC2	*ENG	**Not used**
2-500-018	Data SC3	*ENG	
2-500-019	Data SC4	*ENG	
2-500-020	Data SC5	*ENG	
2-500-021	Data UW1	*ENG	[0 to 65535 / **0** / 1 /step]
2-500-022	Data UW2	*ENG	**Not used**
2-500-023	Data UW3	*ENG	
2-500-024	Data UW4	*ENG	
2-500-025	Data UW5	*ENG	
2-500-026	Data SW1	*ENG	[-32768 to 32767 / **0** / 1 /step]
2-500-027	Data SW2	*ENG	**Not used**
2-500-028	Data SW3	*ENG	
2-500-029	Data SW4	*ENG	
2-500-030	Data SW5	*ENG	
2-500-031	Data UL1	*ENG	[0 to 0xFFFFFFFF / **0** / 1 /step]

2-500-032	Data UL2	*ENG	**Not used**
2-500-033	Data UL3	*ENG	
2-500-034	Data UL4	*ENG	
2-500-035	Data UL5	*ENG	
2-500-036	Data UL6	*ENG	[0 to 0xFFFFFFFF / **0** / 1 /step]
2-500-037	Data UL7	*ENG	**Not used**
2-500-038	Data UL8	*ENG	
2-500-039	Data UL9	*ENG	
2-500-040	Data UL10	*ENG	

2904	**[Auto revolutions]**		
	Turn auto revolutions on to rotate image transfer belt for paper dust removal.		
2-904-001	On	ENG	[- / **-** / -] [Execute]

2907	**[ACS SW: FC Mode]**		
	Adjusts the threshold of BW data continuous page to switch FC mode to BW mode when printing color and BW mixed data.		
2-907-001	Cont.Mono Sheet	ENG	[0 to 10 / **1** / 1 sheet/step]

2997	**[Life Setting]**		
	SP for setting the PCDU life and print stop time. Sets the thresholds for PCDU end page and print stoppage for each color (in units of 1000 pages).		
2-997-001	Life Page<Bk>	ENG	[1 to 255 / **15** / 1000 pages / step]
2-997-002	Life Page<C>	ENG	[1 to 255 / **12** / 1000 pages / step]
2-997-003	Life Page<M>	ENG	[1 to 255 / **12** / 1000 pages / step]
2-997-004	Life Page<Y>	ENG	[1 to 255 / **12** / 1000 pages / step]
2-997-005	Stop Page<Bk>	ENG	[1 to 255 / **26** / 1000 pages / step]
2-997-006	Stop Page<C>	ENG	[1 to 255 / **20** / 1000 pages / step]
2-997-007	Stop Page<M>	ENG	[1 to 255 / **20** / 1000 pages / step]
2-997-008	Stop Page<Y>	ENG	[1 to 255 / **20** / 1000 pages / step]

3.3 ENGINE SP TABLES-3

3.3.1 SP3-XXX (PROCESS)

3011	**[AdjustManualExe]**		
3-011-001	Normal ProCon	ENG	[- / **-** / -] [Execute]
	Executes the normal process control manually (potential control). Check the result with SP3-325-001 and 3-012-001 after executing this SP.		
3-011-004	FullMusic/ProCon	ENG	[- / **-** / -] [Execute]
	Executes the process control that is normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) twice.		
3-011-005	Nor.Music/ProCon	ENG	[- / **-** / -] [Execute]
	Executes the process control that is normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) once.		

3012	**[ProCon OK?]** Process Control Self-check Result		
	Displays the result of the latest process control self-check. All colors are displayed. The results are displayed in the order “Y M C K” The result displays as below: 00: Not executed 11: Succeeded Others: Error Codes e.g., 11 (Y) 99 (C) 11 (M) 11 (K): The self-check for Cyan failed but the others were successful.		
3-012-001	History:Last	*ENG	[0 to 255 / **0** / 1 /step]

3015	**[ManualSply:Exe] DFU**		
3-015-001	TnrSplyFc	ENG	[- / **-** / -] [Execute]
3-015-003	TnrSplyK	ENG	
3-015-004	TnrSplyY	ENG	
3-015-005	TnrSplyM	ENG	
3-015-006	TnrSplyC	ENG	

3016	[ManualSply:Set] DFU		
3-016-001	SplyTimeK	*ENG	[0 to 255 / **30** / 1 sec/step]
3-016-002	SplyTimeY	*ENG	
3-016-003	SplyTimeM	*ENG	
3-016-004	SplyTimeC	*ENG	

3017	[ManualRmn:Exe]		
	Executes the manual toner remaining detection. Detection result can be checked by SP3411-002 to 004.		
3-017-001	TnrRmnSnsFc	ENG	[- / **-** / -]
3-017-002	TnrRmnSnsBk	ENG	[Execute]

3018	[ManualMix:Exe]		
	Executes the manual toner mixing. Execution time can be set by SP3019-001. Detection result can be checked by SP3411-001.		
3-018-001	TnrMixFc	ENG	[- / **-** / -]
3-018-002	TnrMixBk	ENG	[Execute]

3019	[ManualMix:Set] DFU		
3-019-001	MIxTime	*ENG	[0 to 255 / **3** / 1 x10sec/step]

3022	[TonerFillMode] DFU		
3-022-001	FillPhaseID:K	*ENG	[0 to 3 / **2** / 1 /step]
3-022-002	FillPhaseID:Y	*ENG	0: Factory
3-022-003	FillPhaseID:M	*ENG	1: Initial Fill
3-022-004	FillPhaseID:C	*ENG	2: Normal Fill 3: Arrival Fill

3098	[TonerNearEnd]		
3-098-001	DaysBeforeTE	*ENG	[0 to 2 / **1** / 1 step]
	Sets near end timing of the toner. 0: Earlier (7days before) 1: Normal (5days before) 2: Later (3days before)		

3101	**[TE/NE]**		
	Amount of total toner consumption (accumulation for a toner cartridge).		
3-101-005	Total Usage: Bk	*ENG	[0 to 999999999 / **0** / 1 μg/step]
3-101-006	Total Usage: C	*ENG	
3-101-007	Total Usage: M	*ENG	
3-101-008	Total Usage: Y	*ENG	
3101	**[TE/NE]**		
	Remaining amount of toner cartridge that is set to the machine.		
3-101-009	TonerRemainBk	*ENG	[0.0 to 300.0 / **300.0** / 0.1 g/step]
3-101-010	TonerRemainC	*ENG	
3-101-011	TonerRemainM	*ENG	
3-101-012	TonerRemainY	*ENG	
3101	**[TE/NE]**		
	Sets the upper limit of the number of delays in detecting toner consumption counter end.		
3-101-120	EndDelayUpper	*ENG	[0 to 99 / **50** / times / step]

3102	**[RcvrySply:Set] DFU**		
3-102-011	RcvrySplyK	*ENG	[0 to 20 / **7** / 1 g/step]
3-102-012	RcvrySplyY	*ENG	[0 to 20 / **7** / 1 g/step]
3-102-013	RcvrySplyM	*ENG	[0 to 20 / **7** / 1 g/step]
3-102-014	RcvrySplyC	*ENG	[0 to 20 / **7** / 1 g/step]
3102	**[RcvrySply:Set] DFU**		
3-102-015	MixTime:RcvryK	*ENG	[0 to 60 / **10** / 1 sec/step]
3-102-016	MixTime:RcvryY	*ENG	[0 to 60 / **10** / 1 sec/step]
3-102-017	MixTime:RcvryM	*ENG	[0 to 60 / **10** / 1 sec/step]
3-102-018	MixTime:RcvryC	*ENG	[0 to 60 / **10** / 1 sec/step]
3102	**[RcvrySply:Set] DFU**		

3-102-021	RcvrySply:Mid:K	*ENG	[0 to 20 / **5** / 1 g/step]
3-102-022	RcvrySply:Mid:Y	*ENG	[0 to 20 / **5** / 1 g/step]
3-102-023	RcvrySply:Mid:M	*ENG	[0 to 20 / **5** / 1 g/step]
3-102-024	RcvrySply:Mid:C	*ENG	[0 to 20 / **5** / 1 g/step]

3103	**[RcvrySply]**		
	Displays the number of replenishment execution for recovering.		
3-103-001	RcvrySplyCntK	*ENG	[0 to 10000 / **-** / 1 times/step]
3-103-002	RcvrySplyCntY	*ENG	
3-103-003	RcvrySplyCntM	*ENG	
3-103-004	RcvrySplyCntC	*ENG	
3103	**[RcvrySply]**		
	Displays the number of replenishment execution for initial recovering.		
3-103-011	RcvrySplyCntK	*ENG	[0 to 10000 / **-** / 1 times/step]
3-103-012	RcvrySplyCntY	*ENG	
3-103-013	RcvrySplyCntM	*ENG	
3-103-014	RcvrySplyCntC	*ENG	
3103	**[RcvrySply]**		
	Sets the threshold for the number of consecutive failures of recovery supply.		
3-103-015	RcvryFailThresh	*ENG	[0 to 3 / **3** / 1 times/step]

3131	**[TnrSplyErr:Disp]**		
	Displays the counter of toner supply error for recovering. Counts the number if recovery is failed continuously more than the number set in SP3131-015. If recovery execution is succeeded, this counter would be reset.		
3-131-011	RcvryFailCntK	*ENG	[0 to 20 / **0** / 1 times/step]
3-131-012	RcvryFailCntY	*ENG	[0 to 20 / **0** / 1 times/step]
3-131-013	RcvryFailCntM	*ENG	[0 to 20 / **0** / 1 times/step]
3-131-014	RcvryFailCntC	*ENG	[0 to 20 / **0** / 1 times/step]
3-131-015	RcvryFailThresh	*ENG	[0 to 20 / **3** / 1 times/step]

3244	**[TonerRmn]**		
	Sets the threshold for judgment of upper limit for each color of PCDU toner in the HH environment.		
3-244-005	HHThresh:Up:K	*ENG	[0 to 400 / **22** / 1 times/step]
3-244-006	HHThresh:Up:Y	*ENG	[0 to 400 / **24** / 1 times/step]
3-244-007	HHThresh:Up:M	*ENG	[0 to 400 / **22** / 1 times/step]
3-244-008	HHThresh:Up:C	*ENG	[0 to 400 / **22** / 1 times/step]
3244	**[TonerRmn]**		
	Sets the threshold for judgment of lower limit for each color of PCDU toner in the HH environment.		
3-244-009	HHThresh:Low:K	*ENG	[0 to 400 / **31** / 1 times/step]
3-244-010	HHThresh: Low:Y	*ENG	[0 to 400 / **30** / 1 times/step]
3-244-011	HHThresh: Low:M	*ENG	[0 to 400 / **31** / 1 times/step]
3-244-012	HHThresh: Low:C	*ENG	[0 to 400 / **30** / 1 times/step]
3244	**[TonerRmn]**		
	Sets the threshold for judgment of upper limit for each color of PCDU toner in the NN environment.		
3-244-013	NNThresh:Up:K	*ENG	[0 to 400 / **12** / 1 times/step]
3-244-014	NNThresh: Up:Y	*ENG	[0 to 400 / **20** / 1 times/step]
3-244-015	NNThresh: Up:M	*ENG	[0 to 400 / **16** / 1 times/step]
3-244-016	NNThresh: Up:C	*ENG	[0 to 400 / **5** / 1 times/step]
3244	**[TonerRmn]**		
	Sets the threshold for judgment of lower limit for each color of PCDU toner in the NN environment.		
3-244-017	NNThresh:Low:K	*ENG	[0 to 400 / **27** / 1 times/step]

3-244-018	NNThresh: Low:Y	*ENG	[0 to 400 / **37** / 1 times/step]
3-244-019	NNThresh: Low:M	*ENG	[0 to 400 / **25** / 1 times/step]
3-244-020	NNThresh: Low:C	*ENG	[0 to 400 / **30** / 1 times/step]
3244	**[TonerRmn]**		
	Sets the threshold for judgment of upper limit for each color of PCDU toner in the LL environment.		
3-244-013	LLThresh:Up:K	*ENG	[0 to 400 / **15** / 1 times/step]
3-244-014	LLThresh: Up:Y	*ENG	[0 to 400 / **22** / 1 times/step]
3-244-015	LLThresh: Up:M	*ENG	[0 to 400 / **21** / 1 times/step]
3-244-016	LLThresh: Up:C	*ENG	[0 to 400 / **21** 1 times/step]
3244	**[TonerRmn]**		
	Sets the threshold for judgment of lower limit for each color of PCDU toner in the LL environment.		
3-244-017	LLThresh:Low:K	*ENG	[0 to 400 / **29** / 1 times/step]
3-244-018	LLThresh: Low:Y	*ENG	[0 to 400 / **30** / 1 times/step]
3-244-019	LLThresh: Low:M	*ENG	[0 to 400 / **29** / 1 times/step]
3-244-020	LLThresh: Low:C	*ENG	[0 to 400 / **28** / 1 times/step]

3310	**[ID.Sens :Voffset]**		
3-310-001	Voffset_reg (R)	*ENG	[0.00 to 5.50 / **-** / 0.01 V/step]
	Displays regular reflection output when right ID. sensor is turned off.		
3-310-002	Voffset reg (L)	*ENG	[0.00 to 5.50 / **-** / 0.01 V/step]
	Displays regular reflection output when left ID. sensor is turned off.		
3-310-011	Voffset dif (R)	*ENG	[0.00 to 5.50 / **-** / 0.01 V/step]
	Displays diffuse reflection output when right ID. sensor is turned off.		
3-310-012	Voffset dif (L)	*ENG	[0.00 to 5.50 / **-** / 0.01 V/step]
	Displays diffuse reflection output when left ID. sensor is turned off.		

3311	[ID.Sens :Vmin]		
	Displays black Vmin output of gradation pattern of ID. sensors		
3-311-001	Vmin_K (R)	*ENG	[0 to 5 / **0** / 0.001 V/step]
3-311-002	Vmin_K (L)	*ENG	[0 to 5 / **0** / 0.001 V/step]

3312	[ID.Sens :Vct]		
3-312-001	Vct_reg(R)	*ENG	[0 to 5 / **0** / 0.001 V/step]
	Displays stroke voltage of regular reflection for right ID. sensor.		
3-312-002	Vct_reg(L)	*ENG	[0 to 5 / **0** / 0.001 V/step]
	Displays stroke voltage of regular reflection for left ID. sensor.		
3-312-011	Vct_dif(R)	*ENG	[0 to 5 / **0** / 0.001 V/step]
	Displays stroke voltage of diffuse reflection for right ID. sensor.		
3-312-012	Vct_dif(L)	*ENG	[0 to 5 / **0** / 0.001 V/step]
	Displays stroke voltage of diffuse reflection for left ID. sensor.		

3320	[Vsg Adj Excute] DFU		
3-320-001	P Sensor	ENG	[- / **-** / -] [Execute]
3-320-031	Vsg Err Count (R)	*ENG	[0 to 99 / **0** / 1 time/step]
3-320-032	Vsg Err Count (L)	*ENG	[0 to 99 / **0** / 1 time/step]
3-320-033	Vsg Err Stop Th	*ENG	[0 to 99 / **4** / 1 time/step]
3-320-034	Vsg Err Alert Th	*ENG	[0 to 99 / **3** / 1 time/step]

3321	[Adjusted Vsg]		
3-321-001	Vsg reg (R)	*ENG	[0.00 to 5.50 / **0.00** / 0.01 V/step]
	Displays regular reflection output for bare part of the belt of the right ID. sensor when vsg adjustment execution was succeeded last time.		
3-321-002	Vsg reg (L)	*ENG	[0.00 to 5.50 / **0.00** / 0.01 V/step]
	Displays regular reflection output for bare part of the belt of the left ID. sensor when vsg adjustment execution wais succeeded last time.		
3-321-011	Vsg dif (R)	*ENG	[0.00 to 5.50 / **0.00** / 0.01 V/step]
	Displays diffuse reflection output for bare part of the belt of the right ID. sensor when vsg adjustment execution was succeeded last time.		
3-321-012	Vsg dif (L)	*ENG	[0.00 to 5.50 / **0.00** / 0.01 V/step]
	Displays diffuse reflection output for bare part of the belt of the left ID. sensor when vsg adjustment execution was succeeded last time.		

3322	**[Adjusted Ifsg]**		
3-322-001	Ifsg (R)	*ENG	[0 to 3317 / **544** / 1 /step]
	Displays current value of the emission for right ID. sensor when vsg adjustment execution was succeeded last time.		
3-322-002	Ifsg (L)	*ENG	[0 to 3317 / **544** / 1 /step]
	Displays current value of the emission for left ID. sensor when vsg adjustment execution was succeeded last time.		
3-322-011	Ifsg LowThresh(R)	*ENG	[0.0 to 50.0 / **10** / 0.1 mA/step]
	Displays minimum current value of the emission for right ID. sensor from previous vsg adjustment executions.		
3-322-012	Ifsg LowThresh(L)	*ENG	[0.0 to 50.0 / **10** / 0.1 mA/step]
	Displays minimum current value of the emission for left ID. sensor from previous vsg adjustment executions.		
3322	**[Vsg Adj Execute]**		
3-322-013	Ifsg Upper Count(R)	*ENG	[0 to 99 / **0** / 1 times /step]
	Sets the threshold of the number of failed attempts to adjust Vsg for judgment on whether warning message should be displayed.		
3-322-014	Ifsg Upper Count(L)	*ENG	[0 to 99 / **0** / 1 times /step]
	Sets the threshold of the number of failed attempts to adjust Vsg for judgment on whether warning message should be displayed.		

3323	**[Vsg Adj OK?]**		
	Displays vsg result codes. **Readings** • Left digit: right ID. sensor • Right digit: left ID. sensor 0: Has not executed 1: Succeeded Others: other error code		
3-323-001	Latest	*ENG	[0 to 99 / - / 1 /step]
3-323-002	Latest 2	*ENG	[0 to 99 / - / 1 /step]
3-323-003	Latest 3	*ENG	[0 to 99 / - / 1 /step]
3-323-004	Latest 4	*ENG	[0 to 99 / - / 1 /step]
3-323-005	Latest 5	*ENG	[0 to 99 / - / 1 /step]
3-323-006	Latest 6	*ENG	[0 to 99 / - / 1 /step]
3-323-007	Latest 7	*ENG	[0 to 99 / - / 1 /step]
3-323-008	Latest 8	*ENG	[0 to 99 / - / 1 /step]
3-323-009	Latest 9	*ENG	[0 to 99 / - / 1 /step]

3-323-010	Latest 10	*ENG	[0 to 99 / **-** / 1 /step]

3330	**[ID. Sens Coef]**		
	Displays latest correction coefficient of the sensitivity of the ID. sensor.		
3-330-001	K2(Latest) (C)	*ENG	[0 to 5 / **0** / 0.0001 /step]
3-330-002	K2(Latest) (M)	*ENG	[0 to 5 / **0** / 0.0001 /step]
3-330-003	K2(Latest) (Y)	*ENG	[0 to 5 / **0** / 0.0001 /step]
3-330-011	K5(Latest) (C)	*ENG	[0 to 5 / **1.2** / 0.0001 /step]
3-330-012	K5(Latest) (M)	*ENG	[0 to 5 / **1.2** / 0.0001 /step]
3-330-013	K5(Latest) (Y)	*ENG	[0 to 5 / **1.2** / 0.0001 /step]

3333	**[ID. Sens TestVal:F] DFU**		
3-333-001	K2: Check	*ENG	[0 to 1 / **0.5** / 0.001 /step]
3-333-002	Diffuse Corr	*ENG	[0.75 to 1.35 / **1** / 0.01 /step]
3-333-003	Vct_reg Chk:Slope	*ENG	[0 to 99 / **0** / 0.1 mV/mA/step]
3-333-004	Vct_reg Chk:Xint	*ENG	[0 to 25.5 / **0** / 0.1 mA/step]
3-333-005	Vct_dif Chk:Slope	*ENG	[0 to 99 / **0** / 0.1 mV/mA/step]
3-333-006	Vct_dif Chk:Xint	*ENG	[0 to 25.5 / **0** / 0.1 mA/step]

3334	**[ID. Sens TestVal:F] DFU**		
3-334-001	K2: Check	*ENG	[0 to 1 / **0.5** / 0.001 /step]
3-334-002	Diffuse Corr	*ENG	[0.75 to 1.35 / **1** / 0.01 /step]
3-334-003	Vct_reg Chk:Slope	*ENG	[0 to 99 / **0** / 0.1 mV/mA/step]
3-334-004	Vct_reg Chk:Xint	*ENG	[0 to 25.5 / **0** / 0.1 mA/step]
3-334-005	Vct_dif Chk:Slope	*ENG	[0 to 99 / **0** / 0.1 mV/mA/step]
3-334-006	Vct_dif Chk:Xint	*ENG	[0 to 25.5 / **0** / 0.1 mA/step]

3345	**[Density Range] DFU**		
3-345-001	Up Param:a:K	*ENG	[0.00 to 2.55 / **0.00** / 0.01 D /step]
3-345-002	Up Param:a:C	*ENG	
3-345-003	Up Param:a:M	*ENG	
3-345-004	Up Param:a:Y	*ENG	
3-345-005	Low Param:a:K	*ENG	
3-345-006	Low Param:a:C	*ENG	
3-345-007	Low Param:a:M	*ENG	
3-345-008	Low Param:a:Y	*ENG	

3346	[Reverse Point] DFU		
3-346-001	Count	*ENG	[0 to 16 / **0** / 1 /step]

3349	[IBACC Setting]		
	A flag to recognize if IBACC is executing.		
3-349-001	Exec Mode	ENG	[0 or 1 / **0** / 1 /step] • 0: Not executing • 1: Executing

3401	[TonerFixSply:Set] DFU		
3-401-011	FixedSplyAmntK	*ENG	Fixed supply amount. [0 to 20 / **10** / 1 g/step]
3-401-012	FixedSplyAmntY	*ENG	
3-401-013	FixedSplyAmntM	*ENG	
3-401-014	FixedSplyAmntC	*ENG	
3-401-015	MixTime:FixSplyK	*ENG	Mixed time when fixed amount of tonner supplied. [0 to 60 / **60** / 1 sec/step]
3-401-016	MixTime:FixSplyY	*ENG	
3-401-017	MixTime:FixSplyM	*ENG	
3-401-018	MixTime:FixSplyC	*ENG	

3411	[TonerSply:Disp]		
3-411-001	TonerRmnK	*ENG	[0 to 2 / **-** / 1 /step] Displays the detection result of toner remaining for Bk. 0: Upper Lv. 1: Middle Lv. 2: Lower Lv.
3-411-002	TonerRmnY	*ENG	[0 to 2 / **-** / 1 /step] Displays the detection result of toner remaining for Ye. 0: Upper Lv. 1: Middle Lv. 2: Lower Lv.
3-411-003	TonerRmnM	*ENG	[0 to 2 / **-** / 1 /step] Displays the detection result of toner remaining for Ma. 0: Upper Lv. 1: Middle Lv. 2: Lower Lv.
3-411-004	TonerRmnC	*ENG	[0 to 2 / **-** / 1 /step] Displays the detection result of toner remaining for Cy. 0: Upper Lv.

			1: Middle Lv. 2: Lower Lv.
3-411-005	SnsOutCntAvK	*ENG	[0 to 255 / **-** / 1 time/step] Average number of transmission for the toner remaining detection sensor for Bk.
3-411-006	SnsOutCntAvY	*ENG	[0 to 255 / **-** / 1 time/step] Average number of transmission for the toner remaining detection sensor for Ye
3-411-007	SnsOutCntAvM	*ENG	[0 to 255 / **-** / 1 time/step] Average number of transmission for the toner remaining detection sensor for Ma
3-411-008	SnsOutCntAvC	*ENG	[0 to 255 / **-** / 1 time/step] Average number of transmission for the toner remaining detection sensor for Cy

3453	**[TonerSply:Set] DFU**		
3-453-011	Thresh:CnsmK	*ENG	[0 to 100000 / **600** / 0.1 mg/step]
3-453-012	Thresh:CnsmY	*ENG	[0 to 100000 / **600** / 0.1 mg/step]
3-453-013	Thresh:CnsmM	*ENG	[0 to 100000 / **600** / 0.1 mg/step]
3-453-014	Thresh:CnsmC	*ENG	[0 to 100000 / **600** / 0.1 mg/step]

3500	**[ImgQtyAdj:ON/OFF] DFU**		
3-500-001	ALL	*ENG	[0 or 1 / **1** / 1 /step]
3-500-002	ProCon	*ENG	[0 or 1 / **1** / 1 /step]

3510	**[ImgQtyAdj: ExeFlag] DFU**		
3-510-021	Process Control	*ENG	[0 to 3 / **0** / 1 /step]
3-510-025	Vsg Adj.	*ENG	[0 or 1 / **0** / 1 /step]

3516	**[Toner Refresh]**		
3-516-001	Print Area K	*ENG	[0 to 0xFFFFFFFF / **0** / 1 mm^2/step]
	Print area from judge to execute last toner refreshment for Bk.		
3-516-002	Print Area C	*ENG	[0 to 0xFFFFFFFF / **0** / 1 mm^2/step]
	Print area from judge to execute last toner refreshment for Cy.		
3-516-003	Print Area M	*ENG	[0 to 0xFFFFFFFF / **0** / 1 mm^2/step]
	Print area from judge to execute last toner refreshment for Ma.		
3-516-004	Print Area Y	*ENG	[0 to 0xFFFFFFFF / **0** / 1 mm^2/step]
	Print area from judge to execute last toner refreshment for Ye.		

3-516-005	Run Distance K	*ENG	[0 to 999999999 / **0** / 1 mm/step]
	Run distance of OPC drum from judge to execute last toner refreshment for Bk.		
3-516-006	Run Distance C	*ENG	[0 to 999999999 / **0** / 1 mm/step]
	Run distance of OPC drum from judge to execute last toner refreshment for Cy.		
3-516-007	Paper Dist	*ENG	[0 to 999999999 / **0** / 1 mm/step]
	Displays the paper distance that passed registration sensor since the last toner refreshment.		
3-516-008	Paper Dist FC	*ENG	[0 to 999999999 / **0** / 1 mm/step]
	Displays the paper distance that passed registration sensor since the last toner refreshment for FC.		
3-516-021	Enable Flag BW	*ENG	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON **DFU**
3-516-022	Enable Flag FC	*ENG	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON **DFU**
3-516-024	Abs Hum Thresh 1L	*ENG	[0 to 99.99 / **0** / 0.01 g/m^3/step] Toner refreshment reference 1. Absolute humidity threshold (lower)
3-516-025	Low Limit Dist K	*ENG	[0 to 255 / **36** / 1 mm/step] Lower limit distance of toner refreshment discharge for Bk.
3-516-026	Low Limit Dist C	*ENG	[0 to 255 / **36** / 1 mm/step] Lower limit distance of toner refreshment discharge for C.
3-516-027	Low Limit Dist M	*ENG	[0 to 255 / **36** / 1 mm/step] Lower limit distance of toner refreshment discharge for M.
3-516-028	Low Limit Dist Y	*ENG	[0 to 255 / **36** / 1 mm/step] Lower limit distance of toner refreshment discharge for Y.

3517	**[Toner Input]**		
3-517-001	Enable Flag K	*ENG	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON **DFU**
3-517-002	Enable Flag C	*ENG	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
3-517-	Enable Flag	*ENG	**DFU**

003	M		
3-517-004	Enable Flag Y	*ENG	
3-517-005	Run Distance Khf	*ENG	[0 to 999999999 / **0** / 1 mm/step] PM counter running distance after previous toner refreshment (high frequency).
3-517-006	Run Distance Chf	*ENG	
3-517-007	Run Distance M	*ENG	[0 to 999999999 / **0** / 1 mm/step] OPC drum running distance after previous executing for toner input to the cleaning blade.
3-517-008	Run Distance Y	*ENG	

3520	**[ImgQtyAdj:Intval] DFU**		
3-520-001	During Job	*ENG	[0 to 100 / **1** / 1 page/step]
3-520-002	During Stand-by	*ENG	[0 to 100 / **5** / 1 min/step]

3521	**[Drum Stop Time]**		
	Displays the time of drum stopped.		
3-521-001	Year	*ENG	[0 to 99 / **-** / 1 year/step]
3-521-002	Month	*ENG	[1 to 12 / **-** / 1 month/step]
3-521-003	Day	*ENG	[1 to 31 / **-** / 1 day/step]
3-521-004	Hour	*ENG	[0 to 23 / **-** / 1 hour/step]
3-521-005	Minute	*ENG	[0 to 59 / **-** / 1 minute/step]

3522	**[Procon Environ]**		
3-522-001	Temperature	*ENG	[-1280 to 1270 / **0** / 0.1 deg/step]
	Displays latest temperature when process control is executed.		
3-522-002	Rel Humidity	*ENG	[0 to 1000 / **0** / 0.1 %RH/step]
	Displays latest relative humidity when process control is executed.		
3-522-003	Abs Humidity	*ENG	[0 to 1000 / **0** / 0.1 g/m^3/step]
	Displays latest absolute humidity when process control is executed.		

3523	**[Procon Time]**		
	Displays latest date and time when process control is executed.		
3-523-001	Year	*ENG	[0 to 99 / **0** / 1 year/step]
3-523-002	Month	*ENG	[0 to 12 / **1** / 1 month/step]
3-523-003	Day	*ENG	[0 to 31 / **1** / 1 day/step]
3-523-004	Hour	*ENG	[0 to 23 / **0** / 1 hour/step]
3-523-005	Minute	*ENG	[0 to 59 / **0** / 1 minute/step]

3524	**[Unit Change]**		
	Displays request to execute process control when unit is changed. 0: OFF, 1: ON		
3-524-001	Trans Belt	*ENG	[0 or 1 / **0** / 1 /step]
3-524-002	PCDU:K	*ENG	[0 or 1 / **0** / 1 /step]
3-524-003	PCDU:YMC	*ENG	[0 or 1 / **0** / 1 /step]

3529	**[Procon Interval]**		
3-529-006	Page Cnt:BW	*ENG	[0 to 5000 / **-** / 1 sheets/step]
	Displays the page counter since last process control has been executed.		
3-529-007	Page Cnt:FC	*ENG	[0 to 5000 / **-** / 1 sheets/step]
	Displays the page counter since last process control has been executed.		
3-529-011	CnsmRate_Upper	*ENG	[0 to 100 / **100** / 1 %/step]
	Controls process control execution when consumption rate is higher than upper limit.		
3-529-012	CnsmRate_Lower	*ENG	[100 to 0 / **0** / 1 %/step]
	Controls process control execution when consumption rate is lower than lower limit.		

3530	**[PowerON Procon] DFU**		
3-530-001	Non-use Time	*ENG	[0 to 5000 / **2880** / 1 minute/step]
3-530-002	Temperature Range	*ENG	[0 to 99 / 8 / **1** deg/step]
3-530-003	Relat Hum Range	*ENG	[0 to 99 / **50** / 1 %RH/step]
3-530-004	Absol Hum Range	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
3-530-005	Interval:BW	*ENG	[0 to 5000 / **0** / 1 sheets/step]
3-530-006	Interval:FC	*ENG	[0 to 5000 / **0** / 1 sheets/step]

3540	[BkThickLowSpdMode]		
3-540-001	-	*ENG	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON

3560	[TonerBondRemoval]		
3-560-001	Bond Removal Mode	*ENG	[0 to 4 / **0** / 1 /step] Bond Removal Mode 0 Bond Removal Mode 1 Bond Removal Mode 2 Bond Removal Mode 3 Bond Removal Mode 4
3-560-002	Rel Hum Threshold	*ENG	[0 to 100 / **0** / 1 %RH/step]
3-560-003	Temp Threshold	*ENG	[0 to 60 / **0** / 1 deg/step]

3600	[Select ProCon] DFU		
3-600-005	IBACC	*ENG	[0 or 1 / **1** / 1 /step]
3-600-006	Density Control	*ENG	[0 to 2 / **2** / 1 /step]
3-600-010	TMG Correct	*ENG	[0 or 1 / **1** / 1 /step]
3-600-011	Vs_off	*ENG	[0 or 1 / **1** / 1 /step]

3611	[Chrg DC Control]		
	Displays charging DC bias when printing.		
3-611-001	Std Speed: K	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-002	Std Speed: C	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-003	Std Speed: M	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-004	Std Speed: Y	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-021	Low Speed: K	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-022	Low Speed: C	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-023	Low Speed: M	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-024	Low Speed: Y	*ENG	[300 to 1350 / **1038** / 1 -V/step]
3-611-031	UpperLimit	*ENG	[900 to 1300 / **1300** / 1 -V/step]
	Displays upper limit of charging DC bias to set.		
3-611-032	LowerLimit	*ENG	[900 to 1300 / **900** / 1 -V/step]
	Displays lower limit of charging DC bias to set.		

3612	**[Dev DC Control] DFU**		
3-612-001	Std Speed: K	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-002	Std Speed: C	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-003	Std Speed: M	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-004	Std Speed: Y	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-021	Low Speed: K	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-022	Low Speed: C	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-023	Low Speed: M	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-024	Low Speed: Y	*ENG	[50 to 350 / **120** / 1 -V/step]
3-612-031	MUSIC Std: K	*ENG	[70 to 350 / **200** / 1 -V/step]
3-612-032	MUSIC Std: C	*ENG	[70 to 350 / **200** / 1 -V/step]
3-612-033	MUSIC Std: M	*ENG	[70 to 350 / **200** / 1 -V/step]
3-612-034	MUSIC Std: Y	*ENG	[70 to 350 / **200** / 1 -V/step]
3-612-120	Vb Limit	*ENG	[0 to 500 / **30** / 1 V/step]
3-612-201	Plus DC LL Dist1	ENG	[0 to 250 / **175** / 1 V/step]
3-612-202	Plus DC ML Dist1	ENG	[0 to 250 / **175** / 1 V/step]
3-612-203	Plus DC MM Dist1	ENG	[0 to 250 / **175** / 1 V/step]
3-612-204	Plus DC MH Dist1	ENG	[0 to 250 / **175** / 1 V/step]
3-612-205	Plus DC HH Dist1	ENG	[0 to 250 / **175** / 1 V/step]
3-612-206	Plus DC LL Dist2	ENG	[0 to 250 / **175** / 1 V/step]
3-612-207	Plus DC ML Dist2	ENG	[0 to 250 / **175** / 1 V/step]
3-612-208	Plus DC MM Dist2	ENG	[0 to 250 / **175** / 1 V/step]
3-612-209	Plus DC MH Dist2	ENG	[0 to 250 / **175** / 1 V/step]
3-612-210	Plus DC HH Dist2	ENG	[0 to 250 / **175** / 1 V/step]
3-612-211	Plus DC LL Dist3	ENG	[0 to 250 / **175** / 1 V/step]
3-612-212	Plus DC ML Dist3	ENG	[0 to 250 / **175** / 1 V/step]
3-612-213	Plus DC MM Dist3	ENG	[0 to 250 / **175** / 1 V/step]
3-612-214	Plus DC MH Dist3	ENG	[0 to 250 / **175** / 1 V/step]
3-612-215	Plus DC HH Dist3	ENG	[0 to 250 / **175** / 1 V/step]
3-612-216	Plus DC LL Dist4	ENG	[0 to 250 / **150** / 1 V/step]
3-612-217	Plus DC ML Dist4	ENG	[0 to 250 / **150** / 1 V/step]
3-612-218	Plus DC MM Dist4	ENG	[0 to 250 / **150** / 1 V/step]
3-612-219	Plus DC MH Dist4	ENG	[0 to 250 / **150** / 1 V/step]
3-612-220	Plus DC HH Dist4	ENG	[0 to 250 / **150** / 1 V/step]
3-612-221	Distance1	ENG	[0 to 250 / **3** / 1 x100m/step]
3-612-222	Distance2	ENG	[0 to 250 / **5** / 1 x100m/step]
3-612-223	Distance3	ENG	[0 to 250 / **10** / 1 x100m/step]

3613	[LED Strob Time Op]		
3-613-001	Std Speed:K	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Bk when printing.
3-613-002	Std Speed:C	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Cy when printing.
3-613-003	Std Speed:M	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ma when printing.
3-613-004	Std Speed:Y	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ye when printing.
3-613-021	Low Speed:K	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Bk when printing in low speed.
3-613-022	Low Speed:C	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Cy when printing in low speed.
3-613-023	Low Speed:M	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ma when printing in low speed.
3-613-024	Low Speed:Y	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ye when printing in low speed.
3-613-031	PPattern: K	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Bk when P pattern is drawn on the OPC drum.
3-613-032	PPattern: C	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Cy when P pattern is drawn on the OPC drum.
3-613-033	PPattern: M	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ma when P pattern is drawn on the OPC drum.
3-613-034	PPattern: Y	*ENG	[0 to 200 / **100** / 1 %/step] Displays exposure amount for Ye when P pattern is drawn on the OPC drum.
3-613-051	Music	*ENG	[0 to 200 / **100** / 1 %/step] Strobe time coefficient when MUSIC pattern is created. Indicating the correction percentage for the time set by SP3-613-001 to 004. Do not change this SP because there is possibility to fail MUSIC if the value is changed.

3614	[LED Energy]		
	Displays the upper setting limit and lower setting limit of LED energy.		
3-614-001	Upper Limit	*ENG	[0 to 1605 / **802** / 1 nJ/cm^2/step]
3-614-002	Lower Limit	*ENG	[0 to 1605 / **446** / 1 nJ/cm^2/step]

3615	[Supply DC :set]		
	Previous offsets of supply DC.		
3-615-001	Latest value_Bk	*ENG	[0 to 350 / **50** / 1 V/step]
3-615-002	Latest value C	*ENG	[0 to 350 / **20** / 1 V/step]
3-615-003	Latest value M	*ENG	[0 to 350 / **20** / 1 V/step]
3-615-004	Latest value Y	*ENG	[0 to 350 / **20** / 1 V/step]

3616	[Supply DC :set]		
	Offsets of supply DC.		
3-616-001	Offset Bk	*ENG	[0 to 350 / **50** / 1 V/step]
3-616-002	Offset C	*ENG	[0 to 350 / **20** / 1 V/step]
3-616-003	Offset M	*ENG	[0 to 350 / **20** / 1 V/step]
3-616-004	Offset Y	*ENG	[0 to 350 / **20** / 1 V/step]

3620	[TrgtAdhnsAmt:Set]		
3-620-001	Maximum:K	*ENG	[0.10 to 7.50 / **4.65** / 0.01 g/m^2/step]
	Sets solid adhesion amount for Bk.		
3-620-002	Maximum:C	*ENG	[0.10 to 7.50 / **4.63** / 0.01 g/m^2/step]
	Sets solid adhesion amount for Cy.		
3-620-003	Maximum:M	*ENG	[0.10 to 7.50 / **5.06** / 0.01 g/m^2/step]
	Sets solid adhesion amount for Ma.		
3-620-004	Maximum:Y	*ENG	[0.10 to 7.50 / **4.58** / 0.01 g/m^2/step]
	Sets solid adhesion amount for Ye.		
3-620-011	Halftone:K	*ENG	[0.10 to 5.00 / **1.70** / 0.01 g/m^2/step]
	Sets halftone adhesion amount for Bk.		
3-620-012	Halftone:C	*ENG	[0.10 to 5.00 / **1.70** / 0.01 g/m^2/step]
	Sets halftone adhesion amount for Cy.		
3-620-013	Halftone:M	*ENG	[0.10 to 5.00 / **1.90** / 0.01 g/m^2/step]
	Sets halftone adhesion amount for Ma.		
3-620-014	Halftone:Y	*ENG	[0.10 to 5.00 / **1.70** / 0.01 g/m^2/step]
	Sets halftone adhesion amount for Ye.		

3622	[Dev Pot :Set]		
	Displays development potential. Development potential is a potential difference between electrostatic latent image potential and development bias.		
3-622-001	K	*ENG	[0 to 800 / - / 1 V/step]
3-622-002	C	*ENG	[0 to 800 / - / 1 V/step]
3-622-003	M	*ENG	[0 to 800 / - / 1 V/step]
3-622-004	Y	*ENG	[0 to 800 / - / 1 V/step]

3628	[Ppattern:Set]		
	Displays difference between pattern scanning time when MUSIC is executed and standard time.		
3-628-001	OffsetTime K	*ENG	[-100 to 100 / - / 1 ms/step]
3-628-002	OffsetTime:C	*ENG	[-100 to 100 / - / 1 ms/step]
3-628-003	OffsetTime:M	*ENG	[-100 to 100 / - / 1 ms/step]
3-628-004	OffsetTime:Y	*ENG	[-100 to 100 / - / 1 ms/step]
3-628-005	OffsetTime:BW	*ENG	[-100 to 100 / - / 1 ms/step]

3630	[Dev gamma :Disp]		
	Displays latest development gamma.		
3-630-001	Current:K	*ENG	[0.10 to 6.00 / **1.00** / 0.01 g/m^2/-100V/step]
3-630-002	Current:C	*ENG	[0.10 to 6.00 / **1.00** / 0.01 g/m^2/-100V/step]
3-630-003	Current:M	*ENG	[0.10 to 6.00 / **1.00** / 0.01 g/m^2/-100V/step]
3-630-004	Current:Y	*ENG	[0.10 to 6.00 / **1.00** / 0.01 g/m^2/-100V/step]

3631	[Dev Start Vol Vk]		
	Displays latest development starting voltage.		
3-631-001	K	*ENG	[-900 to 300 / **0** / 1 -V/step]
3-631-002	C	*ENG	[-900 to 300 / **0** / 1 -V/step]
3-631-003	M	*ENG	[-900 to 300 / **0** / 1 -V/step]
3-631-004	Y	*ENG	[-900 to 300 / **0** / 1 -V/step]
3631	**[Dev Start Vol Vk]**		
	Displays the upper limit of latest development starting voltage.		
3-631-011	Upper:K	*ENG	[0 to 900 / **400** / 1 V/step]
3-631-012	Upper:C	*ENG	[0 to 900 / **400** / 1 V/step]
3-631-013	Upper:M	*ENG	[0 to 900 / **400** / 1 -V/step]
3-631-014	Upper:Y	*ENG	[0 to 900 / **400** / 1 -V/step]

3632	[Hlftn:Slope alpha]		
	Displays current halftone slope.		
3-632-001	Current:K	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/100V/step]
3-632-002	Current:C	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/100V/step]
3-632-003	Current:M	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/100V/step]
3-632-004	Current:Y	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/100V/step]
3-632-011	LED Current:K	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/-650ns/step]
3-632-012	LED Current:C	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/-650ns/step]
3-632-013	LED Current:M	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/-650ns/step]
3-632-014	LED Current:Y	*ENG	[-6.00 to 0.00 / **0.00** / 0.01 g/m^2/-650ns/step]

3633	[Hlftn:Intcpt beta]		
	Displays halftone intercept slope.		
3-633-001	Current:K	*ENG	[0.00 to 50.00 / **0.00** / 0.01 g/m^2/step]
3-633-002	Current:C	*ENG	[0.00 to 50.00 / **0.00** / 0.01 g/m^2/step]
3-633-003	Current:M	*ENG	[0.00 to 50.00 / **0.00** / 0.01 g/m^2/step]
3-633-004	Current:Y	*ENG	[0.00 to 50.00 / **0.00** / 0.01 g/m^2/step]
3-633-011	LED Current:K	*ENG	[-100.00 to 100.00 / **0.00** / 0.01 g/m^2/step]
3-633-012	LED Current:C	*ENG	[-100.00 to 100.00 / **0.00** / 0.01 g/m^2/step]
3-633-013	LED Current:M	*ENG	[-100.00 to 100.00 / **0.00** / 0.01 g/m^2/step]
3-633-014	LED Current:Y	*ENG	[-100.00 to 100.00 / **0.00** / 0.01 g/m^2/step]

3700	[New Unit Detect] DFU		
3-700-001	ON/OFF Setting	*ENG	[0 or 1 / **1** / 1 /step]

3800	**[TN Collec. Bottle]**		
3-800-001	Full Record	*ENG	[0 to 2 / **0** / 1 /step]
	History of tonner collection bottle status. 0: Empty “Toner correction near full detection sensor is not ON.” 1: Near Full “Toner correction near full detection sensor is ON.” 2: Full “After “1” was detected, toner correction became full.”		
3-800-002	After NF:M/A	*ENG	[0 to 1000000000 / **0** / 1 µg/step] **DFU**
3-800-004	Mt_full	*ENG	[0 to 1000000 / **26950** / 1 mg/step] **DFU**
3-800-005	Mt_near_full	*ENG	[0 to 1000000 / **10914** / 1 mg/step] **DFU**
3-800-009	MC	*ENG	[0 to 1000000000 / **0** / 1 µg/step] **DFU**
3-800-010	T2	*ENG	[0 to 100 / **92** / 1 %/step] **DFU**
3-800-011	T3	*ENG	[0 to 100 / **15** / 1 %/step] **DFU**
3-800-012	T4	*ENG	[0 to 100 / **15** / 1 %/step] **DFU**
3-800-013	Change Chk:M/A	*ENG	[0 to 1000000000 / **0** / 1 µg/step] **DFU**
3-800-014	M_rap_full	*ENG	[0 to 100 / **0** / 1 times/step] **DFU**
3-800-015	Mt_new	*ENG	[0 to 1000000 / **70000** / 1 mg/step] **DFU**
3-800-016	Rapid Full Thresh	*ENG	[0 to 100 / **0** / 1 times/step] **DFU**
3-800-017	Days bfr End	*ENG	[0 to 2 / **1** / 1 /step] **DFU**

3.4 ENGINE SP TABLES-4

3.4.1 SP4-XXX (SCANNER)

There are no Group 4 SP modes for this machine.

3.5 ENGINE SP TABLES-5

3.5.1 SP5-XXX (MODE)

5110	**[PowerON LowPower]**		
5-110-001	Non-use Time	*ENG	[1 to 60 / **12** / 1 minute/step]
	Threshold whether or not to set BW text mode when the printer is turned on. Bk text mode is to print Bk only and when printing a predetermined ratio. It suppresses the TEC when BW text mode is on.		

5131	**[Paper Size Type] DFU**		
5-131-001	-	*ENG	[0 to 2 / ***** / 1/step]
	*0: JP 1: NA 2: EU, CHN, TW Sets paper size type.		

5801	**[Memory Clear]**		
5-801-002	Engine	ENG	[- / **-** / -] [Execute]
	Clears the engine settings.		

5803	**[INPUT CHECK]**
	See "***Input Check Table***"

5804	**[OUTPUT CHECK]**
	See "***Output Check Table***"

5806	**[ID Chip]**		
5-806-100	Error Log	*ENG	[0 to 0xFFFFFFFF / **0** / 1 /step]
	bit	**Error Descriptions**	
	0 to 3	BUS OPEN Channel Error	
	4 to 7	I^2C BUS READ Channel Error	
	8 to 11	I^2C BUS READ Device Error or Communication interruption	
	12 to 15	I^2C BUS READ Verifying Error	
	16 to 20	I^2C BUS WRITE Channel Error	
	21 to 25	I^2C BUS WRITE Device Error or Communication interruption	
	26 to 30	I^2C BUS WRITE Verifying Error	
5-806-101	Error Log 2	*ENG	[0 to 0xFFFFFFFF / **0** / 1 /step]
	bit	**Error Descriptions**	

	0 to 3	BUS OPEN Timeout Error
	4 to 7	BUS READ Timeout Error
	8 to 11	BUS WRITE Timeout Error
	12 to 15	Boot Verifying Error
	16 to 30	Reserved

5810	**[Fusing SC Clear]**		
5-810-001	Clear	ENG	[- / **-** / -] [Excute]
	Clears the error when the fusing SC occurred.		

5811	**[MachineSerial]**		
5-811-002	Display:Serial	*ENG	[0 to 255 / **0** / 1/step]
5-811-004	Set:BICU	*ENG	[0 to 255 / **0** / 1/step] **DFU**
5-811-021	Latest Update	*ENG	[0 or 1 / **0** / 1/step]
5-811-022	Previous Update	*ENG	[0 or 1 / **0** / 1/step]
5-811-023	Previous	*ENG	[0 to 255 / 0 / 1/step]
5-811-024	Latest Update: BCU	*ENG	[0 or 1 / **0** / 1/step]
5-811-025	Prev. Update: BCU	*ENG	[0 or 1 / **0** / 1/step]
5-811-026	Previous: BCU	*ENG	[0 to 255 / 0 / 1/step]

5900	**[Engine Log Upload]**		
5-900-001	Pattern	*ENG	[0 to 4 / **0** / 1 /step] Specifies the target module group for the engine log uploading.
5-900-002	Trigger	*ENG	[0 to 3 / **0** / 1 /step] Specifies the target trigger group for the engine log uploading.

5902	**[AdjustControl]**		
5-902-001	B/W Priority Mode	*ENG	[0 or 1 / **0** / 1 /step]
	Turn on or off the monochrome printing priority mode. This SP can reduce color toner in the BW printing mode if this SP is set to "1: ON". 0: OFF (default), 1: ON		

5903	**[Test Print]**			
5-903-001	Feed Tray		ENG	[0 to 4 / **0** / 1/step]
	Sets the feed tray to print test printing executed by SP5-903-009.			
	0	Bypass	3	Tray3

	1	Tray1	4	Tray4
	2	Tray2	-	-
5-903-002	Duplex Setting	ENG	[0 or 1 / **0** / 1/step] 0: Single 1: Duplex	
	Sets the duplex / single-sided setting to print test printing executed by SP5-903-009.			
5-903-003	Paper Size	ENG	[0 to 3 / **0** / 1/step] 0: LGT 1: A4T 2: B5T 3: A5T	
	Sets the paper size to print test printing executed by SP5-903-009.			
5-903-004	Color Mode	ENG	[0 to 6 / **0** / 1/step]	
	Sets the color mode to print test printing executed by SP5-903-009. Red (Magenta + Yellow) Blue (Cyan + Magenta) Green (Yellow + Cyan)			
	0	BK	4	Red
	1	Cyan	5	Blue
	2	Magenta	6	Green
	3	Yellow	-	-
5-903-005	Test Pattern	ENG	[0 to 14 / **0** / 1/step]	
	Sets the test pattern to print test printing executed by SP5-903-009.			
	0	None	8	SGrid
	1	V 1Line	9	20mm SGrid
	2	H 1Line	10	1by1
	3	V 2Line	11	2by2
	4	H 2Line	12	4by4
	5	V Grid	13	Full Dot
	6	H Grid	14	Belt
	7	20mm Grid	-	-
5-903-006	Paper Kind	ENG	[0 to 2 / **0** / 1/step]	
	Sets the paper weight and paper type to print test printing executed by SP5-903-009.			
	0	Plain Paper	Normal Speed (144mm/s)	
	1	Thick1	Mid Speed (90mm/s)	
	2	Thick2	Low Speed (60mm/s)	
5-903-007	Print Page	ENG	[0 to 255 / **1** / 1/step]	
	Sets the print page to print test printing executed by SP5-903-009.			

	If this SP is set to “0”, it prints unlimited number of copies. To exit the test printing, open the cover of the machine.		
5-903-008	Freerun Setting	ENG	[0 or 1 / **0** / 1/step] 0: Normal 1: FreeRun
	Sets the free-run on / off to print test printing executed by SP5-903-009. If this SP is set to “on”, it creates test pattern image on the image transfer belt but doesn’t print on the paper. It doesn’t control paper feeding clutch but it still detects paper remaining, so paper must be set to the tray.		
5-903-009	Print Start	ENG	[- / **-** / -] [Execute]
	Executes the test print with parameter set by SP5-903-001 to 008.		

5930	**[Meter Click Ch.]**		
5-930-001	Meter Click Ch.	*ENG	Enables or disables the Meter Charge mode. When enabling the Meter Charge mode, the “Counter” menu is added to the user menu. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
5-930-010	PCDU	*ENG	[0 or 1 / **0** / 1/step]
	• 0: OFF (End notification on) • 1: ON (End notification off) Displays or does not display the Supply End Option. This SP is activated only when the SP5930-001 is "1 (ON)".		
5-930-014	Trans Unit	*ENG	[0 or 1 / **1** / 1/step]
	• 0: OFF (End notification on) • 1: ON (End notification off) Displays or does not display the Supply End Option. This SP is activated only when the SP5930-001 is "1 (ON)".		
5-930-016	Fusing Unit	*ENG	[0 or 1 / **1** / 1/step]
	• 0: OFF (End notification on) • 1: ON (End notification off) Displays or does not display the Supply End Option. This SP is activated only when the SP5930-001 is "1 (ON)".		

5988	**[ID Setting]**		
5-988-001	Maintenance ID	*ENG	[0 to 255 / **0** / 1/step]
5-988-002	Brand ID	*ENG	[0 to 255 / **0** / 1/step]

			DFU

5997	**[PSC] DFU**		
5-997-001	COMMAND	ENG	[0 to 3 / **2** / 1/step]
5-997-002	DOMAIN_IF	ENG	[0 to 3 / **0** / 1/step]
5-997-003	RAPI	ENG	
5-997-004	PRINT	ENG	
5-997-005	ENGINE	ENG	
5-997-006	THREAD	ENG	
5-997-007	THREAD_OBJ	ENG	
5-997-008	STS_TREE	ENG	[0 to 3 / **0** / 1/step]
5-997-009	TREE_INIT	ENG	
5-997-010	EVENT	ENG	
5-997-011	SP	ENG	
5-997-012	OTHER	ENG	
5-997-013	MEMORY	ENG	

5998	**[Fusing Cont mode] DFU**		
5-998-001	fast/silent	*ENG	[0 or 1 / **0** / 1/step]
	Fusing behavior when silent start-up. • 0: Silent • 1: Fast		

3.6 ENGINE SP TABLES-6

3.6.1 SP6-XXX (PERIPHERALS)

There are no Group 6 SP modes for this machine.

3.7 ENGINE SP TABLES-7

3.7.1 SP7-XXX (DATA LOG)

7801	[ROM Info]		
	Displays ROM numbers in the machine.		
7-801-002	ROM No.	ENG	[- / - / -]
7-801-102	Firmware Version	ENG	[- / - / -]

7803	[PM Counter]		
	Displays the PM counter for each unit.		
7-803-002	Page: PDCU: Bk	*ENG	Displays the number of pages printed. [0 to 999999 / **0** / 1 page/step]
7-803-003	Page: PDCU: C	*ENG	
7-803-004	Page: PDCU: M	*ENG	
7-803-005	Page: PDCU: Y	*ENG	
7-803-014	Page: ITB Unit	*ENG	
7-803-016	Page: Fusing Unit	*ENG	
7-803-019	Page: PTR Unit	*ENG	
7-803-031	Dist: PDCU: Bk	*ENG	Displays the rotation distance. [0 to 999999999 / **0** / 1 mm/step] From the firmware versions mentioned below, it is possible to enter the PCDU distances on the SP Mode Data Logging Sheet for each color. Do this in cases where a new PCDU is defective and you need to re-install an old PCDU. It is necessary to input these distances so that the machine
7-803-032	Dist: PDCU: C	*ENG	
7-	Dist:	*ENG	

803-033	PDCU: M		applies the correct bias control to the used PCDU. (The machine applies a different bias control when it detects a brand new unit).
7-803-034	Dist: PDCU: Y	*ENG	Use the following firmware versions and SP modes: Firmware: Engine 1.60:16 or later and System 1.08 or later, used in combination
7-803-043	Dist: ITB Unit	*ENG	Displays the rotation distance. [0 to 999999999 / **0** / 1 mm/step]
7-803-044	Dist: ITBUnit: FC	*ENG	Displays the rotation distance. Counts rotation distance when full color printing and the PCDU of YMC is touching the image transfer belt unit. It is used to count only, not to control. [0 to 999999999 / **0** / 1 mm/step]
7-803-045	Dist: Fusing Unit	*ENG	Displays the rotation distance. [0 to 999999999 / **0** / 1 mm/step]
7-803-048	Dist: PTR	*ENG	
7-803-110	Pass Dist: PTR	*ENG	Distance is used to determine lifecycle, and pass distance is used to control image stabilization. PTR distance is used to determine lifecycle, and PTR pass distance is used to control image stabilization. Fusing distance is used to determine lifecycle, and fusing pass distance is NOT used to control image stabilization, only used to count. [0 to 999999999 / **0** / 1 mm/step]
7-803-112	Pass Dist: Fusing	*ENG	

7804	**[PM Counter.Reset]**		
	Clears the PM counter. Press the Enter key after the machine asks “Execute?”, which will store the PM counter value in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to “0”.		
7-804-002	PCU: Bk	ENG	Clears the unit counter for each unit. [- / **-** / -]
7-804-003	PCU: C	ENG	[Execute]
7-804-004	PCU: M	ENG	

7-804-005	PCU: Y	ENG	
7-804-017	ITB Unit	ENG	
7-804-019	Fusing Unit	ENG	
7-804-022	PTR Unit	ENG	
7-804-030	Consump	ENG	**DFU** *Executing this SP does not work after mass production. [- / - / -] [Execute]
7-804-050	Life:PCU: Bk	ENG	Clears the unit counter for each unit. [- / - / -] [Execute]
7-804-051	Life:PCU: C	ENG	
7-804-052	Life:PCU: M	ENG	
7-804-053	Life:PCU: Y	ENG	
7-804-060	Life:ITB Unit	ENG	
7-804-061	Life:PTR Unit	ENG	
7-804-070	Life:Fusing Unit	ENG	
7-804-100	All	ENG	Clears the unit counter for all units. **DFU** *This SP is used to clear the counter before shipment from the factory. It is recommended not to use this SP in the market. [- / - / -] [Execute]

7850	**[MachineCounter]**		
	Parameter to calculate ID log saving data.		
7-850-001	Total Counter	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Total sheets printed by this machine. A3 counts as 1 sheet.		
7-850-002	Total Counter FC	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Total number of sheets printed in full color by this machine. A3 counts as 1 sheet.		
7-850-003	Duplex	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Total number of sheets printed in duplex mode. A3 counts as 1 sheet.		
7-850-004	Size:DL/A3	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that DL / A3 have been through the machine. (%)		
7-850-005	Size:LT/A4	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that LT / A4 have been through the machine. (%)		
7-850-006	Pkind:Normal	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that plain paper has been through the machine. (%)		
7-850-007	Pkind:Recycle	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that recycle paper has been through the machine. (%)		
7-850-008	Pkind:MidThick	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that mid-thick paper has been through the machine. (%)		
7-850-009	Pkind:Glossy	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that glossy paper has been through the machine. (%)		
7-850-010	Pkind:Post	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that postcards have been through the machine. (%)		
7-850-011	Feed:Tray1	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed by tray 1. (%)		
7-850-012	Feed:Tray2	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed by tray 2. (%)		
7-850-013	Feed:Tray3	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed by tray 3. (%)		
7-850-014	Feed:Tray4	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed by tray 4. (%)		
7-850-015	Env:HH	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed in HH environment defined by SP2302-001. (%)		
7-850-016	Env:HL	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed in HL environment defined by		

	SP2302-001. (%)		
7-850-017	Env:LH	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed in LH environment defined by SP2302-001. (%)		
7-850-018	Env:LL	*ENG	[0 to 0xFFFFFFFF / **0** / 1page/step]
	Displays ratio of total counter that are printed in LL environment defined by SP2302-001. (%)		
7-850-019	Coverage:Bk	*ENG	Calculate dot coverage as A4 conversion for each colors and counted cumulative value. [0 to 0xFFFFFFFF / **0** / 1page/step]
7-850-020	Coverage:C	*ENG	
7-850-021	Coverage:M	*ENG	
7-850-022	Coverage:Y	*ENG	

7853	**[Replacement Cnt]**		
7-853-001	PCDU: Bk	*ENG	Displays the replacement counter. [0 to 999 / **-** / 1time/step]
7-853-002	PCDU: C	*ENG	
7-853-003	PCDU: M	*ENG	
7-853-004	PCDU: Y	*ENG	
7-853-009	Cartridge: Bk	*ENG	Displays the replacement counter. [0 to 999 / **-** / 1time/step]
7-853-010	Cartridge: C	*ENG	
7-853-011	Cartridge: M	*ENG	
7-853-012	Cartridge: Y	*ENG	
7-853-013	ITB Unit	*ENG	Displays the replacement counter. [0 to 999 / **-** / 1time/step]
7-853-015	Fusing Unit	*ENG	
7-853-018	PTR Unit	*ENG	

7854	**[CCW Rotate Cnt]**		
7-854-001	ITB Unit	*ENG	Displays the number of reverse rotation image transfer belt to clean paper dust. [0 to 9999 / **-** / 1time/step]

7905	**[Life Counter]**		
7-905-001	Page: PCDU: Bk	*ENG	Displays the number of pages printed to make a life decision. [0 to 999999 / **-** / 1 page/step]
7-905-	Page: PCDU: C	*ENG	

002			
7-905-003	Page: PCDU: M	*ENG	
7-905-004	Page: PCDU: Y	*ENG	
7-905-013	Page: ITB Unit	*ENG	
7-905-015	Page: Fusing Unit	*ENG	
7-905-018	Page: PTR Unit	*ENG	
7-905-031	Dist: PCDU: Bk	*ENG	Displays the rotation distance to make a life decision. [0 to 999999999 / **-** / 1 mm/step]
7-905-032	Dist: PCDU: C	*ENG	
7-905-033	Dist: PCDU: M	*ENG	
7-905-034	Dist: PCDU: Y	*ENG	
7-905-043	Dist: ITB Unit	*ENG	
7-905-045	Dist: Fusing Unit	*ENG	
7-905-048	Dist: PTR	*ENG	
7-905-061	Dist(%): PCDU:Bk	ENG	Displays the threshold of rotation distance to make a life decision. [0.0 to 250.0 / **0.0** / 0.1%/step] 0: New 100: reached life end It counts up to 250% and stays until new unit is installed.
7-905-062	Dist(%): PCDU:C	ENG	
7-905-063	Dist(%): PCDU:M	ENG	
7-905-064	Dist(%): PCDU:Y	ENG	
7-905-073	Dist(%): ITB Unit	ENG	
7-905-075	Dist(%): Fusing	ENG	
7-905-078	Dist(%): PTR	ENG	

7-905-091	Page(%): PCDU: Bk	ENG	Displays the threshold of page count to make a life decision. [0.0 to 250.0 / **0.0** / 0.1%/step] 0: New 100: reached life end It counts up to 250% and stays until new unit is installed.
7-905-092	Page(%): PCDU: C	ENG	
7-905-093	Page(%): PCDU: M	ENG	
7-905-094	Page(%): PCDU: Y	ENG	
7-905-103	Page(%): ITB Unit	ENG	
7-905-105	Page(%): Fuser	ENG	
7-905-108	Page(%): PTR Unit	ENG	

7906	**[Prev. Counter]** Previous Unit Counter Display		
	Copies the life counter to this sp as a previous counter when the life counter is cleared.		
7-906-001	Page: PCDU: Bk	*ENG	Displays the number of pages printed with the previous unit counter. [0 to 999999 / **-** / 1 page/step]
7-906-002	Page: PCDU: C	*ENG	
7-906-003	Page: PCDU: M	*ENG	
7-906-004	Page: PCDU: Y	*ENG	
7-906-013	Page: ITB Unit	*ENG	
7-906-015	Page: Fusing Unit	*ENG	
7-906-018	Page: PTR Unit	*ENG	
7-906-031	Dist: PCDU: Bk	*ENG	Displays the rotation distance with the previous unit counter. [0 to 999999999 / **-** / 1 mm/step]
7-906-032	Dist: PCDU: C	*ENG	
7-906-033	Dist: PCDU: M	*ENG	
7-906-	Dist: PCDU: Y	*ENG	

034			
7-906-043	Dist: ITB Unit	*ENG	
7-906-045	Dist: Fusing Unit	*ENG	
7-906-048	Dist: PTR	*ENG	

7907	**[Life(%) Counter]**		
7-907-001	PCDU: Bk	ENG	[0.0 to 250.0 / **0.0** / 0.1%/step]
7-907-002	PCDU: C	ENG	
7-907-003	PCDU: M	ENG	
7-907-004	PCDU: Y	ENG	
7-907-005	PDCU: FC	ENG	
7-907-013	ITB Unit	ENG	
7-907-014	ITB&PTR Unit	ENG	
7-907-015	Fusing Unit	ENG	
7-907-018	PTR Unit	ENG	
7-907-101	P Stop Dist(%): Bk	ENG	
7-907-102	P Stop Dist(%): C	ENG	
7-907-103	P Stop Dist(%): M	ENG	
7-907-104	P Stop Dist(%): Y	ENG	

7931	**[Toner Bottle Bk]**		
7-931-001	Machine Serial ID	*ENG	Displays the information number for each category.
7-931-002	Cartridge Ver	*ENG	
7-931-003	Brand ID	*ENG	
7-931-004	Area ID	*ENG	
7-931-005	Product Type ID	*ENG	
7-931-006	Color ID	*ENG	
7-931-007	Maintenance ID	*ENG	
7-931-008	New Info	*ENG	
7-931-009	Recycle Counter	*ENG	Displays the recycle counter. [0 to 255 / **-** / 1/step]
7-931-010	Date	*ENG	Displays the date of manufacturing ID.
7-931-011	Serial No.	*ENG	Displays the serial number.
7-931-012	Toner Remaining	*ENG	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]

7-931-013	EDP Code	*ENG	Displays the EDP code.
7-931-014	End History	*ENG	Displays the toner end status.
7-931-015	Refill Info	*ENG	Displays the refill information [0 to 99 / **-** / 1 /step]
7-931-016	Set: Total Cnt	*ENG	Displays the total counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-931-017	Set: Color Cnt	*ENG	Displays the total color counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-931-018	End: Total Cnt	*ENG	Displays the total counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-931-019	End: Color Cnt	*ENG	Displays the color counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-931-020	Set Date	*ENG	Displays the installation date.
7-931-021	End Date	*ENG	Displays the toner end date.

7932	**[Toner Bottle C]**		
7-932-001	Machine Serial ID	*ENG	Displays the information number for each category.
7-932-002	Cartridge Ver	*ENG	
7-932-003	Brand ID	*ENG	
7-932-004	Area ID	*ENG	
7-932-005	Product Type ID	*ENG	
7-932-006	Color ID	*ENG	
7-932-007	Maintenance ID	*ENG	
7-932-008	New Info	*ENG	
7-932-009	Recycle Counter	*ENG	Displays the recycle counter. [0 to 255 / **-** / 1/step]
7-932-010	Date	*ENG	Displays the date of manufacturing ID.
7-932-011	Serial No.	*ENG	Displays the serial number.
7-932-012	Toner Remaining	*ENG	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]
7-932-013	EDP Code	*ENG	Displays the EDP code.
7-932-014	End History	*ENG	Displays the toner end status.
7-932-015	Refill Info	*ENG	Displays the refill information [0 to 99 / **-** / 1 /step]
7-932-016	Set: Total Cnt	*ENG	Displays the total counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-932-017	Set: Color Cnt	*ENG	Displays the total color counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]

7-932-018	End: Total Cnt	*ENG	Displays the total counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-932-019	End: Color Cnt	*ENG	Displays the color counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-932-020	Set Date	*ENG	Displays the installation date.
7-932-021	End Date	*ENG	Displays the toner end date.

7933	**[Toner Bottle M]**		
7-933-001	Machine Serial ID	*ENG	Displays the information number for each category.
7-933-002	Cartridge Ver	*ENG	
7-933-003	Brand ID	*ENG	
7-933-004	Area ID	*ENG	
7-933-005	Product Type ID	*ENG	
7-933-006	Color ID	*ENG	
7-933-007	Maintenance ID	*ENG	
7-933-008	New Info	*ENG	
7-933-009	Recycle Counter	*ENG	Displays the recycle counter. [0 to 255 / **-** / 1/step]
7-933-010	Date	*ENG	Displays the date of manufacturing ID.
7-933-011	Serial No.	*ENG	Displays the serial number.
7-933-012	Toner Remaining	*ENG	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]
7-933-013	EDP Code	*ENG	Displays the EDP code.
7-933-014	End History	*ENG	Displays the toner end status.
7-933-015	Refill Info	*ENG	Displays the refill information [0 to 99 / **-** / 1 /step]
7-933-016	Set: Total Cnt	*ENG	Displays the total counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-933-017	Set: Color Cnt	*ENG	Displays the total color counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-933-018	End: Total Cnt	*ENG	Displays the total counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-933-019	End: Color Cnt	*ENG	Displays the color counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-933-020	Set Date	*ENG	Displays the installation date.
7-933-021	End Date	*ENG	Displays the toner end date.

7934	[Toner Bottle Y]		
7-934-001	Machine Serial ID	*ENG	Displays the information number for each category.
7-934-002	Cartridge Ver	*ENG	
7-934-003	Brand ID	*ENG	
7-934-004	Area ID	*ENG	
7-934-005	Product ID	*ENG	
7-934-006	Color ID	*ENG	
7-934-007	Maintenance ID	*ENG	
7-934-008	New Info	*ENG	
7-934-009	Recycle Counter	*ENG	Displays the recycle counter. [0 to 255 / **-** / 1/step]
7-934-010	Date	*ENG	Displays the date of manufacturing ID.
7-934-011	Serial No.	*ENG	Displays the serial number.
7-934-012	Toner Remaining	*ENG	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]
7-934-013	EDP Code	*ENG	Displays the EDP code.
7-934-014	End History	*ENG	Displays the toner end status.
7-934-015	Refill Info	*ENG	Displays the refill information [0 to 99 / **-** / 1 /step]
7-934-016	Set: Total Cnt	*ENG	Displays the total counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-934-017	Set: Color Cnt	*ENG	Displays the total color counter from the installation. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-934-018	End: Total Cnt	*ENG	Displays the total counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-934-019	End: Color Cnt	*ENG	Displays the color counter at the toner end. [0 to 0xFFFFFFFF / **-** / 1 sheet/step]
7-934-020	Set Date	*ENG	Displays the installation date.
7-934-021	End Date	*ENG	Displays the toner end date.

7935	[Toner Log: Bk]		
	Displays the toner bottle information log for Bk		
7-935-001	Log1:SerialNo.	*ENG	[0 to 255 / **-** / 1/step]
7-935-002	Log1:Set Date	*ENG	[0 to 255 / **-** / 1/step]
7-935-003	Log1:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / **-** / 1/step]
7-935-004	Log1:Refill Info	*ENG	[0 to 99 / **-** / 1/step]
7-935-005	Log2:SerialNo.	*ENG	[0 to 255 / **-** / 1/step]

7-935-006	Log2:Set Date	*ENG	[0 to 255 / - / 1/step]
7-935-007	Log2:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-935-008	Log2:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-935-009	Log3:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-935-010	Log3:Set Date	*ENG	[0 to 255 / - / 1/step]
7-935-011	Log3:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-935-012	Log3:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-935-013	Log4:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-935-014	Log4:Set Date	*ENG	[0 to 255 / - / 1/step]
7-935-015	Log4:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-935-016	Log4:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-935-017	Log5:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-935-018	Log5:Set Date	*ENG	[0 to 255 / - / 1/step]
7-935-019	Log5:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-935-020	Log5:Refill Info	*ENG	[0 to 99 / - / 1/step]

7936	**[Toner Log: C]**		
	Displays the toner bottle information log for Cy		
7-936-001	Log1:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-936-002	Log1:Set Date	*ENG	[0 to 255 / - / 1/step]
7-936-003	Log1:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-936-004	Log1:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-936-005	Log2:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-936-006	Log2:Set Date	*ENG	[0 to 255 / - / 1/step]
7-936-007	Log2:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-936-008	Log2:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-936-009	Log3:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-936-010	Log3:Set Date	*ENG	[0 to 255 / - / 1/step]
7-936-011	Log3:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-936-012	Log3:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-936-013	Log4:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-936-014	Log4:Set Date	*ENG	[0 to 255 / - / 1/step]
7-936-015	Log4:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-936-016	Log4:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-936-017	Log5:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-936-018	Log5:Set Date	*ENG	[0 to 255 / - / 1/step]
7-936-019	Log5:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-936-020	Log5:Refill Info	*ENG	[0 to 99 / - / 1/step]

7937	[Toner Log: M]		
	Displays the toner bottle information log for Ma		
7-937-001	Log1:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-937-002	Log1:Set Date	*ENG	[0 to 255 / - / 1/step]
7-937-003	Log1:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-937-004	Log1:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-937-005	Log2:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-937-006	Log2:Set Date	*ENG	[0 to 255 / - / 1/step]
7-937-007	Log2:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-937-008	Log2:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-937-009	Log3:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-937-010	Log3:Set Date	*ENG	[0 to 255 / - / 1/step]
7-937-011	Log3:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-937-012	Log3:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-937-013	Log4:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-937-014	Log4:Set Date	*ENG	[0 to 255 / - / 1/step]
7-937-015	Log4:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-937-016	Log4:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-937-017	Log5:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-937-018	Log5:Set Date	*ENG	[0 to 255 / - / 1/step]
7-937-019	Log5:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-937-020	Log5:Refill Info	*ENG	[0 to 99 / - / 1/step]

7938	[Toner Log: Y]		
	Displays the toner bottle information log for Ye		
7-938-001	Log1:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-938-002	Log1:Set Date	*ENG	[0 to 255 / - / 1/step]
7-938-003	Log1:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-938-004	Log1:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-938-005	Log2:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-938-006	Log2:Set Date	*ENG	[0 to 255 / - / 1/step]
7-938-007	Log2:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-938-008	Log2:Refill Info	*ENG	[0 to 99 / - / 1/step]
7-938-009	Log3:SerialNo.	*ENG	[0 to 255 / - / 1/step]
7-938-010	Log3:Set Date	*ENG	[0 to 255 / - / 1/step]
7-938-011	Log3:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / - / 1/step]
7-938-012	Log3:Refill Info	*ENG	[0 to 99 / - / 1/step]

7-938-013	Log4:SerialNo.	*ENG	[0 to 255 / **-** / 1/step]
7-938-014	Log4:Set Date	*ENG	[0 to 255 / **-** / 1/step]
7-938-015	Log4:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / **-** / 1/step]
7-938-016	Log4:Refill Info	*ENG	[0 to 99 / **-** / 1/step]
7-938-017	Log5:SerialNo.	*ENG	[0 to 255 / **-** / 1/step]
7-938-018	Log5:Set Date	*ENG	[0 to 255 / **-** / 1/step]
7-938-019	Log5:Set:TotalCnt	*ENG	[0 to 0xFFFFFFFF / **-** / 1/step]
7-938-020	Log5:Refill Info	*ENG	[0 to 99 / **-** / 1/step]

7952	**[PM Yield Setting]**		
7-952-021	Days Thres:PCDU: K	*ENG	Sets the near end timing for Bk. Recommend to set by UP. [0 to 2 / **1** / 1/step] 0: Notify Sooner 1: Normal 2: Notify Later
7-952-022	Days Thres:PCDU: FC	*ENG	Sets the near end timing for color. Recommend to set by UP. [0 to 2 / **1** / 1/step] 0: Notify Sooner 1: Normal 2: Notify Later
7-952-033	Days Thres:Trans	*ENG	Sets the near end timing for the image transfer unit. Recommend to set by UP. [0 to 2 / **1** / 1/step] 0: Notify Sooner 1: Normal 2: Notify Later
7-952-035	Days Thres:Fuser	*ENG	Sets the near end timing for the fusing unit. Recommend to set by UP. [0 to 2 / **1** / 1/step] 0: Notify Sooner 1: Normal 2: Notify Later
7-952-071	Day Rate:Trans	*ENG	[0.1 to 25.5 / **0.1** / 0.1 %/step] **DFU**
7-952-073	Day Rate:Fuser	*ENG	[0.1 to 25.5 / **0.1** / 0.1 %/step] **DFU**

7-952-076	Day Rate:PTR	*ENG	[0.1 to 25.5 / **0.1** / 0.1 %/step] **DFU**

3.8 INPUT AND OUTPUT CHECK

3.8.1 INPUT CHECK TABLE

5803	**[INPUT CHECK]**		
5-803-001	PSIZE&TRYSET	ENG	[0 to 15 / **0** / 1/step] 0: A4 SEF 1: LT SEF 2: A5 SEF 3: Custom 4: A6 SEF 5: HLT SEF 6: LG SEF 7: Tray not set 8 to 15: Not used
5-803-004	PAPEND_SNS	ENG	[0 or 1 / **0** / 1/step] Displays the status of the by-pass paper end sensor. 0: paper end 1: paper remaining
5-803-005	HANDBP_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Base plate goes down 1: Base plate goes up
5-803-006	HAND_SNS	ENG	[0 or 1 / **0** / 1/step] 0: No paper detected 1: Paper detected
5-803-008	PAPOUT_SNS	ENG	
5-803-009	PEFUL_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Paper not full 1: Paper full
5-803-010	PAPERON_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Paper detected 1: No paper detected
5-803-013	DUP_SNS	ENG	
5-803-015	REG_SNS	ENG	
5-803-018	TE_SNS_K	ENG	[0 or 1 / **0** / 1/step] 0: Toner remaining 1: Toner end
5-803-019	TE_SNS_C	ENG	

5-803-020	TE_SNS_M	ENG	
5-803-021	TE_SNS_Y	ENG	
5-803-024	INTERLOCK_+24VS1	ENG	[0 or 1 / **0** / 1/step] 0: +24VS1 On 1: +24VS1 Off
5-803-025	INTERLOCK_+24VS2	ENG	[0 or 1 / **0** / 1/step] 0: +24VS2 On 1: +24VS2 Off
5-803-026	+5V_LED	ENG	[0 or 1 / **0** / 1/step] 0: +5VS On 1: +5VS Off
5-803-032	TONERBTLSET_SNS	ENG	[0 or 1 / **0** / 1/step] Displays the status of the waste toner bottle set sensor. 0: Set 1: Not set
5-803-033	TONERFUL_SNS	ENG	[0 or 1 / **0** / 1/step] Displays the status of the waste toner overflow sensor. 0: Not full 1: Full
5-803-034	MIDNEW_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Used 1: New
5-803-035	MINFAN_LOCK	ENG	[0 or 1 / **0** / 1/step] 0: Normal 1: Error
5-803-036	FUFAN_LOCK	ENG	[0 or 1 / **0** / 1/step] 0: Normal 1: Error
5-803-037	PSUFAN_LOCK	ENG	[0 or 1 / **0** / 1/step] 0: Normal 1: Error
5-803-048	MID_TCSP_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Abutting 1: Spaced
5-803-	BWMT_LOCK	ENG	[0 or 1 / **0** / 1/step]

050			0: Normal 1: Error
5-803-051	FUMT_LOCK	ENG	
5-803-052	COLMT_LOCK	ENG	
5-803-053	MIDMT_LOCK	ENG	
5-803-055	HVP_ERR_1	ENG	[0 or 1 / **0** / 1/step] Indicates the state of the error signal from high voltage output of charging and development. If the error is detected, it returns SC490-00. 0: Error 1: Normal
5-803-056	HVP_ERR_2	ENG	[0 or 1 / **0** / 1/step] Indicates the state of the error signal from high voltage output of 1st and 2nd transfer. If the error is detected, it returns SC490-01. 0: Abutting 1: Spaced
5-803-058	FUNEW_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Used 1: New
5-803-060	FUSET_SNS	ENG	[0 or 1 / **0** / 1/step] 0: Set 1: Not set
5-803-062	FUCOMP	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: High temp. detected
5-803-072	EGB_VER	ENG	[0 to 15 / **0** / 1/step] Increases 1 if version is increased.
5-803-073	EGB_TYPE	ENG	[0 to 15 / **0** / 1 /step] 0: GW 1: KIBO
5-803-077	BANK_PE_SNS1	ENG	[0 or 1 / **0** / 1/step] 0: paper end 1: paper remaining
5-803-078	BANK_PE_SNS2	ENG	
5-803-079	BANK_PE_SNS3	ENG	

5-803-080	BANK_FEED_SNS1	ENG	[0 or 1 / **0** / 1/step] 0: No paper detected 1: Paper detected
5-803-081	BANK_FEED_SNS2	ENG	
5-803-082	BANK_FEED_SNS3	ENG	
5-803-083	BANK_500/250_1	ENG	[0 or 1 / **0** / 1/step] Indicates first stage (tray 2) is 500 sheets tray. 0: 500 1: Not used
5-803-084	BANK_500/250_2	ENG	[0 or 1 / **0** / 1/step] Indicates second stage (tray 3) is 500 sheets tray. 0: 500 1: Not used
5-803-085	BANK_500/250_3	ENG	[0 or 1 / **0** / 1/step] Indicates third stage (tray 4) is 500 sheets tray. 0: 500 1: Not used
5-803-086	BANK_PSIZE_1	ENG	[0 to 15 / **0** / 1/step] 0: A3 SEF 1: B4 SEF 2: A4 SEF 3: A4 LEF 4: B5 SEF 5: B5 LEF 6: A5 SEF 9: DLT SEF 10: LG SEF 11: LT SEF 12: LT LEF 14: Custom 15: Tray not set
5-803-087	BANK_PSIZE_2	ENG	
5-803-088	BANK_PSIZE_3	ENG	
5-803-089	BANK_SET	ENG	[0 to 3 / **0** / 1/step] Number of bank set
5-803-090	BANK_MT_LOCK_1	ENG	[0 or 1 / **0** / 1/step] 0: Normal 1: Error
5-803-091	BANK_MT_LOCK_2	ENG	
5-803-	BANK_MT_LOCK_3	ENG	

092			
5-803-100	PCDUNEW_SNS_K	ENG	[0 or 1 / **0** / 1/step] 0: Used 1: New
5-803-101	PCDUNEW_SNS_C	ENG	
5-803-102	PCDUNEW_SNS_M	ENG	
5-803-103	PCDUNEW_SNS_Y	ENG	
5-803-104	PCDUSET_SNS_K	ENG	[0 or 1 / **0** / 1/step] 0: Set 1: Not set
5-803-105	PCDUSET_SNS_C	ENG	
5-803-106	PCDUSET_SNS_M	ENG	
5-803-107	PCDUSET_SNS_Y	ENG	
5-803-116	Temperature	ENG	[0 to 999 / **0** / 1 deg/step] Displays current temperature.
5-803-117	Relative Humidity	ENG	[0 to 999 / **0** / 1 %RH/step] Displays current relative humidity.
5-803-118	Absolute Humidity	ENG	[0.00 to 99.99 / **0.00** / 0.01 %RH/step] Displays current absolute humidity.

3.8.2 OUTPUT CHECK TABLE

5804	[OUTPUT CHECK]		
5-804-003	BWMT_Plain	ENG	[0 or 1 / **0** / 1/step] When using this SP, remove Bk toner cartridge / Bk PCDU. Toner may contaminate inside of the machine.
5-804-004	BWMT_Thick1	ENG	
5-804-005	BWMT_Thick2	ENG	
5-804-010	FUMT_Plain	ENG	[0 or 1 / **0** / 1/step]
5-804-011	FUMT_Thick1	ENG	[0 or 1 / **0** / 1/step]
5-804-013	FUMT_Thick2	ENG	[0 or 1 / **0** / 1/step]
5-804-017	COLMT_Plain	ENG	[0 or 1 / **0** / 1/step] When using this SP, remove FC (CMY) toner cartridge / FC (CMY) PCDU. Toner may contaminate inside of the machine.
5-804-018	COLMT_Thick1	ENG	
5-804-019	COLMT_Thick2	ENG	
5-804-024	MIDMT_Plain	ENG	[0 or 1 / **0** / 1/step] When using this SP, remove all toner cartridges / all PCDU. This may damage PCDU and transfer belt, and would affect printing images.
5-804-025	MIDMT_Thick1	ENG	
5-804-026	MIDMT_Thick2	ENG	

5-804-035	FEEDMT_1TCSP	ENG	[0 or 1 / **0** / 1/step] Revolve using transected motor speed of the 1st transfer. When using this SP, remove all toner cartridges / all PCDU. This may damage PCDU and transfer belt, and would affect printing images.
5-804-036	FEEDMT_HANDBP	ENG	[0 or 1 / **0** / 1/step] To lift manual feed base plate, reverse drive paper transfer motor, and rotate at a speed for lifting. When using this SP, remove all toner cartridges / all PCDU. This may damage PCDU and transfer belt, and would affect printing images.
5-804-039	REG_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-040	MID_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-041	PAP_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-042	HAND_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-043	DUP_MID_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-044	DUP_OUT_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-046	PAPOUT_SOL	ENG	[0 or 1 / **0** / 1/step] Drives solenoid for the idler gear to reverse drive paper exit roller. 0: Off 1: On – idler gear works to transfer the paper to the duplex unit. Do not turn on more than a minute, this might damage the machine because of the high heat.
5-	HAND_BP_CL	ENG	[0 or 1 / **0** / 1/step]

804-047			
5-804-083	1TCSP_CL	ENG	[0 or 1 / **0** / 1/step]
5-804-091	TN_CL_K	ENG	[0 or 1 / **0** / 1/step]
5-804-092	TN_CL_C	ENG	[0 or 1 / **0** / 1/step]
5-804-093	TN_CL_M	ENG	[0 or 1 / **0** / 1/step]
5-804-094	TN_CL_Y	ENG	[0 or 1 / **0** / 1/step]
5-804-100	MIN_FAN_H	ENG	[0 or 1 / **0** / 1/step]
5-804-101	MIN_FAN_L	ENG	[0 or 1 / **0** / 1/step]
5-804-102	FU_FAN_H	ENG	[0 or 1 / **0** / 1/step]
5-804-103	FU_FAN_L	ENG	[0 or 1 / **0** / 1/step]
5-804-107	PSU_FAN_H	ENG	[0 or 1 / **0** / 1/step]
5-804-108	PSU_FAN_L	ENG	[0 or 1 / **0** / 1/step]
5-804-130	HVP_C_K	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -1100V There is no SP to change output voltage. When turning

			this ON, make sure to remove Bk toner cartridge and Bk PCDU. OPC Drum might be scratched by the discharge. SP5804-147 must be ON to output voltage.
5-804-131	HVP_C_C	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -1100V There is no SP to change output voltage. When turning this ON, make sure to remove Cy toner cartridge and Cy PCDU. OPC Drum might be scratched by the discharge. SP5804-148 must be ON to output voltage.
5-804-132	HVP_C_M	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -1100V There is no SP to change output voltage. When turning this ON, make sure to remove Ma toner cartridge and Ma PCDU. OPC Drum might be scratched by the discharge. SP5804-148 must be ON to output voltage.
5-804-133	HVP_C_Y	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -1100V There is no SP to change output voltage. When turning this ON, make sure to remove Ye toner cartridge and Ye PCDU. OPC Drum might be scratched by the discharge. SP5804-148 must be ON to output voltage.
5-804-134	HVP_DV_K	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -200V There is no SP to change output voltage. SP5804-147 must be ON to output voltage.
5-804-135	HVP_DV_C	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -200V There is no SP to change output voltage. SP5804-148 must be ON to output voltage.
5-804-136	HVP_DV_M	ENG	
5-	HVP_DV_Y	ENG	

804-137			
5-804-138	HVP_DV_+	ENG	[0 or 1 / **0** / 1/step] 0:OFF 1:ON
5-804-139	HVP_T1_K	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output +1000V There is no SP to change output voltage.
5-804-143	HVP_T2_+	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output +30uA There is no SP to change output value.
5-804-144	HVP_T2_-	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – Output -800V There is no SP to change output voltage.
5-804-147	HVP_BION_BK	ENG	[0 or 1 / **0** / 1/step] SP to output charging and development for Bk. This SP must be “ON” to enable SP5804-130 / SP5804-134 to output voltage.
5-804-148	HVP_BION_COL	ENG	[0 or 1 / **0** / 1/step] SP to output charging and development for Bk. This SP must be “ON” to enable SP5804-135 to SP5804-137 to output voltage.
5-804-185	TM_0	ENG	[0 or 1 / **0** / 1/step]
5-804-186	TM_1	ENG	[0 or 1 / **0** / 1/step]
5-804-190	QLON_BK	ENG	[0 or 1 / **0** / 1/step]
5-804-191	QLON_COL	ENG	[0 or 1 / **0** / 1/step]
5-804-	BANK_MT1:Plain	ENG	[0 or 1 / **0** / 1/step]

224			
5-804-225	BANK_MT1:Thick1	ENG	[0 or 1 / **0** / 1/step]
5-804-226	BANK_MT1:Thick2	ENG	[0 or 1 / **0** / 1/step]
5-804-227	BANK_MT2:Plain	ENG	[0 or 1 / **0** / 1/step]
5-804-228	BANK_MT2:Thick1	ENG	[0 or 1 / **0** / 1/step]
5-804-229	BANK_MT2:Thick2	ENG	[0 or 1 / **0** / 1/step]
5-804-230	BANK_MT3:Plain	ENG	[0 or 1 / **0** / 1/step]
5-804-231	BANK_MT3:Thick1	ENG	[0 or 1 / **0** / 1/step]
5-804-232	BANK_MT3:Thick2	ENG	[0 or 1 / **0** / 1/step]
5-804-239	BANK_PAP_CL1	ENG	[0 or 1 / **0** / 1/step]
5-804-240	BANK_PAP_CL2	ENG	[0 or 1 / **0** / 1/step]
5-804-241	BANK_PAP_CL3	ENG	[0 or 1 / **0** / 1/step]
5-804-242	BANK_FEED_CL1	ENG	[0 or 1 / **0** / 1/step]
5-804-	BANK_FEED_CL2	ENG	[0 or 1 / **0** / 1/step]

243			
5-804-244	BANK_FEED_CL3	ENG	[0 or 1 / **0** / 1/step]
5-804-248	ON_DEMAND_2	ENG	[0 or 1 / **0** / 1/step] Do not execute.
5-804-249	MIDFU_NEWON	ENG	[0 or 1 / **0** / 1/step] 0: Off 1: On – flows current to cut the new detection fuse of the Fusing unit. This SP only flows current, no new detection control is working.
5-804-250	PCDU_NEWON	ENG	[0 or 1 / **0** / 1/step]
5-804-251	TEON_BK	ENG	[0 or 1 / **0** / 1/step]
5-804-252	TEON_COL	ENG	[0 or 1 / **0** / 1/step]
5-804-253	UPCOVER_SOL	ENG	[0 or 1 / **0** / 1/step] This SP controls shutter to supply toner to PCDU from toner cartridge. If top cover is opened, it is a spec not to open shutter. Must to hear the sound to check if this solenoid is working. When using this SP, remove all toner cartridge / PCDU. Toner may contaminate inside of the machine.
5-804-254	5V_TMP_ON	ENG	[0 or 1 / **0** / 1/step] This SP supplies power to the thermopile to check the surface temperature of fusing belt. Design analysis use only. Controlling this SP might damage the thermopile.

3.9 TEST PATTERN PRINTING

Printing Test pattern: SP5-903 [Test Print]

Some of these test patterns are used for print image adjustments but most are used primarily for design testing.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC occurs.

5. Enter the SP mode and select [Engine Maintenance].
6. Select **SP5-903-005**.
7. Enter the number for the test pattern that you want to print and press [OK].
8. Enter the SP5-903-001 to 008 and modify the test print parameters below if needed:

   SP5-903-001: Feed Tray

   SP5-903-002: Duplex Setting

   SP5-903-003: Paper Size

   SP5-903-004: Color Mode

   SP5-903-006: Paper Kind

   SP5-903-007: Print Page

   SP5-903-008: Freerun Setting
9. Enter SP-5-903-009 and touch “Execute” to print test pattern.
10. After checking the test pattern, reset SP5-903-005 to “0: None”
11. Exit the SP mode.

No	Pattern	No	Pattern
0	None	8	S Grid
1	V1 Line	9	20mm Grid
2	H1 Line	10	1 by 1
3	V2 Line	11	2 by 2
4	H2 Line	12	4 by 4
5	V Grid	13	Full dot
6	H Grid	14	Belt
7	20mm Grid	-	-

APPENDIX:

CONTROLLER SP MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

4. APPENDIX: CONTROLLER SP MODE TABLES

4.1 CONTROLLER SERVICE MENU

4.1.1 SP1-XXX (SERVICE MODE)

1001	**[Bit Switch]**			
001	Bit Switch 1 Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	Responding with the hostname as the sysName	**Model name** (PnP name)	Hostname
		This BitSwitch can change the value of the sysName. 0 (default): Model name (PnP name) such as "SP C352DN" 1: Host name		
	bit 2	**DFU**	-	-
	bit 3	**No I/O Timeout**	**Disabled**	Enabled
		Enables/Disables I/O Timeouts. If enabled, the I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	bit 4	**SD Card Save Mode**	**Disabled**	Enabled
		If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	bit 5	**[PS and PDF] Paper size error margin**	**±5pt**	±10pt
		When a PS job is printed by using a custom paper size, the job might not be printed because of a paper size mismatch caused by a calculation error. By default, the error margin for matching to a paper size is ±5 points. By enabling this BitSwitch, the error margin for matching to a paper size can be extended to ±10 points.		
	bit 6	**Color balance switching**	**0:Disabled**	1:Enabled
		This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance that is equivalent to Fuji-Xerox printers will be used.		
	bit 7	**[RPCS,PCL]: Printable area frame border**	**Disabled**	Enabled
		Prints all RPCS and PCL jobs with a border around the printable area.		

1001	[Bit Switch]		
002	Bit Switch 2 Settings	0	1
	bit 0 **Color balance switching**	**Disabled**	Enabled
	This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance from 09S and earlier models will be used. Note • If the BitSwitches #2-0, #2-4 and #1-6 are respectively configured to "1", their configurations will be given priority in the following order: #2-0 > #2-4 > #1-6.		
	bit 1 **RPCS: Switching between normal printing mode and 2-color printing mode for color absence prevention**	**OFF (Normal mode)**	ON (Color absence prevention mode)
	bit 2 **DFU**	-	-
	bit 3 **[PCL5e/c,PS]: PDL Auto Switching**	**Enabled**	Disabled
	Enables/Disables the machine's ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4 **Color balance switching**	**Disabled**	Enabled
	This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance from 09A and Extended 09A models will be used. Note • If the BitSwitches #2-0, #2-4 and #1-6 are respectively configured to "1", their configurations will be given priority in the following order: #2-0 > #2-4 > #1-6.		
	bit 5 **DFU**	-	-
	bit 6 **Switch dither** *Please refer to RTB#RD014018	**Use normal dither**	Use alternative dither
	bit 7 **Switching of in-process print mode**	**Normal mode**	In-process mode

1001	[Bit Switch]			
003	Bit Switch 3 Settings		0	1
	bit 0	**RPDL/R98/R55/R16: Switching font size of OCR-B**	**OFF (Conventional font size)**	ON (New font size)
	bit 1	**RPDL: Switching ON/OFF the display of "86%" option in the "Scaling" menu of the printing condition settings**	**OFF (Not displayed)**	ON (Displayed)
	bit 2	**[PCL5e/c]: Legacy HP compatibility**	**Disabled**	Enabled
		Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A".		
	bit 3	**RPGL: Switching ON/OFF the "Reduce the line width of 0.3 mm or thicker pens by 1 dot" function for color machine**	**(Do not reduce by 1 dot)**	ON (Reduce by 1 dot)
	bit 4	**RPDL, R16, R55, R98, GL/GL2: Ignore one byte in data greater than 0x80 when the host power is turned ON**	**OFF (Do not ignore)**	ON (Ignore)
	bit 5	**RPDL: Selection of paper feed tray allocation**	**LP type**	MFP type
	bit 6	**R16, R55, R98: Selection of paper feed tray allocation**	**LP type**	MFP type
	bit 7	**DFU**	-	-

1001	**[Bit Switch]**			
004	Bit Switch 4 Settings		0	1
	bit 0	**RPDL, R16, R55, R98: Fill enclosed areas of simple graphics**	**OFF (Do not fill)**	ON (Fill)
	bit 1	**R98: Avoid clearing 2-byte external characters**	**OFF (Clear)**	ON (Do not clear)
	bit 2	**R16: Avoid resetting portrait/landscape settings by reset command**	**OFF**	ON
	bit 3	**DFU**	**-**	-
	bit 4	**RPDL, R16, R55, R98, GL/GL2: Hide/show the display of error messages No. 84 to DF**	**OFF (Display)**	ON (Do not display)
	bit 5	**RPDL, R16, R55, R98, GL/GL2: Hide/show the display of error messages No. E1 onwards**	**OFF (Display)**	ON (Do not display)
	bit 6	**DFU**	**-**	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
005	Bit Switch 5 Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**Multiple copies if a paper size or type mismatch occurs**	**Disabled (single copy)**	Enabled (multiple)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	**Prevent SDK applications from altering the contents of a job.**	**Disabled**	Enabled
		If this switch is enabled, SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". Note: The main purpose of this switch is for troubleshooting the effects of SDK applications on data.		
	bit 3	**[PS] PS Criteria**	**Pattern3**	Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	**Increase max number of the stored jobs.**	**Disabled (100)**	Enabled (750)
		Changes the maximum number of jobs that can be stored on the HDD. The default (disabled) is 100. If this is enabled, the max. will be raised to 750.		
	bit 5	**DFU**	-	-

1001	**[Bit Switch]**			
005	Bit Switch 5 Settings		0	1
	bit 6	**Method for determining the image rotation for the edge to bind on.**	**Disabled**	Enabled
		If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models		
	bit 7	**Letterhead mode printing**	**Disabled**	Enabled (Duplex)
		Routes all pages through the duplex unit. If this is disabled, simplex pages or the last page of an odd-paged duplex job, are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages. Only affects pages specified as Letterhead paper.		

1001	**[Bit Switch]**		
006	Bit Switch 6 Settings **DFU**	-	-

1001	**[Bit Switch]**			
007	Bit Switch 7 Settings		0	1
	bit 0	**DFU**	**-**	-
	bit 1	**MSIS: Setting to LT-size medical receipt continuation sheet mode**	**Normal mode (11"x8.5")**	Receipt continuation sheet mode (239 mm x 210 mm
	bit 2	**RPDL: Addition of 3 characters for ruling line**	**Not added**	Added
	bit 3	**RPCS: Inhibition of overwrap judgment process**	**Not inhibited**	Inhibited
	bit 4	**RPCS: Inhibition of Black Over Print**	**Not inhibited**	Inhibited
	bit 5	**DFU**	**-**	-
	bit 6	**MSIS: Insert a blank back page when performing duplex printing of an odd**	**Inserted**	Not inserted

		number of pages		
	bit 7	**DFU**	**-**	-

1001	**[Bit Switch]**			
008	Bit Switch 8 Settings		0	1
	bit 0	**MSIS: Enable switching of binding margin position in the same duplex printing job Enable switching of binding position on a per-page basis in a duplex printing job**	**Enabled DAZEL mode Compatible with non-GW machine (Switching enabled)**	Disabled (Switching disabled)
		If the function is enabled, "Switching of binding margin position in the same duplex printing job" will also work.		
	bit 1	**MSIS/RPCS: Count data indicated in debug messages**	**Disabled**	Enabled
	bit 2	**R16, R55, R98: Setting the scope of 11-inch settings**	**A4 landscape 67x67% is set as scope of 11-inch settings**	Not set (Compatible with former models)
	bit 3	**[PCL,PS]: Allow BW jobs to print without requiring User Code**	**Disabled**	Enabled (allow BW jobs to print without a user code)
		BW jobs submitted without a user code will be printed even if usercode authentication is enabled. Note: Color jobs will not be printed without a valid user code.		
	bit 4	**PCL: Switching to custom-built EdgeToEdge (Tailored to BMS)**	**Disabled (Normal EdgeToEdge is applied)**	Enabled (Custom-built EdgeToEdge is applied)
		Valid only for PCL5		

1001	[Bit Switch]			
008	Bit Switch 8 Settings		0	1
	bit 5	**RTIFF (TIFFDP): Switching of default values of printing conditions**	**Default values for model 07A series and later**	Default values for model 06A series and earlier
	bit 6	**PCL, RPCS, PS: Forced BW print**	**Enabled**	Disabled
		Switches whether to ignore PDL color command.		
	bit 7	**RTIFF (TIFFDP): Switching of image rotation angle**	**Disabled**	Enabled MSIS compatible mode
		If the orientation of an image does not match that of the sheet, the angle of the image can be changed. If the function is disabled, the angle of the image will be kept at 270°. With the function enabled, the image will be rotated by 90° only if the following criteria are met: -The machine is capable of rotating expanded images. -Printing conditions allow rotation of expanded images. -Limitless paper feed is enabled or finishing process is disabled. -In the orientation setting menu, 90° or 180° is selected.		

1001	[Bit Switch]			
009	Bit Switch 9 Settings		0	1
	bit 0	**PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).**	**Disabled (Immediately)**	Enabled (10 seconds)
		To be used if PDL auto-detection fails. A failure of PDL autodetection doesn't necessarily mean that the job can't be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 1	DFU	-	-
	bit 2	**Job Cancel**	**Disabled (Not cancelled)**	Enabled (Cancelled)
		If this bit switch, all jobs will be cancelled after a jam occurs. Note: If this bitsw is enabled, printing under the following conditions might result in problems: - Job submission via USB or Parallel Port - Spool printing (WIM >Configuration > Device Settings > System)		
	bit 3	**DFU**	-	-

	bit 4	**Timing of the PJL Status ReadBack (JOB END) when printing multiple collated copies.**	**Disable**	Enable
		This switch determines the timing of the PJL USTATUS JOB END sent when multiple collated copies are being printed. 0 (default): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. 1: JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.		

1001	**[Bit Switch]**			
009	Bit Switch 9 Settings		0	1
	bit 5	**Display UTF-8 text in the operation panel**	**Enabled**	Disabled
		Enabled (=0): Text composed of UTF-8 characters can be displayed in the operation panel. Disabled (=1): UTF-8 characters cannot be displayed in the operation panel. For example, job names are sometimes stored in the MIB using UTF-8 encoded characters. When these are displayed on the operation panel, they will be garbled unless this switch is enabled (=0).		
	bit 6	**Disable super option**	**OFF**	ON
		Switches super option disable on / off. If this is On, multiple jobs are grouped at LPR port. PJL settings are enabled even jobs that are specified queue names are sent.		
	bit 7	**Enable/Disable Print from USB/SD's Preview function**	**Enabled**	Disabled
		Determines whether Print from USB/SD will have the Preview function. Enabled (=0): Print from USB/SD will have the Preview function. Disabled (=1): Print from USB/SD will not have the Preview function.		

1001	**[Bit Switch]**			
010	Bit Switch A Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**DFU**	-	-
	bit 2	**DFU**	-	-
	bit 3	**DFU**	-	-
	bit 4	**DFU**	-	-
	bit 5	**Store and Skip Errored Job locks the queue**	**Queue is not locked after SSEJ**	Queue locked after SSEJ
		If this is 1, then after a job is stored using Store and Skip Errored Job (SSEJ), new jobs cannot be added to the queue until the stored job has been completely printed.		
	bit 6	**Allow use of Auto Job Promotion if connected to an external charge device.**	**Does not allow AJP with ECD**	Allows AJP with ECD
		If this is 0, Auto Job Promotion will be automatically disabled if an external charge device is connected. Note: We do not officially support enabling this switch (1). Use it at your own risk.		
	bit 7	**DFU**	-	-

1001	[Bit Switch]			
011	Bit Switch B Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**Print job interruption**	**Does not allow interruption**	Allow interruption
		0 (default): Print jobs are not interrupted. If a job is promoted to the top of the print queue, it will wait for the currently printing job to finish. 1: If a job is promoted to the top of the queue, it will interrupt the currently printing job and start printing immediately.		
	bit 2	**In the manual feed free mode, the manual feed tray is included within/excluded from the scope of the limitless paper feed function**	**Included within scope**	xcluded from scope
	bit 3	**DFU**	-	-
	bit 4	**Add/do not add tray lock to tray overwriting criteria**	**Do not add**	Add
	bit 5	**DFU**	-	-
	bit 6	**Disable/do not disable the selection of trays that are not included in the choices of automatic tray selection in the Forced Print screen**	**Do not disable**	Disable
	bit 7	**DFU**	-	-

1001	[Bit Switch]			
012	Bit Switch C Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**DFU**	-	-
	bit 2	**DFU**	-	-
	bit 3	**DFU**	-	-
	bit	**DFU**	-	-

	4			
	bit 5	**Change the user ID type displayed on the operation panel**	**Login User Name**	User ID
		As of 15S models, the Login User Name can be displayed on the operation panel. The user ID type displayed on the operation panel can be changed by configuring BitSwitch #12-5 as follows: - 0 (default): Login User Name - 1: User ID. If this is enabled, User ID will be displayed, which is equivalent to the behavior exhibited in 14A and earlier models.		
	bit 6	**Ability to use AirPrint**	**Enabled**	Disabled
		For 15S and later models that support AirPrint, AirPrint can be disabled by changing this Bit Switch from 0 (default) to 1.		
	Bit 7	DFU		

1003	**[Clear Setting]**		
1-003-001	Initialize Printer System	*CTL	[- / **-** / -] [Execute]
	Initializes settings in the "System" menu of the user mode.		
1-003-003	Delete Program	*CTL	[- / **-** / -] [Execute]

1004	**[Print Summary]**		
	Prints the service summary sheet (a summary of all the controller settings).		
1-004-001	Print Printer Summary	CTL	[- / **-** / -] [Execute]

1007	**[Supply Display]**		
	Sets displaying remaining supply amount information or not. 0: Displays remaining supply amount information 1: Does not display remaining supply amount information		
1-007-001	Development	*CTL	[0 or 1 / **1** / 1 /step] *The Default setting is 1 but the Factory setting is 0
1-007-002	PCU	*CTL	
1-007-003	Transfer	*CTL	
1-007-004	Int. Transfer	*CTL	
1-007-005	Transfer Roller	*CTL	
1-007-006	Fuser	*CTL	
1-007-007	Fuser Oil	*CTL	

1101	[Data Recall]		
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.		
1-101-001	Factory	*CTL	[- / **-** / -] [Execute]
1-101-002	Previous	*CTL	
1-101-003	TCurrent	*CTL	

1102	[Resolution Setting]		
	Selects the printing mode (resolution) for the printer gamma adjustment.		
1-102-001	Tone Control Media Selection	CTL	[0 to 7 / **0** / 1/step] 0: 1200x1200Photo 1: 600x600Photo 2: 600x600 Photo 3: 600x600 Photo 4: 1200x1200 Text 5: 600x600 Text 6: 600x600 Text 7: 600x600 Text

1103	[Test Page]		
	Prints the test page to check the color balance before and after the gamma adjustment.		
1-103-001	Color Gray Scale	CTL	[- / **-** / -] [Execute]
1-103-002	Color Pattern	CTL	

1104	[Gamma Adjustment]		
	Adjusts the printer gamma for the mode selected in the "Mode Selection" menu.		
1-104-001	Black 1: Highlight	CTL	[0 to 255 / **0** / 1/step]
1-104-002	Black 2: Shadow	CTL	
1-104-003	Black 3: Middle	CTL	
1-104-004	Black 4: IDmac	CTL	
1-104-005	Tone Control Value Setting: Black 5	CTL	
1-104-006	Tone Control Value Setting: Black 6	CTL	
1-104-007	Tone Control Value Setting: Black 7	CTL	

1-104-008	Tone Control Value Setting: Black 8	CTL	
1-104-009	Tone Control Value Setting: Black 9	CTL	
1-104-010	Tone Control Value Setting: Black 10	CTL	
1-104-011	Tone Control Value Setting: Black 11	CTL	
1-104-012	Tone Control Value Setting: Black 12	CTL	
1-104-013	Tone Control Value Setting: Black 13	CTL	
1-104-014	Tone Control Value Setting: Black 14	CTL	
1-104-015	Tone Control Value Setting: Black 15	CTL	
1-104-021	Cyan 1: Highlight	CTL	[0 to 255 / **0** / 1/step]
1-104-022	Cyan 2: Shadow	CTL	
1-104-023	Cyan 3: Middle	CTL	
1-104-024	Cyan 4: IDmac	CTL	
1-104-025	Tone Control Value Setting: Cyan 5	CTL	
1-104-026	Tone Control Value Setting: Cyan 6	CTL	
1-104-027	Tone Control Value Setting: Cyan 7	CTL	
1-104-028	Tone Control Value Setting: Cyan 8	CTL	
1-104-029	Tone Control Value Setting: Cyan 9	CTL	
1-104-030	Tone Control Value Setting: Cyan 10	CTL	
1-104-031	Tone Control Value Setting: Cyan 11	CTL	
1-104-032	Tone Control Value Setting: Cyan 12	CTL	
1-104-033	Tone Control Value Setting: Cyan 13	CTL	
1-104-034	Tone Control Value Setting: Cyan 14	CTL	
1-104-035	Tone Control Value Setting: Cyan 15	CTL	
1-104-041	Magenta 1: Highlight	CTL	[0 to 255 / **0** / 1/step]
1-104-042	Magenta 2: Shadow	CTL	
1-104-043	Magenta 3: Middle	CTL	
1-104-044	Magenta 4: IDmac	CTL	
1-104-045	Tone Control Value Setting: Magenta 5	CTL	
1-104-046	Tone Control Value Setting: Magenta 6	CTL	
1-104-047	Tone Control Value Setting: Magenta 7	CTL	
1-104-048	Tone Control Value Setting: Magenta 8	CTL	
1-104-049	Tone Control Value Setting: Magenta 9	CTL	
1-104-050	Tone Control Value Setting: Magenta 10	CTL	
1-104-051	Tone Control Value Setting: Magenta 11	CTL	
1-104-052	Tone Control Value Setting: Magenta 12	CTL	
1-104-053	Tone Control Value Setting: Magenta 13	CTL	
1-104-054	Tone Control Value Setting: Magenta 14	CTL	
1-104-055	Tone Control Value Setting: Magenta 15	CTL	

1-104-061	Yellow 1: Highlight	CTL	[0 to 255 / **0** / 1/step]
1-104-062	Yellow 2: Shadow	CTL	
1-104-063	Yellow 3: Middle	CTL	
1-104-064	Yellow 4: lDmac	CTL	
1-104-065	Tone Control Value Setting: Yellow 5	CTL	
1-104-066	Tone Control Value Setting: Yellow 6	CTL	
1-104-067	Tone Control Value Setting: Yellow 7	CTL	
1-104-068	Tone Control Value Setting: Yellow 8	CTL	
1-104-069	Tone Control Value Setting: Yellow 9	CTL	
1-104-070	Tone Control Value Setting: Yellow 10	CTL	
1-104-071	Tone Control Value Setting: Yellow 11	CTL	
1-104-072	Tone Control Value Setting: Yellow 12	CTL	
1-104-073	Tone Control Value Setting: Yellow 13	CTL	
1-104-074	Tone Control Value Setting: Yellow 14	CTL	
1-104-075	Tone Control Value Setting: Yellow 15	CTL	

1105	**[Save Tone Control Value]**		
	Stores the print gamma adjusted with the "Gamma Adj." menu item as the current setting. Before the machine stores the new "current setting", it moves the data currently stored as the "current setting" to the "previous setting" memory storage location.		
1-105-001	Save Tone Control Value	*CTL	[- / **-** / -] [Execute]

1106	**[Toner Limit]**		
	Adjusts the maximum toner amount for image development.		
1-106-001	Toner Limit Value	*CTL	[0 to 400 / **0** / 1 %/step]

1108	**[Ext.TonerSave]**		
	Adjusts the maximum toner amount for image development.		
1-108-001	Mode1:Text	*CTL	[0 to 255 / **75** / 1 /step]
1-108-002	Mode2:Text	*CTL	[0 to 255 / **50** / 1 /step]
1-108-003	Mode1:Image	*CTL	[0 to 255 / **75** / 1 /step]
1-108-004	Mode2:Image	*CTL	[0 to 255 / **50** / 1 /step]
1-108-005	Mode1:Line	*CTL	[0 to 255 / **75** / 1 /step]
1-108-006	Mode2:Line	*CTL	[0 to 255 / **50** / 1 /step]
1-108-007	Mode1:Paint	*CTL	[0 to 255 / **75** / 1 /step]

1-108-008	Mode2:Paint	*CTL	[0 to 255 / **50** / 1 /step]

1109	**[EconomyColor]**		
	Adjusts the maximum toner amount for image development.		
1-109-001	Text	*CTL	[0 to 999 / **100** / 1 /step]
1-109-002	Image	*CTL	[0 to 999 / **50** / 1 /step]
1-109-003	Line	*CTL	[0 to 999 / **30** / 1 /step]
1-109-004	Paint	*CTL	[0 to 999 / **30** / 1 /step]

1110	**[Media Print Device Setting]**		
	Selects the setting for the media print device.		
1-110-002	0: Disable 1: Enable	*CTL	[0 or 1 / **1** / 1 /step]

1111	**[All Job Delete Mode]]**		
	Selects whether to include an image processing job in jobs subject to full cancellation from the SCS job list.		
1-111-001	0: Excluding New Job 1: Including New Job	*CTL	[0 or 1 / **1** / 1 /step]

1113	**[IBACC Exec]**		
	Sets IBACC correction execution (calculation IBACC gamma) on / off. 0: Not calculate IBACC gamma. (Sets IBACC gamma linear) 1: Calculate IBACC gamma		
1-113-001	0:Off 1:On	*CTL	[0 or 1 / **1** / 1/step]

1114	**[IBACC ToneCtlSet]**		
	Sets back to the previous value of IBACC gamma correction for all resolutions. If there is no previous value, sets to the factory default values.		
1-114-001	Tone (Prev.)	CTL	-
1-114-002	Tone (Factory)	CTL	-

1115	**[IBACC Exec Time]**		
	Displays the time when IBACC is executed or sets back to the previous / initial value.		
1-115-001	Time	CTL	-

4.2 CONTROLLER SP TABLES-5

4.2.1 SP5-XXX (MODE)

5009	[Add display language]		
5-009-201	1-8	*CTL	[0 to 255 / **0** / 1 / step]
5-009-202	9-16	*CTL	[0 to 255 / **0** / 1 / step]
5-009-203	17-24	*CTL	[0 to 255 / **0** / 1 / step]
5-009-204	25-32	*CTL	[0 to 255 / **0** / 1 / step]
5-009-205	33-40	*CTL	[0 to 255 / **0** / 1 / step]
5-009-206	41-48	*CTL	[0 to 255 / **0** / 1 / step]
5-009-207	49-56	*CTL	[0 to 255 / **0** / 1 / step]

5024	[mm / inch Display Selection]		
5-024-001	0:mm 1:inch	*CTL	Sets units (mm or inch) for custom paper sizes. [0 or 1 / **0(EU,ASIA,CHN,TW,),1(NA)** / 1 / step]

5045	[Accounting counter]		
	Selects the counting method. Note • The counting method can be changed only once, regardless of whether the counter value is negative or positive.		
5-045-001	Counter Method	*CTL	[0 to 7 / **0** / 1 / step] 0: Developments 1: Prints 2: Coverage 3: Eco Colour (Color-up mode) 4: Eco Colour (B/W-up mode) 7: Coverage (YMC)

5051	[TonerRefillDetectionDisplay]		
	Enable or disable the warning display when you install a toner bottle that was refilled by third party venders.		
5-051-001	-	*CTL	[0 or 1 / **0** / 1 / step] 0: Enable, 1: Disable

5055	[Display IP address]		
	Display or does not display the IP address on the LCD.		
5-055-001	-	*CTL	[0 or 1 / **0** / 1 / step] 0: Not display, 1: Display

5061	[Toner Remaining Window Display Change]		
5-061-101	-	*CTL	[0 to 255 / **0** / 1 / step]

5074	[Home Key Custom] [Home Key Customization]		
	Sets the application that appears when the home key is pressed.		
5-074-002	Login Setting	*CTL	[0 to 255 / **0** / 1 / step]
5-074-050	Show Home Edit Menu	CTL	[0 to 2 / **0** / 1 / step]
5-074-091	Function Setting	*CTL	[0 to 2 / **0** / 1/ step] 0: Function disable 1: SDK application 2: Legacy application (reserved)
5-074-092	Product ID	*CTL	[0 to 0xffffffff / **0** / 1 / step]
5-074-093	Application Screen ID	*CTL	[0 to 255 / 0 / **1** / step]
	Sets the display category of the application that is specified in the SP5075-001,002		

5075	[USB Keyboard]		
	Sets the function of the external keyboard.		
5-075-003	Display setting	*CTL	[0 or 1 / **0** / 1 / step]

5083	[LED Light Switch Setting]		
	Specifies whether the alert LED is lit or not when toner near end condition is detected. (This does not change the toner near end condition indication in the operation panel LCD.)		
5-083-001	Toner Near End	*CTL	[0 or 1 / **0** / - / step] 0:LED Off 1:LED On *The Default setting is 0 but the Factory setting is 1

5-083-002	Waste Toner Near End	*CTL	[0 or 1 / **1** / - / step] 0:LED Off 1:LED On

5169	**[CE Login]**		
5-169-001	-	*CTL	[0 or 1/ **0** / 1 / step] 0: Disabled 1: Enabled

5191	**[Mode Set]**		
5-191-001	Power Str Set	*CTL	[0 or 1 / **1** / 1 / step]

5195	**[Limitless SW]**		
5-195-001	-	*CTL	[0 or 1 / **0** / 1 / step] Tray Switching 0:OFF 1:ON

5302	**[Set Time]**		
	Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) *DOM: +540 (Tokyo) *NA: -300 (New York) *EU: + 60 (Paris) *ASIA, CHN, TW: +480 (Peking)		
5-302-002	Time difference	*CTL	[-1440 to 1440 / ***** / 1 / step]

5305	**[Auto Off Set]**		
5-305-101	Auto Off Limit Set	*CTL	[0 to 1 / **0** / 1 / step]

5307	**[Daylight Saving Time]**		
5-307-001	Setting	*CTL	[0 or 1 / ***** / 1 / step] *NA and EU: 1 *ASIA, CHN, TW: 0 0: Disabled 1: Enabled
	Enables or disables the summer time mode. Note • Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP		

	is not activated even if this SP is set to "1".		
5-307-003	Rule Set(Start)	*CTL	[0 to 0xffffffff/ ***** / 1 / step] *NA:0x03200210 *EU: 0x03500010 *ASIA: 0x10500010 *CHN, TW: 0
	Specifies the start setting for the summer time mode. There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step] • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		
	For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March		
5-307-004	Rule Set(End)	*CTL	[0 to 0xffffffff/ ***** / 1 / step] *NA: 0x11100200 *EU: 0x10500100 *ASIA: 0x03100000 *CHN, TW: 0
	Specifies the end setting for the summer time mode. There are 8 digits in this SP. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00". • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		

5401	**[Access Control]**		
5-401-104	Authentication Time	*CTL	[0 to 255 / **0** / 1 sec / step]
5-401-162	Extend Certification Detail	*CTL	[0 to 0xff/ **0** / 1 / step]
5-401-200	SDK1 UniqueID	*CTL	[0 to 0xFFFFFFFF/ **0** / 1 / step]
5-401-201	SDK1 Certification Method	*CTL	[0 to 0xFF/ **0** / 1 / step]

5-401-210	SDK2 UniqueID	*CTL	[0 to 0xFFFFFFFF/ **0** / 1 / step]
5-401-211	SDK2 Certification Method	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-401-220	SDK3 UniqueID	*CTL	[0 to 0xFFFFFFFF/ **0** / 1 / step]
5-401-221	SDK3 Certification Method	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-401-230	SDK Certification Device	*CTL	[0 to 0xff/ **0** / 1 / step]
5-401-240	Detail Option	*CTL	[0 to 0xff/ **0** / 1 / step]
	Enables or disables the log out confirmation option. • Bit 0: Log out confirmation option 0: Enable (default), 1: Disable Selects the automatic log out time. • Bit 1 and 2: Automatic log out timer reduction. 00: 60 seconds (default), 01: 10 seconds, 10: 20 seconds, 11: 30 seconds		

5402	**[Access Control]**		
5-402-101	SDKJ1 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-102	SDKJ2 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-103	SDKJ3 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-104	SDKJ4 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-105	SDKJ5 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-106	SDKJ6 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-107	SDKJ7 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-108	SDKJ8 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-109	SDKJ9 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-110	SDKJ10 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-111	SDKJ11 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-112	SDKJ12 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-113	SDKJ13 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-114	SDKJ14 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-115	SDKJ15 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-116	SDKJ16 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-117	SDKJ17 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-118	SDKJ18 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-119	SDKJ19 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-120	SDKJ20 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-121	SDKJ21 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-122	SDKJ22 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-123	SDKJ23 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-124	SDKJ24 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]

5-402-125	SDKJ25 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-126	SDKJ26 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-127	SDKJ27 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-128	SDKJ28 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-129	SDKJ29 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-130	SDKJ30 Limit Setting	*CTL	[0 to 0xFF/ **0** / 1 / step]
5-402-141	SDKJ1 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-142	SDKJ2 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-143	SDKJ3 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-144	SDKJ4 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-145	SDKJ5 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-146	SDKJ6 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-147	SDKJ7 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-148	SDKJ8 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-149	SDKJ9 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-150	SDKJ10 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-151	SDKJ11 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-152	SDKJ12 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-153	SDKJ13 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-154	SDKJ14 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-155	SDKJ15 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-156	SDKJ16 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-157	SDKJ17 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-158	SDKJ18 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-159	SDKJ19 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-160	SDKJ20 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-161	SDKJ21 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-162	SDKJ22 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-163	SDKJ23 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-164	SDKJ24 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-165	SDKJ25 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-166	SDKJ26 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-167	SDKJ27 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-168	SDKJ28 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-169	SDKJ29 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]
5-402-170	SDKJ30 ProductID	*CTL	[0 to 0xffffffff/ **0** / 1 / step]

5404	[User Code Count Clear]		
5-404-001	User Code Count Clear	CTL	Clears all counters for users.
5-404-101	User Code Count Clear Permit Setting	CTL	[0 or 1 / **0** / 1/ step] 0: Permitted, 1: Not permitted

5411	[LDAP-Certification]		
5-411-004	Simplified Authentication	*CTL	[0 or 1/ **1** / 1 / step] 1: On, 0: Off
5-411-005	Password Null Not Permit	*CTL	[0 or 1/ **1** / 1 / step] 0: Password NULL not permitted. 1: Password NULL permitted.
	This SP is referenced only when SP5411-4 is set to "1" (On).		
5-411-006	Detail Option	*CTL	[0 to 0xff/ **0** / 1 / step] 0: OFF, 1: ON

5412	[Krb-Certification]		
5-412-100	Encrypt Mode	*CTL	[0 to 0xFF / **0x1F** / 1 / step] 0x01:AES256-CTS-HMAC-SHA1-96 0x02:AES128-CTS-HMAC-SHA1-96 0x04:DES3-CBC-SHA1 0x08:RC4-HMAC 0x10:DES-CBC-MD5 0xFF(0x1F):ALL

5413	[Lockout Setting]		
5-413-001	Lockout On/Off	*CTL	[0 or 1/ **0** / 1 / step] 0: Off, 1: On
5-413-002	Lockout Threshold	*CTL	[1 to 10 / **5** / 1 / step]
5-413-003	Cancelation On/Off	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-413-004	Cancelation Time	*CTL	[1 to 9999 / **60** / 1 min / step]

5414	[Access Mitigation]		
5-414-001	Mitigation On/Off	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-414-002	Mitigation Time	*CTL	[0 to 60 / **15** / 1 min / step]

5415	[Password Attack]		
5-415-001	Permission Number	*CTL	[0 to 100 / **30** / 1 / step]
5-415-002	Detect Time	*CTL	[1 to 10 / **5** / 1 sec / step]

5416	[Access Information]		
5-416-001	Access User Max Num	*CTL	[50 to 200 / **200** / 1 / step]
5-416-002	Access Password Max Num	*CTL	[50 to 200 / **200** / 1 / step]
5-416-003	Monitor Interval	*CTL	[1 to 10 / **3** / 1 sec / step]

5417	[Access Attack]		
5-417-001	Access Permissible Number	*CTL	[0 to 500 / **100** / 1 / step]
5-417-002	Attack Detect Time	*CTL	[10 to 30 / **10** / 1 sec / step]
5-417-003	Productivity Fall Waite	*CTL	[0 to 9 / **3** / 1 sec / step]
5-417-004	Attack Max Num	*CTL	[50 to 200 / **200** / 1 / step]

5420	[User Authentication]		
5-420-041	Printer	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-420-051	SDK1	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-420-061	SDK2	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-420-071	SDK3	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On

5430	[Auth Dialog Message Change]		
5-430-001	Message Change On/Off	*CTL	[0 to 1 / **0** / 1 / step]
5-430-002	Message Text Download	CTL	[- / **-** / -] EXECUTE
5-430-003	Message Text ID	CTL	[- / **-** / -]

5481	[Authentication Error Code]		
5-481-001	System Log Disp	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-481-002	Panel Disp	*CTL	[0 or 1 / **1** / 1 / step] 0: Off, 1: On

5501	[PM Alarm]		
5-501-001	PM Alarm Level	*CTL	[0 to 9999 / **0** / 1 / step] 0: Alarm off 1 to 9999: Alarm goes off when **Value (1 to 9999) x 1000 > PM counter**

5504	[Jam Alarm]		
	Sets the alarm to sound for the specified jam level (document miss feeds are not included).		
5-504-001	-	*CTL	[0 to 3 / **3** / 1 / step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)
5-504-002	Threshold	*CTL	[1 to 99 / 10 / 1 / step]

5505	[Error Alarm]		
	Sets the error alarm level. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 1500 sheets). The error alarm occurs when the SC error alarm counter reaches "5".		
5-505-001	-	*CTL	[0 to 255 / **10** / 1 / step] 0: Disables the PM alarm
5-505-002	Threshold	*CTL	[1 to 99 / **5** / 1 / step]

5507	**[Supply/CC Alarm]**		
	Enables or disables notifying a supply call via @Remote.		
5-507-001	Paper Supply Alarm	*CTL	[0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-507-003	Toner Supply Alarm	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-507-005	Drum LifeRemain Supply Alarm	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-507-006	WasteTonerBottle	*CTL	[0 to 2 / **2** / 1 / step] 0: Off 1: On 2: CC
5-507-007	Tensya Supply Alarm	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-507-008	Fuser Supply Alarm	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-507-080	Toner Call Timing	*CTL	Changes the timing of the "Toner Supply Call" via @Remote, when the following conditions occur. [0 or 1 / **0** / 1 / step] 0: At replacement 1: At near end
5-507-081	Toner Call Threshold	*CTL	[10 to 90 / **10** / 10% / step]
5-507-128	Interval: Others	*CTL	Sets the paper supply alarm level. A paper supply alarm counter increases by +1 when a sheet of the related size is used. The paper supply alarm occurs when one of the paper supply alarm counters gets to the set value. [250 to 10000 / **1000** / 1 / step]
5-507-133	Interval: A4	*CTL	
5-507-134	Interval: A5	*CTL	
5-	Interval: B5	*CTL	

507-142			
5-507-164	Interval: LG	*CTL	
5-507-166	Interval: LT	*CTL	
5-507-172	Interval: HLT	*CTL	

5508	**[CC Call]**		
5-508-001	Jam Remains	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
	Enables/disables initiating a call for an unattended paper jam.		
5-508-002	Continuous Jams	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
	Enables/disables initiating a call for consecutive paper jams.		
5-508-003	Continuous Door Open	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
	Enables/disables initiating a call when the front door remains open.		
5-508-011	Jam Detection: Time Length	*CTL	[3 to 30 / **10** / 1 minute / step]
	Sets the time a jam must remain before it becomes an “unattended paper jam”. This setting is enabled only when SP5508-004 is set to "1".		
5-508-012	Jam Detection: Continuous Count	*CTL	[2 to 10 / **5** / 1 time / step]
	Sets the number of consecutive paper jams required to initiate a call. This setting is enabled only when SP5508-004 is set to "1".		
5-508-013	Door Open: Time Length	*CTL	[3 to 30 / **10** / 1 minute / step]
	Sets the length of time the door remains open before the machine initiates a call. This setting is enabled only when SP5-508-004 is set to "1".		

5515	**[SC/Alarm Setting]**		
	With NRS (New Remote Service) in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.		
5-515-001	SC Call	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On

5-515-002	Service Parts Near End Call	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-003	Service Parts End Call	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-004	User Call	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-006	Communication Test Call	*CTL	[0 or 1 / **1** / 1- / step] 0: Off 1: On
5-515-007	Machine Information Notice	*CTL	
5-515-008	Alarm Notice	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-009	Non Genuine Tonner Alarm	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-010	Supply Automatic Ordering Call	*CTL	
5-515-011	Supply Management Report Call	*CTL	
5-515-012	Jam/Door Open Call	*CTL	[0 or 1 / **1** / 1 / step] 0: Off 1: On
5-515-050	Timeout: Manual Call	*CTL	[1 to 255 / **5** / 1 minute / step]
5-515-051	Timeout: Other Call	*CTL	[1 to 255 / **10** / 1 minute / step]

5517	**[Get Machine Information]**		
	-		
5-517-031	Get SMC Info: Retry Interval	*CTL	[0 to 255 / **10** / 1 minute / step]

5728	[Network Setting]		
	-		
5-728-001	NAT Machine Port1	CTL	[1 to 65535 / **49101** / 1 / step]
5-728-002	NAT UI Port1	CTL	[1 to 65535 / **55101** / 1 / step]
5-728-003	NAT Machine Port2	CTL	[1 to 65535 / **49102** / 1 / step]
5-728-004	NAT UI Port2	CTL	[1 to 65535 / **55102** / 1 / step]
5-728-005	NAT Machine Port3	CTL	[1 to 65535 / **49103** / 1 / step]
5-728-006	NAT UI Port3	CTL	[1 to 65535 / **55103** / 1 / step]
5-728-007	NAT Machine Port4	CTL	[1 to 65535 / **49104** / 1 / step]
5-728-008	NAT UI Port4	CTL	[1 to 65535 / **55104** / 1 / step]
5-728-009	NAT Machine Port5	CTL	[1 to 65535 / **49105** / 1 / step]
5-728-010	NAT UI Port5	CTL	[1 to 65535 / **55105** / 1 / step]
5-728-011	NAT Machine Port6	CTL	[1 to 65535 / **49106** / 1 / step]
5-728-012	NAT UI Port6	CTL	[1 to 65535 / **55106** / 1 / step]
5-728-013	NAT Machine Port7	CTL	[1 to 65535 / **49107** / 1 / step]
5-728-014	NAT UI Port7	CTL	[1 to 65535 / **55107** / 1 / step]
5-728-015	NAT Machine Port8	CTL	[1 to 65535 / **49108** / 1 / step]
5-728-016	NAT UI Port8	CTL	[1 to 65535 / **55108** / 1 / step]
5-728-017	NAT Machine Port9	CTL	[1 to 65535 / **49109** / 1 / step]
5-728-018	NAT UI Port9	CTL	[1 to 65535 / **55109** / 1 / step]
5-728-019	NAT Machine Port10	CTL	[1 to 65535 / **49110** / 1 / step]
5-728-020	NAT UI Port10	CTL	[1 to 65535 / **55110** / 1 / step]

5730	[Extended Function Setting]		
5-730-010	Expiration Prior Alarm Set	*CTL	[0 to 999 / **20** / 1 days / step]

5731	[Counter Effect] DFU		
5-731-001	Change Mk1 Cnt(Paper->Combine)	*CTL	[0 or 1/ **0** / 1 / step]

5745	[Deemed Power Consumption]		
	Displays the status of each mode.		
5-745-211	Controller Standby	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-212	STR	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-213	Main Power Off	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-214	Scanning and Printing	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-215	Printing	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-216	Scanning	*CTL	[0 to 9999 / **0** / 1 / step]

5-745-217	Engine Standby	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-218	Low Power Consumption	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-219	Silent Consumption	*CTL	[0 to 9999 / **0** / 1 / step]
5-745-220	Heater Off	*CTL	[0 to 9999 / **0** / 1 / step]

5749	**[Import/Export] DFU**		
5-749-001	Export	*CTL	[- / **-** / -] [Excute]
5-749-002	Import	CTL	[- / **-** / -] [Excute]

5751	**[Key Event Encryption Setting]**		
	-		
5-751-001	Password	CTL	[0 to 255/ **0** / 1]

5801	**[Memory Clear]**		
5-801-001	All Clear	CTL	[- / **-** / -] [Execute]
	Resets all correction data for process control and all software counters, and returns all modes and adjustments to their default values.		
5-801-003	SCS	CTL	[- / **-** / -] [Execute]
	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.		
5-801-004	IMH Memory Clr	CTL	[- / **-** / -] [Execute]
5-801-005	MCS	CTL	[- / **-** / -] [Execute]
	Initializes the MCS settings.		
5-801-008	Printer Application	CTL	[- / **-** / -] [Execute]
	The following service settings: • Bit switches • Gamma settings (User & Service) • Toner Limit The following user settings: • Tray Priority • Menu Protect • System Setting except for setting of Energy Saver		

	• I/F Setup (I/O Buffer and I/O Timeout) PCL Menu		
5-801-010	Web Service	CTL	[- / - / -] [Execute]
	Deletes the network file application management files and thumbnails, and initializes the job login ID.		
5-801-011	NCS	CTL	[- / - / -] [Execute]
	All setting of Network Setup (User Menu) (NCS: Network Control Service)		
5-801-014	Clear DCS Setting	CTL	[- / - / -] [Execute]
	Initializes the DCS (Delivery Control Service) settings.		
5-801-015	Clear UCS Setting	CTL	[- / - / -] [Execute]
	Initializes the UCS (User Information Control Service) settings.		
5-801-016	MIRS Setting	CTL	Resets or deletes the MIRS-related data.
	Initializes the MIRS (Machine Information Report Service) settings.		
5-801-017	CCS	CTL	[- / - / -] [Execute]
	Initializes the CCS (Certification and Chargecontrol Service) settings.		
5-801-018	SRM Memory Clr	CTL	[- / - / -] [Execute]
	Initializes the SRM (System Resource Manager) settings.		
5-801-019	LCS	CTL	[- / - / -] [Execute]
	Resets or deletes the LCS-related data.		
5-801-021	ECS	CTL	[- / - / -] [Execute]
	Initializes the ECS settings.		
5-801-025	websys	CTL	[- / - / -] [Execute]
	-		
5-801-026	PLN	CTL	[- / - / -] [Execute]
	-		
5-801-027	SAS	CTL	[- / - / -] [Execute]

	-		
5-801-028	Rest WebService	CTL	[- / **-** / -] [Execute]
	-		

5812	**[Service Tel. No. Setting]**		
5-812-001	Service	*CTL	-
	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 16 characters (both numbers and alphabetic characters can be input).		
5-812-002	Facsimile	*CTL	-
	Sets the fax or telephone number for a service representative. This number is printed on the Counter List. This can be up to 16 characters (both numbers and alphabetic characters can be input).		
5-812-003	Supply	*CTL	[- / **-** / -]
5-812-004	Operation	*CTL	[- / **-** / -]
5-812-101	Disp Inquiry	*CTL	[0 to 1 / **0** / 1 / step]

5816	**[Remote Service]**		
	These settings are used for NRS.		
5-816-001	I/F Setting	*CTL	[0 to 2 / **2** / 1 / step] 0: Remote service off 1: CSS remote service on 2: NRS remote service on
	Selects the remote service setting.		
5-816-002	CE Call	*CTL	[0 or 1 / **0** / 1 / step] 0: Start of the service 1: End of the service
	Performs the CE Call at the start or end of the service. Note • This SP is activated only when SP 5816-001 is set to "2".		
5-816-003	Function Flag	*CTL	[0 or 1 / **0** / 1 / step] 0: Disabled 1: Enabled

	Enables or disables the remote service function.		
5-816-007	SSL Disable	*CTL	[0 or 1 / **0** / 1 / step] 0: Yes. SSL not used. 1: No. SSL used.
	Controls if RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the @Remote over a network interface.		
5-816-008	RCG Connect Timeout	*CTL	[1 to 90 / **30** / 1 sec / step]
	Sets the length of time (seconds) for the time-out when the RCG (Remote Communication Gate) connects during a call via the @Remote network.		
5-816-009	RCG Write Timeout	*CTL	[0 to 100 / **60** / 1 sec / step]
	Sets the length of time (seconds) for the time-out when sent data is written to the RCG during a call over the @Remote network.		
5-816-010	RCG Read Timeout	*CTL	[0 to 100 / **60** / 1 sec / step]
	Sets the timeout counter for reading processing.		
5-816-011	Port 80 Enable	*CTL	[0 or 1 / **0** / 1 / step] 0: No. Access denied 1: Yes. Access granted.
	Controls if permission is given to get access to the SOAP method over Port 80 on the @Remote network.		
5-816-013	RFU Timing	*CTL	[0 or 1 / **1** / 1 / step] 0: Any status of a target machine 1: Sleep or panel off mode only
	Selects the timing for the remote firmware updating.		
5-816-014	RCG Error Cause	CTL	[0 to 2 / **0** / 1 / step]
	0: Normal 1: Fails to reflect the client/server certificate settings by network failure to reboot. Transitions to 0 on restarting the machine.		
5-816-021	RCG-C Registed	*CTL	[0 or 1 / **0** / 1 / step] 0: Not registered, 1: Registered
5-816-023	Connect Mode (N/M)	*CTL	[0 or 1 / **0** / 1 / step] 0: Internet connection 1: Dial-up connection
	This SP displays and selects the RCG-N connection method.		
5-816-027	Connection Timeout	*CTL	[1 to 90 / **30** / 1 second / step]
	Sets the timeout period for connecting to the GW URL. Enabled only if operation is performed as Cumin.		
5-	Send Timeout	*CTL	[0 to 100 / **30** / 1 second / step]

816-028	Sets the timeout period for transmitting to the GW URL.		
5-816-029	Receive Timeout	*CTL	[0 to 100 / **30** / 1 second / step]
	Sets the timeout period for receiving from the GW URL.		
5-816-030	Retry Interval	*CTL	[0 to 0xffff / **3** / 1 second / step]
	Sets the interval of connection retry performed when connection to the GW URL could not be established.		
5-816-031	Retry Count	*CTL	[0 to 255 / **3** / 1 / step]
	Sets the number of times of connection retry performed when connection to the GW URL could not be established. If the number is reached, the failure will be processed as communication error.		
5-816-032	Connect Send Delay	*CTL	[0 to 255 / **5** / 1 second / step]
	Sets waiting time after sending notification request to the request management until getting the notification.		
5-816-033	Max Multipart	*CTL	[0 to 255 / **10** / 1 / step]
	Sets the maximum number of multipart messages sent to/from the GW URL. The upper limit of this value is 10, as agreed on with the GW URL.		
5-816-034	Firm DL Interval	*CTL	[0 to 0xffff / **3** / 1 second / step]
	Sets the interval of retry performed when acquisition of firmware data from the SERES server (global server) fails in the course of firmware update with Cumin.		
5-816-035	Firm DL Retry Count	*CTL	[0 to 255 / **3** / 1 / step]
	Sets the number of times of retry performed when acquisition of firmware data from the SERES server (global server) fails in the course of firmware update with Cumin.		
5-816-061	Cert Expire Timing	*CTL	[0 to 0xffffffff / **0** / 1 / step]
	Proximity of the expiration of the certification.		
5-816-062	Use Proxy	*CTL	[0 or 1 / **0** / 1 / step] 0: Not use 1: Use
	This SP setting determines if the proxy server is used when the machine communicates with the service center.		
5-816-063	Proxy Host	*CTL	-
	This SP sets the address of the proxy server used for communication between the RCG device and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up the embedded RCG-N. Note • The address display is limited to 128 characters. Characters beyond the 128		

	character are ignored. • This address is customer information and is not printed in the SMC report.		
5-816-064	Proxy PortNumber	*CTL	[0 to 0xffff / **0** / 1 / step]
	This SP sets the port number of the proxy server used for communication between the embedded RCG-N and the gateway. This setting is necessary to set up the embedded RC Gate-N. Note • This port number is customer information and is not printed in the SMC report.		
5-816-065	Proxy User Name	*CTL	-
	This SP sets the HTTP proxy certification user name. Note • The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. • This name is customer information and is not printed in the SMC report.		
5-816-066	Proxy Password	*CTL	-
	This SP sets the HTTP proxy certification password. Note • The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. • This name is customer information and is not printed in the SMC report.		
5-816-067	CERT:Up State	*CTL	[0 to 255 / **0** / 1 / step]
	Displays the status of the certification update.		
	0	The certification used by RCG-N is set correctly.	
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.	
	2	The certification update is completed and the GW URL is being notified of the successful update.	
	3	The certification update failed, and the GW URL is being notified of the failed update.	
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.	
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.	
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.	
	13	The notification of the request for certification update has	

		completed successfully, and the system is waiting for the certification update request from the rescue GW URL.	
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.	
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.	
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.	
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but an certification error has been received, and the rescue certification is being recorded.	
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.	
5-816-068	CERT:Error	*CTL	[0 to 255 / **0** / 1 / step]
	Displays a number code that describes the reason for the request for update of the certification.		
	0	Normal. There is no request for certification update in progress.	
	1	Request for certification update in progress. The current certification has expired.	
	2	An SSL error notification has been issued. Issued after the certification has expired.	
	3	Notification of shift from a common authentication to an individual certification.	
	4	Notification of a common certification without ID2.	
	5	Notification that no certification was issued.	
	6	Notification that GW URL does not exist.	
5-816-069	CERT:Up ID	*CTL	-
	The ID of the request for certification.		
5-816-083	Firm Up Status	*CTL	[0 or 1 / **0** / 1 / step]
	Displays the status of the firmware update.		
5-816-	Firm Up User Check	*CTL	[0 or 1 / **0** / 1 / step]
	This SP setting determines if the operator can confirm the previous version of the		

085	firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.		
5-816-086	Firmware Size	*CTL	[0 to 0xffffffff / **0** / 1 / step]
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.		
5-816-087	CERT: Macro Ver.	CTL	-
	Displays the macro version of the @Remote certification.		
5-816-088	CERT: PAC Ver.	CTL	-
	Displays the macro version of the @Remote certification.		
5-816-089	CERT: ID2 Code	CTL	-
	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asteriskes (****) indicate that no @Remote certification exists.		
5-816-090	CERT: Subject	CTL	-
	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (****) indicate that no DESS exists.		
5-816-091	CERT: SerialNo.	CTL	-
	Displays serial number for the NRS certification. Asterisks (****) indicate that no DESS exists.		
5-816-092	CERT: Issuer	CTL	-
	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks (****) indicate that no DESS exists.		
5-816-093	CERT: Valid Start	CTL	-
	Displays the start time of the period for which the current @Remote certification is enabled.		
5-816-094	CERT: Valid End	CTL	-
	Displays the end time of the period for which the current @Remote certification is enabled.		
5-816-102	CERT: Encrypt Level	*CTL	[1 or 2 / **1** / 1 / step] 1: 512 bit 2: 2048 bit
	Displays cryptic strength of the NRS certification. Press [Execute]. Setting this SP classifies the telephone line where embedded RCG-M is connected as either dial-up (pulse dial) or push (DTMF tone) type, so embedded RCG-M can automatically distinguish the number that connects to the outside line.		

	• The current progress, success, or failure of this execution can be displayed with SP5816-152. • If the execution succeeded, SP5816-153 will display the result for confirmation and SP5816-154 will display the telephone number for the connection to the outside line.		
5-816-103	Client Communication Method	*CTL	[0 to 3 / **0** / 1 / step]
5-816-104	Client Communication Limit	*CTL	[1 to 7 / **7** / 1 / step]
5-816-115	Network Information Waiting timer	*CTL	[5 to 255 / **5** / 1 second / step]
5-816-200	Manual Polling	CTL	[0 or 1 / **0** / 1 / step] [Execute]
	Executes the manual polling.		
5-816-201	Regist Status	CTL	[0 to 255 / **0** / 1 / step]
	Displays a number that indicates the status of the @Remote service device. 0: Neither the registered device by the external nor embedded RCG device is set. 1: The embedded RCG device is being set. Only Box registration is completed. In this status, this unit cannot answer a polling request from the external RCG. 2. The embedded RCG device is set. In this status, the external RCG unit cannot answer a polling request. 3. The registered device by the external RCG is being set. In this status the embedded RCG device cannot be set. 4 The registered module by the external RCG has not started.		
5-816-202	Letter Number	*CTL	-
	Allows entry of the number of the request needed for the RCG-N device.		
5-816-203	Confirm Execute	CTL	[0 or 1 / **0** / 1 / step] [Excute]
	Executes the inquiry request to the @Remote GW URL.		
5-816-204	Confirm Result	CTL	[0 to 255 / **0** / 1 / step]
	Displays a number that indicates the result of the inquiry executed with SP5816-203.		
	0: Succeeded 1: Inquiry number error 2: Registration in progress 3: Proxy error (proxy enabled)		

	4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Inquiry executing		
5-816-205	Confirm Place	CTL	[0 or 1 / **0** / 1 / step]
	Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.		
5-816-206	Register Execute	CTL	[0 or 1 / **0** / 1 / step] [Excute]
	Executes "Embedded RCG Registration".		
5-816-207	Register Result	CTL	[0 to 255 / **0** / 1 / step]
	Displays a number that indicates the registration result. 0: Succeeded 2: Registration in progress 3: Proxy error (proxy enabled) 4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Registration executing		
5-816-208	Error Code	CTL	[-2147483647 to 2147483647 / **0** / - / step]
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.		
	Cause	**Code**	**Meaning**
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
		-11004	
		-11005	
	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
		-12005	@Remote communication is prohibited. The

			device has an Embedded RC gate-related problem.
	Operation Error, Incorrect Setting	-12006	A confirmation request was made after the confirmation had been already completed.
		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
		-12009	ID2 mismatch between an individual certification and NVRAM
		-12010	Certification area is not initialized.
	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	Basil not managed
		-2394	Device not managed
		-2395	Box ID for Basil is illegal
		-2396	Device ID for Basil is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
5-816-209	Instl Clear	CTL	[0 or 1 / **0** / 1/step] [Excute]
	Releases a machine from its Cumin setup.		
5-816-240	CommErrorTime	*CTL	[0 to 0xffffffff / **0** / 1 / step]
5-816-241	CommErrorCode 1	*CTL	[0 to 0xffffffff / **0x00000000** / 1 / step]
5-816-242	CommErrorCode 2	*CTL	[0 to 0xffffffff / **0x00000000** / 1 / step]
5-816-243	CommErrorCode 3	*CTL	[0 to 0xffffffff / **0x00000000** / 1 / step]

5-816-244	CommErrorState 1	*CTL	[0 to 0xffff / **0x0000** / 1 / step]
5-816-245	CommErrorState 2	*CTL	[0 to 0xffff / **0x0000** / 1 / step]
5-816-246	CommErrorState 3	*CTL	[0 to 0xffff / **0x0000** / 1 / step]
5-816-247	SSL Error Count	*CTL	[0 to 255 / **0** / 1 / step]
5-816-248	Other Err Count	*CTL	[0 to 255 / **0** / 1 / step]
5-816-250	CommLog Print	CTL	[0 to 255 / **0** / 1 / step] [Excute]
	Prints the communication log.		

5821	**[Remote Service RCG Setting]**		
5-821-002	RCG IPv4 Address	*CTL	[0 to 0xffffffff / **0** / 1 / step]
	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.		
5-821-003	RCG Port	*CTL	[0 to 65535 / **443** / 1 / step]
	Sets the port number of the RCG (Remote Communication Gate) destination for call processing at the remote service center.		
5-821-004	RCG IPv4 URL Path	*CTL	[- / **-** / -]
	Sets the URL path of the RCG (Remote Communication Gate) destination for call processing at the remote service center.		
5-821-005	RCG IPv6 Address	*CTL	[- / **-** / -]
5-821-006	RCG IPv6 URL Path	*CTL	[- / **-** / -]
5-821-007	RCG Host Name	*CTL	[- / **-** / -]
5-821-008	RCG Host URL Path	*CTL	[- / **-** / -]

5824	**[NVRAM Upload]**

	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card. For details, see "NVRAM Data Upload/Download" in the "Main chapters: 5. System Maintenance".		
5-824-001	-	CTL	[- / **-** / -]

5825	**[NVRAM Download]**		
	Downloads the UP and SP mode data from an SD card to the NVRAM. For details, see "NVRAM Data Upload/Download" in the "Main chapters: 5. System Maintenance".		
5-825-001	-	CTL	[- / **-** / -] [Execute]

5828	**[Network Setting]**			
	Job spool settings/ Interface selection for Ethernet and wireless LAN			
5-828-050	1284 Compatibility (Centro)	*CTL		Enables or disables 1284 Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled
5-828-052	ECP (Centro)	*CTL		[0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled
	Enables or disables ECP Compatibility. Note • This SP is activated only when SP5-828-50 is set to "1".			
5-828-065	Job Spooling	*CTL		Switches the job spooling on and off. [0 or 1 / **0** / 1 / step] 0: No spooling 1: Spooling enabled
5-828-066	Job Spooling Clear: Start Time	*CTL		[0 or 1 / **1** / 1 / step] 1: OFF Resumes printing spooled job. 0: ON Clears spooled job.
	This SP determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828-065 is set to "1".			
5-828-069	Job Spooling (Protocol)	*CTL		[0x00 to 0xff / **0x7f** / 0 / step] 0: No spooling 1: Spooling enabled
	This SP determines whether job spooling is enabled or disabled for each protocol. This is an 8-bit setting.			
	0	LPR	4	BMLinks (Japan Only)
	1	FTP	5	DIPRINT

		(Not Used)		
	2	IPP	6	Reserved (Not Used)
	3	SMB	7	Reserved (Not Used)
5-828-087	Protocol usage	*CTL		[0x00000000 to 0xffffffff / **0x00000000** / 1 / step]
	Shows which protocols have been used with the network. 0: Off (Not used the network with the protocol.) 1: On (Used the network with the protocol once or more.) bit0: IPsec, bit1: IPv6, bit2: IEEE 802. 1X, bit3:Wireless LAN, bit4: Security mode level setting, bit5:Appletalk, bit6: DHCP, bit7: DHCPv6, bit8: telnet, bit9: SSL, bit10: HTTPS, bit11: BMLinkS printing, bit12: diprint printing, bit13: LPR printing, bit14: ftp printing, bit15: rsh printing, bit16: SMB printing, bit17: WSD-Printer, bit18: WSD-Scanner, bit19: Scan to SMB, bit20: Scan to NCP, bit21: Reserve, bit22: Bluetooth, bit23: IEEE 1284, bit24: USB printing, bit25: Dynamic DNS, bit26: Netware printing, bit27: LLTD, bit28: IPP printing, bit29: IPP printing (SSL), bit30: ssh, bit31: sftp			
5-828-090	TELNET (0: OFF 1: ON)	*CTL		Enables or disables the Telnet protocol. [0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
5-828-091	Web (0: OFF 1: ON)	*CTL		Enables or disables the Web operation. [0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
5-828-145	Active IPv6 Link Local Address	CTL		This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-147	Active IPv6 Stateless Address 1	CTL		These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-149	Active IPv6 Stateless Address 2	CTL		
5-828-151	Active IPv6 Stateless Address 3	CTL		
5-	Active IPv6	CTL		

828-153	Stateless Address 4		
5-828-155	Active IPv6 Stateless Address 5	CTL	
5-828-156	IPv6 Manual Address	*CTL	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-158	IPv6 Gateway Address	*CTL	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-161	IPv6 Stateless Auto Setting	*CTL	Enables or disables the automatic setting for IPv6 stateless. [0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable
5-828-219	IPsec Aggressive Mode Setting	*CTL	Switches the IPsec Aggressive Mode On/Off. [0 or 1 / **0** / 1 / step] 0: Off, 1: On
5-828-236	Web Item visible	*CTL	[0x0000 to 0xffff / **0xffff** / 1 / step] 0: Not displayed 1: Displayed
	Displays or does not display the Web system items. bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)		
5-828-237	Web shopping link visible	*CTL	[0 or 1 / **1** / 1 / step] 0: Not display 1:Display
	Displays or does not display the link to Net RICOH on the top page and link page of the web system.		
5-828-238	Web supplies Link visible	*CTL	[0 or 1 / **1** / 1 / step] 0: Not display 1:Display
	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system.		

5-828-239	Web Link1 Name	*CTL	-
	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.		
5-828-240	Web Link1 URL	*CTL	[- / **NULL** / - / step]
	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.		
5-828-241	Web Link1 visible	*CTL	[0 or 1 / **1** / 1 / step] 0: Not display 1:Display
	Displays or does not display the link to URL1 on the top page of the web system.		
5-828-242	Web Link2 Name	*CTL	-
	Same as "-239"		
5-828-243	Web Link2 URL	*CTL	[- / **NULL** / - / step]
	Same as "-240"		
5-828-244	Web Link2 visible	*CTL	[0 or 1 / **1** / 1 / step]
	Same as "-241"		
5-828-249	DHCPv6 DUID	CTL	[- / **-** / -]
	Sets DHCPv6 DUID.		

5832	**[HDD]** HDD Initialization		
	Initializes the hard disk. Use this SP mode only if there is a hard disk error.		
5-832-001	HDD Formatting (ALL)	CTL	[- / **-** / -] [Execute]

5840	**[IEEE 802.11]**		
5-840-006	Channel MAX	*CTL	[1 to 14 / **14** / 1 / step]
5-840-007	Channel MIN	*CTL	[1 to 14 / **1** / 1 / step]
	Sets the minimum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the minimum end of the range for each area. Adjust the lower 4 bits to set the minimum number of channels.		
5-840-	WEP Key Select	*CTL	[0x00 to 0x11 / **0x00** / 0 / step]

011			
5-840-045	WPA Debug Lvl	*CTL	[1 to 3 / **3** / 1/step] 1: Info 2: warning 3: error
	Selects the debug level for WPA authentication application. This SP is displayed only when the IEEE802.11 card is installed.		
5-840-046	11w	*CTL	[0 to 2 / **0** / 1 / step]
5-840-047	PSK SetType	*CTL	[0 or 1 / **0** / 1 / step]

5841	**[Supply Name Setting]**		
5-841-001	Toner Name Setting: Black	*CTL	[- / **-** / -]
5-841-002	Toner Name Setting: Cyan	*CTL	[- / **-** / -]
5-841-003	Toner Name Setting: Yellow	*CTL	[- / **-** / -]
5-841-004	Toner Name Setting: Magenta	*CTL	[- / **-** / -]
5-841-009	WasteTonerBottle	*CTL	[- / **-** / -]
5-841-101	DrumUnit: Black	*CTL	[- / **-** / -]
5-841-102	DrumUnit: Color	*CTL	[- / **-** / -]

5842	**[GWWS Analysis]** Net File Application Analysis		
5-842-001	Setting 1	*CTL	Prints or does not print the module log for each bit. [0x00 to 0xFF / **0** / 1 / step] 0: Prints, 1: Not print Bit switches: • Bit 0: System or other related application. • Bit 1: Captured related application • Bit 2: Certification related application • Bit 3: Address related application • Bit 4: Control devices or transmission logs related application • Bit 5: Output (print, fax or transmission) related application • Bit 6: Documents related application in bit 7, 0: Not printed, 1: Printed • Bit 7: MSB related application
5-842-	Setting	*CTL	Selects the stamp type for the log of Net File Application

002	2		Analysis. [0x00 to 0xFF / **0** / 1 / step] Bit switches: • Bit 0 to 6: Not used. • Bit 7 0: Minute/second/micro second 1: Date/hour/minute/second

5844	**[USB]**		
5-844-001	Transfer Rate	*CTL	[0x01 or 0x04 / **0x04** / - / step] 0x01: Full speed 0x04: Auto Change
5-844-002	Vender ID	*CTL	Displays the vendor ID. **DFU**
5-844-003	Product ID	*CTL	Displays the product ID. **DFU**
5-844-004	Device Release Number	*CTL	Displays the development release version number. **DFU**
5-844-005	Fixed USB Port	*CTL	[0 to 2 / **0** / 1 / step] 0: OFF 1: Level 1 2: Level 2
5-844-006	PnP Model Name	*CTL	Default: Laser Printer (up to 20 characters allowed).
5-844-007	PnP Serial Number	*CTL	Default: None (up to 12 characters allowed for entry).
5-844-008	Mac Supply Level	*CTL	[0 or 1 / **1** / 1 / step]
5-844-009	USB Toggle Clear Mode	*CTL	[0 or 1 / **0** / 1 / step] 0: Disable, 1: Enable
5-844-100	Notify Unspport	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable, 1: Enable

5845	**[Delivery Server Setting]**		
5-845-003	Retry Interval	*CTL	Specifies the retry interval. [60 to 900 / **300** / 1 sec / step]
5-845-004	Number of Retries	*CTL	Specifies the maximum number of retries. [0 to 99 / **3** / 1 / step]
5-845-022	Rapid Sending Control	*CTL	Switches instant transmission off/on. [0 or 1 / **1** / 1 / step] 1: Off. Instant transmission not possible with network setting errors.

			0: On. Instant transmission possible with network setting errors.
	Note • The machine will continue to transmit over the network, even if the network settings are incorrect. (This causes multiple errors, of course.) • With this SP off, the machine will stop communicating with the network if the settings are wrong. This reduces the amount of spurious network traffic caused by errors due to incorrect settings.		

5846	**[UCS Setting]**		
5-846-010	LDAP Search Timeout	*CTL	[1 to 255 / **60** / 1 / step]
	Sets the length of the timeout for the search of the LDAP server.		
5-846-041	Fill Addr Acl Info	CTL	-
	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. **Procedure** 1. Turn the machine off. 2. Install the new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. 5. However, at this point the address book can be accessed by only the system administrator or key operator. 6. Enter the SP mode and do SP5846-041. After this SP executes successfully, any user can access the address book.		
5-846-043	Addr Book Media	*CTL	[0 to 30 / **0** / 1 / step] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing
	Displays the slot number where an address book data is in.		
5-	Initialize Local Addr Book	CTL	[- / **-** / -]

846-047			[Execute]
	Clears the local address book information, including the user code.		
5-846-049	Initialize LDAP Addr Book	CTL	[- / - / -] [Execute]
	Clears the LDAP address book information, except the user code.		
5-846-050	Initialize All Addr Book	CTL	[- / - / -] [Execute]
	Clears all directory information managed by UCS, including all user codes. Turn off and on the main power switch after executing this SP.		
5-846-051	Backup All Addr Book	CTL	[- / - / -] [Execute]
	Uploads all directory information to the SD card.		
5-846-052	Restore All Addr Book	CTL	[- / - / -] [Execute]
	Downloads all directory information from the SD card.		
5-846-053	Clear Backup Info	CTL	[- / - / -] [Execute]
	Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected. Note • After you do this SP, go out of the SP mode, and then turn the power off. • Do not remove the SD card until the Power LED stops flashing.		
5-846-060	Search option	*CTL	[0x00 to 0xff / **0x0f** / 1 / step]
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. [0: Off or **1: On**] Bit: Meaning Bit0: Checks both upper/lower case characters Bit1 to 3: Japan Only Bit4 to 7: Not used		
5-846-062	Complexity option 1	*CTL	[0 to 32 / **0** / 1 / step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. Note • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		

5-846-063	Complexity option 2	*CTL	[0 to 32 / **0** / 1 / step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **lower case** and defines the length of the password. Note • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5-846-064	Complexity option 3	*CTL	[0 to 32 / **0** / 1 / step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **numbers** and defines the length of the password. Note • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5-846-065	Complexity option 4	*CTL	[0 to 32 / **0** / 1 / step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **symbols** and defines the length of the password. Note • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5-846-094	Encryption Stat	*CTL	[0 to 255 / **-** / - / step]
	Shows the status of the encryption function of the address book on the LDAP server. 0: No encryption 1: Encryption 2: Decrypting from encrypted data to plain data 3: Encrypting from plain data to encrypted data 4: Decrypted from encrypted data to plain data 5: Encrypted from plain data to encrypted data 6: Changing the encryption setting 7: Changing the encryption key is done. 8: Deleting the encryption key is done before changing the setting. 9: Changing the encryption setting is done.		

5848	**[Web Service]**		
	5848 2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5848 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.		
5-848-004	Access Ctrl: udirectory (Lower 4bits)	*CTL	Switches access control on and off. [0x00 to 0xFF / **0x00** / 0 / step] 0000: No access control 0001: Access control
5-848-009	Access Ctrl: Job Ctrl (Lower 4bits)	*CTL	
5-848-011	Access Ctrl: Devicemanagement (Lower 4bits)	*CTL	
5-848-022	Access Ctrl: uadministration (Lower 4bits)	*CTL	
5-848-024	Access Ctrl: Log Service (Lower 4bits)	*CTL	
5-848-025	Access Ctrl: Rest WebService (Lower 4bits)	*CTL	
5-848-150	Log Operation Mode	*CTL	[0 to 3 / **0** / 1 / step] 0: Server operation 1: SDK App operation 2: Lynx operation 3: ZL operation
5848	**[LogTrans]**		
5-848-217	Setting: Timing	*CTL	NIA [0 to 2 / **0** / 1 / step] Sets the timing of log transfer. 0: Transfer Off 1: Sequential transfer 2: Fixed time transfer

5849	**[Installation Date]**		
5-849-001	Display	*CTL	[- / **-** / -]
5-849-002	Switch to Print	*CTL	[0 or 1 / **1** / 1 / step] 0: OFF (No Print) 1: ON (Print)
5-849-003	Total Counter	*CTL	[0 to 99999999 / **0** / 1 / step]

5851	[Bluetooth]		
5-851-001	Mode	*CTL	[0x00 to 0x01 / **0x00** / 1 / step] *Japan Only 0: Public 1: Private

5856	[Remote ROM Update]		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
5-856-002	Local Port	*CTL	[0 or 1 / **0** / 1 / step] 0: Disable 1: Enable

5858	[Collect Machine Info]		
5-858-001	0:OFF 1:ON	*CTL	[0 to 1 / **1** / - / step]
5-858-002	Save To (0:HDD 1:SD)	*CTL	[0 to 1 / **0** / - / step]
5-858-003	Make Log Trace Dir	*CTL	[0 to 1 / **0** / - / step]
5-858-101	Failure Occuring Date	*CTL	[0 to 20371212 / **0** / 1 / step]
5-858-102	Tracing Days	*CTL	[1 to 180 / **2** / day / step]
5-858-103	Acquire Fax Address(0:OFF 1:ON)	*CTL	[0 to 1 / **0** / - / step]
5-858-111	Acquire All Info & Logs	*CTL	[0 to 1 / **0** / - / step]
5-858-121	Acquire Configuration Page	*CTL	[0 to 1 / **0** / - / step]
5-858-122	Acquire Font Page	*CTL	[0 to 1 / **0** / - / step]
5-858-123	Acquire Print Setting List	*CTL	[0 to 1 / **0** / - / step]
5-858-124	Acquire Error Log	*CTL	[0 or 1 / **0** / - / step]
5-858-131	Acquire Fax Info	*CTL	[0 or 1 / **0** / - / step]
5-858-141	Acquire All Debug Logs	*CTL	[0 or 1 / **0** / - / step]
5-858-142	Acquire Controller Debug Logs Only	*CTL	[0 or 1 / **0** / - / step]
5-858-143	Acquire Engine Debug Logs Only	*CTL	[0 or 1 / **0** / - / step]
5-858-144	Acquire Opepanel Debug Logs Only	*CTL	[0 or 1 / **0** / - / step]
5-858-145	Acquire FCU Debug Logs Only	*CTL	[0 or 1 / **0** / - / step]

5860	**[SMTP/POP3/IMAP4]**		
5-860-002	SMTP Server Port Number	*CTL	[1 to 65535 / **25** / 1 / step]
5-860-003	SMTP Authentication	*CTL	[0 or 1 / **0** / 1 / step]
5-860-006	SMTP Auth. Encryption	*CTL	[0 to 2 / **0** / 1 / step]
5-860-007	POP before SMTP	*CTL	[0 or 1 / **0** / 1 / step]
5-860-008	POP to SMTP Waiting Time	*CTL	[0 to 10000 / **300** / 1 ms/ step]
5-860-009	Mail Receive Protocol	*CTL	[1 to 3 / **1** / 1 / step]
5-860-013	POP3/IMAP4 Auth. Encryption	*CTL	[0 to 2 / **0** / 1 / step]
5-860-014	POP3 Server Port Number	*CTL	[1 to 65535 / **110** / 1 / step]
5-860-015	IMAP4 Server Port Number	*CTL	[1 to 65535 / **143** / 1 / step]
5-860-016	SMTP Receive Port Number	*CTL	[1 to 65535 / **25** / 1 / step]
5-860-017	Mail Receive Interval	*CTL	[2 to 1440 / **3** / 1 min / step]
5-860-019	Mail Keep Setting	*CTL	[0 to 2 / **0** / 1/step]
5-860-020	Partial Mail Receive Timeout	*CTL	[1 to 168 / **72** / 1 hour / step]
5-860-021	MDN Response RFC2298 Compliance	*CTL	[0 or 1 / **1** / 1 / step] 0: No 1: Yes
	Determines whether RFC2.5298 compliance is switched on for MDN reply mail.		
5-860-022	SMTP Auth. From Field Replacement	*CTL	[0 or 1 / **0** / 1 / step]
5-860-025	SMTP Auth. Direct Setting	*CTL	[0 to 0xff / **0** / 1 / step]
	Selects the authentication method for SMPT. Bit switch: Bit 0: LOGIN Bit 1: PLAIN		

	Bit 2: CRAM MD5 Bit 3: DIGEST MD5 Bit 4 to 7: Not used Note • This SP is activated only when SMTP authorization is enabled by UP mode.		
5-860-026	S/MIME:MIME Header Setting	*CTL	[0 to 2 / **0** / 1 / step] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard
	Selects the MIME header type of an E-mail sent by S/MIME.		

5866	**[E-Mail Report]**		
5-866-001	Report Validity	CTL	[0 or 1/ **0** / 1 / step] 0: Enable, 1: Disable
	Disables and re-enables the email notification feature.		
5-866-005	Add Date Field	*CTL	[0 or 1/ **0** / 1 / step]

5869	**[RAM Disk Setting]**		
5-869-001	Mail Function	*CTL	[0 or 1 / **0** / 1 / step] 0: On, 1: Off
	Enables or disables the e-mail transfer function. This SP sets the RAM disk size for the e-mail transfer function.		

5870	**[Common Key Info Writing]**		
5-870-001	Writing	CTL	[0 or 1 / **0** / 1 / step] [Execute]
	Writes the authentication data (used for NRS) in the memory.		
5-870-003	Initialize	CTL	[0 or 1 / **0** / 1 / step] [Execute]
	Initializes the authentication data in the memory.		
5-870-004	Writing: 2048bit	CTL	[0 or 1 / **0** / 1 / step] [Execute]
	Writes the authentication data 2048bit (used for NRS) in the memory.		

5873	[SDCard Appli Move]		
5-873-001	Move Exec	CTL	[- / - / 1] [Execute]
	This SP copies the application programs from the original SD card in SD card slot 2 to an SD card in SD card slot 1.		
5-873-002	Undo Exec	CTL	[- / - / 1] [Execute]
	This SP copies back the application programs from an SD card in SD Card Slot 2 to the original SD card in SD card slot 1. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).		

5875	[SC Auto Reboot]		
	Configures settings relating to reboot performed in case of SC.		
5-875-001	Reboot Setting	CTL	[0 or 1 / **0** / 1 / step] 0: ON 1: OFF
	Sets whether reboot is performed or not when SC occurs.		
5-875-002	Reboot Type	CTL	[0 or 1 / **0** / 1 / step] 0: Manual reboot 1: Automatic reboot
	Sets the type of reboot performed when SC occurs.		

5878	[Option Setup]		
5-878-001	Data Overwrite Security	CTL	[- / - / -] [Execute]
	Enables the Data Overwrite Security unit. Press "EXECUTE" on the operation panel. Then turn the machine off and on.		
5-878-002	HDD Encryption	CTL	[- / - / -] [Execute]

5881	[Fixed Phrase Block Erasing]		
5-881-001	-	*CTL	[- / - / -] [EXECUTE]

5886	[Farm Update Setting]		
100	Skip Version Check	*CTL	[0 to 1 / **0** / 1 / step]
101	Skip LR Check	*CTL	[0 to 1 / **0** / 1 / step]
111	Auto Update Setting	*CTL	[0 to 1 / **0** / 1 / step]
112	Auto Update Prohibit Term Setting	*CTL	[0 to 1 / **1** / 1 / step]
113	Auto Update Prohibit Start hour	*CTL	[0 to 23 / **9** / 1 hour/ step]
114	Auto Update Prohibit End hour	*CTL	[0 to 23 / **17** / 1 hour/ step]
115	SFU Auto Download Setting	*CTL	[0 to 1 / **0** / 1 / step]
116	Auto Update Next Date	*CTL	[- / **-** / -]
117	Auto Update Retry Interval Hour	*CTL	[1 to 24 / **1** / 1 hour/ step]

5887	[SD GetCounter] DFU		
5-887-001	-	CTL	[- / **-** / -] [Execute]

5888	[Personal Information Protect]		
5-888-001	-	*CTL	[0 or 1 / **0** / 1 / step]

5893	[SDK Application Counter]		
5-893-001	SDK-1	CTL	-
5-893-002	SDK-2	CTL	-
5-893-003	SDK-3	CTL	-
5-893-004	SDK-4	CTL	-
5-893-005	SDK-5	CTL	-
5-893-006	SDK-6	CTL	-
5-893-007	SDK-7	CTL	-
5-893-008	SDK-8	CTL	-
5-893-009	SDK-9	CTL	-
5-893-010	SDK-10	CTL	-
5-893-011	SDK-11	CTL	-
5-893-012	SDK-12	CTL	-

5907	[Plug & Play Maker/Model Name]		
5-907-001	-	*CTL	[0 to 225 / **0** / 1 / step]
	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.		

5990	[SP Print mode]		
	Prints out the SMC sheets.		
5-990-001	All (Data List)	CTL	[0 to 255 / **-** / - / step]
5-990-002	SP (Mode Data List)	CTL	[0 to 255 / **-** / - / step]
5-990-004	Logging Data	CTL	[0 to 255 / **-** / - / step]
5-990-005	Diagnostic Report	CTL	[0 to 255 / **-** / - / step]
5-990-006	Non-Default	CTL	[0 to 255 / **-** / - / step]
5-990-007	NIB Summary	CTL	[- / **-** / -]
5-990-024	SDK/J Summary	CTL	[- / **-** / -]
5-990-025	SDK/J Application Info	CTL	[- / **-** / -]
5-990-026	Printer SP	CTL	[0 to 255 / **-** / - / step]

5992	[SP Text mode]		
	Saves the SMC list data to the SD card in csv format.		
5-992-001	All (Data List)	CTL	[0 to 255 / **-** / - / step]
5-992-002	SP (Mode Data List)	CTL	[0 to 255 / **-** / - / step]
5-992-004	Logging Data	CTL	[0 to 255 / **-** / - / step]
5-992-005	Diagnostic Report	CTL	[0 to 255 / **-** / - / step]
5-992-006	Non-Default	CTL	[0 to 255 / **-** / - / step]
5-992-007	NIB Summary	CTL	[- / **-** / -]
5-992-024	SDK/J Summary	CTL	[- / **-** / -]
5-992-025	SDK/J Application Info	CTL	[- / **-** / -]
5-992-026	Printer SP	CTL	[0 to 255 / **-** / - / step]

4.3 CONTROLLER SP TABLES-7

4.3.1 SP7-XXX (DATA LOG)

7401	[Total SC]		
	Displays the number of SC codes detected.		
7-401-001	SC Counter	*CTL	[0 to 65535 / **0** / - / step]
7-401-002	Total SC Counter	*CTL	[0 to 65535 / **0** / - / step]

7403	[SC History]		
	Logs and displays the SC codes detected. The 10 most recently detected SC Codes are displayed on the screen, and also can be seen on the SMC (logging) outputs. Note • If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs.		
7-403-001	Latest	*CTL	[- / **-** / -]
7-403-002	Latest 1	*CTL	
7-403-003	Latest 2	*CTL	
7-403-004	Latest 3	*CTL	
7-403-005	Latest 4	*CTL	
7-403-006	Latest 5	*CTL	
7-403-007	Latest 6	*CTL	
7-403-008	Latest 7	*CTL	
7-403-009	Latest 8	*CTL	
7-403-010	Latest 9	*CTL	

7404	[Software Error History]		
	Logs and displays the SC990 / SC991 /SC899 / SC997 / SC998 detected. The 10 most recently detected SC. Note • If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs.		
7-404-001	Latest	*CTL	[- / - / -]
7-404-002	Latest 1	*CTL	
7-404-003	Latest 2	*CTL	
7-404-004	Latest 3	*CTL	
7-404-005	Latest 4	*CTL	
7-404-006	Latest 5	*CTL	
7-404-007	Latest 6	*CTL	
7-404-008	Latest 7	*CTL	
7-404-009	Latest 8	*CTL	
7-404-010	Latest 9	*CTL	

7502	[Total Paper Jam]		
	Displays the total number of jams detected.		
7-502-001	Jam Counter	*CTL	[0 to 65535 / - / - / step]
7-502-002	Total Jam Counter	*CTL	

7504	[Paper Jam Location]		
	Displays the number of jams according to the location where jams were detected.		
7-504-001	At Power On	*CTL	Paper is not fed at power on. [0 to 65535 / - / - / step]
7-504-003	Tray1: On	*CTL	[0 to 65535 / - / - / step]
7-504-004	Tray2: On	*CTL	[0 to 65535 / - / - / step]

7-504-005	Tray3: On	*CTL	[0 to 65535 / - / - / step]
7-504-006	Tray4: On	*CTL	[0 to 65535 / - / - / step]
7-504-008	Bypass: On	*CTL	[0 to 65535 / - / - / step]
7-504-009	Duplex: On	*CTL	[0 to 65535 / - / - / step]
7-504-018	Tray 2 Sn: On	*CTL	[0 to 65535 / - / - / step]
7-504-019	Tray 3 Sn: On	*CTL	[0 to 65535 / - / - / step]
7-504-023	Registration:On	*CTL	[0 to 65535 / - / - / step]
7-504-024	Fusing Entrance: On	*CTL	[0 to 65535 / - / - / step]
7-504-032	Paper Exit On	*CTL	[0 to 65535 / - / - / step]
7-504-038	Duplex On	*CTL	Paper stays on the duplex sensor. [0 to 65535 / - / - / step]
7-504-087	Resistration: Off	*CTL	[0 to 65535 / - / - / step]
7-504-096	Paper Exit: Off	*CTL	[0 to 65535 / - / - / step]
7-504-102	Duplex Off	*CTL	Paper does not reach the duplex sensor. [0 to 65535 / - / - / step]

7506	**[Jam Count by Paper Size]**		
7-506-006	A5 LEF	*CTL	Displays the number of jams according to the paper size. [0 to 65535 / - / - / step]
7-506-044	HLT LEF	*CTL	
7-506-133	A4 SEF	*CTL	
7-506-134	A5 SEF	*CTL	
7-506-142	B5 SEF	*CTL	
7-506-164	LG SEF	*CTL	
7-506-166	LT SEF	*CTL	
7-506-172	HLT SEF	*CTL	
7-506-255	Others	*CTL	

7507	[Plotter Jam History]		
	Logs and displays the 10 most recently detected paper jams. (CODE, SIZE, TOTAL, DATE)		
7-507-001	Latest	*CTL	[- / - / -]
7-507-002	Latest 1	*CTL	
7-507-003	Latest 2	*CTL	
7-507-004	Latest 3	*CTL	
7-507-005	Latest 4	*CTL	
7-507-006	Latest 5	*CTL	
7-507-007	Latest 6	*CTL	
7-507-008	Latest 7	*CTL	
7-507-009	Latest 8	*CTL	
7-507-010	Latest 9	*CTL	

7514	[Paper Jam Count by Location]		
	Displays the total number of jams according to the location where jams were detected.		
7-514-001	At Power On	*CTL	Paper is not fed at power on. [0 to 65535 / - / - / step]
7-514-003	Tray1: On	*CTL	[0 to 65535 / - / - / step]
7-514-004	Tray2: On	*CTL	[0 to 65535 / - / - / step]
7-514-005	Tray3: On	*CTL	[0 to 65535 / - / - / step]
7-514-006	Tray4: On	*CTL	[0 to 65535 / - / - / step]
7-514-008	Bypass: On	*CTL	[0 to 65535 / - / - / step]
7-514-009	Duplex On	*CTL	[0 to 65535 / - / - / step]
7-514-018	Tray 2 Sn: On	*CTL	[0 to 65535 / - / - / step]
7-514-019	Tray 3 Sn: On	*CTL	[0 to 65535 / - / - / step]
7-514-023	Registration:On	*CTL	[0 to 65535 / - / - / step]
7-514-	FusingEntrance: On	*CTL	[0 to 65535 / - / - / step]

024			
7-514-032	Paper Exit: On	*CTL	[0 to 65535 / **-** / - / step]
7-514-038	Duplex Sn: On	*CTL	[0 to 65535 / **-** / - / step]
7-514-087	Resistration: Off	*CTL	[0 to 65535 / **-** / - / step]
7-514-096	Paper Exit: Off	*CTL	[0 to 65535 / **-** / - / step]
7-514-102	Duplex: Off	*CTL	[0 to 65535 / **-** / - / step]

7516	**[Paper Size Jam Count]**		
7-516-006	A5 LEF	*CTL	Displays the number of jams according to the paper size. [0 to 65535 / **-** / - / step]
7-516-044	HLT LEF	*CTL	
7-516-133	A4 SEF	*CTL	
7-516-134	A5 SEF	*CTL	
7-516-142	B5 SEF	*CTL	
7-516-164	LG SEF	*CTL	
7-516-166	LT SEF	*CTL	
7-516-172	HLT SEF	*CTL	
7-516-255	Others	*CTL	

7520	**[Update Log]**		
7-520-001	Record1 ErrorRecord1	*CTL	[0 to 255 / **0** / 1 / step]
7-520-002	Record2 ErrorRecord2	*CTL	
7-520-003	Record3 ErrorRecord3	*CTL	
7-520-004	Record4 ErrorRecord4	*CTL	
7-520-005	Record5 ErrorRecord5	*CTL	
7-520-006	Record6 ErrorRecord6	*CTL	
7-520-007	Record7 ErrorRecord7	*CTL	

7-520-008	Record8 ErrorRecord8	*CTL	
7-520-009	Record9 ErrorRecord9	*CTL	
7-520-010	Record10 ErrorRecord10	*CTL	
7-520-011	Auto:StartDate1	*CTL	[- / **-** / - / -]
7-520-012	Auto:StartDate2	*CTL	
7-520-013	Auto:StartDate3	*CTL	
7-520-014	Auto:StartDate4	*CTL	
7-520-015	Auto:StartDate5	*CTL	
7-520-021	Auto:EndDate1	*CTL	
7-520-022	Auto:EndDate2	*CTL	
7-520-023	Auto:EndDate3	*CTL	
7-520-024	Auto:EndDate4	*CTL	
7-520-025	Auto:EndDate5	*CTL	
7-520-031	Auto:Piecemark1	*CTL	
7-520-032	Auto:Piecemark2	*CTL	
7-520-033	Auto:Piecemark3	*CTL	
7-520-034	Auto:Piecemark4	*CTL	
7-520-035	Auto:Piecemark5	*CTL	
7-520-041	Auto:Version1	*CTL	
7-520-042	Auto:Version2	*CTL	
7-520-043	Auto:Version3	*CTL	
7-520-044	Auto:Version4	*CTL	
7-520-045	Auto:Version5	*CTL	
7-520-051	Auto:Result1	*CTL	[0 to 255 / **0** / 1 / step]
7-520-052	Auto:Result2	*CTL	
7-520-053	Auto:Result3	*CTL	
7-520-054	Auto:Result4	*CTL	
7-520-055	Auto:Result5	*CTL	
7-520-056	Auto:Result6	*CTL	
7-520-057	Auto:Result7	*CTL	
7-520-058	Auto:Result8	*CTL	
7-520-059	Auto:Result9	*CTL	
7-520-060	Auto:Result10	*CTL	

7801	**[ROM No./ Firmware Version]**

	Displays ROM numbers in the machine.		
7-801-255	-	CTL	Displays the part number and version of all ROMs in the machine.

7803	**[PM Counter Display]**		
7-803-001	Paper	CTL	[0 to 999999 / **-** / - / step]

7804	**[PM Counter.Reset]**		
	Clears the PM counter. Press the Enter key after the machine asks “Execute?”, which will store the PM counter value in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to “0”.		
7-804-001	Paper	CTL	[- / **-** / -] [Execute]

7807	**[SC/Jam Counter Reset]**		
	Clears the all counters related to SC codes and paper jams. Note • This SP doesn’t reset either jam histories or SC code histories.		
7-807-001	-	CTL	[- / **-** / -] [Execute]

7832	**[Self-Diagnose Result Display]**		
7-832-001	-	CTL	Displays the result of the diagnostics. To scroll the return codes, press the up-arrow key or the down-arrow key.

7836	**[Total Memory Size]**		
7-836-001	-	CTL	[0 to 0xffffffff / **-** / - MB / step] Displays the memory capacity of the controller system.

7855	**[Coverage Range]**		
7-855-001	Coverage Range 1	*CTL	[0 to 200 / **5** / 1% / step]
7-855-002	Coverage Range 2	*CTL	[0 to 200 / **20** / 1% / step]

7901	[Assert Info.]		
7-901-001	File Name	*CTL	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis.
7-901-002	Number of Lines	*CTL	
7-901-003	Location	*CTL	

7910	[ROM No]		
7-910-001	System	CTL	[- / - / -]
7-910-002	Engine	CTL	[- / - / -]
7-910-003	Lcdc	CTL	[- / - / -]
7-910-018	NetworkSupport	CTL	[- / - / -]
7-910-022	BIOS	CTL	[- / - / -]
7-910-023	HDD Format Option	CTL	[- / - / -]
7-910-150	RPCS	CTL	[- / - / -]
7-910-151	PS	CTL	[- / - / -]
7-910-152	RPDL	CTL	[- / - / -]
7-910-153	R98	CTL	[- / - / -]
7-910-154	R16	CTL	[- / - / -]
7-910-156	R55	CTL	[- / - / -]
7-910-157	RTIFF	CTL	[- / - / -]
7-910-158	PCL	CTL	[- / - / -]
7-910-159	PCLXL	CTL	[- / - / -]
7-910-160	MSIS	CTL	[- / - / -]
7-910-162	PDF	CTL	[- / - / -]
7-910-164	PictBridge	CTL	[- / - / -]
7-910-165	PJL	CTL	[- / - / -]
7-910-167	MediaPrint:JPEG	CTL	[- / - / -]
7-910-168	MediaPrint:TIFF	CTL	[- / - / -]
7-910-169	XPS	CTL	[- / - / -]
7-910-180	FONT	CTL	[- / - / -]
7-910-181	FONT1	CTL	[- / - / -]
7-910-182	FONT2	CTL	[- / - / -]
7-910-183	FONT3	CTL	[- / - / -]
7-910-184	FONT4	CTL	[- / - / -]
7-910-185	FONT5	CTL	[- / - / -]

7-910-186	FONT6	CTL	[- / - / -]
7-910-187	FONT7	CTL	[- / - / -]
7-910-200	Factory	CTL	[- / - / -]
7-910-202	NetworkDocBox	CTL	[- / - / -]
7-910-204	Printer	CTL	[- / - / -]
7-910-210	MIB	CTL	[- / - / -]
7-910-211	Websupport	CTL	[- / - / -]
7-910-213	SDK1	CTL	[- / - / -]
7-910-214	SDK2	CTL	[- / - / -]
7-910-215	SDK3	CTL	[- / - / -]
7-910-250	Package	CTL	[- / - / -]

7911	**[Firmware Version]**		
7-911-001	System	CTL	[- / - / -]
7-911-002	Engine	CTL	[- / - / -]
7-911-003	Lcdc	CTL	[- / - / -]
7-911-018	NetworkSupport	CTL	[- / - / -]
7-911-022	BIOS	CTL	[- / - / -]
7-911-023	HDD Format Option	CTL	[- / - / -]
7-911-150	RPCS	CTL	[- / - / -]
7-911-151	PS	CTL	[- / - / -]
7-911-152	RPDL	CTL	[- / - / -]
7-911-153	R98	CTL	[- / - / -]
7-911-154	R16	CTL	[- / - / -]
7-911-156	R55	CTL	[- / - / -]
7-911-157	RTIFF	CTL	[- / - / -]
7-911-158	PCL	CTL	[- / - / -]
7-911-159	PCLXL	CTL	[- / - / -]
7-911-160	MSIS	CTL	[- / - / -]
7-911-162	PDF	CTL	[- / - / -]
7-911-164	PictBridge	CTL	[- / - / -]
7-911-165	PJL	CTL	[- / - / -]
7-911-166	IPDS	CTL	[- / - / -]
7-911-167	MediaPrint:JPEG	CTL	[- / - / -]
7-911-168	MediaPrint:TIFF	CTL	[- / - / -]
7-911-169	XPS	CTL	[- / - / -]
7-911-180	FONT	CTL	[- / - / -]
7-911-181	FONT1	CTL	[- / - / -]

7-911-182	FONT2	CTL	[- / - / -]
7-911-183	FONT3	CTL	[- / - / -]
7-911-184	FONT4	CTL	[- / - / -]
7-911-185	FONT5	CTL	[- / - / -]
7-911-186	FONT6	CTL	[- / - / -]
7-911-187	FONT7	CTL	[- / - / -]
7-911-200	Factory	CTL	[- / - / -]
7-911-202	NetworkDocBox	CTL	[- / - / -]
7-911-204	Printer	CTL	[- / - / -]
7-911-210	MIB	CTL	[- / - / -]
7-911-211	Websupport	CTL	[- / - / -]
7-911-213	SDK1	CTL	[- / - / -]
7-911-214	SDK2	CTL	[- / - / -]
7-911-215	SDK3	CTL	[- / - / -]
7-911-250	Package	CTL	[- / - / -]

4.4 CONTROLLER SP TABLES-8

4.4.1 SP8-XXX (DATA LOG 2)

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an "application"). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications.
P:	Print application.	Totals (pages, jobs, etc.) executed for each application.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

Keys and abbreviations in Data Log 2

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up.

Abbreviation	What it means
	For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, and "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to move around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server
TonEnd	Toner End

Abbreviation	What it means
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

8001	**[T:Total Jobs]**		
8004	**[P:Total Jobs]**		
001	**-**	*CTL	[0 to 99999999 / **0** / 1 / step]
	These SPs count the number of times each application is used to do a job.		

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.

8061	**[T:FIN Jobs]**		
	These SPs total the finishing methods. The finishing method is specified by the application.		
8064	**[P:FIN Jobs]**		
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8067	**[O:FIN Jobs]**		
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.		
001	Sort	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started in Sort mode.		
002	Stack	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started out of Sort mode.		
003	Staple	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started in Staple mode.		
004	Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.		
005	Z-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-		

	fold).		
006	Punch	*CTL	[0 to 99999999 / **0** / 1 / step]
	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8-064-6.)		
007	Other	*CTL	[0 to 99999999 / **0** / 1 / step]
	(Reserved)		
008	Inside-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
009	Three-IN-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
010	Three-OUT-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
011	Four-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
012	KANNON-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
013	Perfect-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
014	Ring-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
015	3rd Vendor	*CTL	[0 to 99999999 / **0** / 1 / step]

8071	**[T:Jobs/PGS]**		
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.		
8074	**[P:Jobs/PGS]**		
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		
8077	**[O:Jobs/PGS]**		
	These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job.		
001	1 Page	*CTL	[0 to 99999999 / **0** / 1 / step]
002	2 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
003	3 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
004	4 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
005	5 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
006	6 to 10 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
007	11 to 20 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
008	21 to 50 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
009	51 to 100 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
010	101 to 300 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
011	301 to 500 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
012	501 to 700 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
013	701 to 1000 Pages	*CTL	[0 to 99999999 / **0** / 1 / step]
014	1001 to Pages	*CTL	[0 to 99999999 / **0** / 1 / step]

- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.

8381	**[T:Total PrtPGS]**		
8384	**[P:Total PrtPGS]**		
8387	**[O:Total PrtPGS]**		
	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments.		
001	Field Number	*CTL	[0 to 99999999 / **0** / 1 / step]

- When the A3/DLT double count function is switched on with SP5-104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored is counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
  - Blank pages in a duplex printing job.
  - Blank pages inserted as document covers, chapter title sheets, and slip sheets.
  - Reports printed to confirm counts.
  - All reports done in the service mode (service summaries, engine maintenance reports, etc.)
  - Test prints for machine image adjustment.
  - Error notification reports.
  - Partially printed pages as the result of a copier jam.

8391	**[LSize PrtPGS]**		
	These SPs count pages printed on paper sizes A3/DLT and larger. Note • In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
8-391-001	A3/DLT, Larger	*CTL	[0 to 99999999 / **0** / 1 / step]
8-391-003	BannaerPaper	*CTL	[0 to 99999999 / **0** / 1 / step]

8411	**[Prints/Duplex]**		
	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted.		
8-411-001	-	*CTL	[0 to 99999999 / **0** / 1 / step]

8421	**[T:PrtPGS/Dup Comb]**		
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.		
8424	**[P:PrtPGS/Dup Comb]**		
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.		
8427	**[O:PrtPGS/Dup Comb]**		
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications		
001	Simplex> Duplex	*CTL	[0 to 99999999 / **0** / 1 / step]
004	Simplex Combine	*CTL	[0 to 99999999 / **0** / 1 / step]
005	Duplex Combine	*CTL	[0 to 99999999 / **0** / 1 / step]
006	2in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	2 pages on 1 side (2-Up)		
007	4in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	4 pages on 1 side (4-Up)		
008	6in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	6 pages on 1 side (6-Up)		
009	8in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	8 pages on 1 side (8-Up)		
010	9in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	9 pages on 1 side (9-Up)		
011	16in1	*CTL	[0 to 99999999 / **0** / 1 / step]
	16 pages on 1 side (16-Up)		
012	Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
013	Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
014	2in1 + Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
015	4in1 + Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
016	6in1 + Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
017	8in1 + Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
018	9in1 + Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]

019	2in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
020	4in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
021	6in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
022	8in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
023	9in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]
024	16in1 + Magazine	*CTL	[0 to 99999999 / **0** / 1 / step]

- These counts (SP8-421 to SP8-427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet		Magazine	
Original Pages	Count	Original Pages	Count
1	1	1	1
2	2	2	2
3	2	3	2
4	2	4	2
5	3	5	4
6	4	6	4
7	4	7	4
8	4	8	4

8431	**[T:PrtPGS/ImgEdt]**		
	These SPs count the total number of pages output with the three features below, regardless of which application was used.		
8434	**[P:PrtPGS/ImgEdt]**		
	These SPs count the total number of pages output with the three features below with the print application.		
8437	**[O:PrtPGS/ImgEdt]**		
	These SPs count the total number of pages output with the three features below with Other applications.		
001	Cover/Slip Sheet	*CTL	[0 to 99999999 / **0** / 1 / step]
	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.		
002	Series/Book	*CTL	[0 to 99999999 / **0** / 1 / step]
	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.		
003	User Stamp	*CTL	[0 to 99999999 / **0** / 1 / step]
	The number of pages printed where stamps were applied, including page numbering		

	and date stamping.

8441	**[T:PrtPGS/Ppr Size]**		
	These SPs count by print paper size the number of pages printed by all applications.		
8444	**[P:PrtPGS/Ppr Size]**		
	These SPs count by print paper size the number of pages printed by the printer application.		
8447	**[O:PrtPGS/Ppr Size]**		
	These SPs count by print paper size the number of pages printed by Other applications.		
001	A3	*CTL	[0 to 99999999 / **0** / 1 / step]
002	A4	*CTL	[0 to 99999999 / **0** / 1 / step]
003	A5	*CTL	[0 to 99999999 / **0** / 1 / step]
004	B4	*CTL	[0 to 99999999 / **0** / 1 / step]
005	B5	*CTL	[0 to 99999999 / **0** / 1 / step]
006	DLT	*CTL	[0 to 99999999 / **0** / 1 / step]
007	LG	*CTL	[0 to 99999999 / **0** / 1 / step]
008	LT	*CTL	[0 to 99999999 / **0** / 1 / step]
009	HLT	*CTL	[0 to 99999999 / **0** / 1 / step]
010	Full Bleed	*CTL	[0 to 99999999 / **0** / 1 / step]
254	Other (Standard)	*CTL	[0 to 99999999 / **0** / 1 / step]
255	Other (Custom)	*CTL	[0 to 99999999 / **0** / 1 / step]

- These counters do not distinguish between LEF and SEF.

8451	**[PrtPGS/Ppr Tray]**		
	These SPs count the number of sheets fed from each paper feed station.		
8-451-001	Bypass Tray	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-002	Tray 1	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-003	Tray 2	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-004	Tray 3	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-005	Tray 4	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-006	Tray 5	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-007	Tray 6	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-008	Tray 7	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-009	Tray 8	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-010	Tray 9	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-011	Tray 10	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-012	Tray 11	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-013	Tray 12	*CTL	[0 to 99999999 / **0** / 1 / step]

8-451-014	Tray 13	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-015	Tray 14	*CTL	[0 to 99999999 / **0** / 1 / step]
8-451-016	Tray 15	*CTL	[0 to 99999999 / **0** / 1 / step]

8461	**[T:PrtPGS/Ppr Type]**		
	These SPs count by paper type the number pages printed by all applications. • These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing. • Blank sheets (covers, chapter covers, slip sheets) are also counted. • During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1.		
8464	**[P:PrtPGS/Ppr Type]**		
	These SPs count by paper type the number pages printed by the printer application.		
001	Normal	*CTL	[0 to 99999999 / **0** / 1 / step]
002	Recycled	*CTL	[0 to 99999999 / **0** / 1 / step]
003	Special	*CTL	[0 to 99999999 / **0** / 1 / step]
004	Thick	*CTL	[0 to 99999999 / **0** / 1 / step]
005	Normal (Back)	*CTL	[0 to 99999999 / **0** / 1 / step]
006	Thick (Back)	*CTL	[0 to 99999999 / **0** / 1 / step]
007	OHP	*CTL	[0 to 99999999 / **0** / 1 / step]
008	Other	*CTL	[0 to 99999999 / **0** / 1 / step]

8471	**[PrtPGS/Mag]**		
	These SPs count by magnification rate the number of pages printed.		
8-471-001	< 49%	*CTL	[0 to 99999999 / **0** / 1 / step]
8-471-002	50% to 99%	*CTL	
8-471-003	100%	*CTL	
8-471-004	101% to 200%	*CTL	
8-471-005	201% <	*CTL	

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	**[T:PrtPGS/TonSave]**		
8484	**[P:PrtPGS/TonSave]**		
001	-	*CTL	[0 to 99999999 / **0** / 1 / step]
	These SPs count the number of pages printed with the Toner Save feature switched on. Note • These SPs return the same results as this SP is limited to the Print application.		

8501	**[T:PrtPGS/Col Mode]**		
8504	**[P:PrtPGS/Col Mode]**		
8507	**[O:PrtPGS/Col Mode]**		
	These SPs count the number of pages printed in the Color Mode by the print application.		
001	B/W	*CTL	[0 to 99999999 / **0** / 1 / step]
002	Mono Color	*CTL	[0 to 99999999 / **0** / 1 / step]
003	Full Color	*CTL	[0 to 99999999 / **0** / 1 / step]
004	Single Color	*CTL	[0 to 99999999 / **0** / 1 / step]
005	Two Color	*CTL	[0 to 99999999 / **0** / 1 / step]
051	B/W(Banner)	*CTL	[0 to 99999999 / **0** / 1 / step]
052	Full Color(Banner)	*CTL	[0 to 99999999 / **0** / 1 / step]
053	Single Color(Banner)	*CTL	[0 to 99999999 / **0** / 1 / step]
054	Two Color(Banner)	*CTL	[0 to 99999999 / **0** / 1 / step]

8511	**[T:PrtPGS/Emul]**		
	These SPs count by printer emulation mode the total number of pages printed.		
8514	**[P:PrtPGS/Emul]**		
	These SPs count by printer emulation mode the total number of pages printed.		
001	RPCS	*CTL	[0 to 99999999 / **0** / 1 / step]
002	RPDL	*CTL	[0 to 99999999 / **0** / 1 / step]
003	PS3	*CTL	[0 to 99999999 / **0** / 1 / step]
004	R98	*CTL	[0 to 99999999 / **0** / 1 / step]
005	R16	*CTL	[0 to 99999999 / **0** / 1 / step]
006	GL/GL2	*CTL	[0 to 99999999 / **0** / 1 / step]
007	R55	*CTL	[0 to 99999999 / **0** / 1 / step]
008	RTIFF	*CTL	[0 to 99999999 / **0** / 1 / step]
009	PDF	*CTL	[0 to 99999999 / **0** / 1 / step]

010	PCL5e/5c	*CTL	[0 to 99999999 / **0** / 1 / step]
011	PCL XL	*CTL	[0 to 99999999 / **0** / 1 / step]
012	IPDL-C	*CTL	[0 to 99999999 / **0** / 1 / step]
013	BM-Links	*CTL	Japan Only
014	Other	*CTL	[0 to 99999999 / **0** / 1 / step]
015	IPDS	*CTL	[0 to 99999999 / **0** / 1 / step]
016	XPS	*CTL	[0 to 99999999 / **0** / 1 / step]

- SP8-511 and SP8-514 return the same results as they are both limited to the Print application.

8521	**[T:PrtPGS/FIN]**		
	These SPs count by finishing mode the total number of pages printed by all applications.		
8524	**[P:PrtPGS/FIN]**		
	These SPs count by finishing mode the total number of pages printed by the Print application.		
001	Sort	*CTL	[0 to 99999999 / **0** / 1 / step]
002	Stack	*CTL	[0 to 99999999 / **0** / 1 / step]
003	Staple	*CTL	[0 to 99999999 / **0** / 1 / step]
004	Booklet	*CTL	[0 to 99999999 / **0** / 1 / step]
005	Z-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
006	Punch	*CTL	[0 to 99999999 / **0** / 1 / step]
007	Other	*CTL	[0 to 99999999 / **0** / 1 / step]
008	Inside Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Half-Fold (FM2) (Multi Fold Unit)		
009	Three-IN-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Letter Fold-in (FM4) (Multi Fold Unit)		
010	Three-OUT-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Letter Fold-out (FM3) (Multi Fold Unit)		
011	Four Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Double Parallel Fold (FM5) (Multi Fold Unit)		
012	KANNON-Fold	*CTL	[0 to 99999999 / **0** / 1 / step]
	Gate Fold (FM6) (Multi Fold Unit)		
013	Perfect-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
	Perfect Binder		
014	Ring-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
	Ring Binder		
015	3rd Vendor	*CTL	[0 to 99999999 / **0** / 1 / step]

Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	**[Staples]**		
	This SP counts the amount of staples used by the machine.		
8-531-001	Staples	*CTL	[0 to 9999999 / **0** / 1 / step]
8-531-002	Stapless	*CTL	[0 to 9999999 / **0** / 1 / step]

8551	**[T:PrtBooks/FIN]**		
8-551-001	Perfect-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
8-551-002	Ring-Bind	*CTL	

8554	**[P: PrtBooks/FIN]**		
8-554-001	Perfect-Bind	*CTL	[0 to 99999999 / **0** / 1 / step]
8-554-002	Ring-Bind	*CTL	

8561	**[T:A Sheet Of Paper]**		
8-561-001	Total: Over A3/DLT	*CTL	[0 to 99999999 / **0** / 1 / step]
8-561-002	Total: Under A3/DLT	*CTL	
8-561-003	Duplex: Over A3/DLT	*CTL	
8-561-004	Duplex: Under A3/DLT	*CTL	

8564	**[P:A Sheet Of Paper]**		
8-564-001	Total: Over A3/DLT	*CTL	[0 to 99999999 / **0** / 1 / step]
8-564-002	Total: Under A3/DLT	*CTL	
8-564-003	Duplex: Over A3/DLT	*CTL	
8-564-004	Duplex: Under A3/DLT	*CTL	

8567	**[O:A Sheet Of Paper]**		
8-567-001	Total: Over A3/DLT	*CTL	[0 to 99999999 / **0** / 1 / step]
8-567-002	Total: Under A3/DLT	*CTL	
8-567-003	Duplex: Over A3/DLT	*CTL	
8-567-004	Duplex: Under A3/DLT	*CTL	

8581	**[T:Counter]**		
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
8-581-001	Total	*CTL	[0 to 99999999 / **0** / 1 / step]
8-581-002	Total: Full Color	*CTL	
8-581-003	B&W/Single Color	*CTL	
8-581-004	Development: CMY	*CTL	
8-581-005	Development: K	*CTL	
8-581-008	Print: Color	*CTL	
8-581-009	Print: B/W	*CTL	[0 to 99999999 / **0** / 1 / step]
8-581-010	Total: Color	*CTL	
8-581-011	Total: B/W	*CTL	
8-581-012	Full Color: A3	*CTL	
8-581-013	Full Color: -B4 JIS or Smaller	*CTL	
8-	Full Color Print	*CTL	

581-014			
8-581-015	Mono Color Print	*CTL	[0 to 99999999 / **0** / 1 / step]
8-581-016	Full Color GPC	*CTL	
8-581-017	Twin Color Mode Print	*CTL	
8-581-018	Full Color Print (Twin)	*CTL	
8-581-019	Mono Color Print (Twin)	*CTL	
8-581-020	Full Color Total (CV)	*CTL	
8-581-021	Mono Color Total (CV)	*CTL	[0 to 99999999 / **0** / 1 / step]
8-581-022	Full Color Print (CV)	*CTL	
8-581-023	Eco Color Print (FC)	*CTL	
8-581-024	Eco Color Print (Bk)	*CTL	
8-581-025	Total: Color (Eco Bk)	*CTL	
8-581-026	Total: B/W (Eco Bk)	*CTL	
8-	Total: Color (Eco FC)	*CTL	[0 to 99999999 / **0** / 1 / step]

581-027			
8-581-028	Development: CMY (A3)	*CTL	
8-581-029	Development: K (A3)	*CTL	
8-581-030	Total: Color (A3)	*CTL	
8-581-031	Total: B/W (A3)	*CTL	

8584	**[P:Counter]**		
	These SPs count the total output of the print application broken down by color output.		
8-584-001	B/W	*CTL	[0 to 99999999 / **0** / 1 / step]
8-584-002	Mono Color	*CTL	
8-584-003	Full Color	*CTL	
8-584-004	Single Color	*CTL	
8-584-005	Two Color	*CTL	

8591	**[O:Counter]**		
	These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.		
8-591-001	A3/DLT	*CTL	[0 to 99999999 / **0** / 1 / step]
8-591-002	Duplex	*CTL	
8-591-005	Banner	*CTL	

8601	[T:Coverage Counter]		
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8-601-001	B/W	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-601-002	Color	*CTL	
8-601-011	B/W Printing Pages	*CTL	[0 to 9999999 / **0** / 1 / step]
8-601-012	Color Printing Pages	*CTL	
8-601-021	Coverage Counter 1	*CTL	
8-601-022	Coverage Counter 2	*CTL	
8-601-023	Coverage Counter 3	*CTL	

8601	[Coverage Counter]		
	-		
8-601-031	Coverage Counter 1 (YMC)	*CTL	[0 to 9999999 / **0** / 1 / step]
8-601-032	Coverage Counter 2 (YMC)	*CTL	
8-601-033	Coverage Counter 3 (YMC)	*CTL	

8604	[P:Coverage Counter]		
	-		
8-604-001	B/W	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-604-002	Single Color	*CTL	
8-604-003	Two Color	*CTL	
8-604-004	Full Color	*CTL	

8617	[SDK Apli Counter]		
	These SPs count the total printout pages for each SDK application.		
8-617-001	SDK-1	*CTL	[0 to 99999999 / **0** / 1 / step]
8-617-002	SDK-2	*CTL	
8-617-003	SDK-3	*CTL	
8-617-004	SDK-4	*CTL	
8-617-005	SDK-5	*CTL	

8-617-006	SDK-6	*CTL	
8-617-007	SDK-7	*CTL	
8-617-008	SDK-8	*CTL	
8-617-009	SDK-9	*CTL	
8-617-010	SDK-10	*CTL	
8-617-011	SDK-11	*CTL	
8-617-012	SDK-12	*CTL	

8621	**[Func Use Counter]**		
	-		
8-621-001	Function-001	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-002	Function-002	*CTL	
8-621-003	Function-003	*CTL	
8-621-004	Function-004	*CTL	
8-621-005	Function-005	*CTL	
8-621-006	Function-006	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-007	Function-007	*CTL	
8-621-008	Function-008	*CTL	
8-621-009	Function-009	*CTL	
8-621-010	Function-010	*CTL	
8-621-011	Function-011	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-012	Function-012	*CTL	
8-621-013	Function-013	*CTL	
8-621-014	Function-014	*CTL	
8-621-015	Function-015	*CTL	
8-621-016	Function-016	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-017	Function-017	*CTL	
8-621-018	Function-018	*CTL	
8-621-019	Function-019	*CTL	
8-621-020	Function-020	*CTL	
8-621-021	Function-021	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-022	Function-022	*CTL	
8-621-023	Function-023	*CTL	
8-621-024	Function-024	*CTL	
8-621-025	Function-025	*CTL	
8-621-026	Function-026	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-027	Function-027	*CTL	
8-621-028	Function-028	*CTL	

8-621-029	Function-029	*CTL	
8-621-030	Function-030	*CTL	
8-621-031	Function-031	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-032	Function-032	*CTL	
8-621-033	Function-033	*CTL	
8-621-034	Function-034	*CTL	
8-621-035	Function-035	*CTL	
8-621-036	Function-036	*CTL	
8-621-037	Function-037	*CTL	
8-621-038	Function-038	*CTL	
8-621-039	Function-039	*CTL	
8-621-040	Function-040	*CTL	
8-621-041	Function-041	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-042	Function-042	*CTL	
8-621-043	Function-043	*CTL	
8-621-044	Function-044	*CTL	
8-621-045	Function-045	*CTL	
8-621-046	Function-046	*CTL	
8-621-047	Function-047	*CTL	
8-621-048	Function-048	*CTL	
8-621-049	Function-049	*CTL	
8-621-050	Function-050	*CTL	
8-621-051	Function-051	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-052	Function-052	*CTL	
8-621-053	Function-053	*CTL	
8-621-054	Function-054	*CTL	
8-621-055	Function-055	*CTL	
8-621-056	Function-056	*CTL	
8-621-057	Function-057	*CTL	
8-621-058	Function-058	*CTL	
8-621-059	Function-059	*CTL	
8-621-060	Function-060	*CTL	
8-621-061	Function-061	*CTL	[0 to 99999999 / **0** / 1 / step]
8-621-062	Function-062	*CTL	
8-621-063	Function-063	*CTL	
8-621-064	Function-064	*CTL	

8771	[Dev Counter]		
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
8-771-001	Total	*CTL	[0 to 99999999 / **0** / 1 / step]
8-771-002	K	*CTL	
8-771-003	Y	*CTL	
8-771-004	M	*CTL	
8-771-005	C	*CTL	

8781	[Toner_Botol_Info.]		
	These SPs display the number of already replaced toner bottles. NOTE: Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
8-781-001	BK	*CTL	[0 to 9999999 / **0** / 1 / step]
8-781-002	Y	*CTL	
8-781-003	M	*CTL	
8-781-004	C	*CTL	

8801	[Toner Remain]		
	These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. Note: This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
8-801-001	K	*CTL	[0 to 100 / **0** / 1% / step]
8-801-002	Y	*CTL	
8-801-	M	*CTL	

003			
8-801-004	C	*CTL	

8811	[Eco Counter]		
	-		
8-811-001	Eco Total	*CTL	[0 to 99999999 / **0** / 1 / step]
8-811-002	Color	*CTL	
8-811-003	Full Color	*CTL	
8-811-004	Duplex	*CTL	
8-811-005	Combine	*CTL	
8-811-006	Color (%)	*CTL	[0 to 100 / **0** / 1% / step]
8-811-007	Full Color (%)	*CTL	
8-811-008	Duplex (%)	*CTL	
8-811-009	Combine (%)	*CTL	
8-811-010	Paper Cut (%)	*CTL	
8-811-051	Sync Eco Total	*CTL	[0 to 99999999 / **0** / 1 / step]
8-811-052	Sync Color	*CTL	
8-811-053	Sync Full Color	*CTL	
8-811-054	Sync Duplex	*CTL	
8-811-055	Sync Combine	*CTL	
8-811-056	Sync Color(%)	*CTL	[0 to 100 / **0** / 1% / step]
8-811-057	Sync Full Color(%)	*CTL	
8-811-058	Sync Duplex(%)	*CTL	
8-811-059	Sync Combine(%)	*CTL	
8-811-060	Sync Paper Cut(%)	*CTL	
8-811-101	Eco Total:Last	*CTL	[0 to 99999999 / **0** / 1 / step]
8-811-102	Color:Last	*CTL	
8-811-103	Full Color:Last	*CTL	
8-811-104	Duplex:Last	*CTL	
8-811-105	Combine:Last	*CTL	
8-811-106	Color(%):Last	*CTL	[0 to 100 / **0** / 1% / step]
8-811-107	Full Color (%):Last	*CTL	
8-811-108	Duplex (%):Last	*CTL	
8-811-109	Combine (%):Last	*CTL	
8-811-110	Paper Cut (%):Last	*CTL	
8-811-151	Sync Eco Totalr:Last	*CTL	[0 to 99999999 / **0** / 1 / step]
8-811-152	Sync Color:Last	*CTL	

8-811-153	Sync Full Color:Last	*CTL	
8-811-154	Sync Duplex:Last	*CTL	
8-811-155	Sync Combine:Last	*CTL	
8-811-156	Sync Color(%):Last	*CTL	[0 to 100 / **0** / 1% / step]
8-811-157	Sync Full Color(%):Last	*CTL	
8-811-158	Sync Duplex(%):Last	*CTL	
8-811-159	Sync Combine(%):Last	*CTL	
8-811-160	Sync Paper Cut(%):Last	*CTL	

8851	**[Cvr Cnt: 0-10%]**		
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.		
8-851-011	0 to 2%: BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-851-012	0 to 2%: Y	*CTL	
8-851-013	0 to 2%: M	*CTL	
8-851-014	0 to 2%: C	*CTL	
8-851-021	3 to 4%: BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-851-022	3 to 4%: Y	*CTL	
8-851-023	3 to 4%: M	*CTL	
8-851-024	3 to 4%: C	*CTL	
8-851-031	5 to 7%: BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-851-032	5 to 7%: Y	*CTL	
8-851-033	5 to 7%: M	*CTL	
8-851-034	5 to 7%: C	*CTL	
8-851-041	8 to 10%: BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-851-	8 to 10%: Y	*CTL	

042			
8-851-043	8 to 10%: M	*CTL	
8-851-044	8 to 10%: C	*CTL	

8861	**[Cvr Cnt: 11-20%]**		
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
8-861-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-861-002	Y	*CTL	
8-861-003	M	*CTL	
8-861-004	C	*CTL	

8871	**[Cvr Cnt: 21-30%]**		
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
8-871-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-871-002	Y	*CTL	
8-871-003	M	*CTL	
8-871-004	C	*CTL	

8881	[Cvr Cnt: 31%-]		
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
8-881-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-881-002	Y	*CTL	
8-881-003	M	*CTL	
8-881-004	C	*CTL	

8891	[Page/Toner Bottle]		
	These SPs display the amount of the remaining current toner for each color.		
8-891-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-891-002	Y	*CTL	
8-891-003	M	*CTL	
8-891-004	C	*CTL	

8901	[Page/Toner_Prev1]		
	These SPs display the amount of the remaining previous toner for each color.		
8-901-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-901-002	Y	*CTL	
8-901-003	M	*CTL	
8-901-004	C	*CTL	

8911	[Page/Toner_Prev2]		
	These SPs display the amount of the remaining 2nd previous toner for each color.		
8-911-001	BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-911-002	Y	*CTL	
8-911-003	M	*CTL	
8-911-004	C	*CTL	

8921	[Cvr Cnt/Total]		
	Displays the total coverage and total printout number for each color.		
8-921-001	Coverage (%) Bk	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-921-002	Coverage (%) Y	*CTL	
8-921-003	Coverage (%) M	*CTL	
8-921-004	Coverage (%) C	*CTL	
8-921-011	Coverage /P: Bk	*CTL	[0 to 99999999 / **0** / 1 / step]
8-921-012	Coverage /P: Y	*CTL	
8-921-013	Coverage /P: M	*CTL	
8-921-014	Coverage /P: C	*CTL	
8-921-031	Coverage(%):Eco BK	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-921-032	Coverage(%):Eco Y	*CTL	
8-921-033	Coverage(%):Eco M	*CTL	
8-921-034	Coverage(%):Eco C	*CTL	
8-921-041	Coverage/P:Eco BK	*CTL	[0 to 99999999 / **0** / 1 / step]
8-921-042	Coverage/P:Eco Y	*CTL	
8-921-043	Coverage/P:Eco M	*CTL	
8-921-044	Coverage/P:Eco C	*CTL	

8941	[Machine Status]		
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.		
8-941-001	Operation Time	*CTL	[0 to 99999999 / **0** / 1 / step]
	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).		
8-941-002	Standby Time	*CTL	[0 to 99999999 / **0** / 1 / step]
	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.		
8-941-003	Energy Save Time	*CTL	[0 to 99999999 / **0** / 1 / step]
	Includes time while the machine is performing background printing.		
8-941-004	Low Power Time	*CTL	[0 to 99999999 / **0** / 1 / step]
	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.		
8-941-005	Off Mode Time	*CTL	[0 to 99999999 / **0** / 1 / step]
	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.		

8-941-006	SC	*CTL	[0 to 99999999 / **0** / 1 / step]
	Total time when SC errors have been staying.		
8-941-007	PrtJam	*CTL	[0 to 99999999 / **0** / 1 / step]
	Total time when paper jams have been staying during printing.		
8-941-008	OrgJam	*CTL	[0 to 99999999 / **0** / 1 / step]
	Total time when original jams have been staying during scanning.		
8-941-009	Supply PM Unit End	*CTL	[0 to 99999999 / **0** / 1 / step]
	Total time when toner end has been staying		

8961	**[Electricity Status]**		
	-		
8-961-001	Ctrl Standby Time	*CTL	[0 to 99999999 / **0** / 1 / step]
8-961-002	STR Time	*CTL	
8-961-003	Main Power Off Time	*CTL	
8-961-004	Reading and Printing Time	*CTL	
8-961-005	Printing Time	*CTL	[0 to 99999999 / **0** / 1 / step]
8-961-006	Reading Time	*CTL	
8-961-007	Eng Waiting Time	*CTL	
8-961-008	Low Power State Time	*CTL	
8-961-009	Silent State Time	*CTL	
8-961-010	Heater Off State Time	*CTL	
8-961-011	LCD on Time	*CTL	
8-961-101	Silent Print	*CTL	

8971	**[Unit Control]**		
	-		
8-971-001	Engine Off Recovery Count	*CTL	[0 to 99999999 / 0 / 1 / step]
8-971-002	Power Off Count	*CTL	
8-971-003	Force Power Off Count	*CTL	

8999	[Admin. Counter List]		
	Displays each total print out and total coverage.		
8-999-001	Total	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-006	Printer: Full Color	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-007	Printer: BW	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-008	Printer: Single Color	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-009	Printer: Two Color	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-013	Duplex	*CTL	[0 to 99999999 / **0** / 1 / step]
8-999-026	Printer: Full Color (%)	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-999-027	Printer: BW (%)	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-999-028	Printer: Single Color (%)	*CTL	[0 to 2147483647 / **0** / 1% / step]
8-999-029	Printer: Two Color (%)	*CTL	[0 to 2147483647 / **0** / 1% / step]

PAPER FEED UNIT TK1230/TK1240

M407/M408

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

PAPER FEED UNIT TK1230/TK1240 (M407/M408)

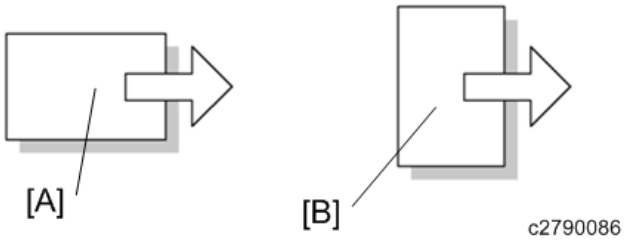
TABLE OF CONTENTS

SYMBOLS, ABBREVIATIONS AND TRADEMARKS

Symbols, Abbreviations

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

Symbol	What it means
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
	Flat Flexible Cable
	Timing Belt
SEF	Short Edge Feed
LEF	Long Edge Feed
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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The proper name of Internet Explorer 6 is Microsoft® Internet Explorer® 6.
The proper name of Internet Explorer 8 is Windows® Internet Explorer® 8.
The proper names of the Windows operating systems are as follows:

- The product names of Windows Vista are as follows:

Microsoft® Windows Vista® Ultimate
Microsoft® Windows Vista® Business
Microsoft® Windows Vista® Home Premium
Microsoft® Windows Vista® Home Basic
Microsoft® Windows Vista® Enterprise

- The product names of Windows 7 are as follows:

Microsoft® Windows® 7 Home Premium
Microsoft® Windows® 7 Professional
Microsoft® Windows® 7 Ultimate
Microsoft® Windows® 7 Enterprise

- The product names of Windows 8 are as follows:

Microsoft® Windows® 8
Microsoft® Windows® 8 Pro
Microsoft® Windows® 8 Enterprise

- The product names of Windows 8.1 are as follows:

Microsoft® Windows® 8.1
Microsoft® Windows® 8.1 Pro
Microsoft® Windows® 8.1 Enterprise

- The product names of Windows 10 are as follows:

Microsoft® Windows® 10 Home Premium

Microsoft® Windows® 10 Pro

Microsoft® Windows® 10 Enterprise

Microsoft® Windows® 10 Education

- The product names of Windows Server 2003 are as follows:

Microsoft® Windows Server® 2003 Standard Edition

Microsoft® Windows Server® 2003 Enterprise Edition

- The product names of Windows Server 2003 R2 are as follows:

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Microsoft® Windows Server® 2003 R2 Enterprise Edition

- The product names of Windows Server 2008 are as follows:

Microsoft® Windows Server® 2008 Standard

Microsoft® Windows Server® 2008 Enterprise

- The product names of Windows Server 2008 R2 are as follows:

Microsoft® Windows Server® 2008 R2 Standard

Microsoft® Windows Server® 2008 R2 Enterprise

- The product names of Windows Server 2012 are as follows:

Microsoft® Windows Server® 2012 Foundation

Microsoft® Windows Server® 2012 Essentials

Microsoft® Windows Server® 2012 Standard

- The product names of Windows Server 2012 R2 are as follows:

Microsoft® Windows Server® 2012 R2 Foundation

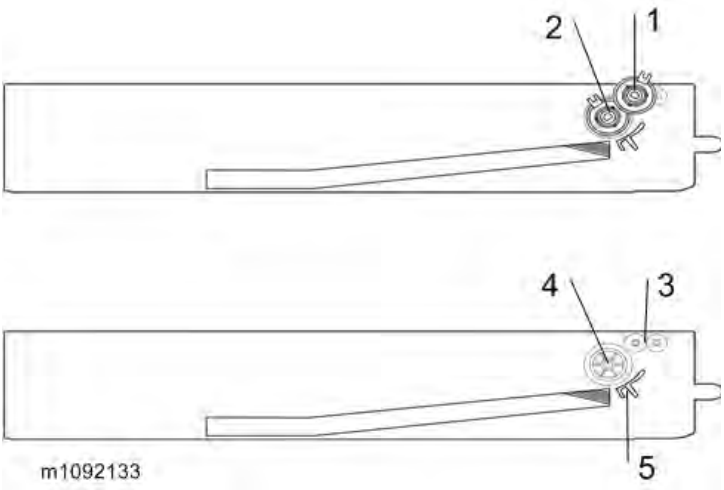
Microsoft® Windows Server® 2012 R2 Essentials

Microsoft® Windows Server® 2012 R2 Standard

1. PRODUCT INFORMATION

1.1 OVERVIEW

1.1.1 SPECIFICATIONS



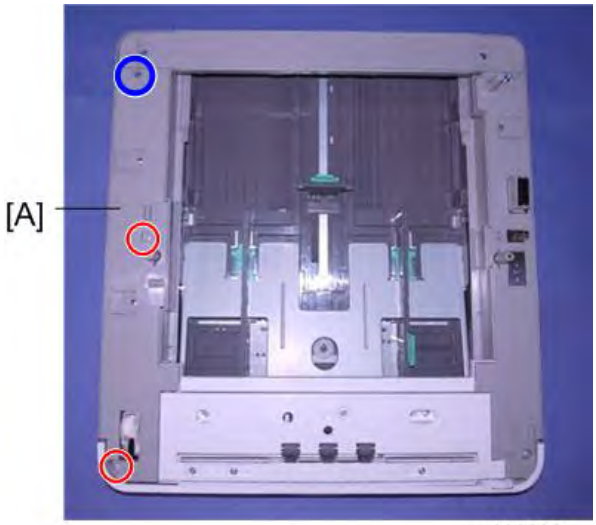
1. Grip roller clutch (Left side as viewed from the front of the machine)
2. Paper feed clutch (Right side as viewed from the front of the machine)
3. Grip roller
4. Paper feed roller
5. Friction pad

2. REPLACEMENT AND ADJUSTMENT

2.1 PAPER FEED TRAY

2.1.1 LEFT COVER

1. Remove the left cover [A] (×3).

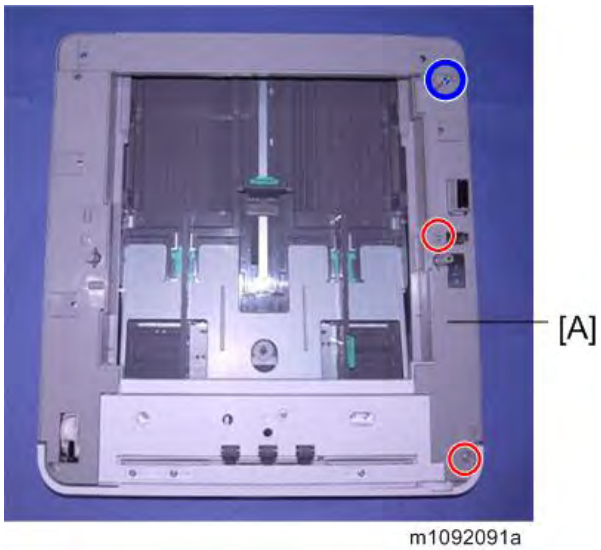


Note

- Two of the red circle is the tapping screws.

2.1.2 RIGHT COVER

1. Remove the right cover [A] (×3).

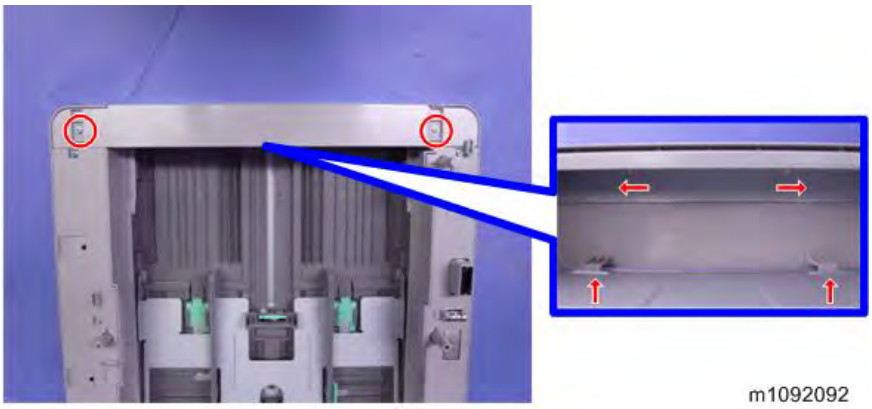


Note

- Two of the red circle is the tapping screws.

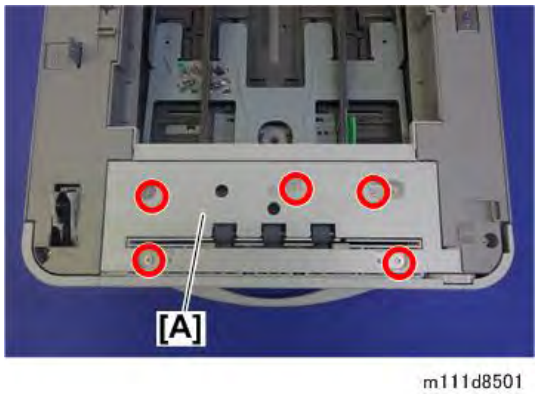
2.1.3 REAR COVER

1. Remove the rear cover [A] (×2, Hook×4).

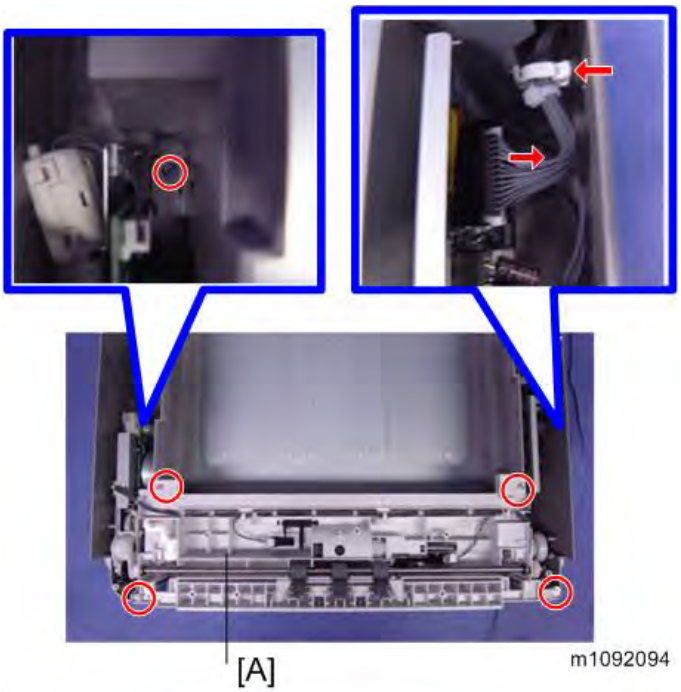


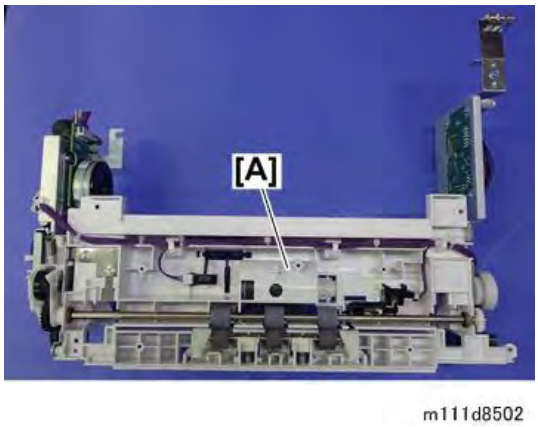
2.1.4 PAPER FEED UNIT

1. Remove the left cover (***Left Cover***).
2. Remove the right cover (***Right Cover***).
3. Remove the front cover [A] (×5).



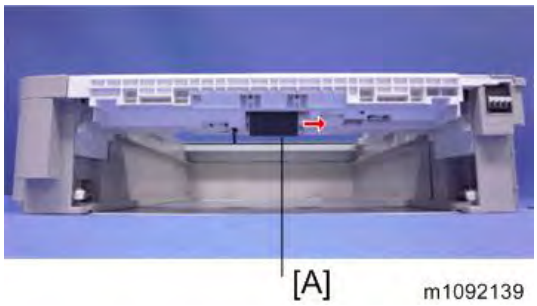
4. Remove the paper feed unit [A] (×5, ×1, ×1).





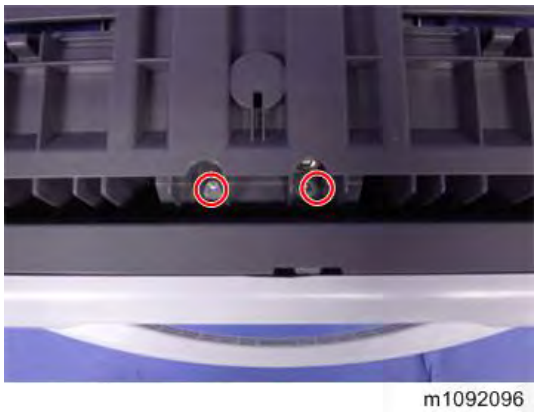
2.1.5 PAPER FEED ROLLER

1. Remove the paper feed roller [A].

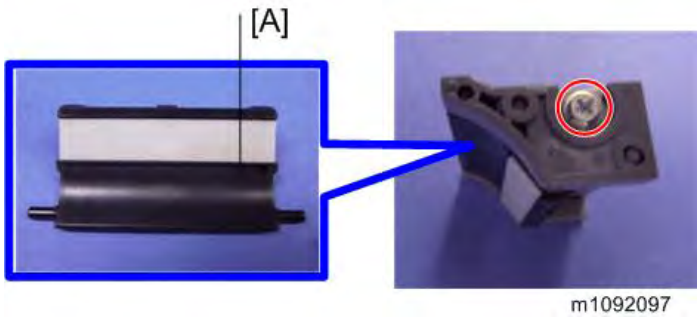


2.1.6 FRICTION PAD

1. Remove the friction pad unit (×2).

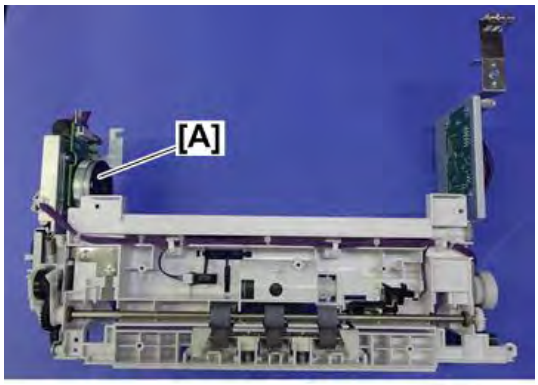


2. Remove the friction pad [A] (×1).



2.1.7 PAPER FEED MOTOR

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the paper feed motor [A] (×4, ×1).



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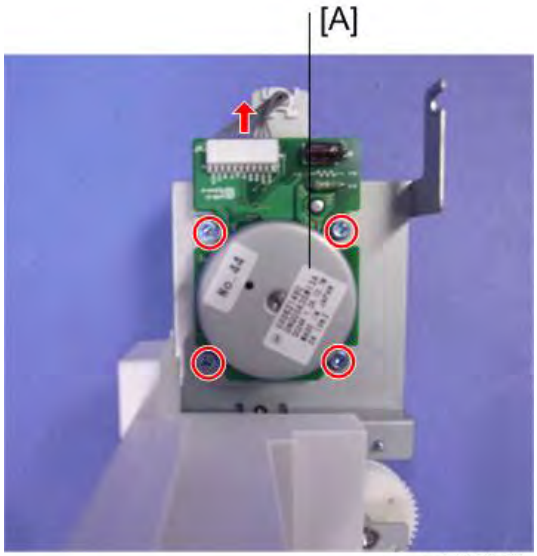

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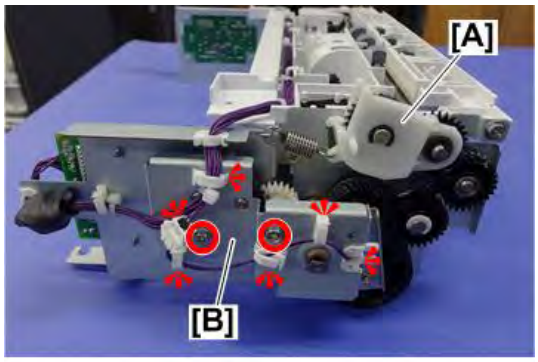
2.1.8 PAPER FEED GEAR

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the gear cover [A] (×2, ×1) and the paper feed clutch bracket [B] (×2, ×1, ×1), then remove each gear.



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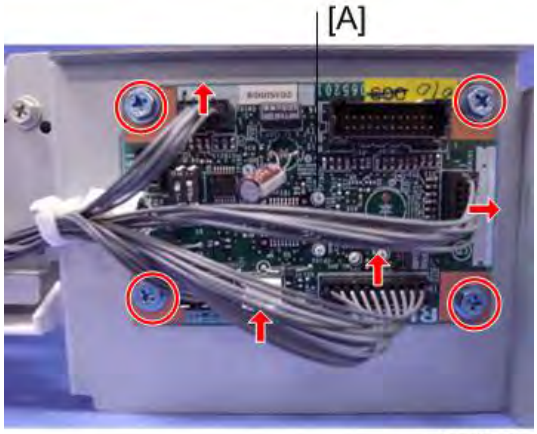
2.1.9 PAPER FEED TRAY BOARD

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the paper feed tray board [A] (×4, ×4).



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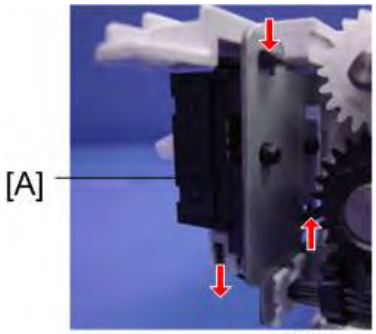
2.1.10 PAPER SIZE DETECTION SWITCH

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the paper size detection switch [A] (×1, Hook×2).



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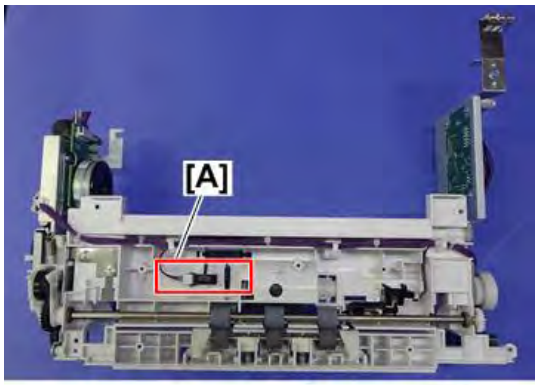
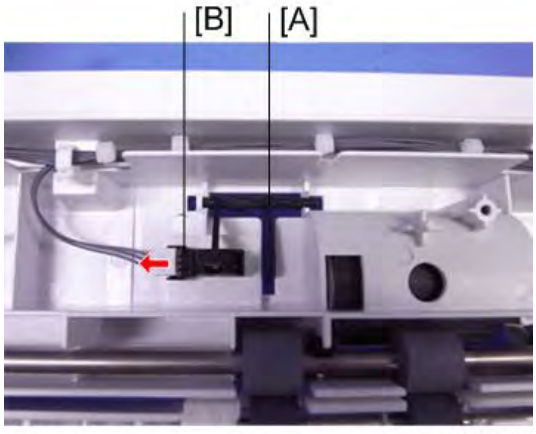
2.1.11 PAPER END SENSOR

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the pemove the feeler [B], then remove the paper end sensor [A] (×1).



m111d8505



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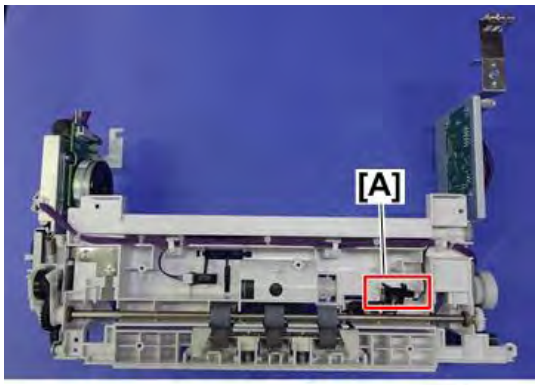
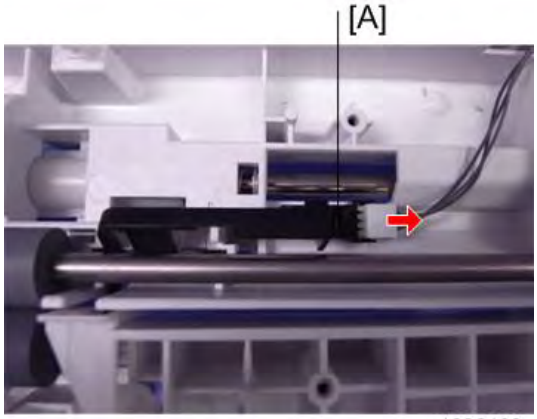
2.1.12 PAPER FEED SENSOR

1. Remove the paper feed unit (***Paper Feed Unit***).
2. Remove the paper feed sensor [A] (×1).



m111d8506



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2.1.13 SIDE FENCE ADJUSTMENT

For the optional paper tray, you can adjust the side-to-side registration within a range of 2 mm, by changing the position of the Pinion on the side fence.

1. Pull out the tray from the optional tray and then turn it over.

Note

- With the default setting (±0), the pinion is positioned so that the triangle marks are fully aligned.

m1092137

2. Loosen the screws and lift up the pinion. Adjust the side-to-side registration in the desired direction and then tighten the screws.

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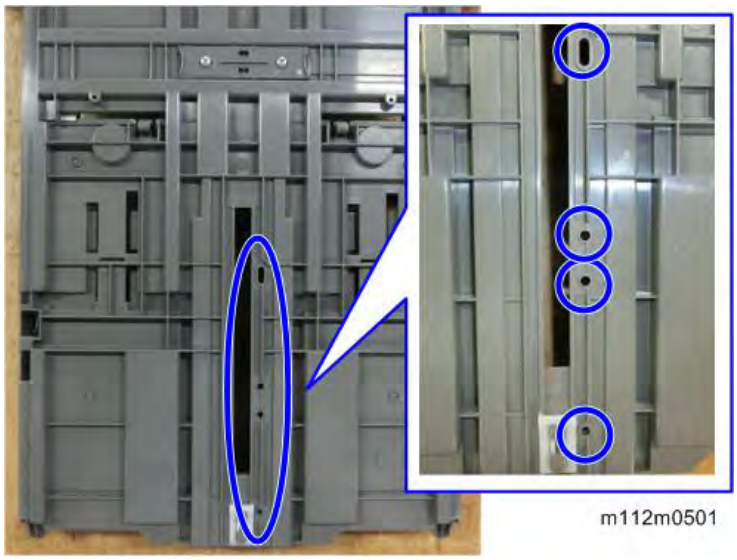
Note

- The example image shows that the registration is adjusted by 2 mm to the right.

End fence and side fences

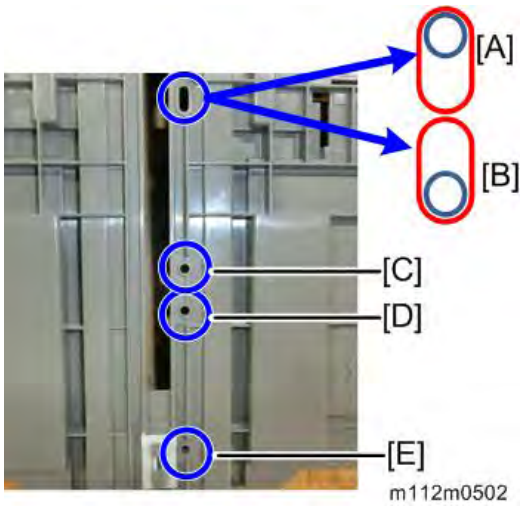
There are five screw holes so that the end fence and side fences can be fixed in place.
This is useful for ensuring that the paper guides will not move when the size of the paper to be used is fixed.

End fence



Note

- Fixable paper sizes are shown below.

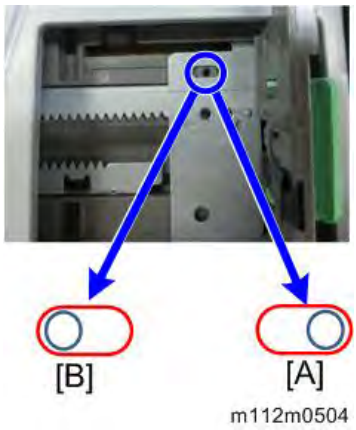


- [A]: A5 SEF
- [B]: 8.5" (HLT SEF)
- [C]: 11" (LT SEF)
- [D]: A4 SEF
- [E]: 14" (LG SEF)

Side fences

Note

- Fixable paper sizes are shown below.



- [A]: A4 SEF
- [B]: LG SEF/LT SEF

2.2 MECHANISM

2.2.1 PAPER FEED SEPARATION MECHANISM

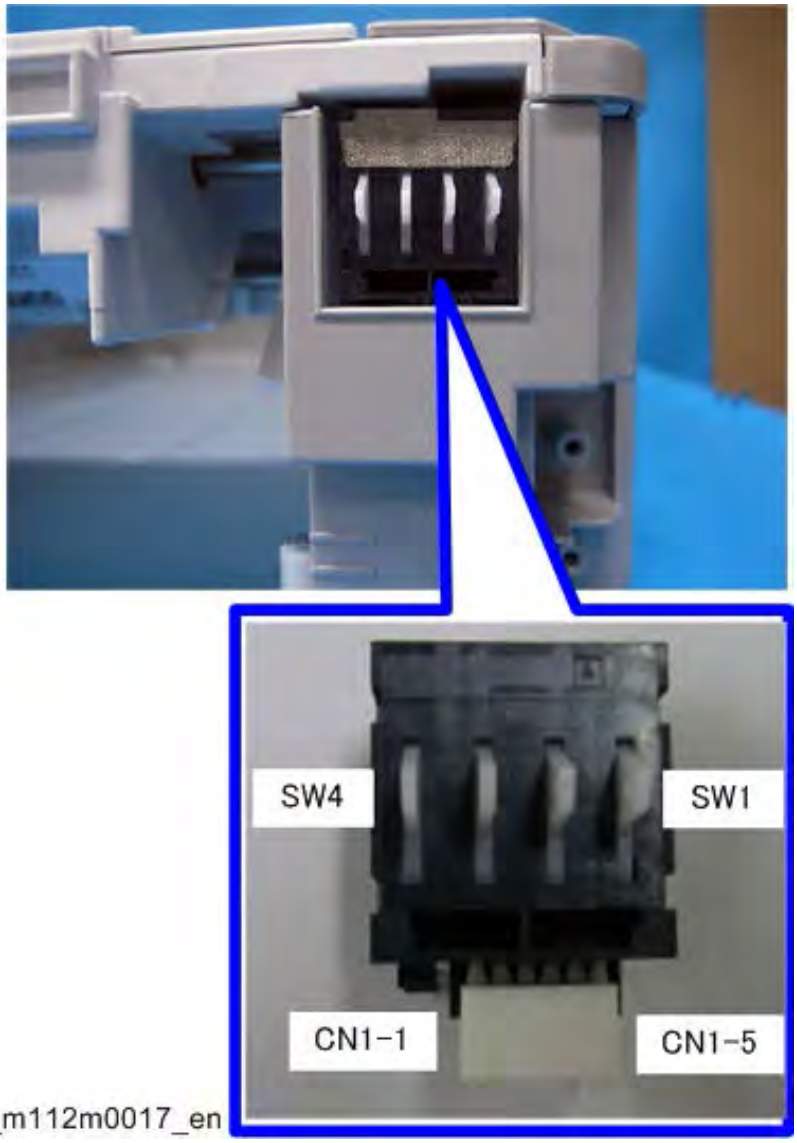
Upon receiving the paper feed signal, the Paper Feed Clutch and the Griproller Clutch of the OptionalTray are turned on to rotate the Paper Feed Roller. Only the sheet in the top in the Cassette is fed by the Friction Pad.

2.2.2 PAPER SIZE DETECTION

The Paper Size Detection Dial, which is located on the right side of the Optional Tray, uses combination of four detection switches to detect the paper size. The size setting is indicated on the front of the tray.

2.2.3 PAPER SIZE DETECT COMBINATION (SWITCH IS PRESSED: L)

SW Knob	Knob 4	Knob 3	Knob 2	Knob 1	Paper Size
SW Side	CN1-1	CN1-2	CN1-4	CN1-5	
PCB Side	CN102-5	CN102-4	CN102-2	CN102-1	
SW value	SW3	SW2	SW1	SW0	
0	L	L	L	L	A5 T
1	L	L	L	H	Custom Size
2	L	L	H	L	B5 T
3	L	L	H	H	LG
4	L	H	L	L	LT
5	L	H	L	H	HLT
6	L	H	H	L	A4 T
7	L	H	H	H	No Cassette
8	H	L	L	L	No Cassette
9	H	L	L	H	No Cassette
10	H	L	H	L	No Cassette
11	H	L	H	H	No Cassette
12	H	H	L	L	No Cassette
13	H	H	L	H	No Cassette
14	H	H	H	L	No Cassette
15	H	H	H	H	No Cassette



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