Model:Ri 100
Machine Code:
J089/J098/J099

Field Service Manual
(For EU and NA Models)

Ver.1.0

Latest Release: Mar, 2018
Initial Release: Mar, 2018

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. Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
13. Never do any procedure that defeats the function of any safety device.
14. 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.
15. 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.

16. When using a vacuum cleaner around the machine, keep others away from the cleaner, especially small children.
17. 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.

Observance of Electrical Safety Standards

1. 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

1. Dispose of replaced parts in accordance with local regulations.
2. 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.
3. 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.

Safety Instructions for Ink Cartridges

Accidental Exposure To Ink

⚠CAUTION

1. If ink gets on the skin, wash the affected area immediately with soap and cold running water.
2. If ink gets into the eyes, immediately flush the eyes with cold running water. If there are signs of irritation or other problems, seek medical attention.
3. If ink is swallowed, drink a strong solution of cold water and table salt to induce vomiting. Seek medical attention immediately.
4. Ink is difficult to remove from fabric. Work carefully to avoid staining clothing when performing routine maintenance or replacing cartridges.

Handling and Storing Ink Cartridges

⚠WARNING

- Ink is flammable. Never store ink cartridges in a location where they will be exposed to high temperature or an open flame.

⚠CAUTION

1. Always store ink cartridges out of the reach of children.
2. Always store ink cartridges in a cool, dry location that is not exposed to direct sunlight.

Ink Cartridge Disposal

⚠CAUTION

1. Attach the caps to empty ink containers for temporary storage to avoid accidental spillage.
2. Return empty ink cartridges to a local dealer who can accept such items for collection and recycling or disposal.
3. If the customer decides to dispose of empty ink cartridges, make sure that they are disposed of in accordance with local laws and regulations.

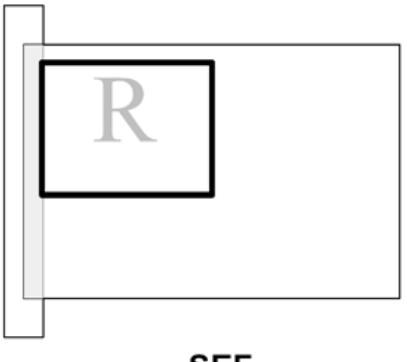
Conventions Used in this Manual

Symbols and Abbreviations

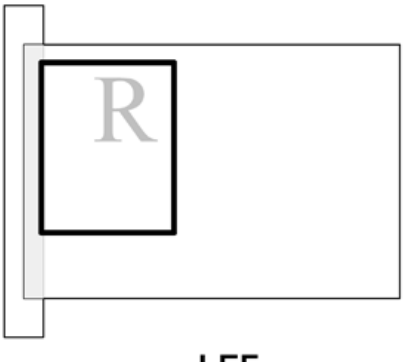
This manual uses several symbols.

Symbol	What It Means
	Clamp
	Clip ring
	Connector
	E-ring
	FFC (Flat Film Connector)
	Hook
	Pointer (cross-reference to another manual section)
	Screw
	Spring
	Standoff
	Timing Belt

This manual uses the following abbreviations.



SEF



LEF

Throughout this service manual, "SEF" denotes "Short Edge Feed" and "LEF" denotes "Long Edge Feed".

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

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  Microsoft® Windows Server® 2016 Essentials

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7. Detailed Description

1. Product Information

Specifications

Basic Specifications

Main Machine

Items	Specifications	
Configuration	Desktop	
Printing Method	On-Demand piezo inlet GEL JET Ink Printing Technology with pigment-base ink (4 colors)	
Resolution (dpi, bit/pixel)	Max. 1200x1200dpi equivalent	
Print Speed (when printing the whole A4 area in black)	• Speed priority mode 1 minute 20 seconds or less (after pressing the Start button) • Quality priority mode 2 minutes 30 seconds or less (after pressing the Start button)	
Nozzles	• Black: 192 nozzles • Cyan, magenta, and yellow: 192 nozzles per color	
Warm-up Time	Less than 35 sec.	
Printable area	A4 standard tray	291 × 204 mm (11.5 × 8.0 inches)
	A5 tray (option)	204 × 142 mm (8.0 × 5.6 inches)
Fabric thickness	• A4 standard tray and A5 tray (option) 7 mm (0.27 inches)	
Number of loadable cassettes	1 cassette	

Power source	• EU/Asia/China 220-240 V: 50/60 Hz 0.6 A (with all options installed) • NA 100-120 V: 60 Hz 1 A (with all options installed)	
Power consumption*1	• During printing (Average): 35W • During power OFF: 0.5W	
Energy Saver mode	Reduced power consumption in Energy Saver mode*2	2W
	Time to switch into Energy Saver mode	5 min.
	Time to switch out from Energy Saver mode*2	2.9 sec.
External dimensions (W × D × H)	• Standby: 399 × 698.2 × 292.5 mm (15.7 × 26.9 × 11.5 inches) • During printing: 399 × 760.3 × 292.5 mm (15.7 × 29.9 × 11.5 inches)	
Weight	24 kg (52.9 lb.) or less	
Interface	• USB 2.0 high speed • Ethernet (10Base-T, 100Base-TX) • Wireless LAN (IEEE 802.11 b/g/n)	

Wireless LAN	Transmission Specification	Based on IEEE 802.11b/g/n
	Data Transfer Speed	Auto select from the following speeds: • 802.11b 1, 2, 5.5, 11 (Mbps) • 802.11g 6, 9, 12, 18, 24, 36, 48, 54 (Mbps) • 802.11n 6.5, 7.2, 13, 13.5, 14.4, 15, 19.5, 21.7,26, 27, 28.9, 30, 39, 40.5, 43.3, 45, 52, 54, 57.8, 58.5, 60, 65, 72.2, 81, 90,108, 120, 121.5, 135, 150 (Mbps)
	Frequency Range	• EU/Asia/China: 2412 to 2472 MHz (1 to 13 Channels) • NA: 2412 to 2462 MHz (1 to 11 Channels)
	Transmission Mode	Infrastructure mode
Printer language	RPCS Raster	

*1: To avoid unnecessary power consumption, disconnect the power plug from the wall outlet. (Unplug the power plug only after making sure the power lamp is off.) Power Consumption may differ depending on the conditions and environment of the machine.

*2: The time it takes to switch out from energy saving functions and power consumption may differ depending on the conditions and environment of the machine.

Optional Dryer for Garment Printer (RICOH Rh 100)

Items	Specifications
Power source	EU/Asia/China: 220-240 V: 50/60 Hz NA: 110-127 V: 50/60 Hz
Power consumption	1,000 W
External dimensions (W × D × H)	399 × 600 × 200 mm (15.8 × 23.7 × 7.9 inches)

Items	Specifications
Weight	16.5 kg (approx. 36.4 lb.)

Optional Cassettes

Items	Specifications
External dimensions (W × D × H)	• A5 tray 242.2 × 409.2 × 97.9 mm (9.5 × 16.1 × 3.9 inches)
Weight	• A5 tray 2.13 kg (4.7 lb.)

RICOH Design Software (T-shirt Designer)

Items	Specifications
Supported device	Windows tablets (with 10-inch touch panel) Device with Mac OS (iMac, MacBook, Mac mini, etc.)
Supported operating system	Windows 10 (32-bit version) Mac OS X 10.10 and later versions

RPCS Raster Printer Driver

Items	Specifications
Available Operating Systems	Windows: Windows 7/8.1/10 and Windows Server 2008/2008 R2/2012/2012 R2/2016 Macintosh: Mac OS X 10.8 and later versions

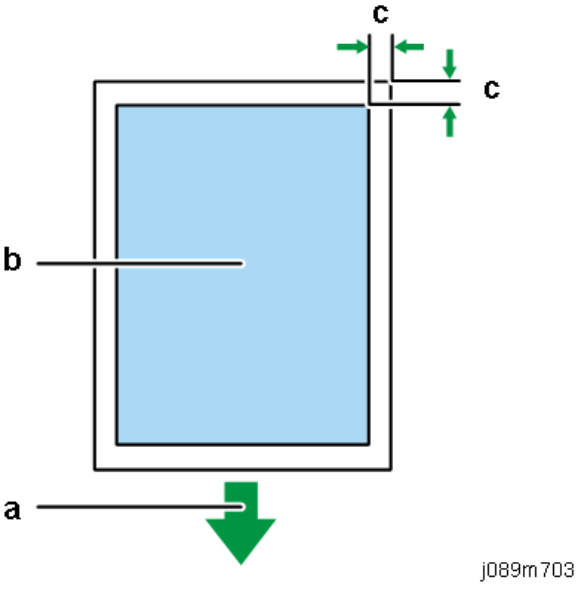
Print Volume, Service Life

Duty	3,000 prints
Monthly Volume	Ave. 200 prints
Estimated Service Life	5 years, or 12 K prints

Operation Specifications

Printing Operation

Print Area



a. Front of the Cassette

b. Printable Area

c. Windows: 3 mm (0.12 inches), Mac: 3 mm (0.12 inches)

The printing ranges of each cassette are as follows:

- A4 standard tray: 291 × 204 mm (11.5 × 8.0 inches)
- A5 tray: 204 × 142 mm (8.0 × 5.6 inches)

Functions that can be adjusted with the driver

- It is possible to select [Fine], [Speed], and [Vivid] in Print Quality for each print media
- Garment Settings (Size, Fit to Garment Size, Portrait/Landscape, Garment Type)
- Color/Monochrome selection
- Adjust images (Adjust Photographs, Smooth Low Resolution Images)
- Advance settings for image quality (Brightness, Contrast, Saturation, RGB Revision, etc.)
- Color Profile Settings (Type, On/Off)
- Printable Area Settings (3 mm margin)

Print Speed and Resolution

Print Mode	dpi	RPCS–R Diver
Fine mode	1200 x 1200	2 minutes 30 seconds or less *1, *2
Speed mode	600 x 600	1 minute 20 seconds or less *1, *2
Vivid mode	600 x 600	NA

*1: When printing the whole A4 area in black.

*2: After pressing the Start button.

Control Boards

Controller

CPU	PowerPC 464FP, 800MHz
SoC	ZICO
RAM	128MB
Program ROM	On Board: 4MB
Font ROM	None
EEPROM	4KB
Optional EEPROM slot	None
PDL	RPCS Raster
Connectivity	
Host Interface(Std)	USB 2.0 High Speed, 10Base-T/100Base-TX
Network Protocol	TCP/IP

MIB Support	Private: Ricoh Original Standard: RFC1213 (MIB-II) RFC1514/RFC2970 (Host Resource MIB) RFC1759 (Printer MIB) RFC3412 (MPD-MIB) RFC3413 (Target-MIB, Norification-MIB) RCF3414 (USM-MIB) RFC3415 (VACM-MIB) RFC3584 (COMMUNITY-MIB) Printer Working Group Candidate Standard 5107.1-2005 (Printer Port Monitor MIB 1.0)
Networking Operating Systems	• Windows: Windows 7/8.1/10 and Windows Server 2008/2008 R2/2012/2012 R2/2016 • Macintosh: Mac OS X 10.8 and later versions

Note: Mac driver included on CD-ROM (The supported languages are English, French, German and Japanese.).

Supported Utilities

Bundled	T-shirt Designer Software for designing and printing on T-shirt and tote bag fabric.
Web	The following software can be downloaded. • Smart Device Monitor for Admin • Smart Device Monitor for Client
Optional	• Remote Communication Gate S Pro • Smart Device Monitor for Admin Accounting Report Package • Desk Top Binder Lt

Overview

1

Machine Codes and Peripherals Configuration

Main Machine

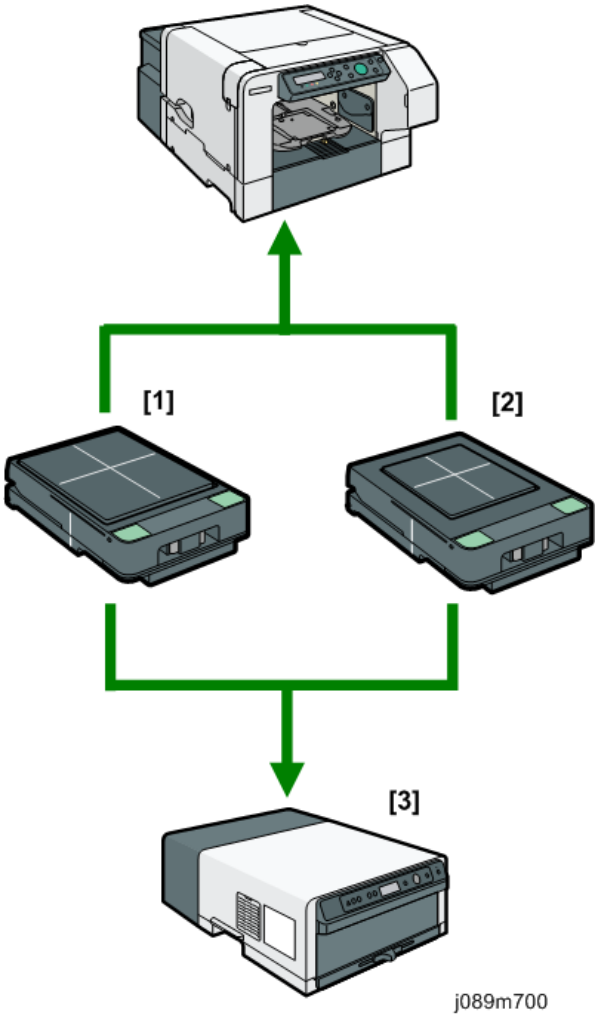
There are 3 different models. However, they each have the same product name. There are absolutely no differences in functionality, as the only difference is the exterior color.

Machine Code	Product Name	Exterior color	Printing on paper	NIC
J089	RICOH Ri 100	White	Not supported	Supported
J098	RICOH Ri 100	Pink	Not supported	Supported
J099	RICOH Ri 100	Green	Not supported	Supported

Options

Code	Product Name	Remarks
J361	RICOH Rh 100	Dryer for garment printer. A heat press for fixing printed images onto fabric.
J362	RICOH Tray for Standard Size Type 1	Same as the supplied standard (A4) tray.
J363	RICOH Tray for Small Size Type 1	A5 tray

Diagram



[1]: RICOH Tray for Standard Size Type 1 (standard/optional)

[2]: RICOH Tray for Small Size Type 1 (optional tray)

[3]: RICOH Rh 100 (optional dryer for garment printer)

Consumables

Ink Cartridges

Never install used ink cartridges to initialize ink supply at installation.

Code	Product Name	Remarks
J922-08 (for NA, AP, and India) J922-24 (for China) J922-48 (for EU)	RICOH Garment Ink Cartridge K (Hi Yield) Type 1	These are **medium**-size cartridges.
J922-09 (for NA, AP, and India) J922-25 (for China) J922-49 (for EU)	RICOH Garment Ink Cartridge C (Hi Yield) Type 1	
J922-10 (for NA, AP, and India) J922-26 (for China) J922-50 (for EU)	RICOH Garment Ink Cartridge M (Hi Yield) Type 1	
J922-11 (for NA, AP, and India) J922-27 (for China) J922-51 (for EU)	RICOH Garment Ink Cartridge Y (Hi Yield) Type 1	

Code	Product Name	Remarks
J922-12 (for NA, AP, and India) J922-28 (for China) J922-52 (for EU)	RICOH Garment Ink Cartridge K Type 1	These are **small**-size cartridges.
J922-13 (for NA, AP, and India) J922-29 (for China) J922-53 (for EU)	RICOH Garment Ink Cartridge C Type 1	
J922-14 (for NA, AP, and India) J922-30 (for China) J922-54 (for EU)	RICOH Garment Ink Cartridge M Type 1	
J922-15 (for NA, AP, and India) J922-31(for China) J922-55 (for EU)	RICOH Garment Ink Cartridge Y Type 1	

Ink Collector Unit

The ink collector unit is installed on the right side of the machine behind the right front door below the ink supply unit.

Code	Product Name
J923-01	RICOH Ink Collection Unit Type 1*

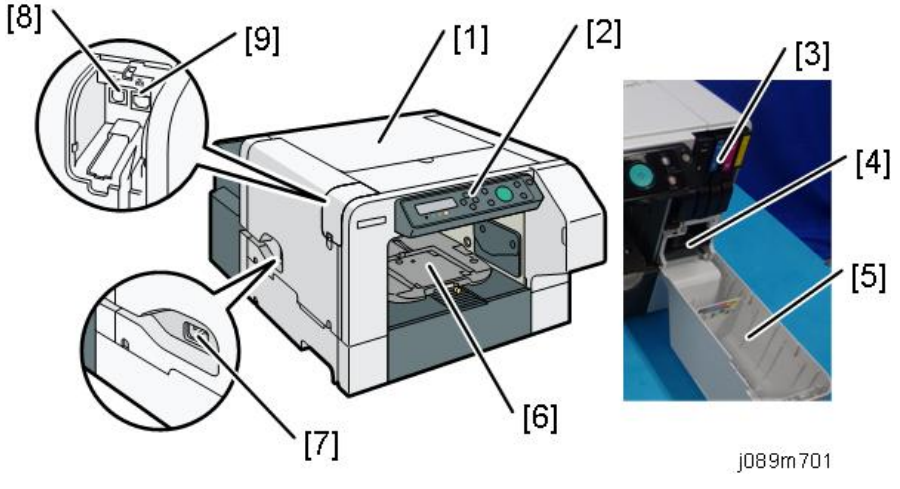
*This ink collector unit is only for this machine. The units for SG 3110DN / SG 3110DNw, or the other Geljet machines have the same appearance, but they are incompatible with this machine due to a software detection.

Others

Code	Product Name
J924-00	RICOH Heat Resistant Paper Type 1

Code	Product Name
J922-40 (for other than China) J922-44 (for China)	RICOH Cleaning Cartridge K Type 1
J922-41 (for other than China) J922-45 (for China)	RICOH Cleaning Cartridge C Type 1
J922-42 (for other than China) J922-46 (for China)	RICOH Cleaning Cartridge M Type 1
J922-43 (for other than China) J922-47 (for China)	RICOH Cleaning Cartridge Y Type 1
J926-01	RICOH Cleaning Liquid Type 1
J927-00	RICOH Cleaning Tool Type 1
J928-00	RICOH Cleaning Absorber Type 1
J929-00	RICOH Cleaning Stick Type 1
J934-00	RICOH Fan Filter Type 1

Names of Components



1. **Top cover**

   Open to remove the fabric or foreign object, or to clean the maintenance unit.

2. **Operation panel**

   Operation keys and the 2-line LCD.

3. **Ink cartridges (K), (C), (M), (Y)**

   Supply ink to the print heads.

4. **Ink collector unit**

   Pull out the ink collector unit when it needs to be replaced, or before servicing the printer.

5. **Front right cover**

   Covers the ink cartridges and the ink collector. Open only when installing or replacing ink cartridges, or when pulling out the ink collector unit. Otherwise, this door should remain closed. A small switch detects when this cover is open and closed. The door must be closed for the printer to operate.

6. **Cassette stand**

   The cassette is set here. The cassette is fed to the inside of the main unit when printing.

7. **Power inlet**

   The connection point for the power cord. Use only the detachable power cord provided with the printer. Make sure you ground (earth) the head of the plug at the power source.

8. **USB port**

   This is the connection point for the USB cable from the PC.

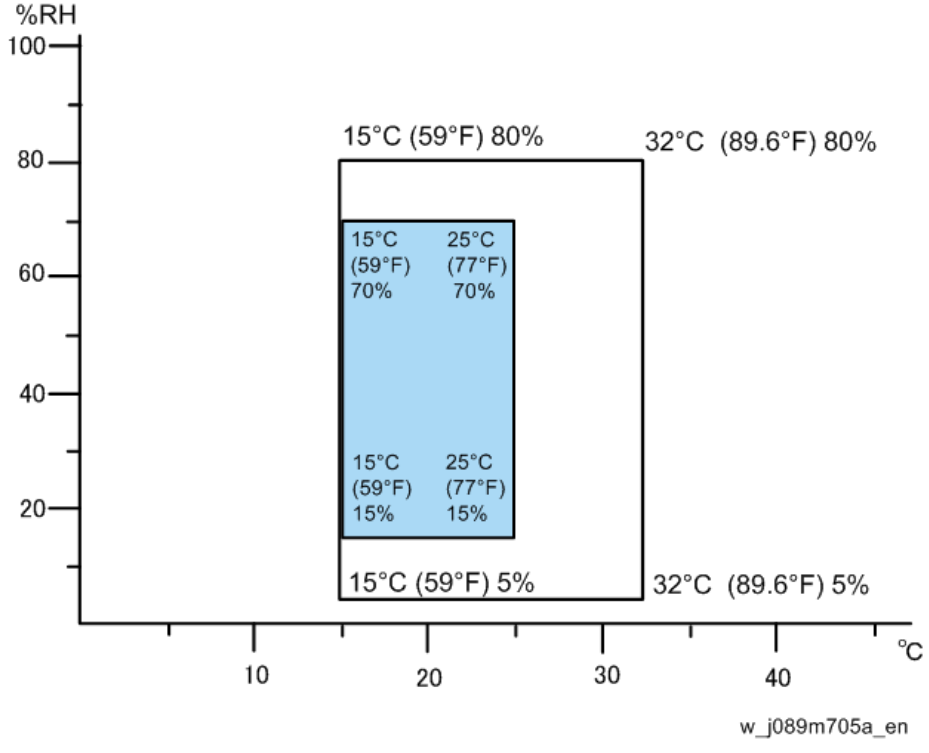
9. **Ethernet port**

   The port for the Ethernet cable. The NIC is mounted on the controller board.

2. Installation

Preparation

Environment



- White area: Permissible Range(Performance guarantee range for the complete specifications including print image quality)
- Blue area: Recommended Range

Set up the machine in a location that meets these minimum requirements (Performance guarantee range not including print image quality):

Temperature Range:	10°C to 40°C (50°F to 113°F)
Humidity Range:	5% to 90% RH
Ambient Illumination:	Less than 2,000 Lux (never expose to direct sunlight).

Choosing a Location

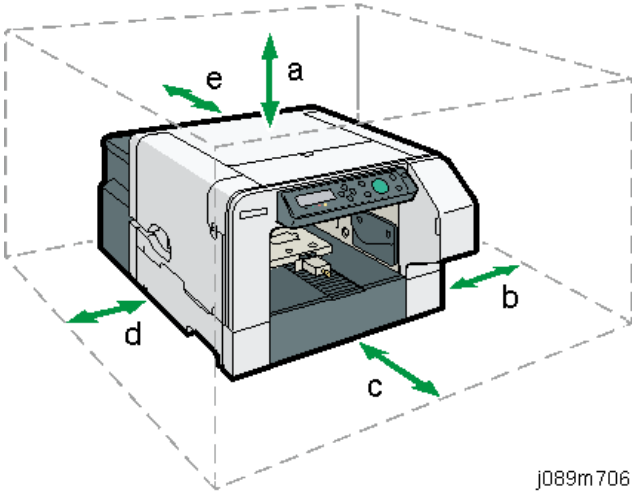
1. Always install the machine:
    - On a sturdy, level surface.
    - Where it will not become damp.
2. Make sure the machine is never exposed to:
    - Extreme changes from low to high temperature or high to low temperature.
    - Cold or cool air directly from an air conditioner.
    - Heat from a space heater.
3. Never install the machine in areas near:
    - Dust, lint, or corrosive fumes.
    - Strong vibration.
4. Do not use the machine at any location higher than 2,500 m (8,200 ft) above sea level.
5. Set up and use the machine on a sturdy, level surface.
    - Place a carpenter's level on the machine front-to-back, and side-to-side and confirm that it is level.
    - Variations between the front/back and left/right level readings should be less than 2 degrees.

Required Software Environment

Software	• Microsoft Windows 7/8.1/10 • Microsoft Windows Server 2008/2008 R2/2012/2012 R2/2016 • Mac OS X 10.8 and later versions
Hardware	• PC/AT-compatible computer with USB or network interface • Macintoshes that are PowerPC G3 or higher with USB port or network port • Macintoshes that are Intel Core Duo or higher with USB port or network port • 80-100 MB of HDD space available

Note: Mac driver included on CD-ROM (The supported languages are English, French, German and Japanese.).

Minimum Space Requirements



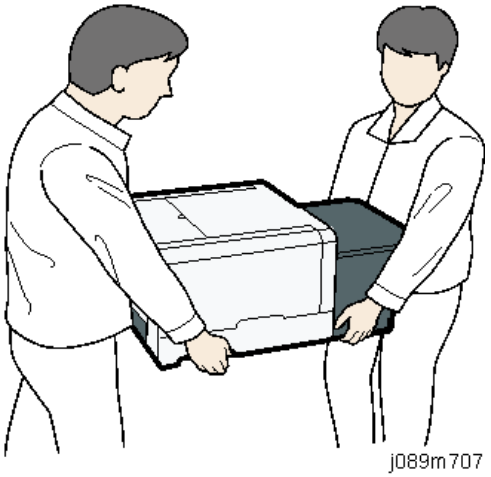
a.	At least 27 cm (10.7 inches)
b.	At least 10 cm (4 inches)
c.	At least 53 cm (20.9 inches)
d.	At least 25 cm (9.9 inches)
e	At least 10 cm (4 inches)

Power Source

North America	100-120V: 60Hz 1.0A (when all options are installed)
Europe	220-240V: 50/60Hz 0.6A (when all options are installed)

Precautions When Moving the Machine

- The machine weighs around 24kg (52.9lb.).
- Two or more people are required to lift the printer.



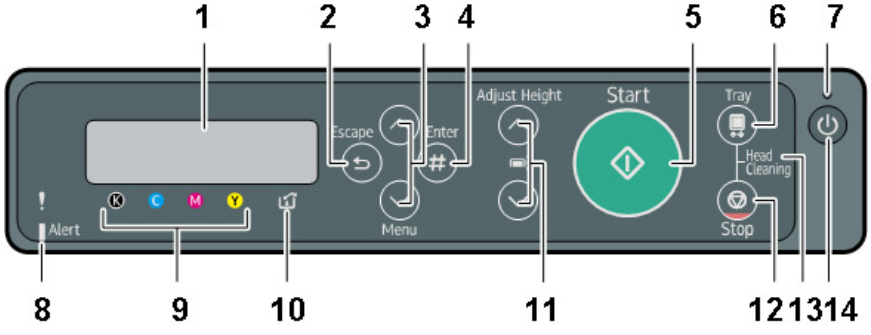
- When moving the printer, lift it slowly so that you do not strain yourself. Lifting the printer forcibly or handling it roughly will risk injury to yourself and damage to the printer.

Be cautious of the following points when moving the machine for repairs or transferring it to a repair facility etc.

- When moving the machine a short distance in a building, make sure the ink cartridges remain set in position.
- When moving the machine a long distance such as for off-site repair, according to the type of ink cartridge in use, do as follows:
  - M -size ink cartridges (RICOH Garment Ink Cartridge X Type 1):
  Do not remove the ink cartridges. Make sure that the ink cartridges are fully inserted, and then move the machine as it is.
  - L -size ink cartridges (RICOH Garment Ink Cartridge X (Hi Yield) Type 1):
  Remove the ink cartridges. After moving the machine, reinstall the ink cartridges by fully inserting them, and then leave them installed in the machine.
- Always remove the cassette before moving the machine.
- Make sure that the cover and tray do not open or come off by securing them with tape at the positions at which they were secured for product shipment.
- Do not tilt or apply shocks to the machine. If the machine is tilted, ink may spill out of the machine.
- After moving the machine, check the quality of images by performing a test print, and clean the machine if necessary.

Using the Operation Panel

Here is a brief description of how to use the keys on the printer operation panel. This information is provided as a quick summary of important information described in the Operating Instructions.



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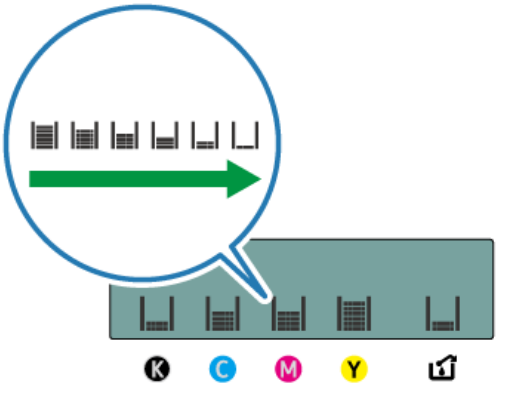
Key Summary Table

	Key/Indicator	What It Does
1	Display	Displays the current machine status and messages.
2	Escape	Press this key to return to the previous condition on the display.
3	▲, ▼/Menu	Use these keys to increase or decrease values on the display when making settings. Keep the key pressed to quicken scrolling, and increase or decrease values on the display in units of 10. To apply this function: under [Maintenance], set [Key Repeat] to [On].
4	#Enter	Press this key to execute menu items selected on the display.
5	Start	Start printing. LED of the [Start] key lights up when the machine is ready to start printing and flashes when it is printing.
6	Tray	Press this key to move the cassette forcibly to the front.
7	Power lamp	Lights up when the power is on. Flashes when the machine is receiving data from a computer or if there is data to be printed.
8	Alert indicator	Lights up or blinks whenever a machine error occurs. If the red light is on, follow the instructions that appear on the display.

	Key/Indicator	What It Does
9	Cartridge replacement indicator	Each color corresponds to an ink cartridge. K, C, M, and Y indicate black, cyan, magenta, and yellow, respectively. The amount of ink remaining in each ink cartridge is indicated on the six-level display.
10	Waste ink full indicator	The amount of waste ink is indicated on the six-level display. A message appears when it is time to replace the ink collector unit.
11	Adjust Height▲/ Adjust Height▼	Move the height of the cassette up and down to adjust the height. Holding down the key, you can adjust the height of the cassette quickly. To apply this function, set [Key Repeat] to [On].
12	Stop	When the machine is online, press this key to cancel an ongoing print job.
13	No-Fuss Head Cleaning	When the machine is in standby mode, press the [Stop] and [Tray] keys at the same time to perform head cleaning for all colors.
14	Power	Press this key to turn the power on. To turn the power off, press and hold down this key for one second.

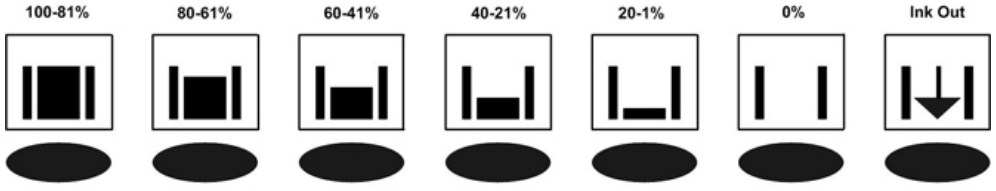
Printer Display Summary

Operation Panel: Cartridge replacement indicator



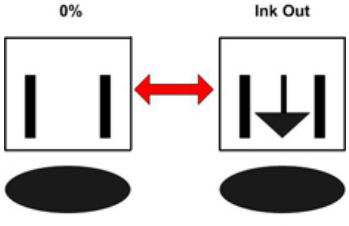
j0270004

The printer shows a multi-level dynamic display that keeps the operator informed about the status of the ink levels in the tanks. The example below for Black (K) shows the progression in the display from full on the left to completely empty on the right.



j017i005

A software count determines when the ink cartridge is has less than 20% ink remaining. The 0% and Ink Out display begin flashing alternately at 3 sec. intervals. This is the near-end alert.

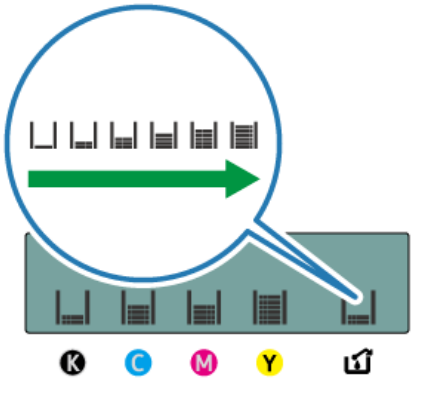


j017i005a

When the cartridge is empty the machine issues the ink-end alert and printing stops.

If the ink runs out during printing, the machine may eject the cassette while printing is performed or leave nothing printed.

Operation Panel: Waste Ink Full Indicator

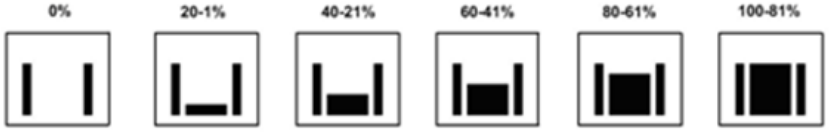


j0270005

The amount of waste ink in the ink collector unit is indicated on a six-step scale, namely 0, 20, 40, 60, 80, and 100%. It is reset to 0% if a new ink collector unit is installed. If it reaches 100%, printing cannot

be done. A message prompting the user to replace the unit appears on the panel display. A message prompting the user to replace the ink collector unit appears also if it is not mounted.

The amount of waste ink can be displayed also on the Status Monitor and Web Image Monitor.



j0270023

On the other hand, "Ink C.U. Space" in the machine's menu on the control panel displays the available storage space left in the ink collector unit. (It is reset to 100% if a new ink collector unit is installed.)

Display Menu Summary

Here is a summary of the function menus. Items needed for printer maintenance or troubleshooting are marked in the left column with an asterisk (*).

User Menu Mode

Menu/Menu Item	Function
Counter	Displays or prints the number of pages printed in B&W and full color.
Show Counter	Displays the counters on the LCD ("Black", "Color")
Print	Prints the "Page Counter" report that lists: the machine serial number, Total Full Color, Total Black, and total amount (%) of ink used for the each color option (Coverage Count.) It also lists Coverage ratio information.
List/Test Print	

Menu/Menu Item	Function
Config.Page(*)	Prints information that tells you the current configuration of the printer. • **System Reference**. Lists printer version, attached options, name of print language, amount of ink remaining for each ink cartridge. • **Maintenance** Maintenance Information. Lists the settings of the Maintenance menu • **System** System Information. Lists the settings of the System menu • **Host Interface**, Interface Information. Lists the settings of the Host Interface menu • **Language** **The selected language in the Language menu**
Color Demo Page	Prints a color sample.
Error Log	Prints a list of most recent errors.
Maintenance	
Nozzle Check(*)	Prints the cross-hatch test pattern so you can visually confirm whether inks are ejecting correctly from the print head.
Head-cleaning(*)	Cleans the print head. Clean the print head when certain colors are missing or printing faintly. Head cleaning consumes ink.
Head-flushing(*)	Cleans the print head more thoroughly than "Head-cleaning". Flushing consumes more ink. Use this function only after "Head-cleaning" fails to solve the problem.
Head Position(*)	Adjusts the alignment of the print head if the Nozzle Check test pattern shows broken vertical lines, or if printed images are blurred.
Registration	Adjust the print start position of the fabric. Use the Nozzle Check test pattern as reference.
Date/Time	Allows setting current date/time.
Key Repeat	Enables/disables repetition of a key pushed and held down on the operation panel.
Feed Test(*)	Confirms the operation of the cassette. Printing is not performed on the fabric.

Menu/Menu Item	Function
Move Prnt-Heads(*)	Moves the print head to allow you to easily remove foreign objects stuck in the right edge. Once all operations have completed, turn the power back on and print a [Nozzle Check] test pattern.
Height Adjust(*)	Adjusts the height of the cassette manually.
Clean Maint Unit(*)	Moves the maintenance unit to a position where cleaning can be carried out.
Auto Head Maint. (*)	Cleans the print head nozzles automatically.
Clean Internals(*)	The internal compartments are cleaned automatically. Clean the interior if you do not use the machine for a long time.
Fan Speed	Adjust the rotation speed of the ink mist collecting fans. You can select from" Normal Speed"," Low Speed", and " Off ".
Fan Filter	Displays the number of prints that have been performed with the filter installed in the machine. Also uses to reset the counter when replacing the filter. **Note** • When the number of prints that have been performed with the filter installed in the machine exceeds the maximum number • (2,000), the message "Exchange Fan Filter" appears in the display window of the operation panel.
System	
Energy Saver	Switches the energy saving function on/off. When this function is on, the printer will automatically shut down some of its functions automatically after it remains idle for the prescribed amount of time. The "E. Saver Timer" can be set for 5, 15, 30, 45, 60 min. Once the printer enters the energy save mode, it will require some time to recover full operation once it receives a print job.
Notify by Email	Determines whether a notification is sent to a specified email address when a printer error occurs. Be sure to cycle the printer off/on after doing this setting.

Menu/Menu Item	Function
Unit of Measure	Determines the units of measure ("mm" or "inch") **Default**: NA: inch EU,AS, and CH: mm
Uni-direct Prt.	You can configure the machine to eject ink only when the head is moving in a particular direction. If you select [Always], printing is performed unidirectionally regardless of the fabric type. If you select [Auto Detect], printing is performed according to the settings of [Garment Type:] specified in the printer driver. Default: [Auto Detect]
Img Recov. Error	Specify whether or not [Page Recovery Error] is reported. Default: [Display]
Ink C.U. Space	Displays the current status of the ink collector unit. The number means the amount of space remaining. (100% means the unit is empty.)
Host Interface	
I/O Timeout	Determines how long the printer waits for the interface to respond. After the specified time elapses, the printer can receive data from another interface. If the specified time is too short, a timeout might occur while a data transfer is in progress. If this occurs, the print job will be interrupted by a new job from another interface. Default: 15 sec.

Menu/Menu Item	Function	
Network Setup	Use to do the network settings.	
	Setting	
	Machine Name	**Default**
	Host Name	Display only
	Domain Name	Display only
	IPv4 DNS	Specify the DNS server settings under IPv4. If DHCP is off, enter the IPv4 addresses for the primary and secondary DNS servers in the format "xxx.xxx.xxx.xx"(where each x represents a digit). Default: [0.0.0.0]
	IPv4 DDNS	Specify the setting to update the host or domain name. Default: [On]
	DHCP	Specify whether or not to use DHCP in an IPv4 environment. Default: [Off]
	IPv4 Address	Specify the IPv4 address. When the DHCP is set to On, the IP Address cannot be changed. To change it, set DHCP to Off. Default: [11.22.33.44]
	Pv4 Subnet M	Specify the subnet mask. When the DHCP is set to On, the setting cannot be changed. To change it, set DHCP to Off. Default: [0.0.0.0]
	IPv4 Gatewy. Ad	Specify the IPv4 gateway address. When the DHCP is set to On, the setting cannot be changed. To change it, set DHCP to Off. Default: [0.0.0.0]
	IPv6 DDNS	Specify the setting to update the host or domain name. Default: [On]

Menu/Menu Item	Function	
Network Setup	IPv6 DNS	Specify the DNS server settings under IPv6. If DHCP is off, enter the IPv6 addresses for the primary and secondary DNS servers in the format "xxxx: xxxx: xxxx: xxxx: xxxx: xxxx: xxxx:xxxx"(where each x represents a digit). Default: [::]
	DHCPv6	Specify whether or not to use DHCP in an IPv6 environment. Default: [Off]
	IPv6 Statlss Ad	Select whether to enable or disable IPv6 stateless address auto configuration. Default: [On]
	IPv6 Address	Specify the machine's IPv6 address.
	IPv6 Gatewy.Ad.	Specify the IPv6 gateway address. Default: [::]
	Active Protocol	Select the protocol by setting the IPv4, IPv6, HTTP (IPv4), HTTP (IPv6), and Web protocol to [Active] or [Not Active]. Default: [Active]
	IPsec	Specify the machine's IPsec function active /not active. Default: [Off]
	MAC Address	Displays the machine's MAC address.
	Ethernet Speed	Set the access speed for network. Default: [Auto Select]
	Prmt SNMPv3 Com	Select SNMPv3 communication for managing the machine using MIB. Default: [Cleartext]

Menu/Menu Item	Function	
Network Setup	Pmt SSL/TLS Com	Set SSL/TLS communication under IPv4 and IPv6 to [Active] or [Not Active].6for managing the machine using MIB. This communication mode will be used when you specify machine settings using a Web browser. Default: [Active]
	Restore Default	Reset the network settings to their defaults.
Wireless LAN	SSID	Display or specify an SSID.
	Security Method	Specify the dncription of the wireless LAN. Default: [Not Active]
	Easy Setup	Configure the wireless LAN's settings automatically. Select either [PBC Method] or [PIM Method] that is correct to network connection via the access points you can use.
	MAC Address	Displays the wireless LAN's MAC address.
USB Setting	USB Speed	Auto: 480 Mbps or 12 Mbps automatically adjusted Full Speed: 12 Mbps fixed Default: Auto. Normally, this setting does not require changing.
	Port Setting	Specifies communication settings for a USB connection. Default: Off

Menu/Menu Item	Function
Language	You can select which language the menu is displayed in. The "Language" menu will be displayed in English. • NA model Japanese, English, French, German, Italian, Spanish, Dutch, Norwegian, Danish, Swedish, Finnish, Portuguese (Default: English) • EU model English, French, German, Italian, Spanish, Dutch, Norwegian, Danish, Swedish, Finnish ,Portuguese, Czech, Polish, Hungarian (Default: English) • AS/CH model Japanese, English, French, German, Italian, Spanish, Dutch, Norwegian, Danish, Swedish, Finnish, Portuguese, Czech, Polish, Hungarian (Default: English)

Access to menus during an error

In previous models, menus could not be accessed during an error. However, this model allows access to user menus by pressing the [▼/Menu] key.

However, functions that require printing, such as the printing of the counter, cannot be executed during an error.

Example:

- Counter. The counts can be displayed but not printed.
- List/Test Print. No selections are available.

Even without computers, you can specify settings, such as the time and date, on the machine's control panel.

Note

- Menus cannot be accessed while the printer is busy.

Installation

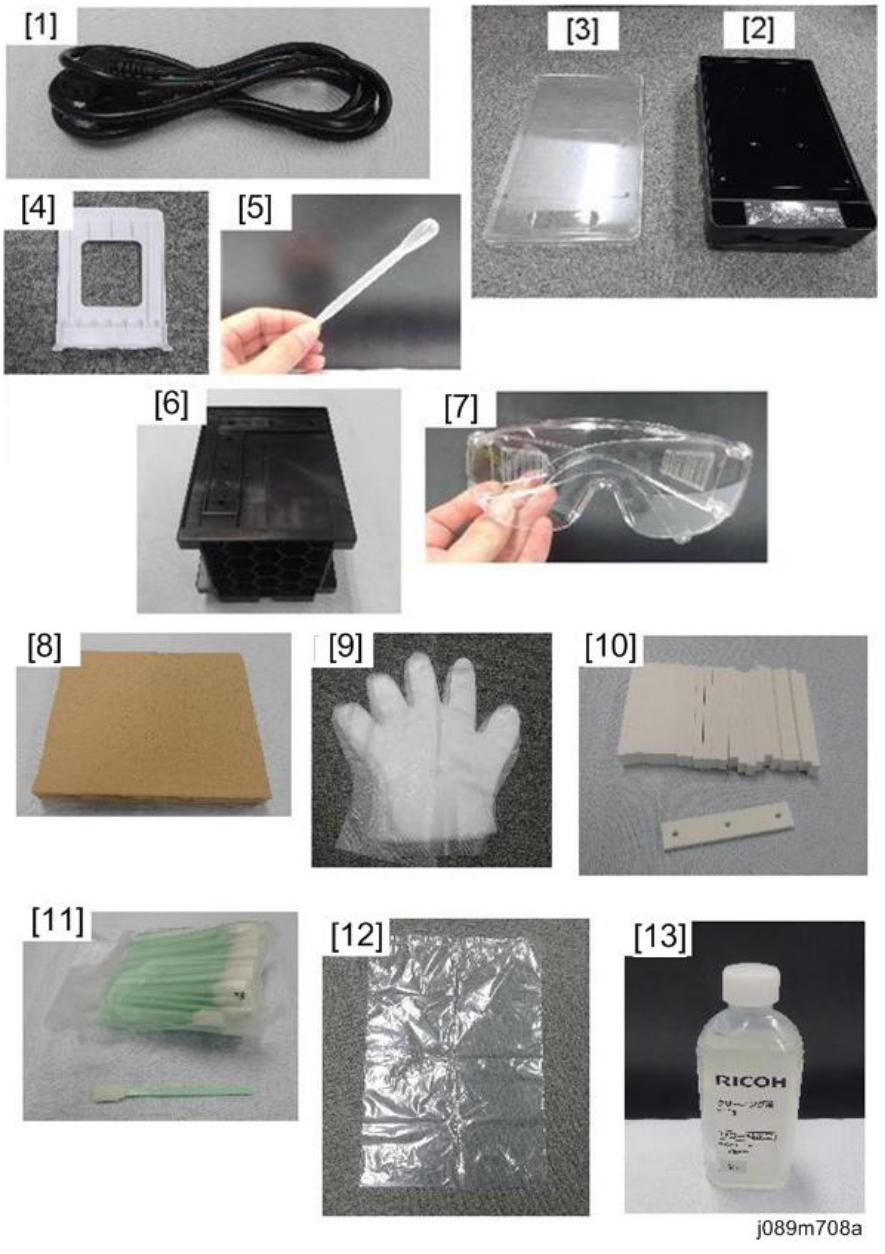
These machines and all peripherals are installed by the customer.

The installation procedures are in the operating instruction manuals issued to the customer with purchase of the main machine or peripheral unit.

Accessory Check

No.	Description	Q'ty	Remarks
1	Power cord	1	
2	Cassette (A4 Standard Tray)	1	
3	Cassette cover	1	
4	Manual pocket	1	
5	Dropper	1	
6	Cleaning tool	1	
7	Protective glasses	1	
8	Cleaning cloth	12	
9	Protective gloves	12 sets	
10	Absorbent material	24	
11	Cleaning stick	100	
12	Disposal bag	1	
13	Cleaning liquid	1	
-	CD-ROM (Operating Instructions)	1	
-	CD-ROM (Wireless LAN Drivers)	1	
-	Manual: Safety Information	1	
-	Manual: User's Guide	1	
-	Manual: Setup Guide	1	
-	Manual: Quick Installation Guide	1	

No.	Description	Q'ty	Remarks
-	Manual: Maintenance Guide	1	
-	Manual: Notes for Wireless LAN Users	1	
-	Manual: Replacing the Ink Collector Unit	1	
-	Sheet: Notes for Wireless LAN (only for China)	1	


[1]
[3]
[2]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
[12]
[13]
RICOH
j089m708a

Important Information

Make sure that the customers understand the following points about moving, storing, and using the printer.

Checklist before Moving the Printer

1. Turn the printer off. Disconnect the power cord.

   Important

   - **Never disconnect the power cord without first turning off the printer.**
2. To lift the printer, grip it at the center of each side by the hand recesses provided.
3. Make sure the covers and trays are closed. Secure them with tape. Attach the tape at the same area you removed at the time of installation.
4. Disconnect the power cord. Tape the power cord to the back of the printer.
5. Do a test print to confirm that the printer operates correctly after you move it to another location. Do the cleaning procedures with the printer driver, if necessary.
6. Always remove the cassette before moving the machine.
7. When moving the machine a short distance in a building, make sure the ink cartridges remain set in position.
8. When moving the machine a long distance such as for off-site repair, L -size ink cartridges (RICOH Garment Ink Cartridge X (Hi Yield) Type 1) must be removed. After moving the machine, reinstall the ink cartridges by fully inserting them, and then leave them installed in the machine.

   For details, see page 33 "Precautions When Moving the Machine".

   Important

   - **To avoid ink spillage, always hold the printer level when you move it.**
   - **Work carefully to avoid dropping it or colliding with other objects in the work area.**

If the Printer Is Not Used Frequently...

1. Turn the power off, disconnect the USB cable, and unplug the power cord.
2. To prevent the print nozzles from drying out, periodically print something.
3. Turn the printer on for a few minutes once a month.
4. After storage or a long period of disuse, use the printer driver to print a nozzle check text pattern and clean the print head nozzles if necessary.

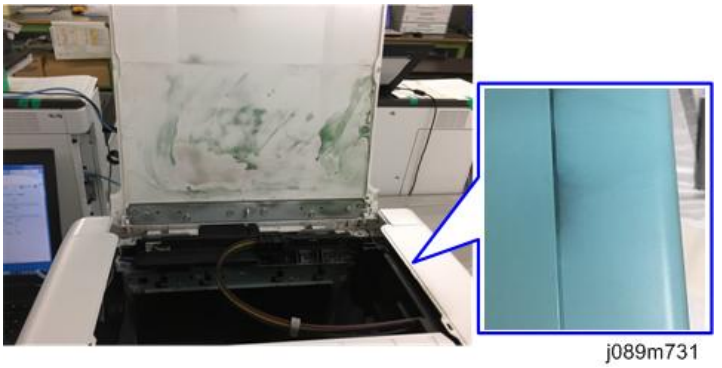
Cleaning Points

Instruct the user to clean the exterior and height sensors periodically.

Exterior

Soak a cloth in water or the cleaning liquid supplied with the maintenance kit, wring it out well, and use it to wipe the exterior. If the stain does not come off, use alcohol for cleaning.

If you leave the stain, the ink mist may escape from the gap in the cover.



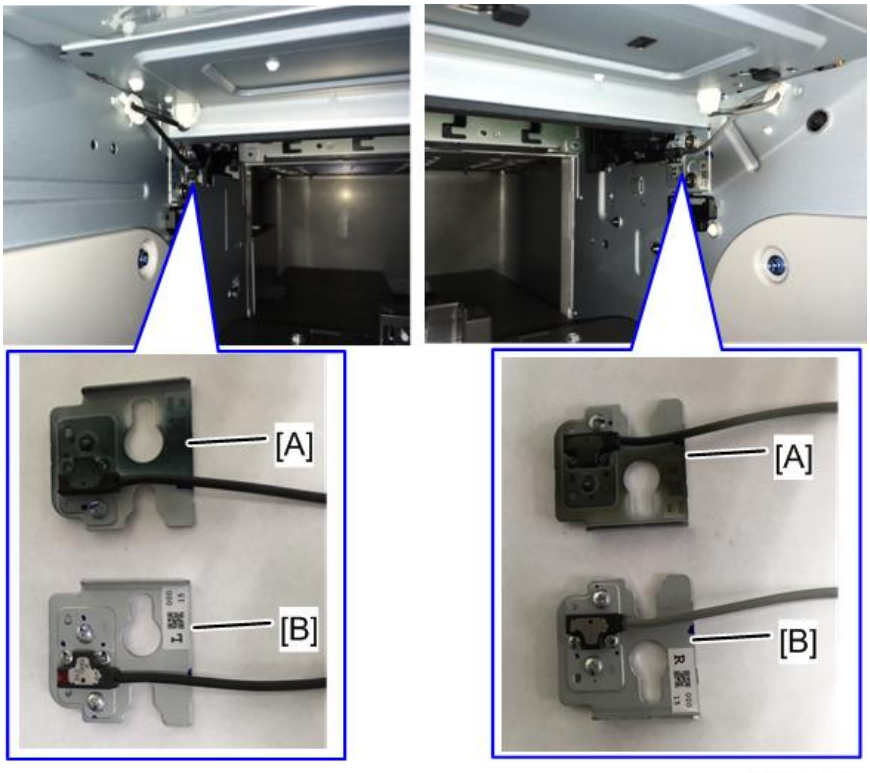
j089m731

Height Sensors

Clean the left and right sensors with the cleaning liquid and cleaning stick supplied with the maintenance kit.

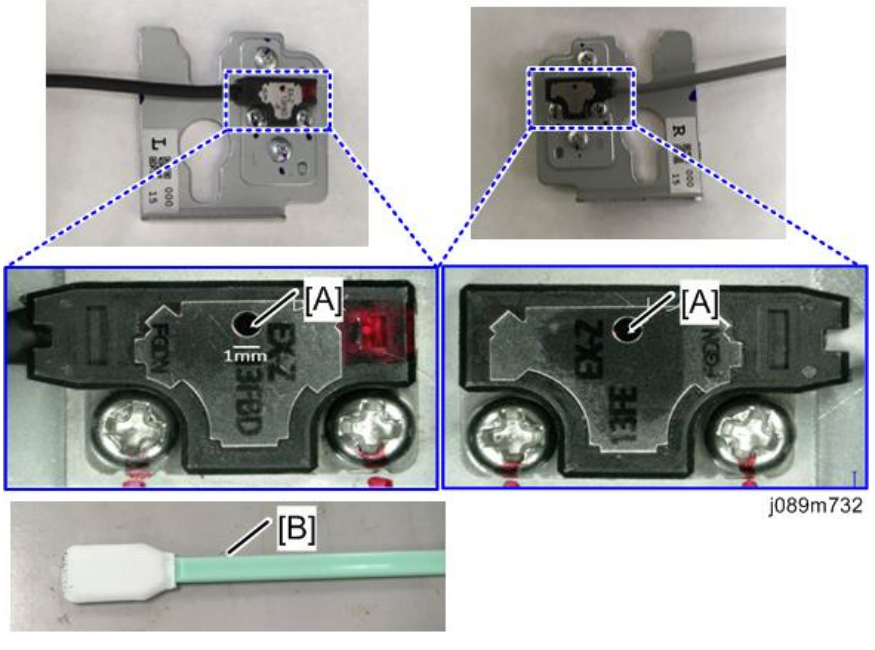
- [A]: Stained with ink mist

  If you leave the stain, the sensor becomes incapable of detecting the tray's height.
- [B] Not stained with ink mist



j089m730

There is a depression in the sensor's lens [A], so remove the stain thoroughly using the end of the cleaning stick [B].



j089m732

3. Preventive Maintenance

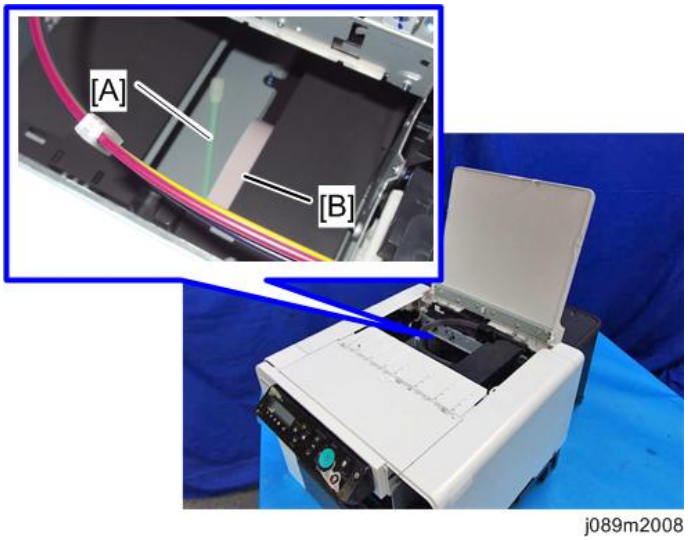
PM Table

There are no PM Parts in this machine.

Service Call Procedures

The procedures listed below should be done by the service technician. For more details about how to do these procedures, please refer to page 183 "Cleaning".

Description	At Service Call, or As Required
External Covers	Damp cloth.
Maintenance Unit	Damp cloth. Always use a tightly wrapped damp cloth to remove the ink that has hardened around the suction cap and wiper blade when you replace the ink collector unit. For details, see maintenance manual and operating instructions.
Printer Operation, Print Quality	Print a Nozzle Check Pattern and check the results. Clean the print heads if necessary. For more, see "Print Head Cleaning and Adjustment" in section "4. Replacement and Adjustment".

Description	At Service Call, or As Required
Internal Inspection	Open the top cover and check whether there are any foreign materials (particularly from when cleaning with a cotton swab [A]) inside. If there are any foreign materials, remove them. Make sure not to damage the FFC [B] at this time.  j089m2008

4. Replacement and Adjustment

Before Replacing Parts

Note

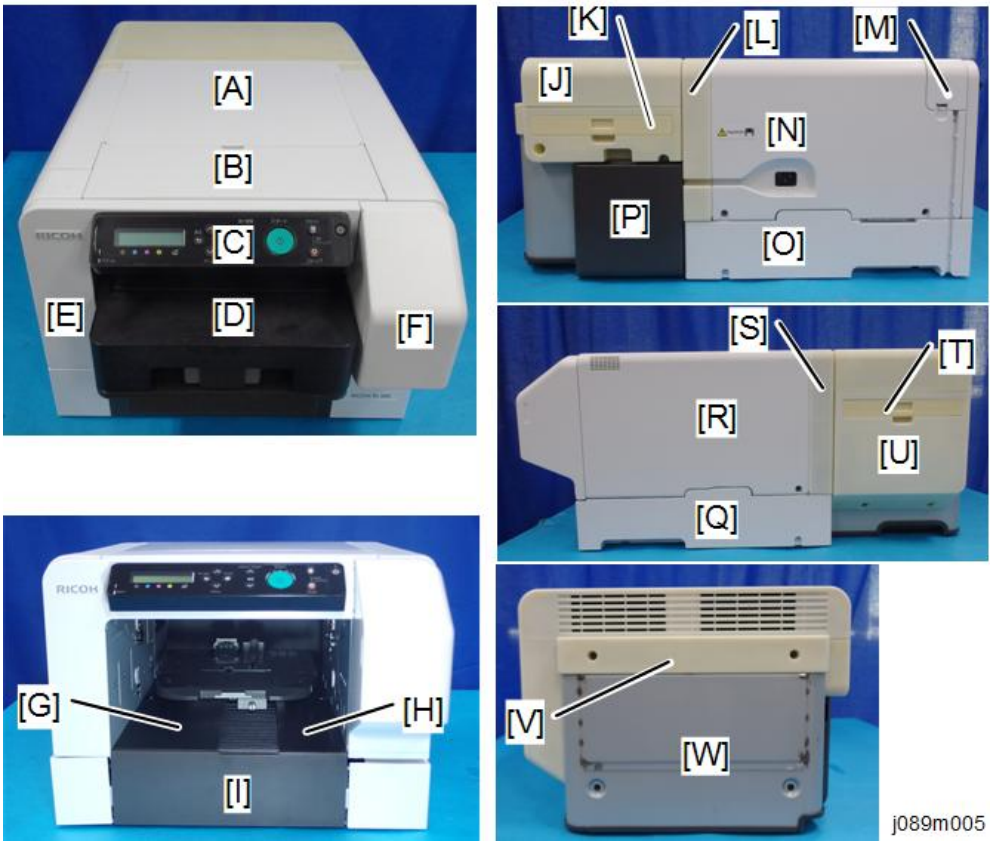
- Some parts of this section illustrate the procedure using an image of the model before the design change, but the procedure is the same for the model after the design change.

Important

- **When reassembling the machine, be sure to attach the screws to their original positions. Especially, the blue and black screws are assigned to particular screw holes.**

Covers

Cover Names

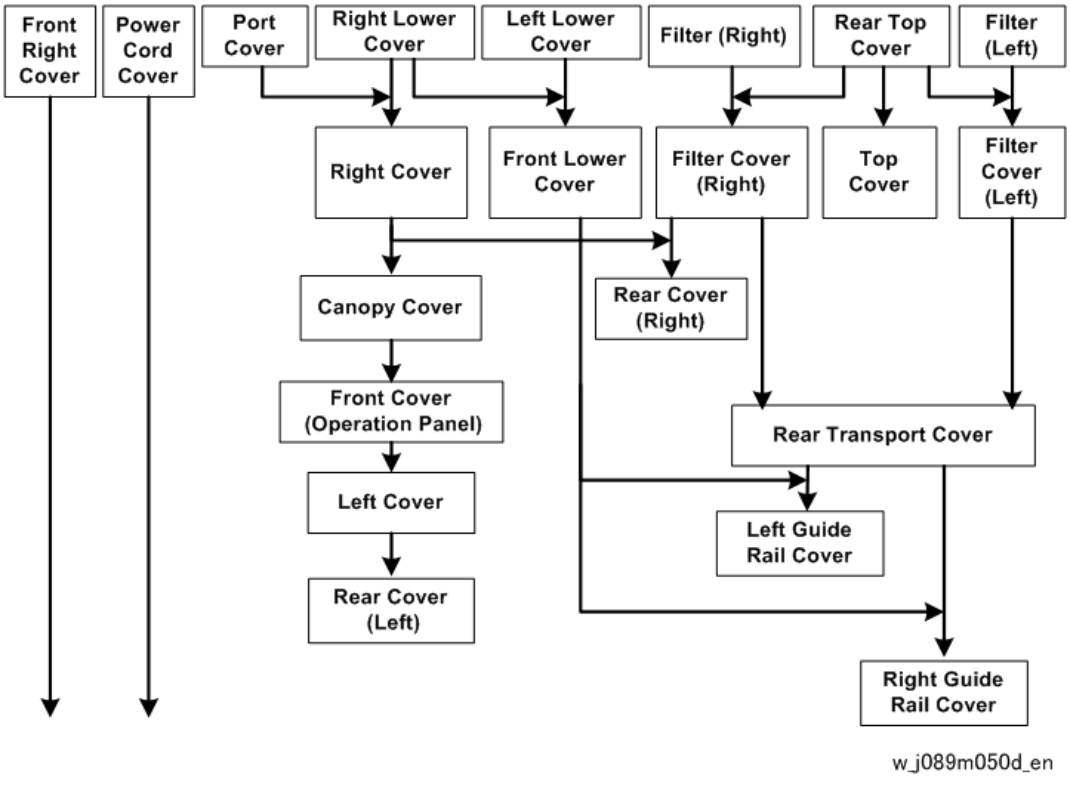


[A]	Top Cover	[M]	Port Cover
[B]	Canopy Cover	[N]	Left Cover
[C]	Operation Panel	[O]	Left Lower Cover
[D]	Cassette	[P]	Power Cord Cover
[E]	Front Cover	[Q]	Right Lower Cover
[F]	Front Right Cover	[R]	Right Cover
[G]	Left Guide Rail Cover	[S]	Rear Cover (Right)
[H]	Right Guide Rail Cover	[T]	Filter (Right)

[I]	Front Lower Cover	[U]	Filter Cover (Right)
[J]	Filter Cover (Left)	[V]	Rear Top Cover
[K]	Filter (Left)	[W]	Rear Transport Cover
[L]	Rear Cover (Left)		

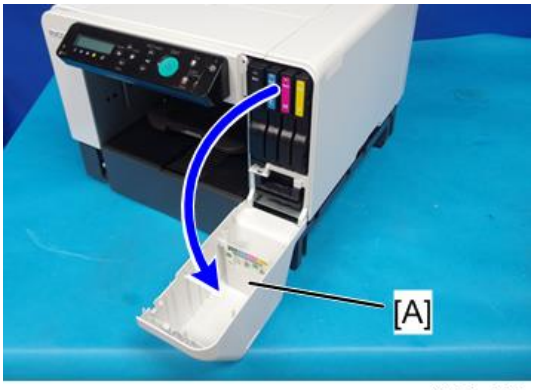
Order of Cover Removal

It is very important that you understand how to remove and reinstall the covers before doing replacement procedures. Here is a general summary of the order of removal.



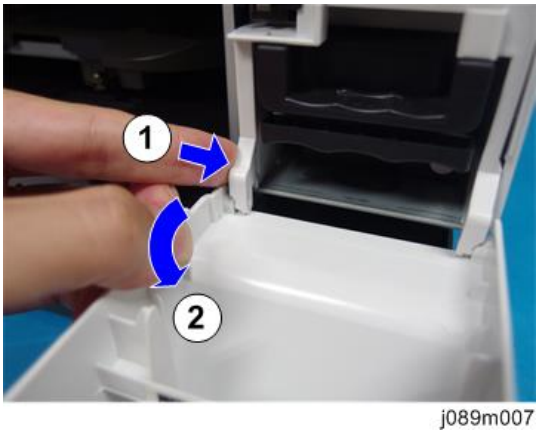
Front Right Cover (with Leaf Spring)

1. Open the front right cover [A].



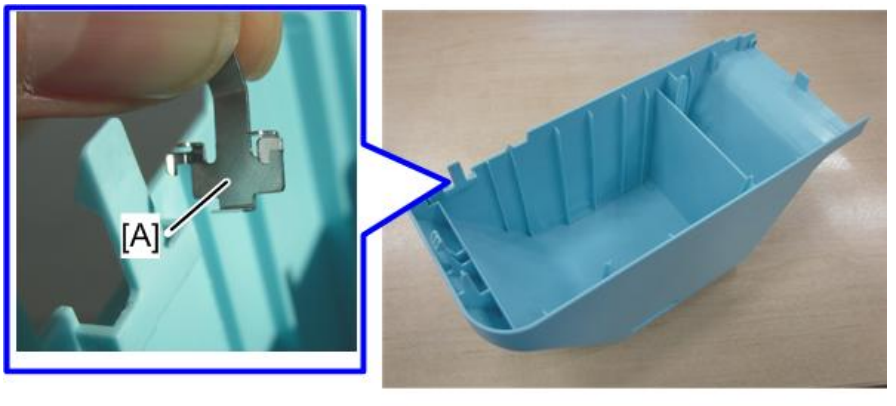
j089m006

2. Disengage the latch and remove the front right cover.



j089m007

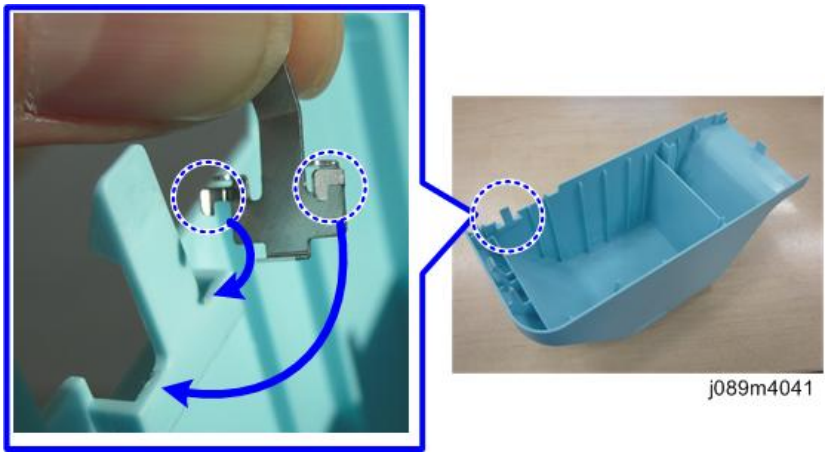
3. Remove the leaf spring [A].



j089m4040

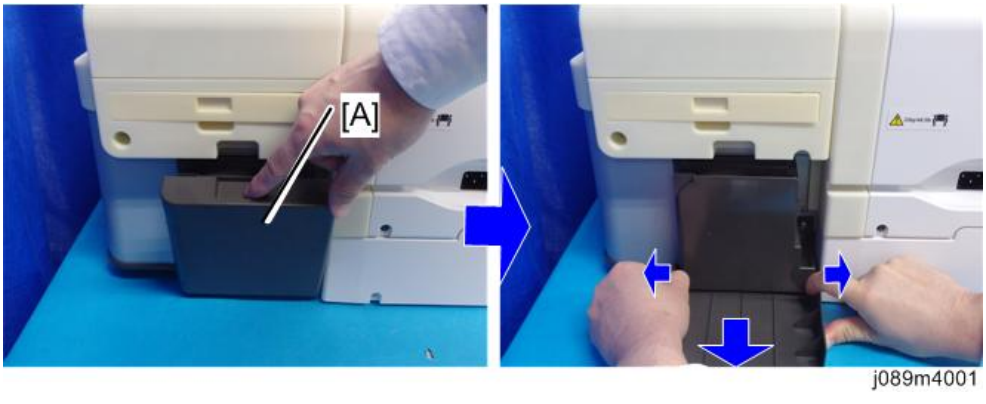
Note

- When attaching the leaf spring, engage the 2hooks on the spring with the front right cover's edge as shown.



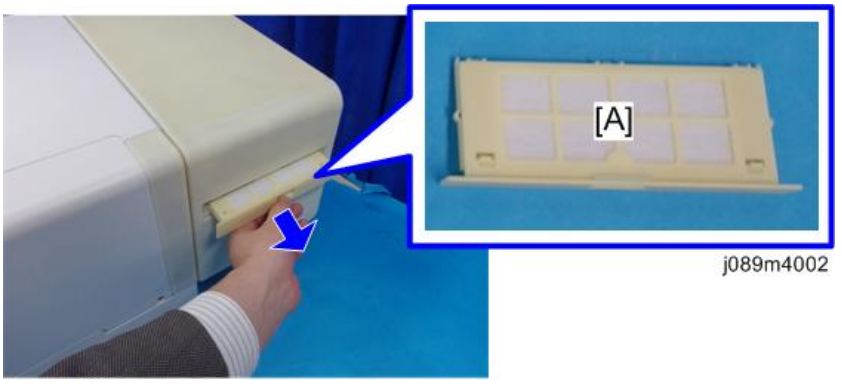
Power Cord Cover

1. **Disengage the latch and remove the power cord cover [A].**



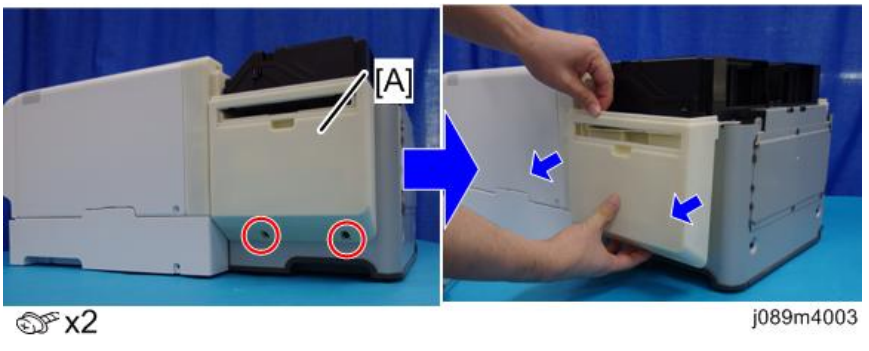
Filter (Right)

1. Remove the filter (right) [A].



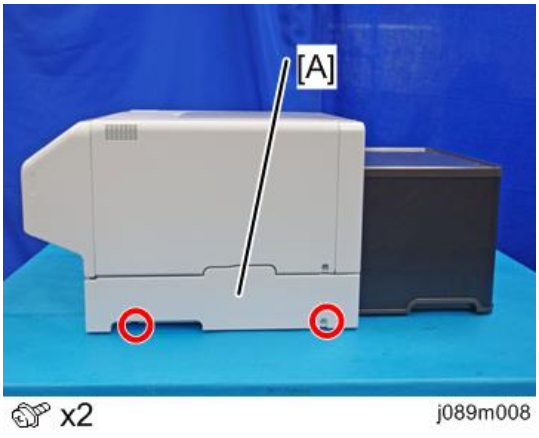
Filter Cover (Right)

1. Remove the filter (right). (page 60 "Filter (Right)")
2. Remove the rear top cover. (page 73 "Rear Top Cover, Top Cover")
3. Remove the filter cover (right) [A].



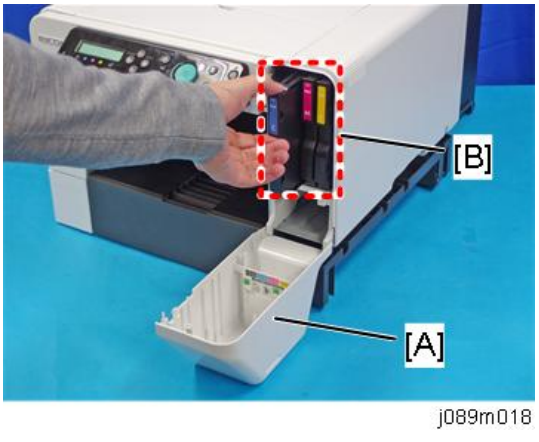
Right Lower Cover

1. Remove the right lower cover [A].

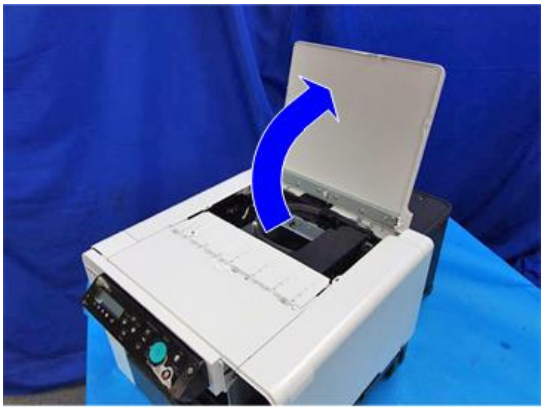


Right Cover

1. Remove the right lower cover. (page 61 "Right Lower Cover")
2. Open the front right cover [A], and remove all ink cartridges [B].

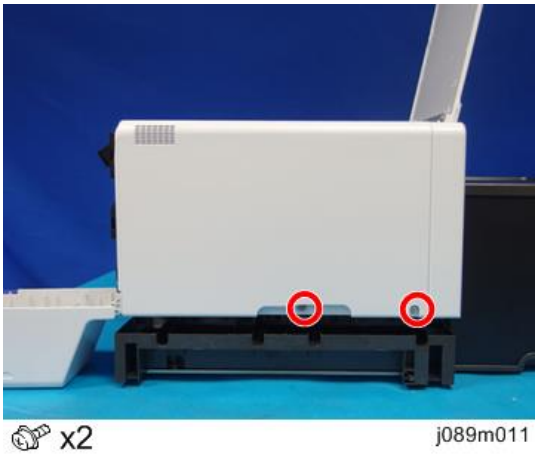


3. **Open the top cover.**



j089m010

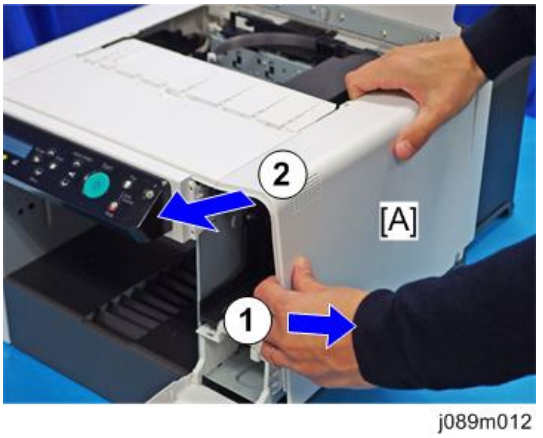
4. **Remove 2 screws.**



x2

j089m011

5. **Remove the right cover [A].**

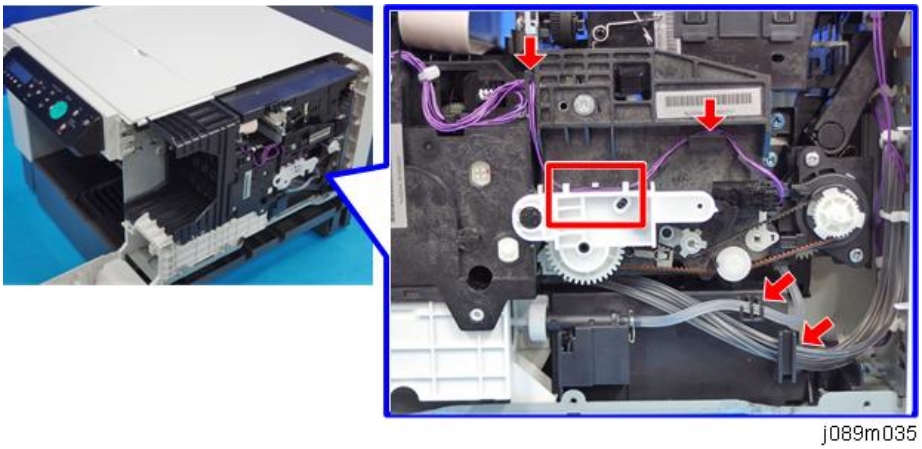


j089m012

Re-assembly

When re-attaching the right cover, check the following points.

1. **Check that the harness and ink tube are secured with the tabs.**

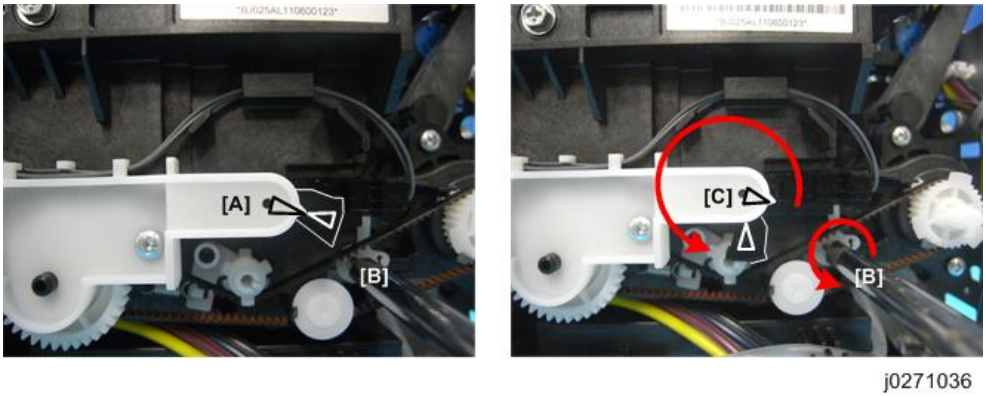


j089m035

2. **Check that the maintenance unit is locked.**
   - If the triangles are aligned tip-to-tip as shown at [A], this means the carriage is unlocked (not ready for operation) and can be moved manually.
   - Insert a screwdriver at [B], turn it counter-clockwise to rotate the lower triangle around until it is at [C]. This locks the carriage for normal operation.

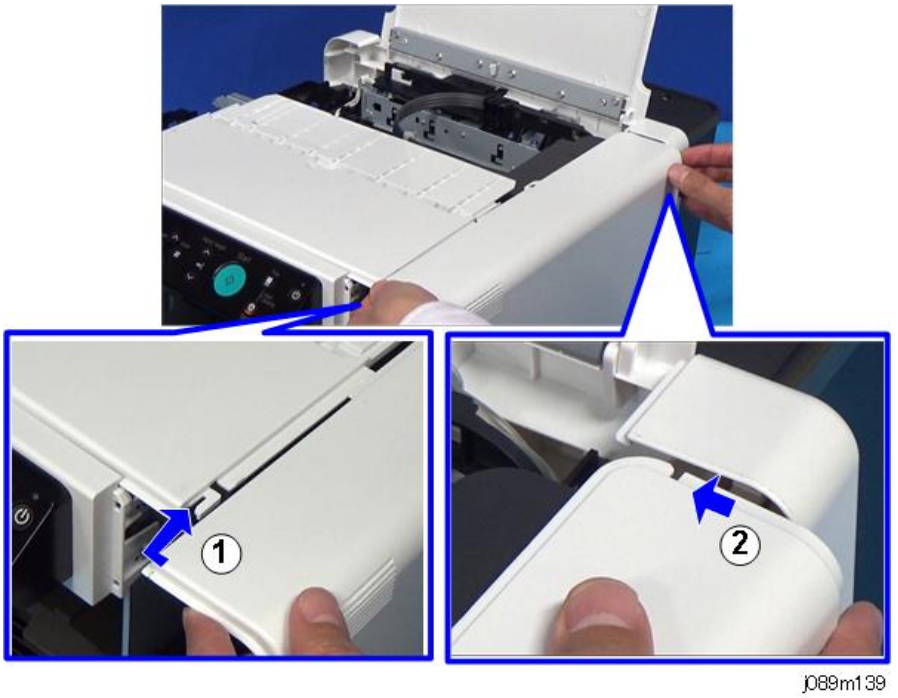
Note

- Never rotate the screwdriver clockwise. It may cause a malfunction.



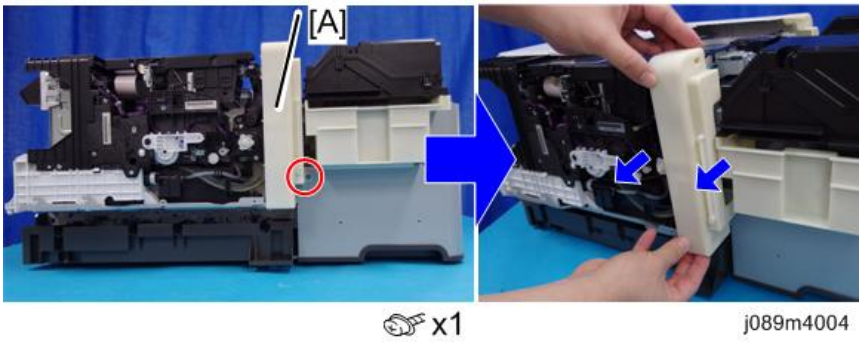
j0271036

3. Reattach the right cover.



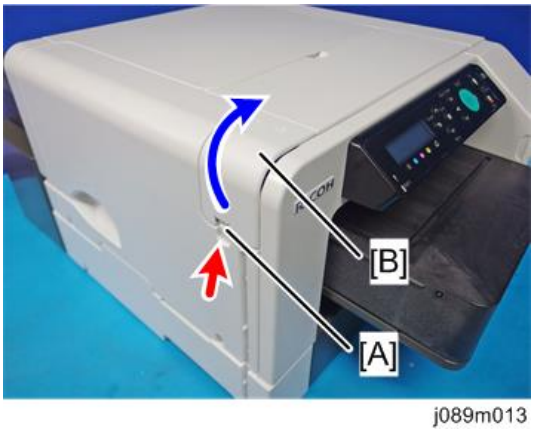
Rear Cover (Right)

1. Remove the filter cover (right). (page 60 "Filter Cover (Right)")
2. Remove the right cover. (page 61 "Right Cover")
3. Remove the rear cover (right) [A].



Port Cover

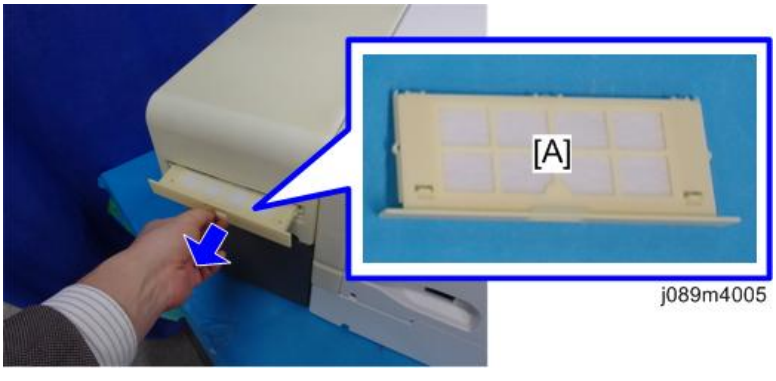
1. Pressing the tab [A], remove the port cover [B].



j089m013

Filter (Left)

1. Remove the filter (left) [A].

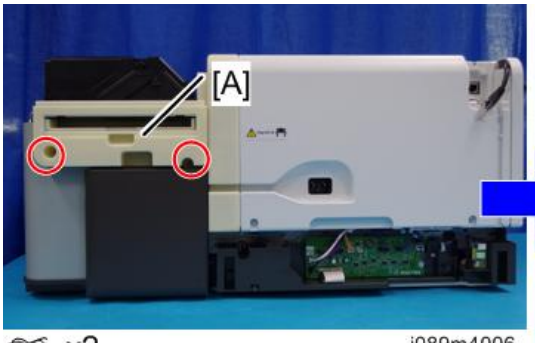


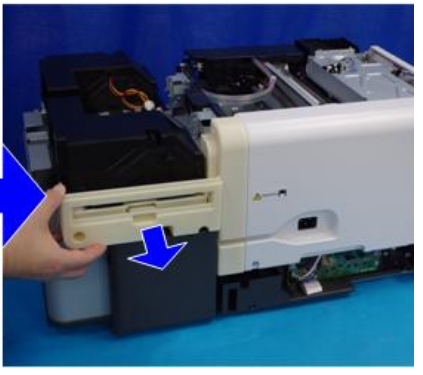
j089m4005

Filter Cover (Left)

1. Remove the rear top cover. (page 73 "Rear Top Cover, Top Cover")
2. Remove the filter (left). (page 65 "Filter Cover (Left)")

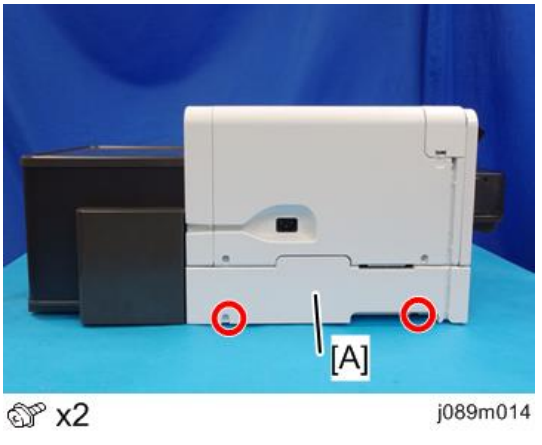
3. Remove the filter cover (left) [A].





Left Lower Cover

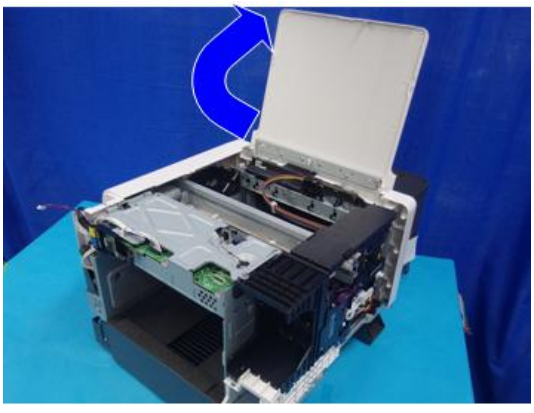
1. Remove the left lower cover [A].



Left Cover

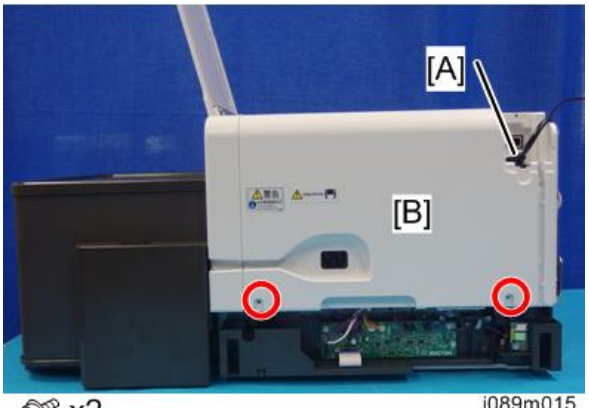
1. Remove the port cover. (page 65 "Port Cover")
2. Remove the front cover. (page 68 "Front Cover, Operation Panel Board")
3. Remove the left lower cover. (page 66 "Left Lower Cover")

4. Open the top cover.



j089m010a

5. Pull out the LAN cable [A], and remove the left cover [B].

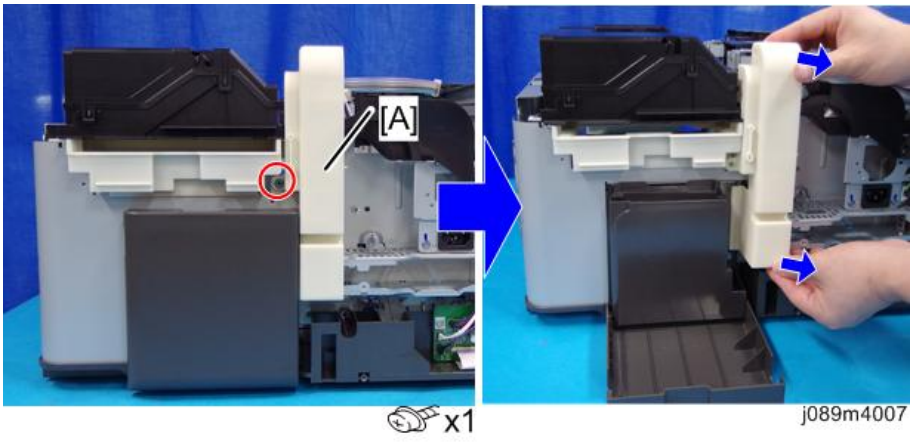


x2 j089m015

Rear Cover (Left)

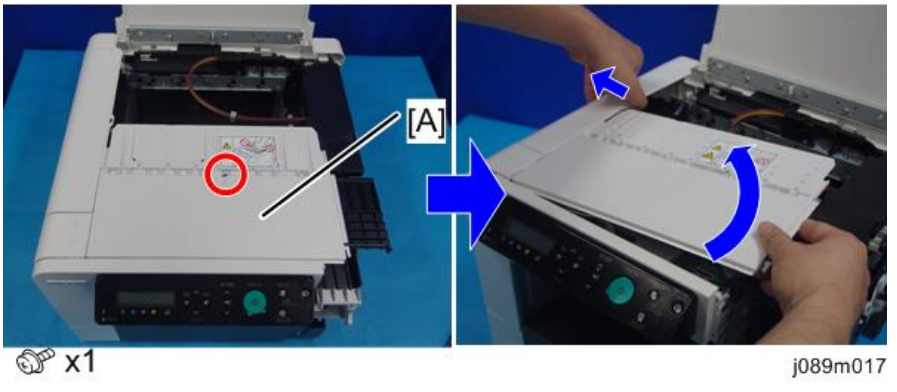
1. Remove the filter (left). (page 65 "Filter Cover (Left)")
2. Remove the left cover. (page 66 "Left Cover")

3. Remove the rear cover (left) [A].



Canopy Cover

1. Remove the right cover. (page 61 "Right Cover")
2. Remove the canopy cover [A].



Front Cover, Operation Panel Board

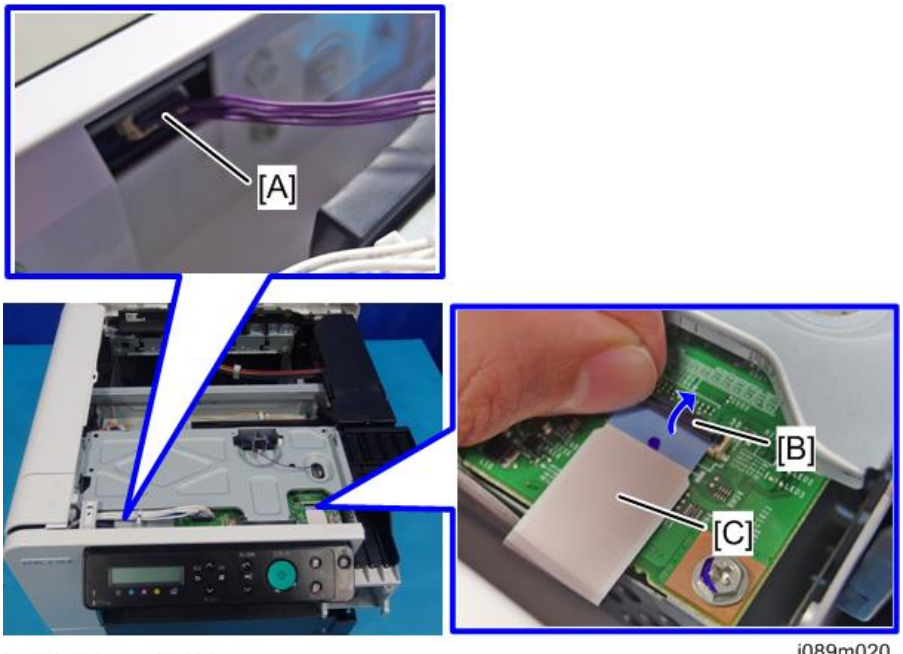
1. Remove the canopy cover. (page 68 "Canopy Cover")

2. Remove the 3 screws.

x3

j089m019

3. Disconnect the connector [A].
4. Release the lock [B] and remove the FFC [C].



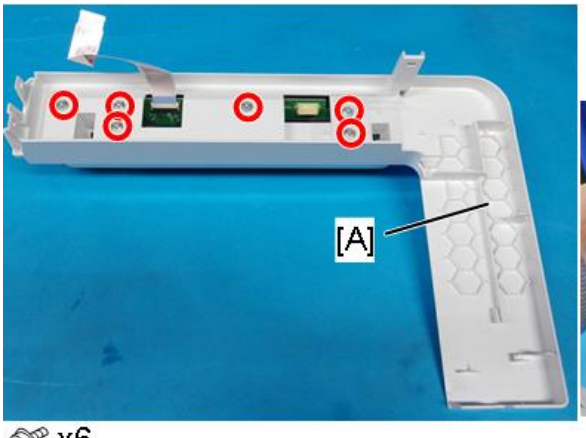
x1 x1

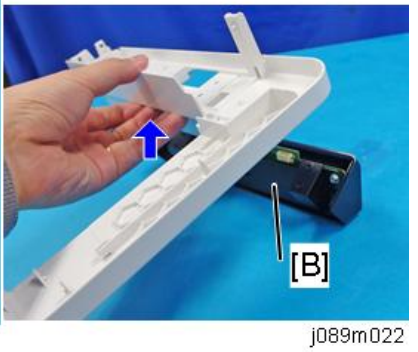
j089m020

5. Slide the front cover [A] to the left to remove it.

j089m021

6. Separate the front cover [A] and the operation panel unit [B].

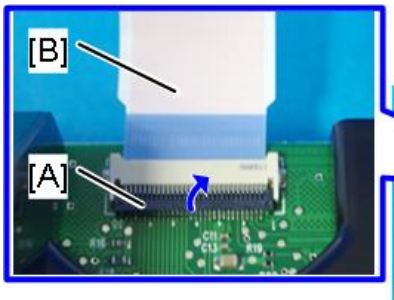


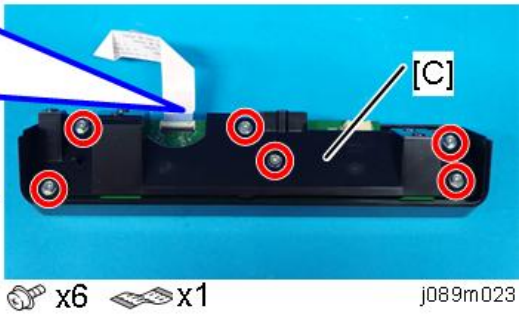


x6

j089m022

7. Release the lock [A] and remove the FFC [B].
8. Remove the operation panel board cover [C].

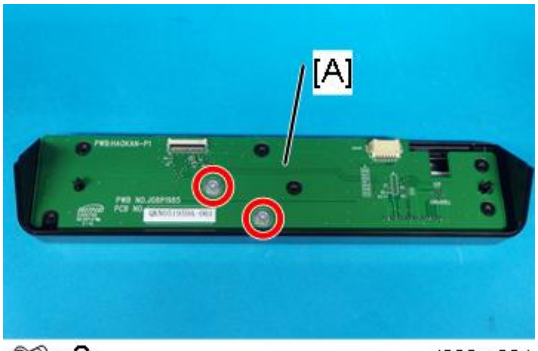




x6 x1

j089m023

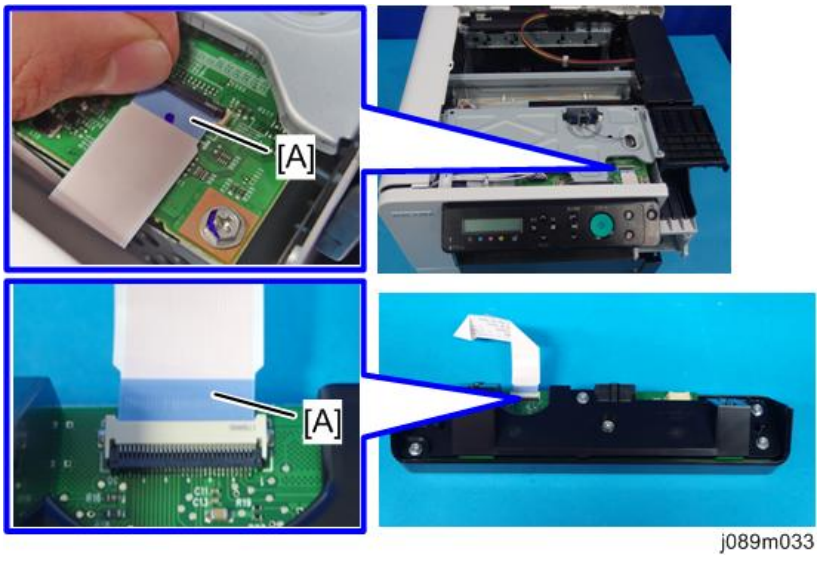
9. Remove the operation panel board [A].



Re-assembly

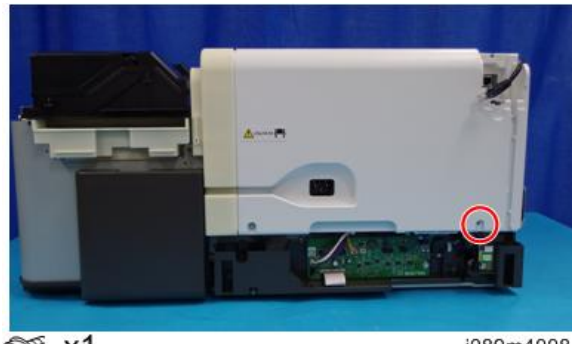
FFC

1. The blue band [A] must be facing up when you reconnect the FFC.



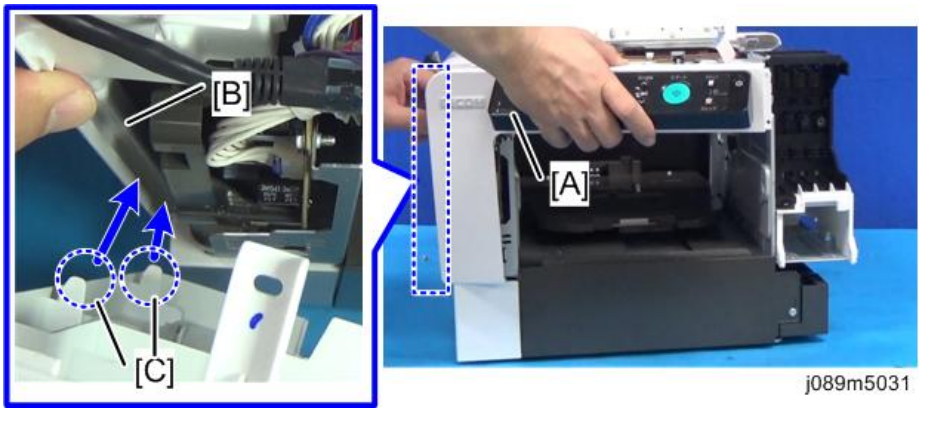
Front Cover

1. **Remove only the screw at the machine's front part of the left cover.**

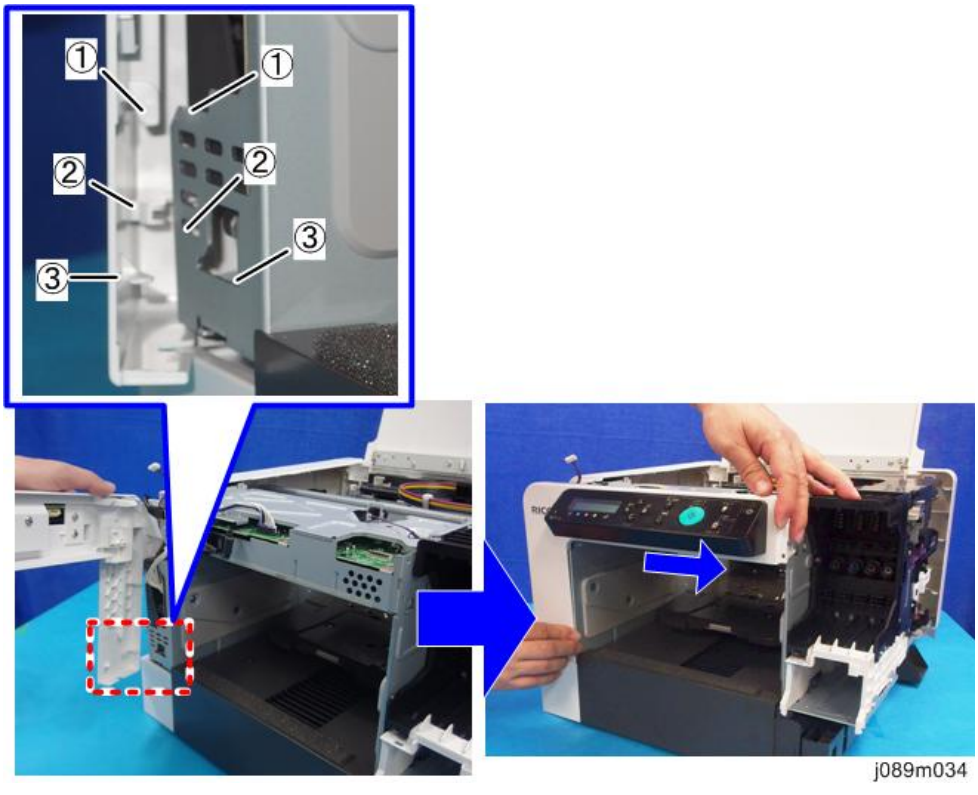


2. **Attach the front cover [A].**

   Slightly pulling out the temporarily attached front part [B] of the left cover, insert the front cover's 2 tabs [C] into the gap.



3. **Align the tabs (3 points) on the left bottom of the front cover with the machine's frame and slide the cover to attach it.**

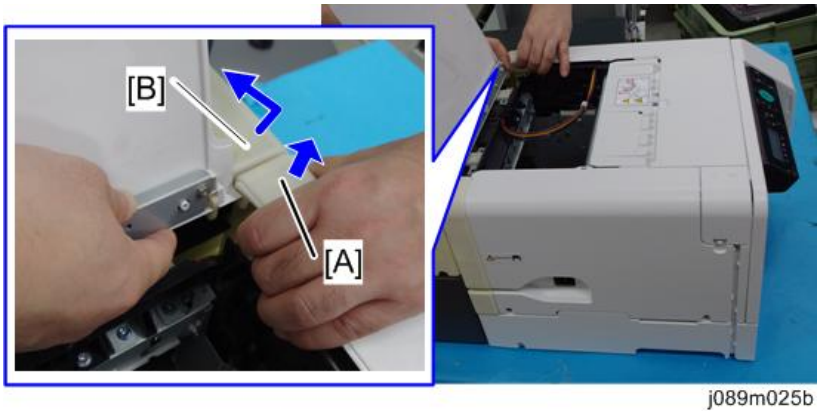


4. **Fasten the screw at the front part of the left cover.**

Rear Top Cover, Top Cover

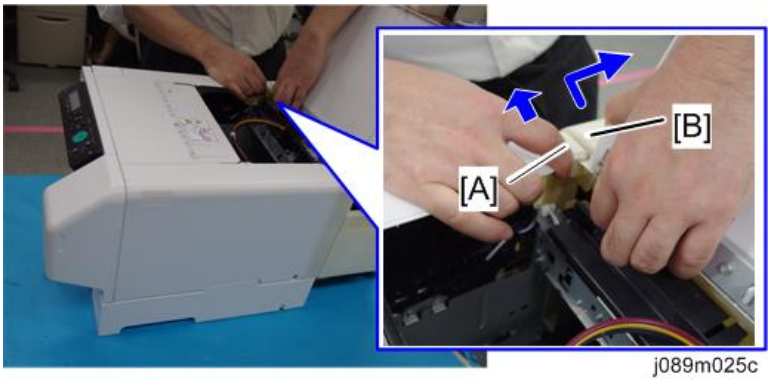
1. **Remove the rear top cover [A].**
   1. Remove the 4 screws.

   2. Pulling up the rear cover (right) [A] slightly, lift the rear top cover's front right end [B] slightly and then pull it out toward the rear side.



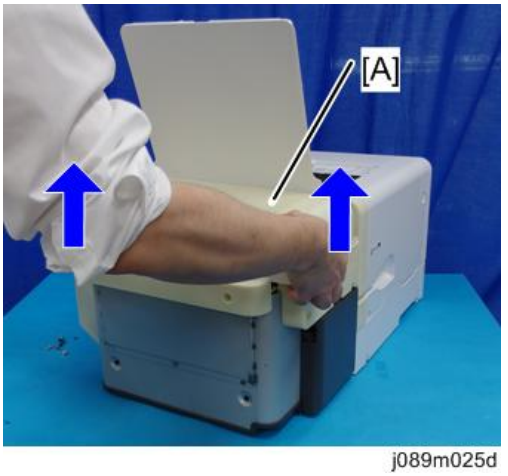
j089m025b

3. Pulling up the rear cover (left) [A] slightly, lift the rear top cover's front left end [B] slightly and then pull it out toward the rear side.



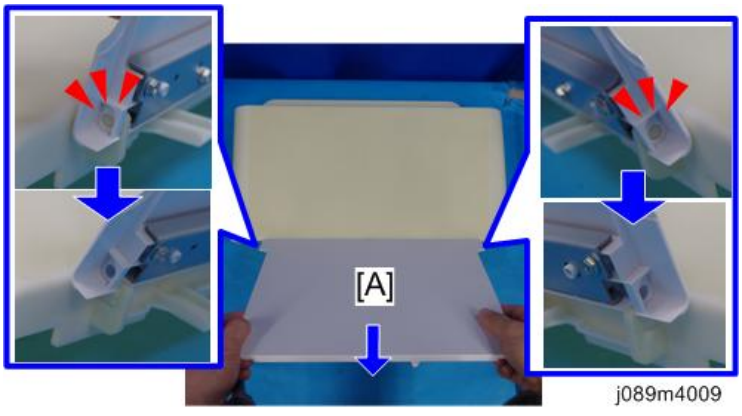
j089m025c

4. Lift the rear top cover [A] and then remove it.



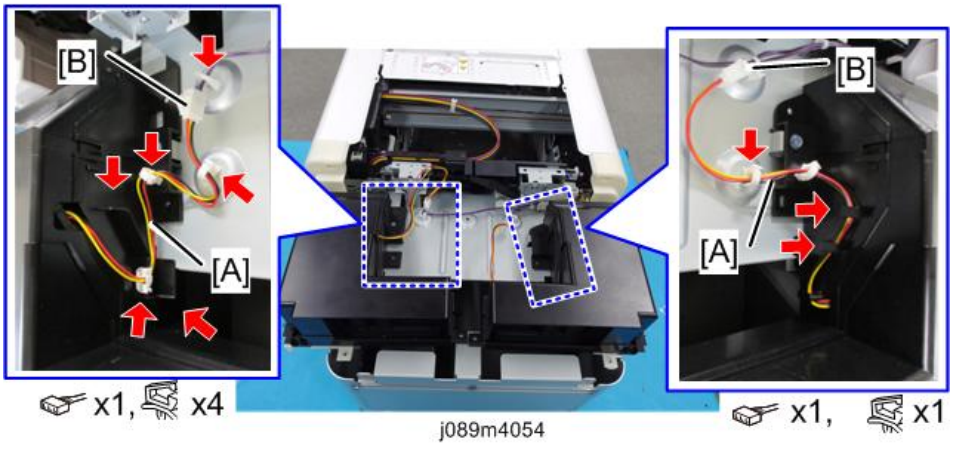
j089m025d

2. Disengage the 2 latches, and remove the top cover [A].



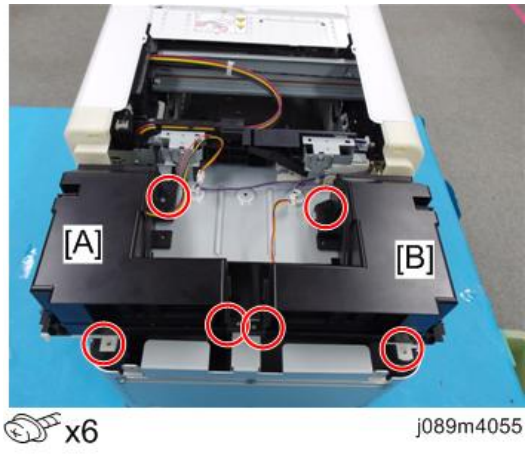
Rear Transport Cover

1. Remove the filter cover (right). (page 60 "Filter Cover (Right)")
2. Remove the filter (left). (page 65 "Filter Cover (Left)")
3. Release the harnesses [A] from the cable guides and the harness guides, and disconnect the connectors [B].

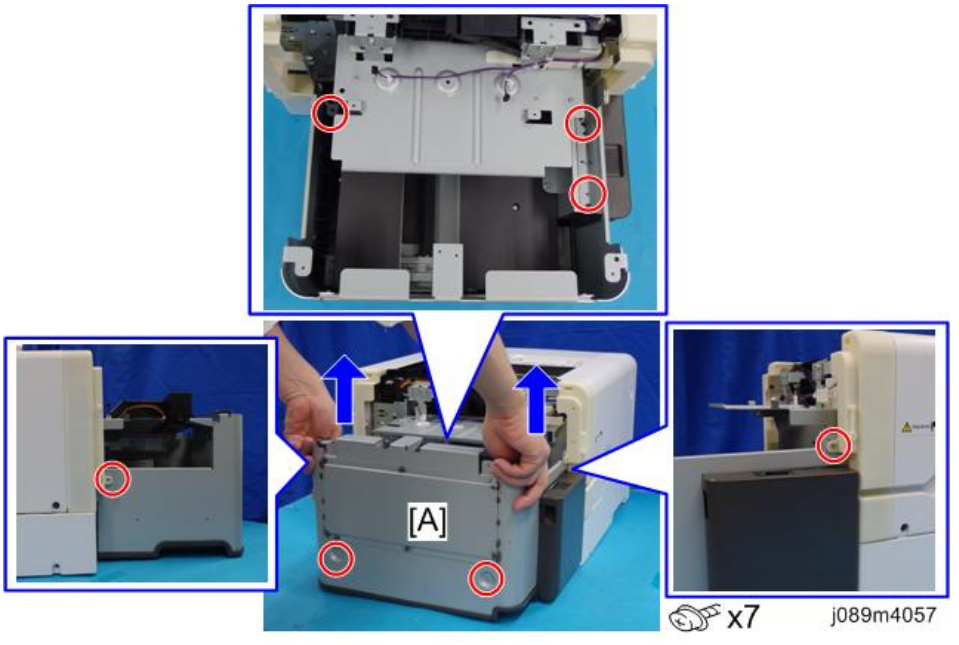


4. Remove the ink mist collecting fan unit (right) [A].

5. Remove the ink mist collecting fan unit (left) [B].



6. Remove the rear transport cover [A].

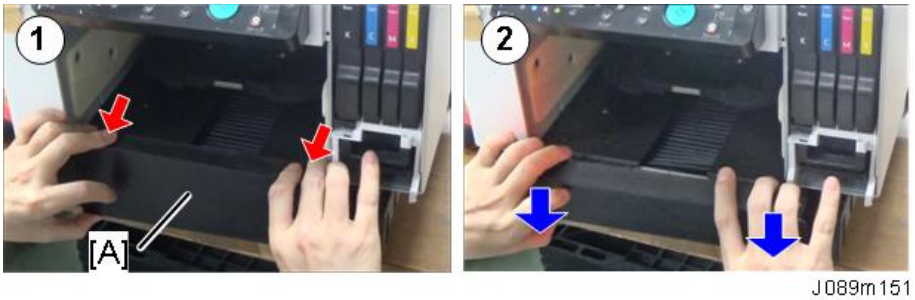


Front Lower Cover

1. Remove the cassette.
2. Remove the right lower cover. (page 61 "Right Lower Cover")
3. Remove the left lower cover. (page 66 "Left Lower Cover")

4. Remove 2 screws of the front lower cover.

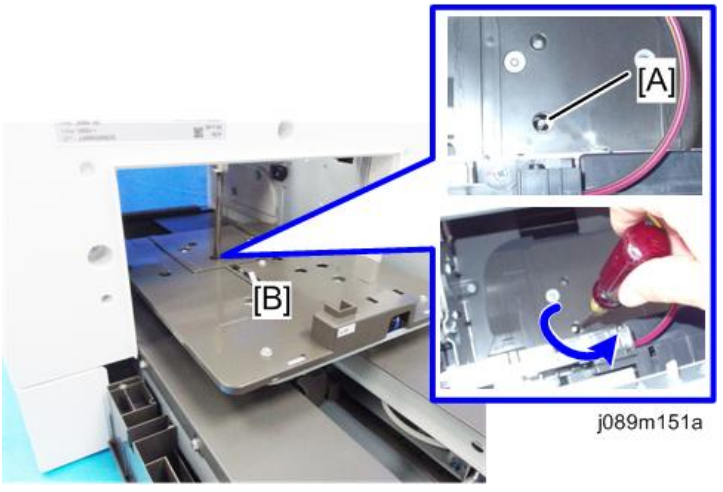
5. Disengage the two tabs on the front lower cover [A], and then remove the cover by pulling it downward.



Right Guide Rail Cover

1. Remove the rear transport cover. (page 75 "Rear Transport Cover")
2. Remove the front lower cover. (page 76 "Front Lower Cover")

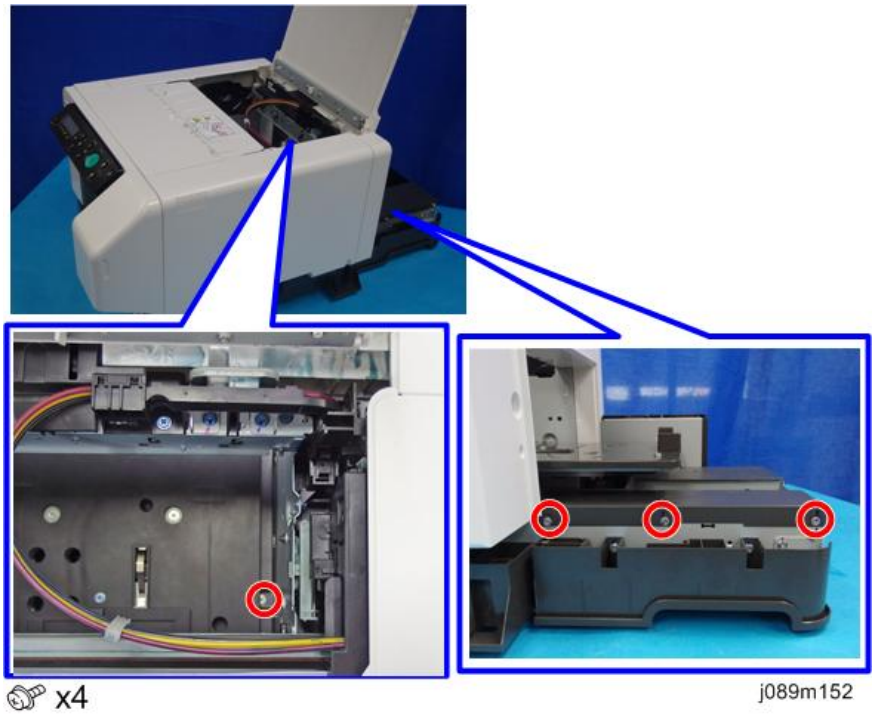
3. **To lift the cassette stand [B], turn the screw [A] counterclockwise until it stops by using a flathead screwdriver.**



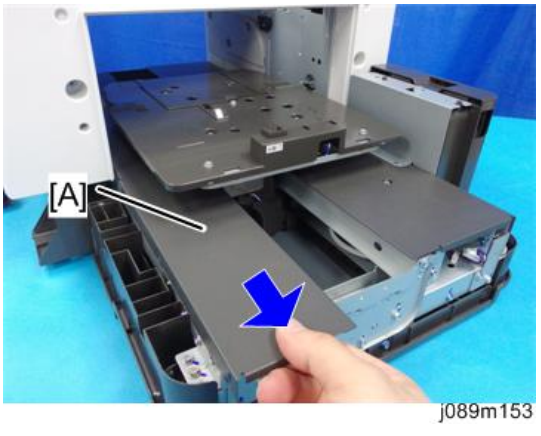
Note

- After the right guide-rail cover (or both guide-rail covers if the left guide-rail cover was also removed) is installed, turn this screw clockwise to lower the cassette stand.
- Again, turn the screw until the screwdriver stops. If the screw stops rotating when either lifting or lowering the cassette stand, do not turn it any further.

4. **Remove the screws of the right guide rail cover.**

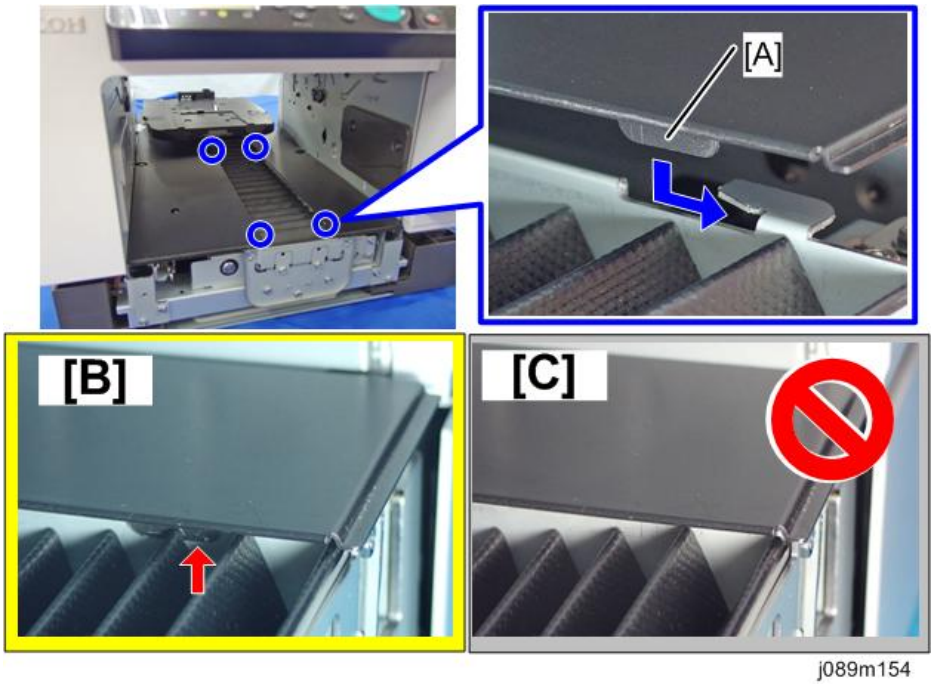


5. **Remove the right guide rail cover [A].**



Note

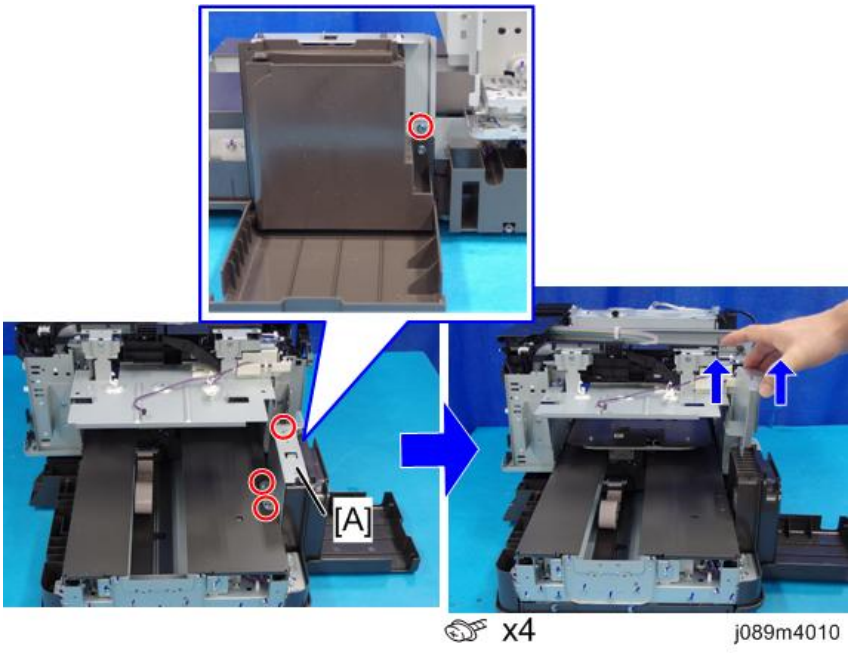
- When attaching the right/left guide rail cover, make sure that the tabs [A] indicated by blue circles as shown are engaged in the corresponding holes.
  [B]: OK
  [C]: Not OK



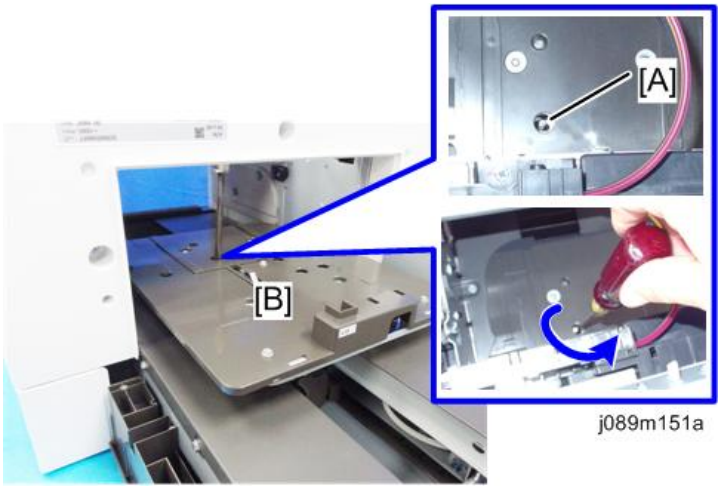
Left Guide Rail Cover

1. Remove the rear transport cover. (page 75 "Rear Transport Cover")
2. Remove the front lower cover. (page 76 "Front Lower Cover")

3. **Remove the vertical motor cover [A].**



4. **To lift the cassette stand [B], turn the screw [A] counterclockwise until it stops by using a flathead screwdriver.**

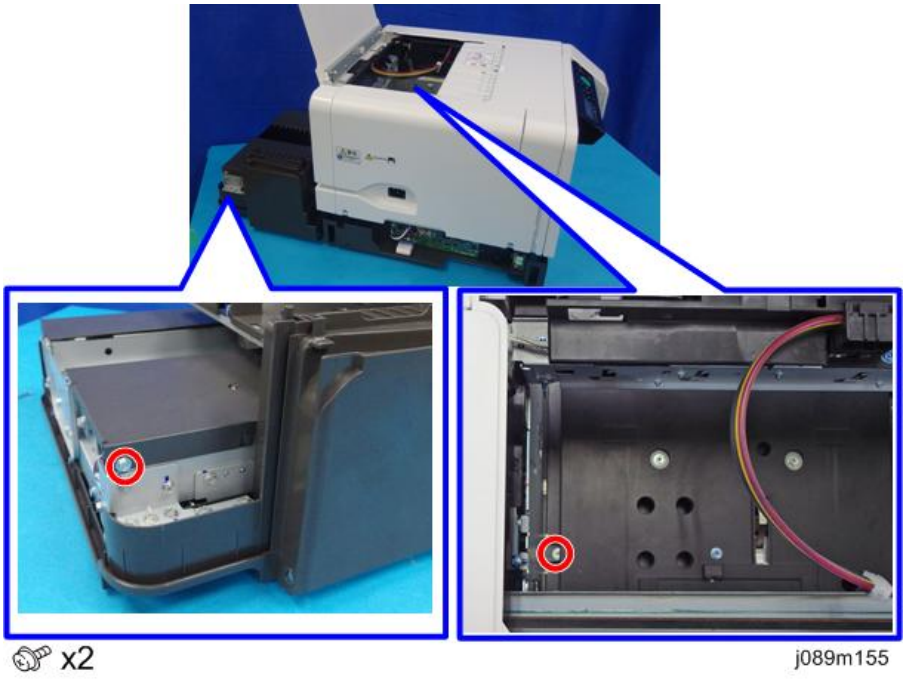


Note

- After the left guide-rail cover (or both guide-rail covers if the right guide-rail cover was also removed) is installed, turn this screw clockwise to lower the cassette stand.
- Again, turn the screw until the screwdriver stops.

- If the screw stops rotating when either lifting or lowering the cassette stand, do not turn it any further.

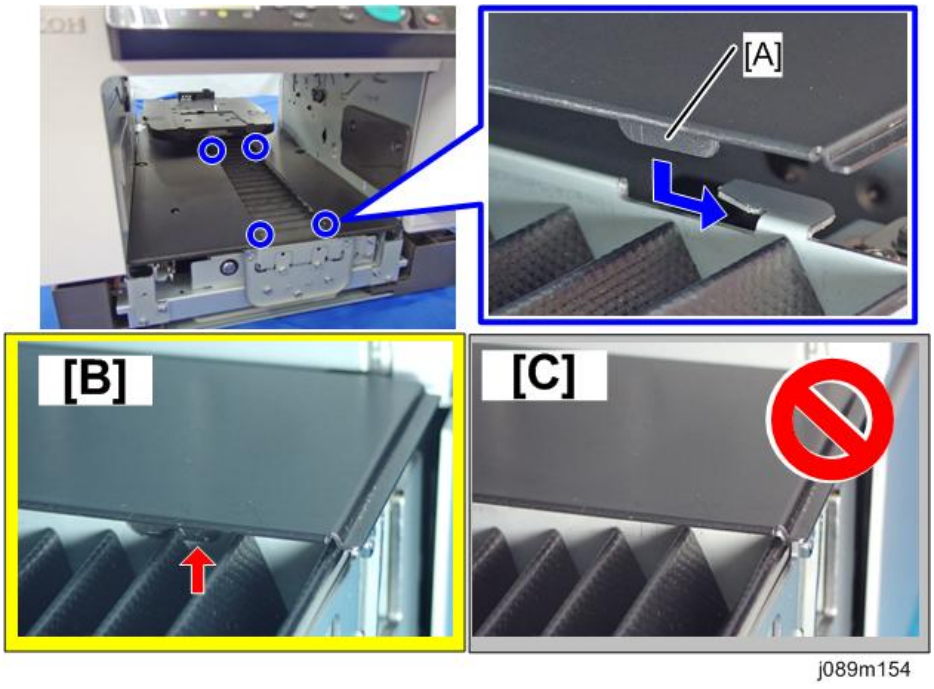
5. **Remove the screws of the left guide rail cover.**



6. **Remove the left guide rail cover [A].**

Note

- When attaching the right/left guide rail cover, make sure that the tabs [A] indicated by blue circles as shown are engaged in the corresponding holes.
  [B]: OK
  [C]: Not OK



j089m154

Ink Collector Unit

Before You Begin

Never remove the ink collector unit unless it requires replacement. A message will appear and tell you that the ink collector unit needs to be replaced.

- You will need a self-sealing plastic bag to hold the ink collector unit.
- When you dispose of the used ink collector unit always obey the local laws and regulations regarding the disposal of such items.

At any time you can determine if the ink collector unit needs to be replaced.

Note

- Never attempt to clean and re-use an ink collector unit.
- Attach the ink collector unit that is marked "J089" under the case handle. Attaching a different ink collector unit will cause an error to occur.

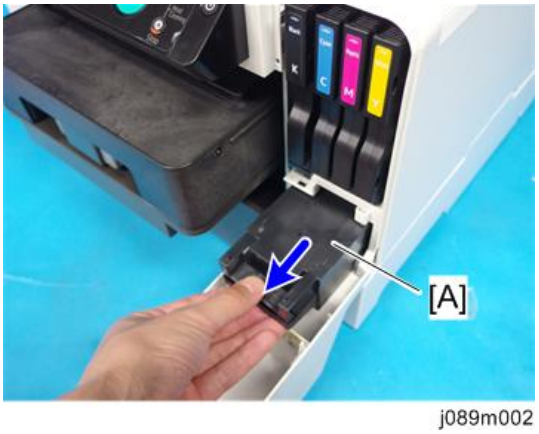
j089m003a

Replacing the Ink Collector Unit

1. Open the front right cover.

j089m001

2. Pull the ink collector unit [A] out.



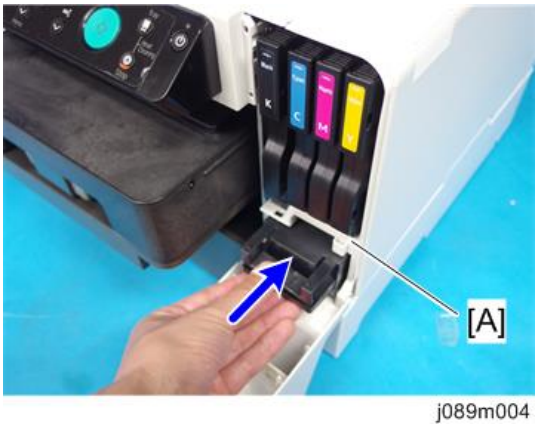
j089m002

j089m003

Note

- The ink collector is completely enclosed to prevent leakage. If you are replacing the ink collector unit, insert a new one.

3. **Push in the new ink collector [A] until you hear it snap and lock in place.**



j089m004

4. **Close the front right cover.**

Note

- The ink collector unit has an internal ID chip that automatically resets the counter for the ink collector unit. No SP adjustment is required.

5. **Discard the used ink collector unit.**

Note

- Obey the local laws and regulations regarding disposal of items like the full ink collector unit.
- Never attempt to open and clean a full ink collector unit and use it again.

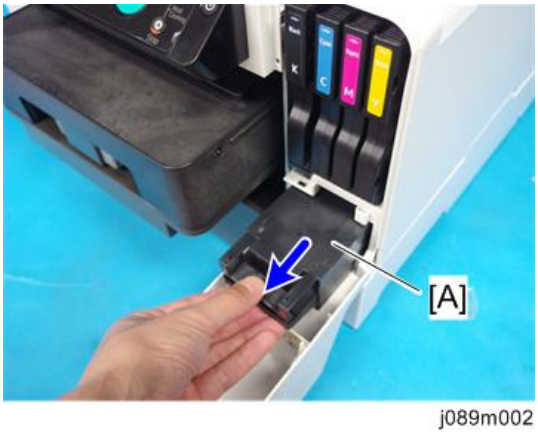
Maintenance Unit, Right Ink Sump

Maintenance Unit

Important

- The bottom edges of the maintenance unit are covered with ink.
- Avoid touching the bottom of the maintenance unit.

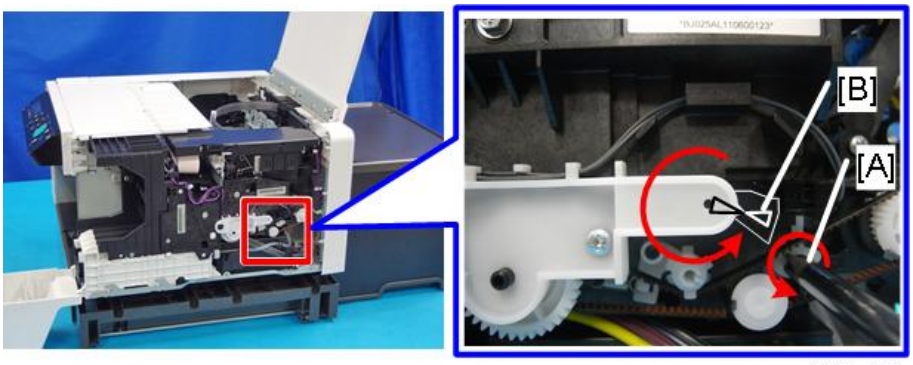
1. Open the front right cover and pull out the ink collector unit [A].



j089m002

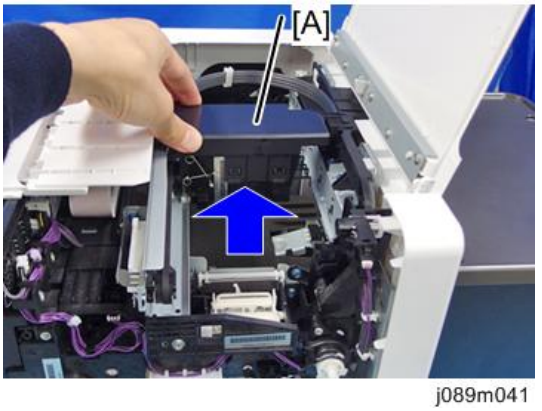
2. Open the top cover.
3. Remove the right cover. (page 61 "Right Cover")
4. Insert the tip of a screwdriver into the hole [A] and turn it counter-clockwise to rotate the lower triangle [B] up to the other triangle until they are aligned.

   When the triangles are aligned, the carriage is unlocked.



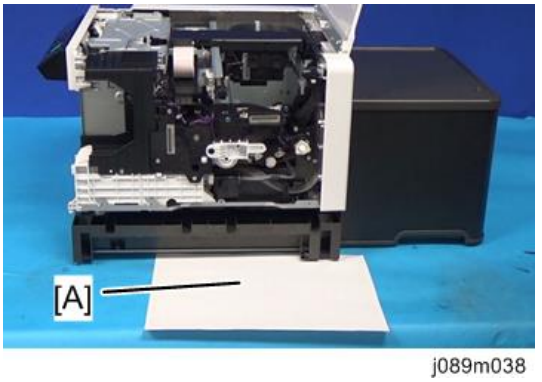
j089m040

5. **Push the carriage [A] to the center of the machine.**



j089m041

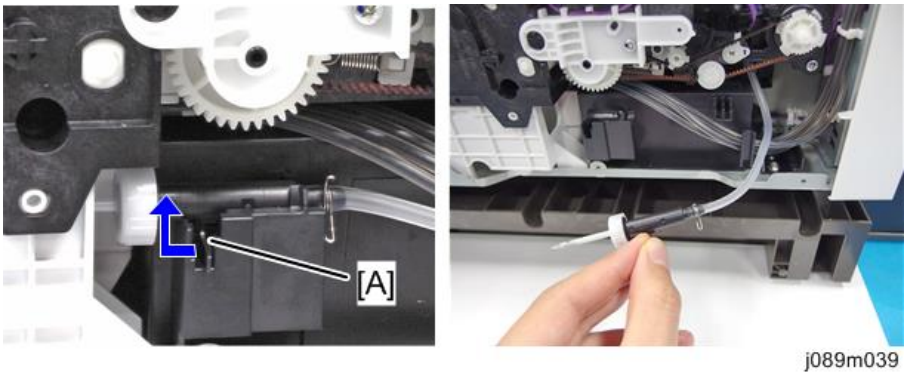
6. **The maintenance unit has ink on it, so put a contamination protection mat [A] down to avoid staining.**



j089m038

7. **Release the lock [A], and then remove the injector.**

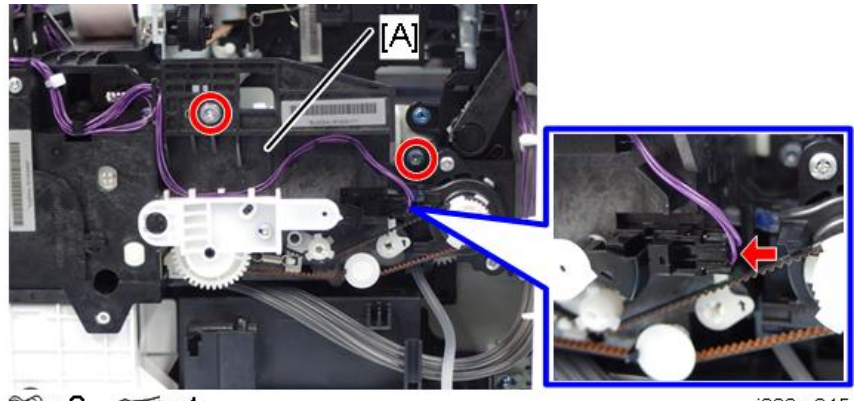
   Be careful when removing the injector, because ink may drip from its head.



j089m039

8. **Remove the maintenance unit [A] and lay it on a mat.**

   The bottom of the unit is covered with ink. Avoid touching the bottom of the unit.



j089m045

j089m042

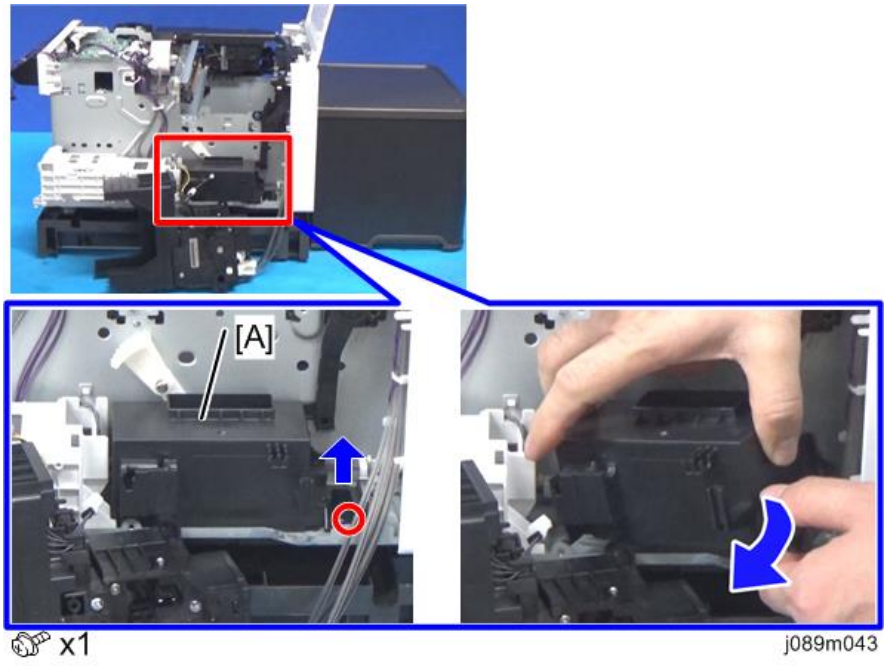
Note

- After re-installing the maintenance unit, print the Nozzle Check Pattern and perform print head cleaning if necessary.

Right Ink Sump

1. **Remove the maintenance unit. (page 87 "Maintenance Unit")**
2. **Remove the ink supply unit. (page 160 "Ink Supply Unit")**

3. **Remove the right ink sump [A].**



Note

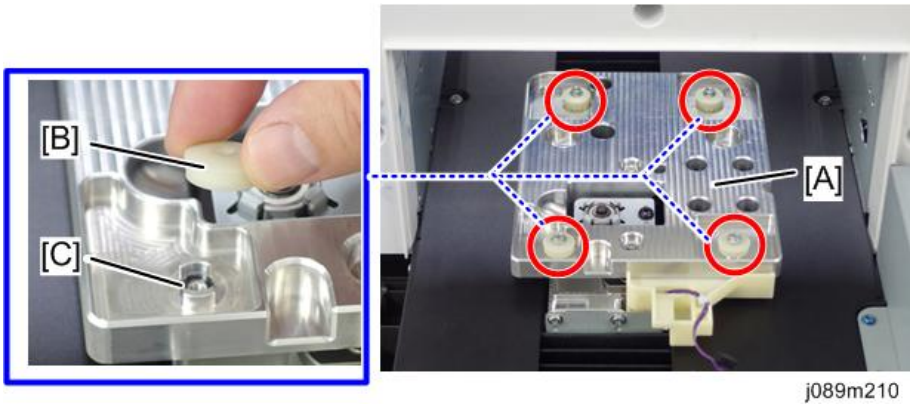
- After re-installing the maintenance unit, print the Nozzle Check Pattern and perform print head cleaning if necessary.

Cassette Stand, Cassette Carriage

Notes on Replacing the Cassette Stand and Cassette Carriage

Important

- Cassette stand and cassette carriage are provided as a set, so you must replace them together. Reason: The cassette stand's height and levelness are precisely adjusted in alignment with the cassette carriage.
- The height and levelness of the cassette stand are precisely adjusted at 4 points; by the caps [B] and spacers [C] beneath them on the cassette carriage [A]. Both the caps and spacers are selected and positioned according to each cassette stand and cassette carriage. Thus, they are supplied as service parts secured to each cassette carriage by the screws for securing the cassette stand.
- Therefore, when replacing the cassette carriage, do not reuse the existing caps and spacers, but use the caps and spacers supplied with the replacement cassette carriage without changing their positions.



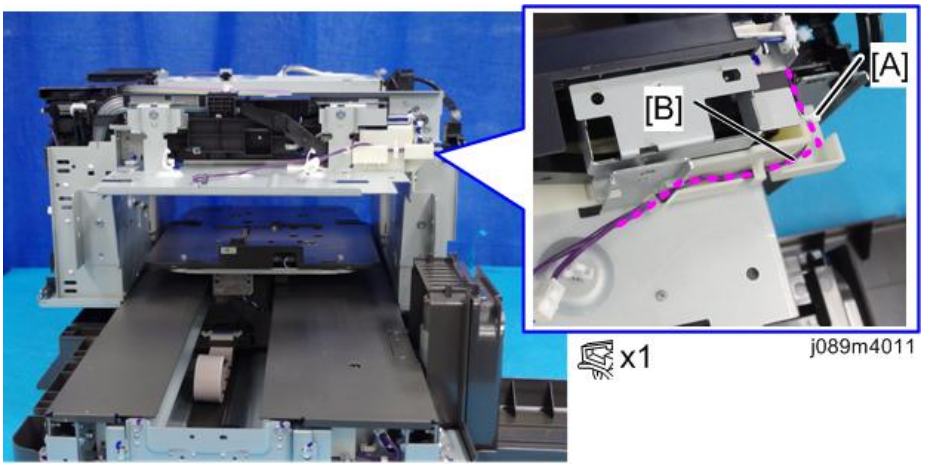
j089m210

Cassette Stand

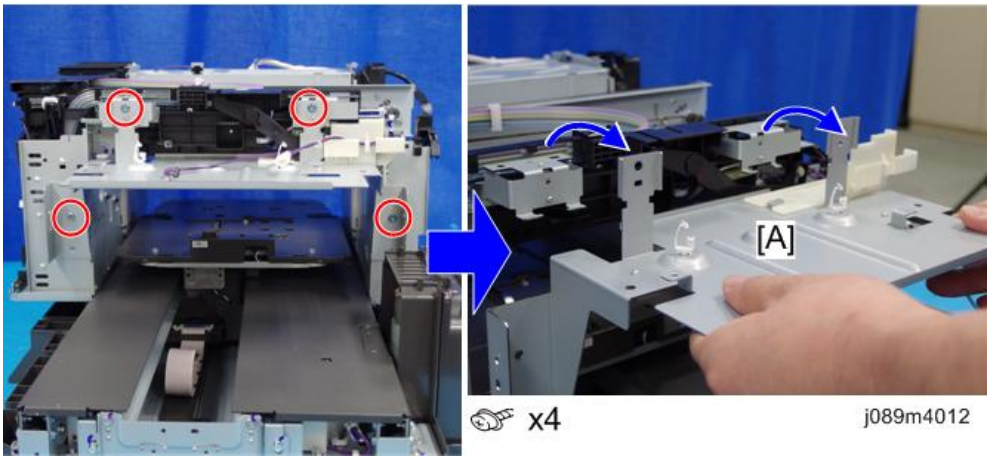
1. Remove the rear transport cover. (page 75 "Rear Transport Cover")
2. Remove the rear cover (right). (page 64 "Rear Cover (Right)")
3. Remove the rear cover (left). (page 67 "Rear Cover (Left)")

RTB 1: Notes added to this procedure

4. **Release the clamp [A], and release the harness [B] from the harness guides.**



5. **Remove the fan unit base [A].**

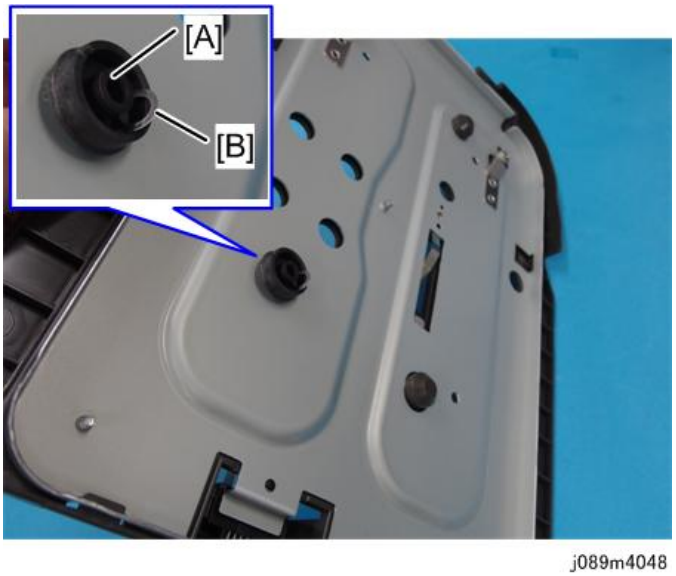


⚠CAUTION

- The following procedure explains how to remove the cassette stand. Note that there are caps [A] and spacers [B] between the cassette stand and the cassette carriage to precisely adjust the height and levelness of the cassette stand at 4 points.
- When detaching and reattaching the cassette stand for replacing other parts, make sure not to remove or change the positions of the caps and spacers. (If they come off when detaching the cassette stand, be sure to return them to their original positions.)

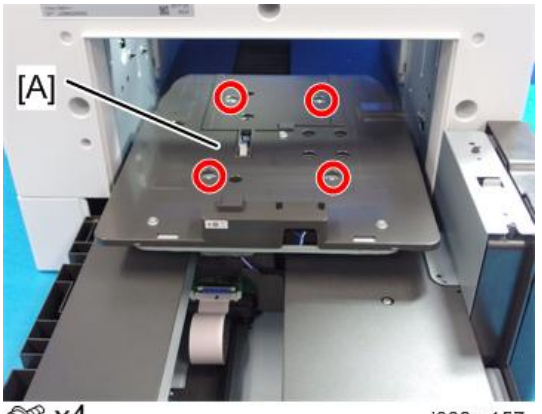
j089m159

- Example of a cap [A] and spacer [B] coming off when removing the cassette stand (The cap has stuck to the back of the cassette stand and come off with the spacer.)

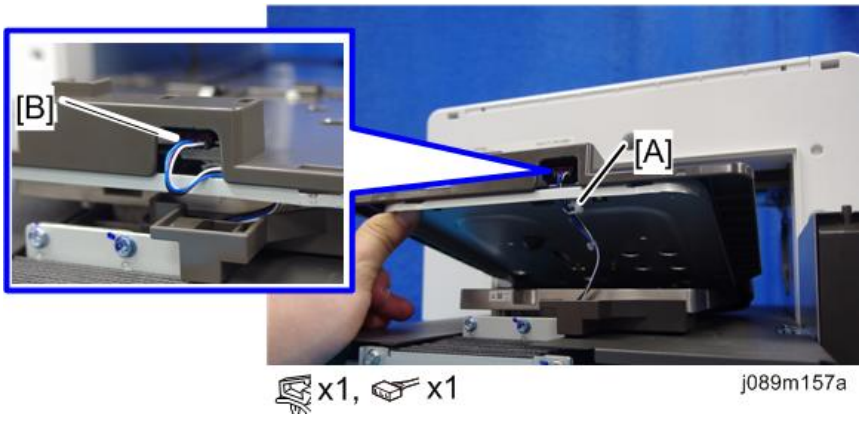


j089m4048

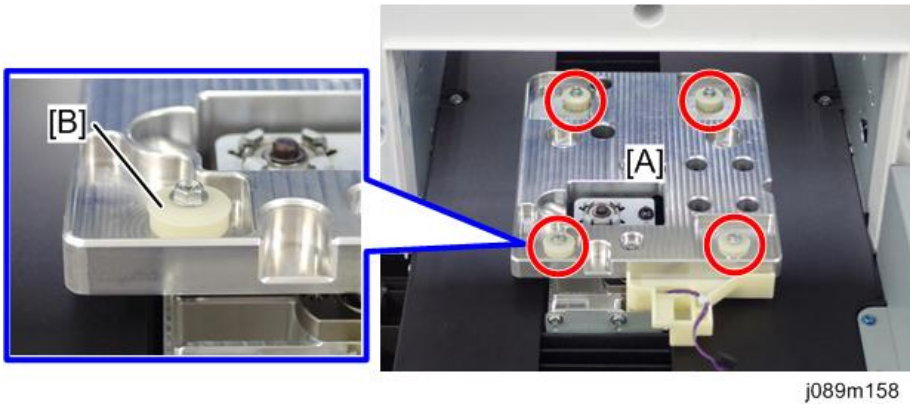
6. **Remove the 4 screws to turn over the cassette stand [A].**



7. **Release the cable clamp [A], and disconnect the connector [B] to remove the cassette stand.**

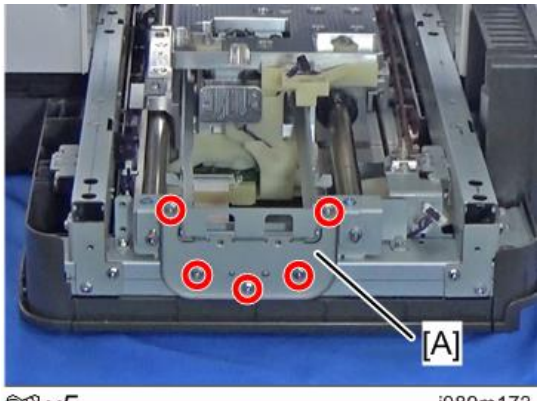


8. **There are 4 caps [B] attached to the cassette carriage [A], which has had the cassette stand removed. Use the screws removed in Step 2 to fix the caps.**



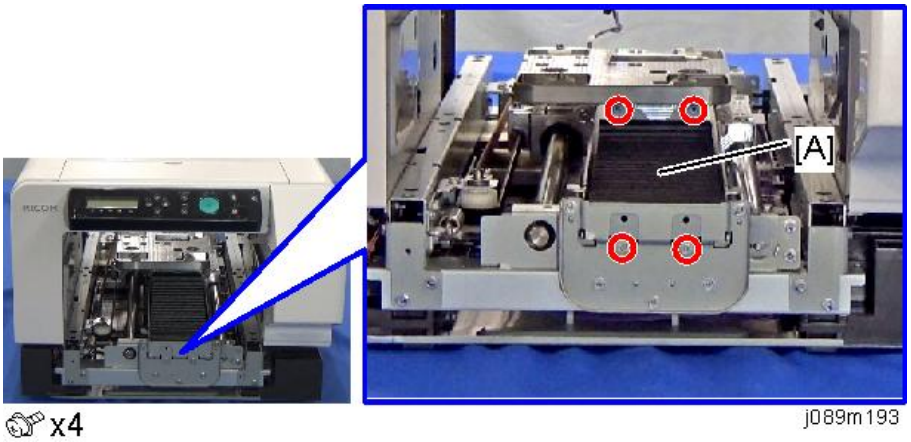
Cassette Carriage

1. Remove the cassette stand. (page 91 "Cassette Stand")
2. Remove the right guide rail cover. (page 77 "Right Guide Rail Cover")
3. Remove the left guide rail cover. (page 80 "Left Guide Rail Cover")
4. Remove the bracket [A].



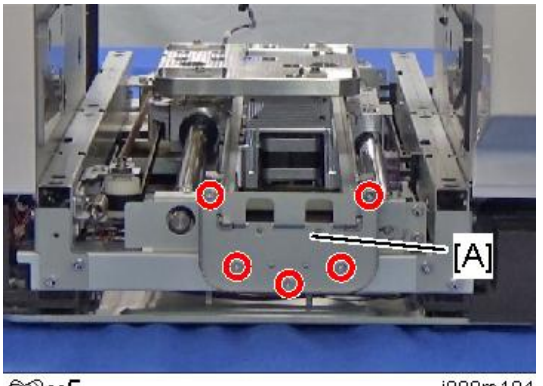
x5 j089m173

5. Remove the accordion cover [A].



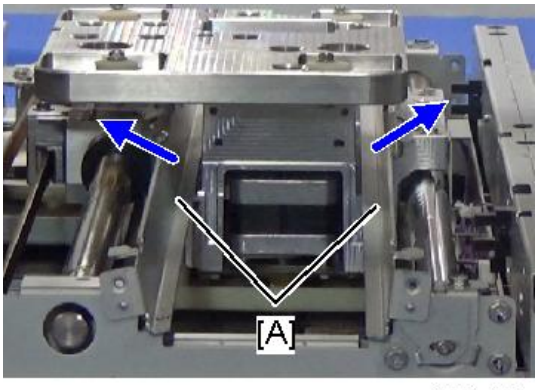
x4 j089m193

6. **Remove the bracket [A].**



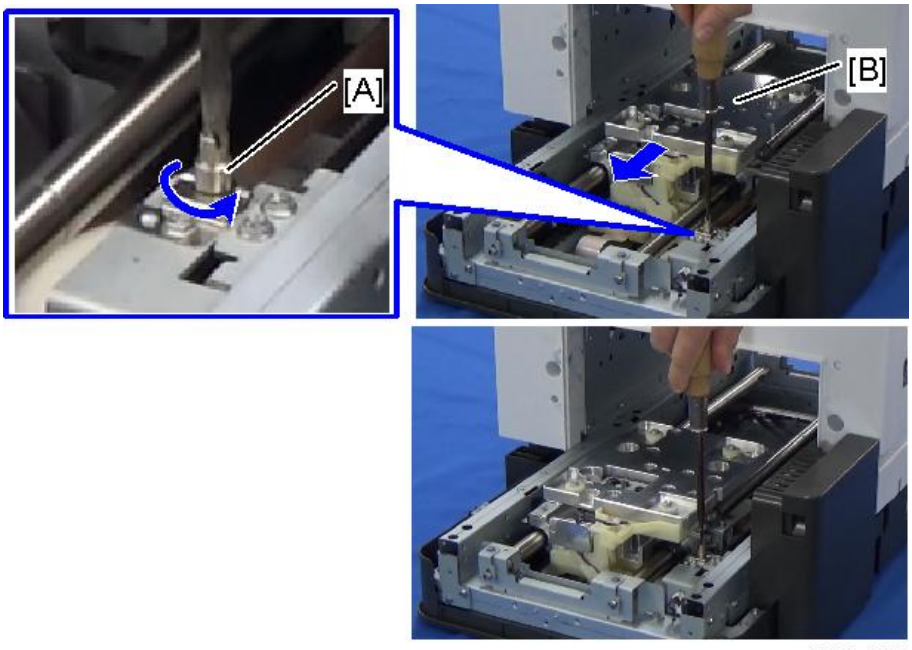
x5 j089m194

7. **Remove the 2 accordion cover guides [A].**



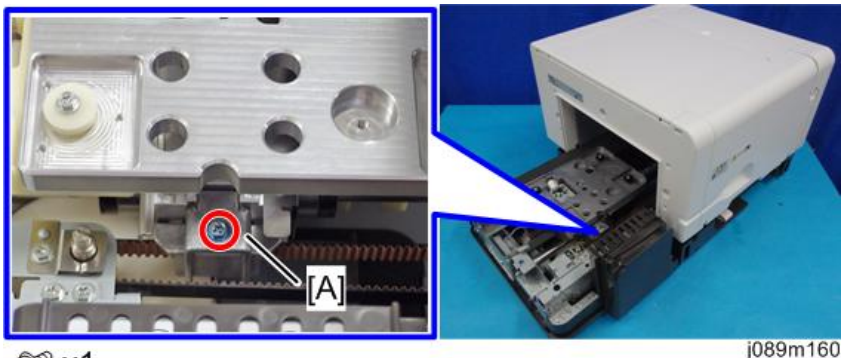
j089m195

8. **Insert a screwdriver at [A], and turn it counter-clockwise to move the cassette carriage [B] to the rear.**



j089m196

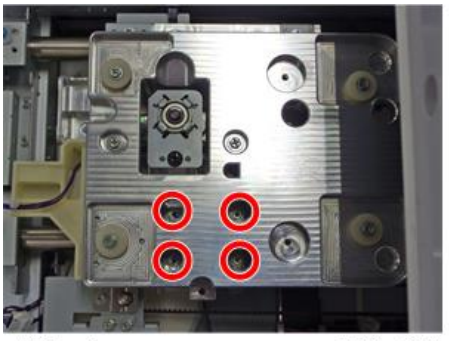
9. **Remove the belt engaging bracket [A].**



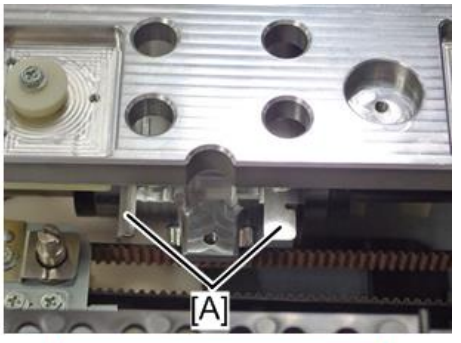
x1

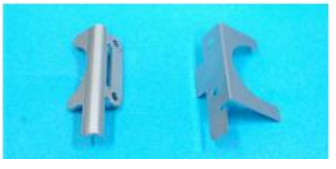
j089m160

10. Remove the 2 brackets [A].

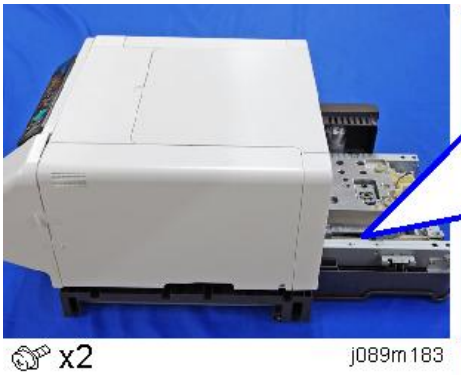


x4 j089m182

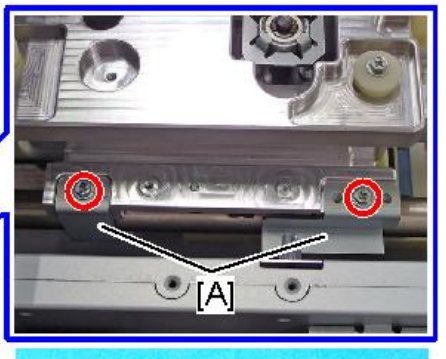




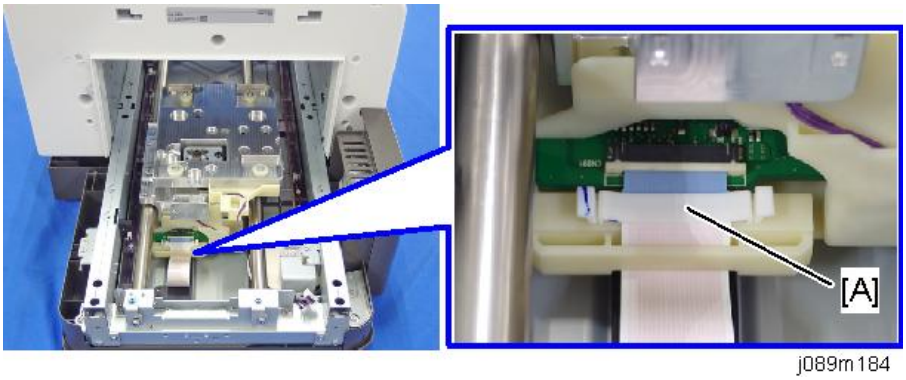
11. Remove the 2 brackets [A] at the right side.



x2 j089m183

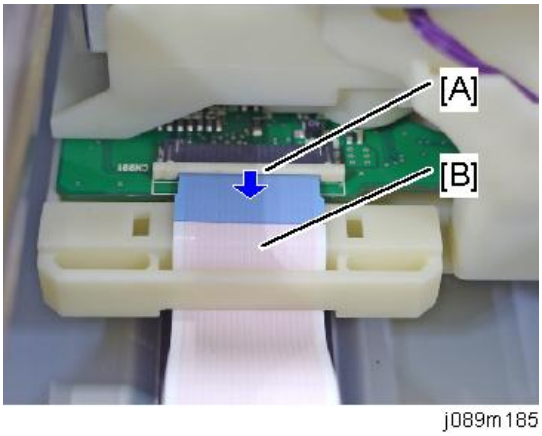


12. **Remove the clamp [A].**



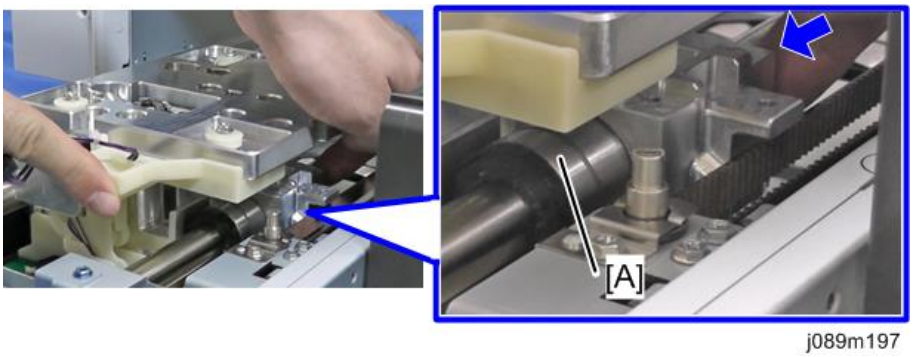
j089m184

13. **Slide the FFC lock [A] and disconnect the FFC [B].**



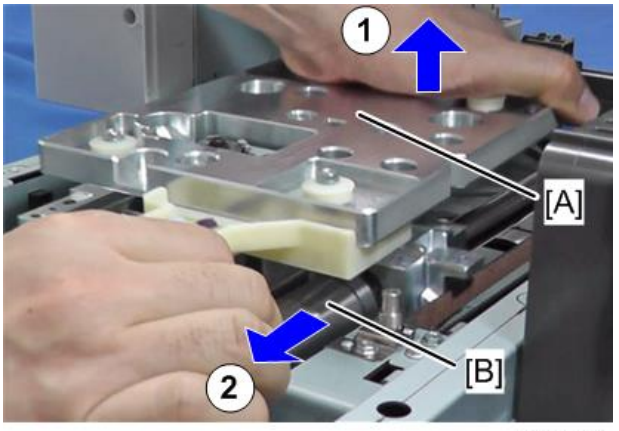
j089m185

14. **Push out the linear bushing [A].**



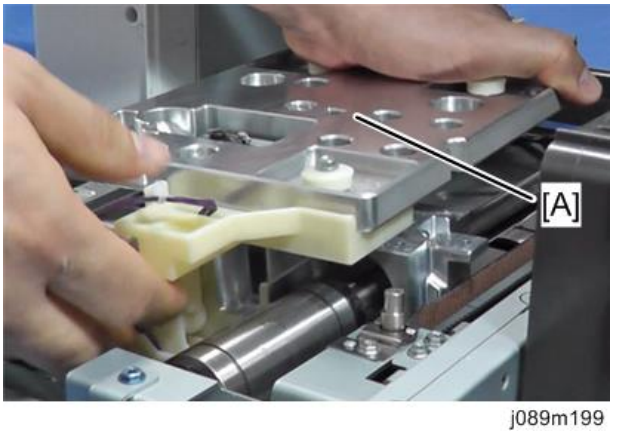
j089m197

15. **While lifting the cassette carriage [A], pull out the linear bushing [B].**



j089m084

16. **Remove the cassette carriage [A].**

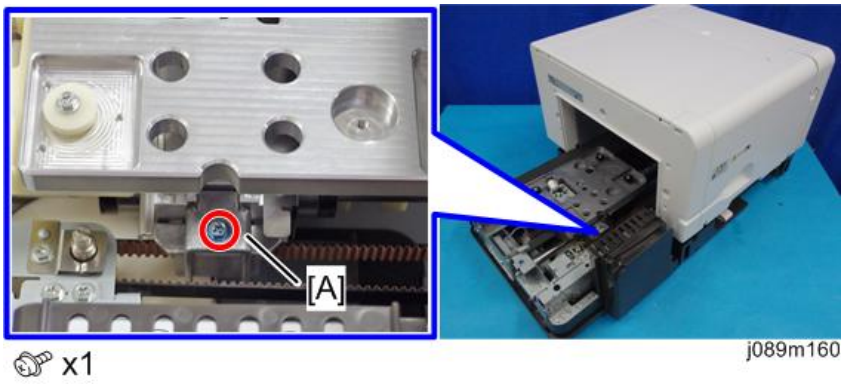


j089m199

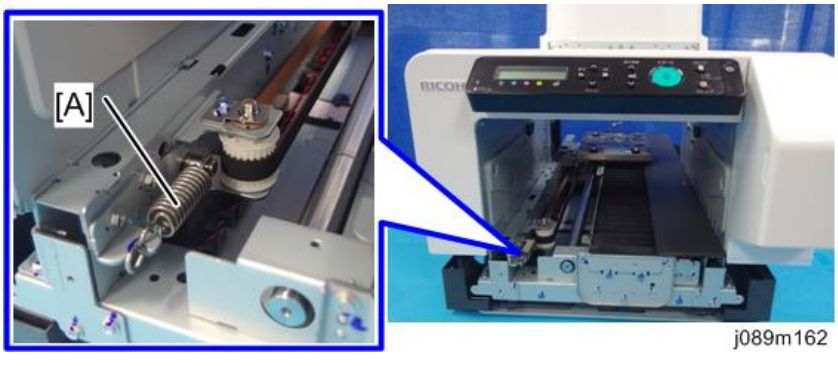
Encoders

Vertical Encoder Wheel

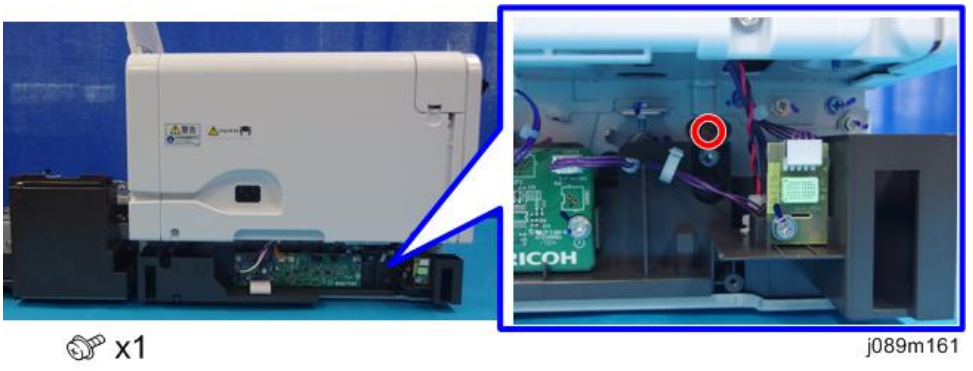
1. Remove the cassette stand. (page 91 "Cassette Stand")
2. Remove the left guide rail cover. (page 80 "Left Guide Rail Cover")
3. Remove the belt engaging bracket [A].



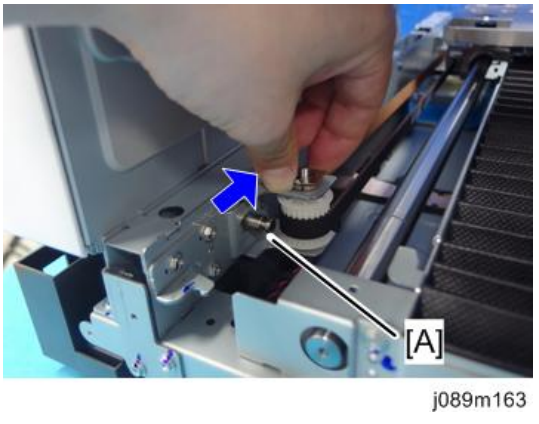
4. Remove the spring [A].



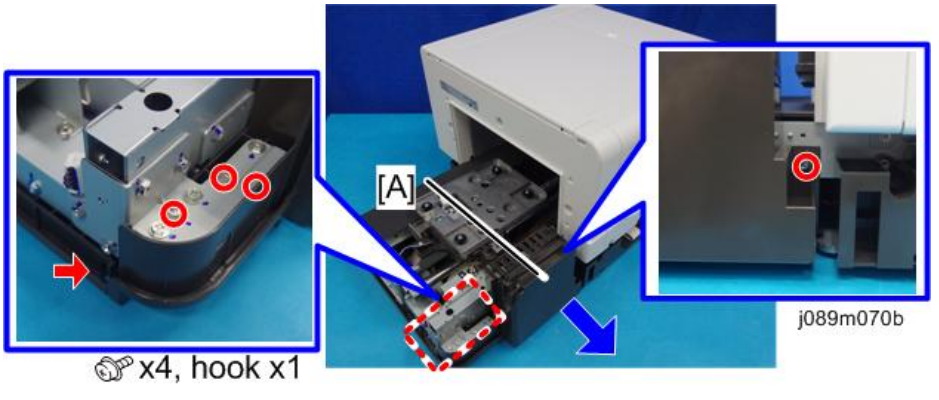
5. **Remove the screw on the left side of the machine.**



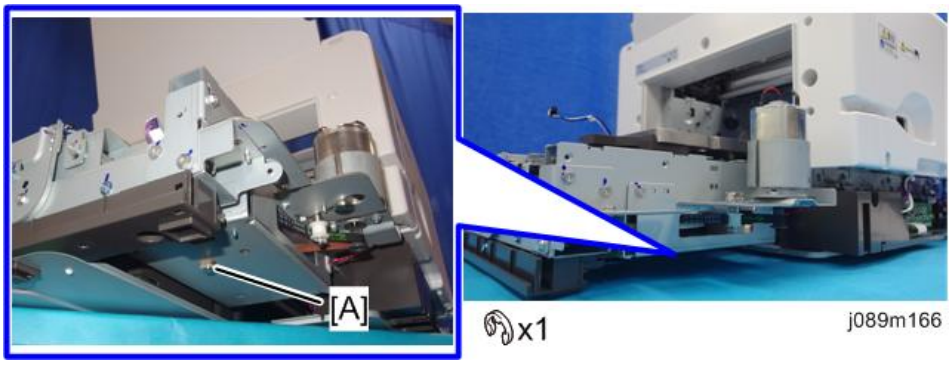
6. **Remove the tension pulley unit. [A]**



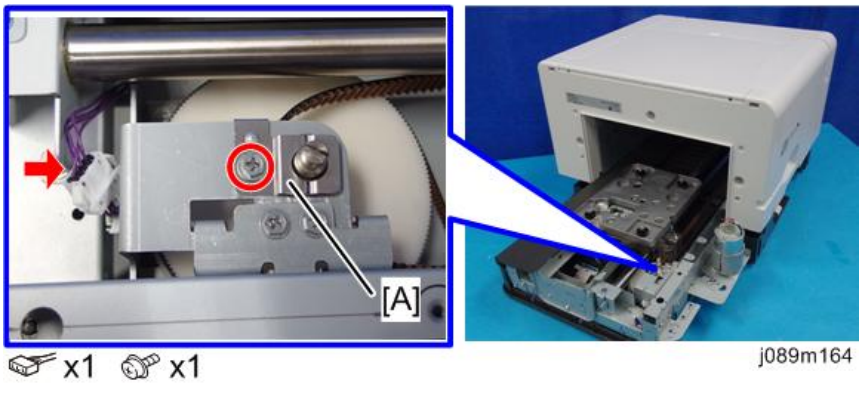
7. **Remove the power cord cover. [A]**



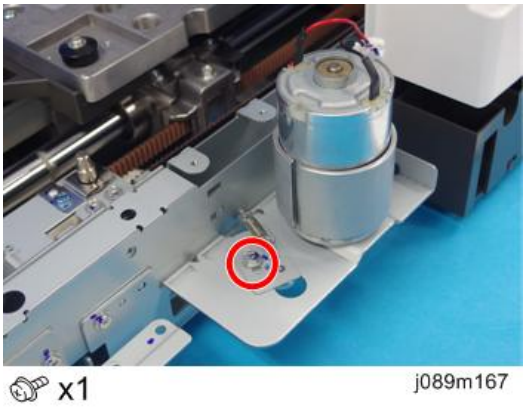
8. Remove an E-ring. [A]



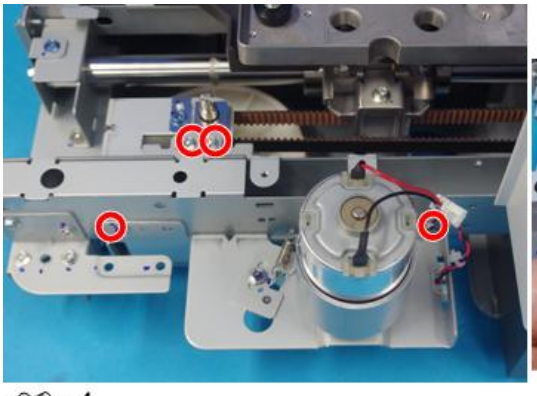
9. Disconnect the connector and remove the bracket [A].

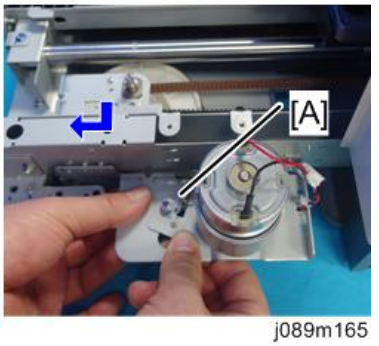


10. Loosen the screw to loosen the belt tension.



11. Remove the vertical encoder unit [A].

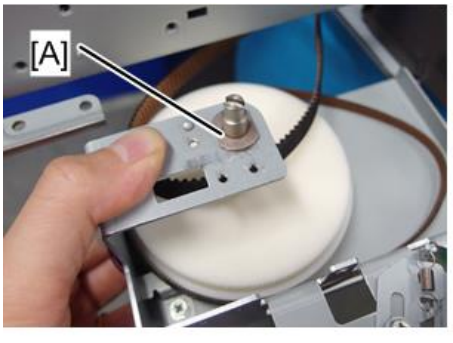


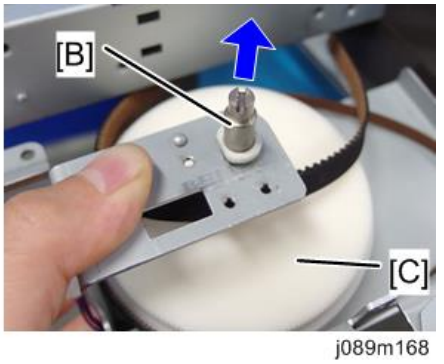


j089m165

x4

12. Remove the bearing [A], shaft [B], and the vertical encoder wheel [C].

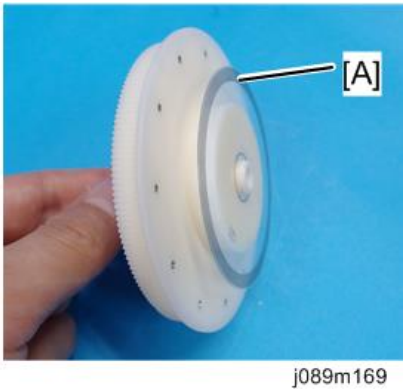




j089m168

Note

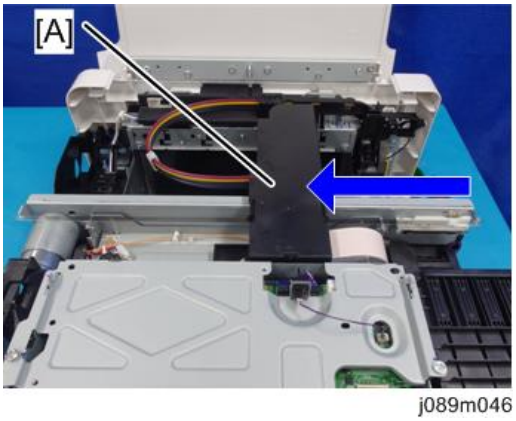
- Handle the vertical encoder wheel carefully. Never touch the encoder disc [A].



j089m169

Horizontal Encoder Strip

1. Remove the left cover. (page 66 "Left Cover")
2. Unlock the carriage [A] and push it to the center. (page 87 "Maintenance Unit")



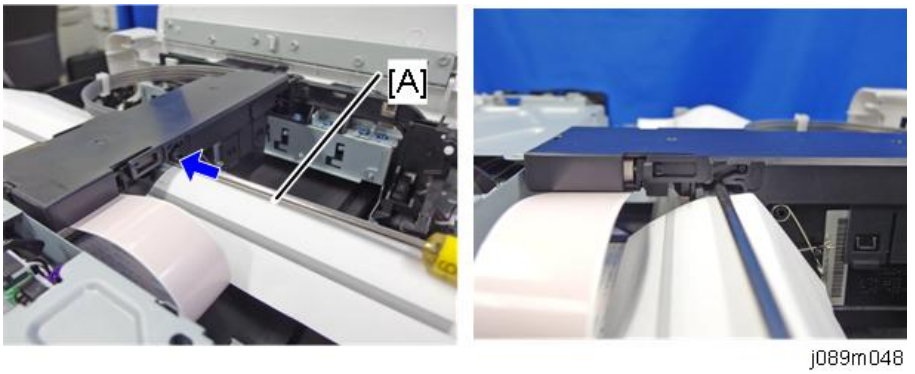
j089m046

3. Cover the guide rail with paper to prevent the grease on the rail from staining the encoder strip.

j089m047

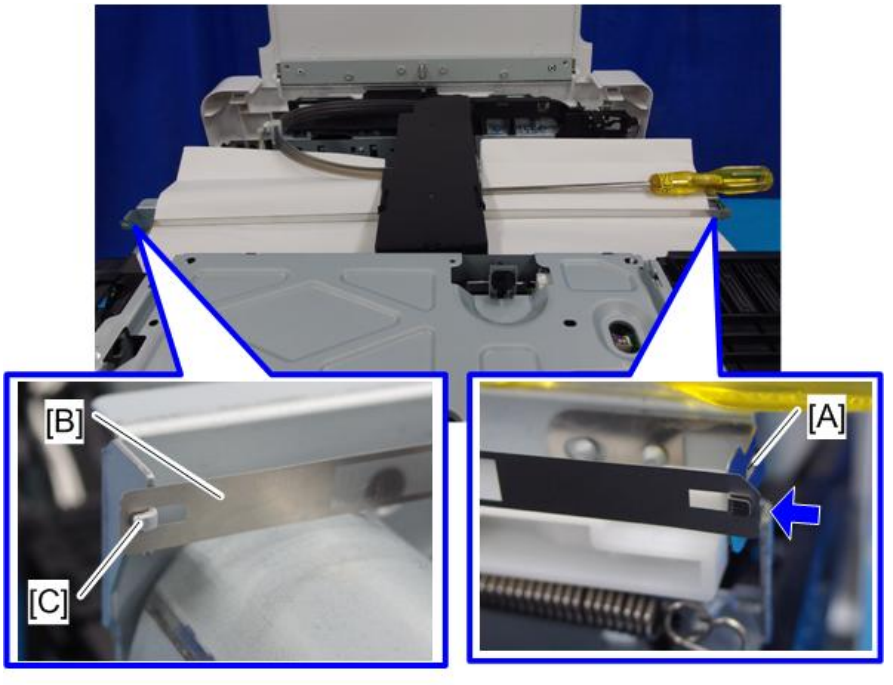
4. Insert a flathead screwdriver [A] under the carriage.

   The carriage is slightly lifted and the encoder strip is freed.



j089m048

5. **While bending the leaf spring [A] inward to loosen the tension of the encoder strip [B], disengage the hook at the left end [C] and remove the strip.**



j089m049

Note

- After removing the horizontal encoder strip, use the prepared plastic encoder strip to clean the horizontal encoder sensor. For details, see page 184 "Horizontal Encoder Sensor Cleaning ".

Re-installing the Horizontal Encoder Strip

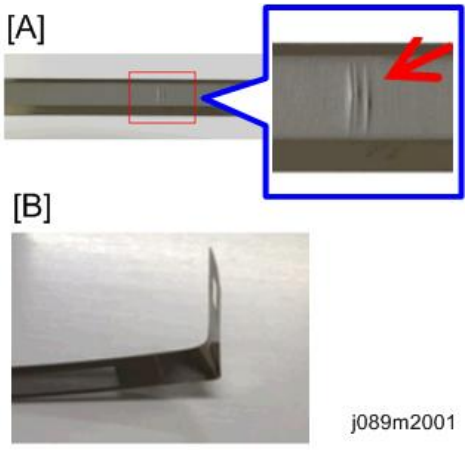
Important

- When replacing the horizontal encoder strip with a new one:
  - Do not try to clean and reuse the horizontal encoder strip (because the slit is fine, dirt cannot be completely wiped off).

J089m136a

  - Do not fold, bend, or strongly warp the horizontal encoder strip. Also, do not use an encoder strip with a deformed slit.

    (Images of unacceptable examples)



j089m2001

    [A]: A horizontal encoder strip with a deformed slit.

    [B]: A horizontal encoder strip folded at a sharp angle.

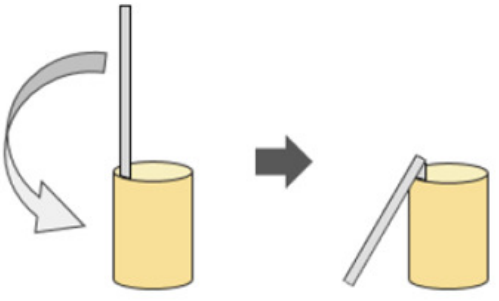
    - The new horizontal encoder strip is covered with protective film to prevent the strip from bending and contamination. Do not peel off the protective film until after attaching the strip. Also, do not touch the strip after peeling off the protective film.

j089m049a

[A]: Horizontal encoder strip without protective film

[B]: Horizontal encoder strip with protective film

- Do not place the horizontal encoder strip vertically. (This may cause the strip to deform.)



j089m2002

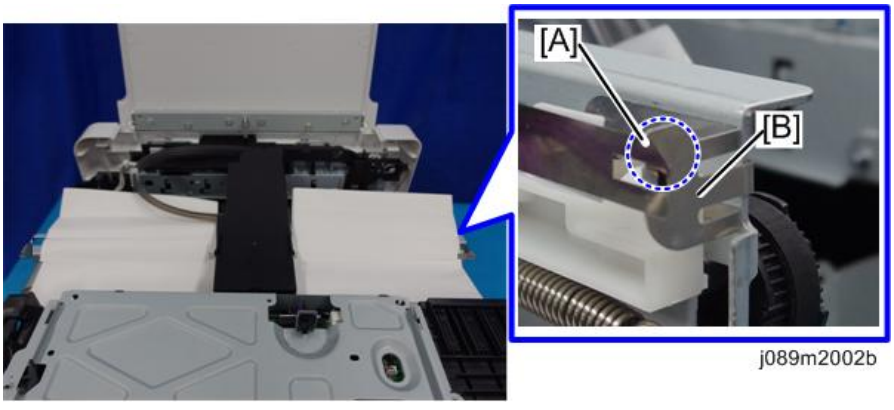
- When carrying out this work, hold both edges of the horizontal encoder strip, and do not touch the slit.

Attachment Procedure

1. Cover the guide rail with paper to prevent the grease on it from staining the horizontal encoder strip.

j089m047a

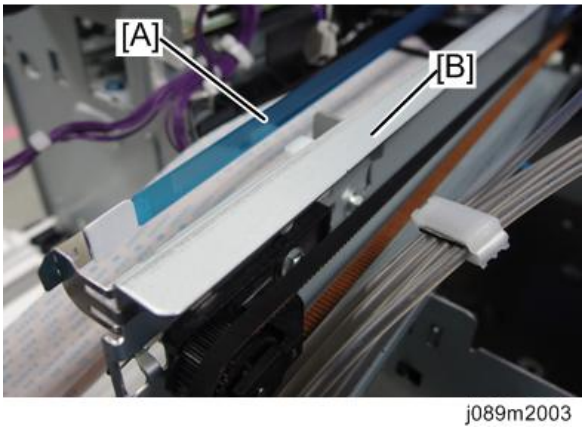
2. **Attach the horizontal encoder strip onto the leaf spring [B] hook so that the notch of the horizontal encoder strip [A] is on top.**



j089m2002b

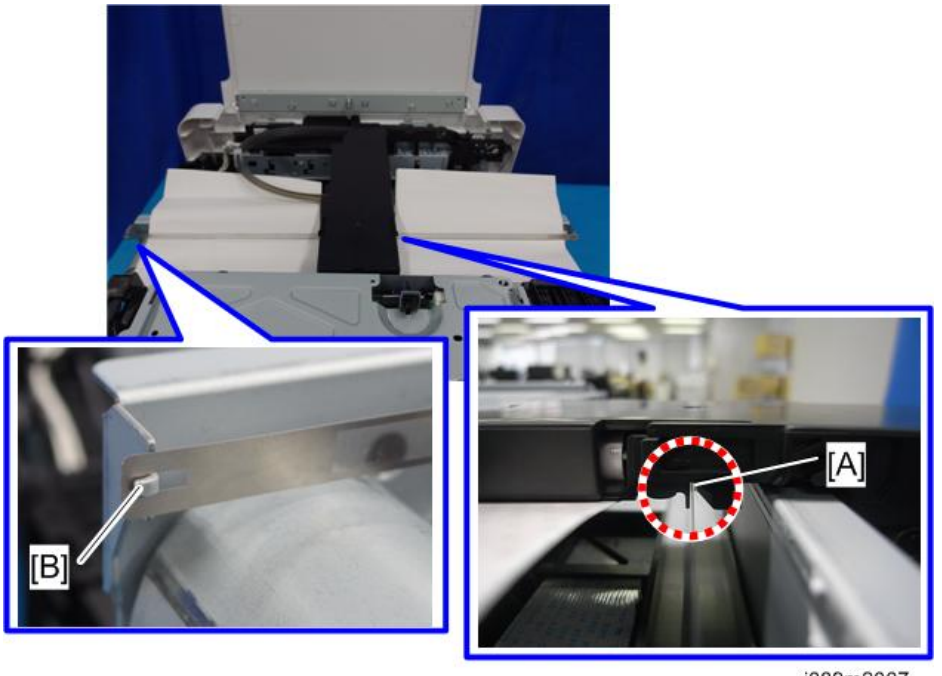
Note

- Check that the protective film surface of the sheet [A] is facing the guiderail [B].

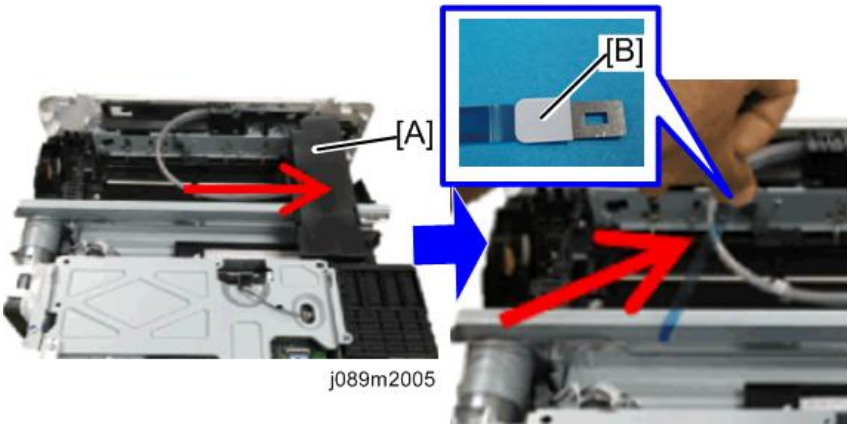


j089m2003

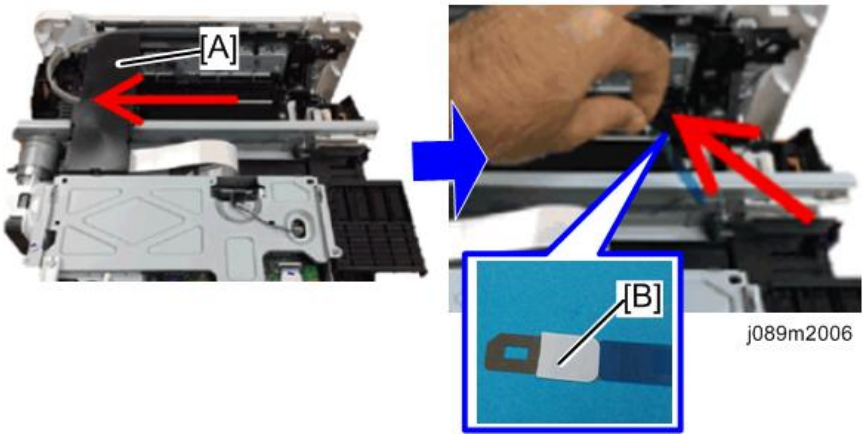
3. Pass the strip through the gap [A] of the sensor inside the carriage, and then, attach the other side of the horizontal encoder strip onto the other hook [B].



4. Move the carriage [A] to the right side, hold the tip [B] of the protective film on the left side of the horizontal encoder strip, and then peel off the protective film.



5. **Move the carriage [A] to the left side, hold the tip [B] of the protective film on the right side of the horizontal encoder strip, and then peel off the protective film.**



1. **Remove the paper that was placed in Step 1.**

Note

- If dirt such as grease or ink is affixed to the attached horizontal encoder strip, or it is scratched, damaged or bent, replace with a new horizontal encoder strip.

After Replacement

Check for any image quality degradation according to the following procedure:

- Do the "Nozzle Check". (page 175 "Nozzle Check")

  (Do the following only if image quality degradation, such as an ink discharge error or color mixture error, occurs.)

- Do the "Head Position". (page 179 "Head Position") (Inspect the nozzle check patterns and execute this up to 3 times for print heads with problems only.)

  (Do the following only if image quality degradation, such as an ink discharge error or color mixture error, occurs.)

- Do the "Registration". (page 181 "Registration") (once)

Boards

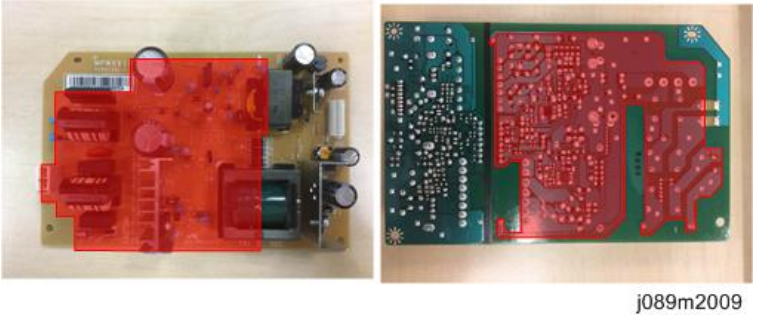
PSU

Important

- **Always replace a PSU with the PSU designed for the machine.**

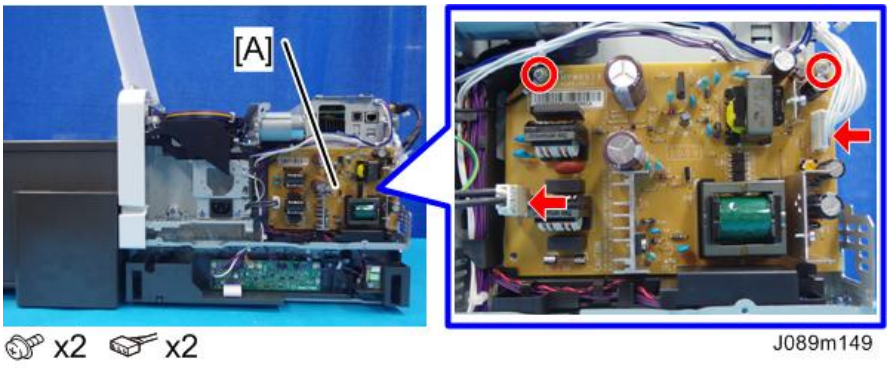
⚠CAUTION

- **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.



j089m2009

1. **Remove the cooling fan and fan bracket. (page 137 "Cooling Fan")**
2. **Remove the PSU [A].**



J089m149

Note

- There are two types of PSU. Before mounting the PSU, check the voltage indicated on the board.
- 100V : For NA
- 200V : For EU, Aaia, China

j0271074

Printer Engine CTL Board

Before Replacement

Before replacing the control board you should always print the Service Summary and an Engine Summary Chart.

Important

- You will need these reports to refer to previous settings that may require resetting.

To print the Service Summary

1. Prepare for test printing. (page 174 "Preparing for Test Printing")
2. Enter the SP mode.
3. Select "Service Menu"> [#Enter].
4. Select "Service Summary"> [#Enter].
5. "Press # to Start"> [#Enter].

To print the Engine Summary Chart:

Do SP5-990-002 (Print SMC). (Printing requires about 2 minutes.)

1. Prepare for test printing. (page 174 "Preparing for Test Printing")
2. Enter the SP mode.

3. **Select "Engine Maint."> [#Enter].**
4. **Using [▲] or [▼/Menu], enter "5990002".**
5. **Press [#Enter].**

PRINT SMC 5990002

6. **Press [#Enter].**

PRINT SMC EXEC

7. **Press [#Enter].**

OK?

- Wait for the report to print (it does not start immediately).
- Printing requires about 2 minutes.

8. **Exit the SP mode, and switch the machine off.**

Note

- For more details about these reports, please refer to Section "5. System Maintenance Reference".

Replacing the CTL Board

1. **Take out the power cord after shutdown.**
2. **Press the power switch [A] for a second to remove the residual charge inside the machine.**

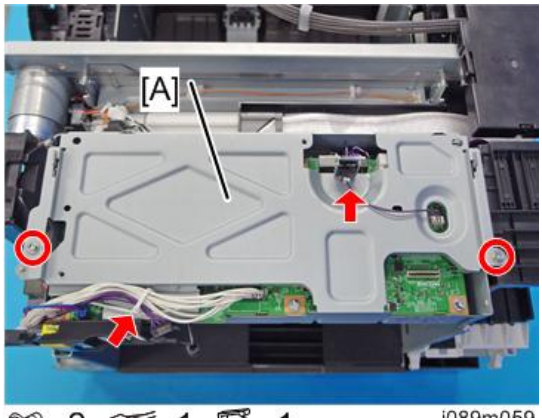
   If you do not do this step, the CTL board can be damaged by the residual charge.

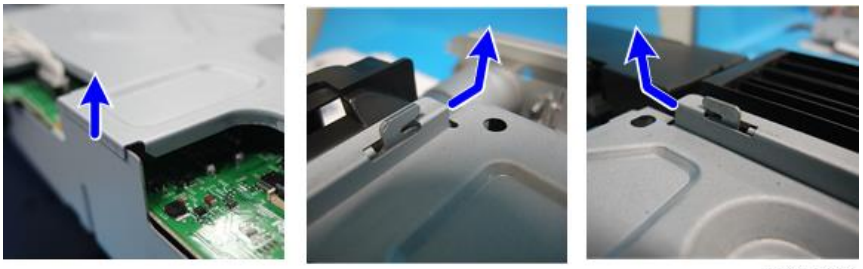
j089m090

3. **Remove the left cover. (page 66 "Left Cover")**

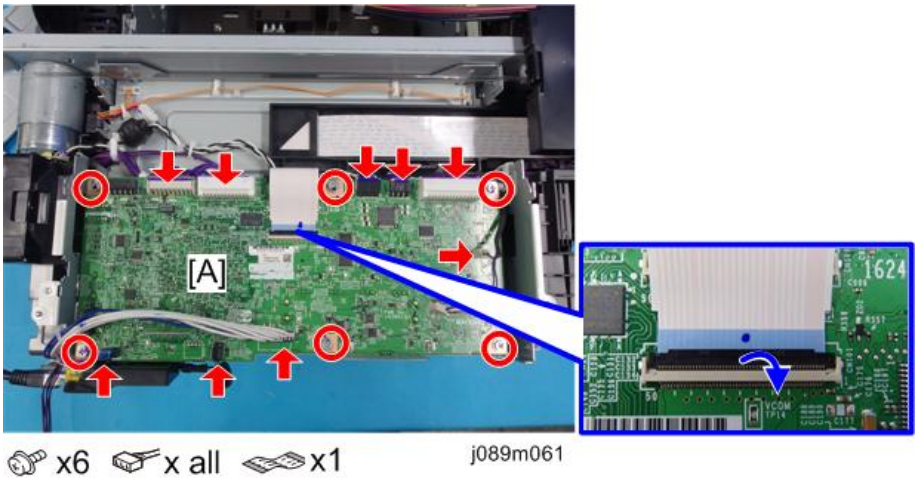
4. **Remove the CTL board cover [A].**

   Make sure that the carriage is in the home position. Otherwise, the cover is blocked by the carriage.





5. **Remove the CTL board [A].**

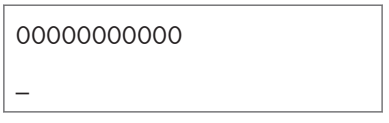


After Replacement

After replacing the CTL board, you need to specify the serial number, and destination, and then initialize the VMRAM. Be sure to perform this in the order of (1) specifying the serial number, (2) specifying the destination, and (3) initializing the VMRAM.

(1) Serial number

1. **Switch the machine on.**
2. **Enter the SP mode.**
3. **Select "Service Menu">"Serial No. Edit."> [#Enter].**
4. **Enter the machine serial number.**



   - Press [▲] or [▼/Menu] to move the cursor vertically, press [#Enter] to select the digit you want to change (among 11 digits), press [▲] or [▼/Menu] to change the character, and then and then press [#Enter] to confirm the entry. The confirmed entry appears on the upper row of the display.

5. **After completing the entry, press [Escape].**
6. **Exit the SP mode.**

(2) Destination

1. **Enter the SP mode.**
2. **Select "Engine Maint."> [#Enter].**
3. **Enter "5807001"> [#Enter].**

4. **Select the destination> [#Enter]> [Escape].**

0	Japan
1	NA
2	EU
3	CH
5	AS

5. **Exit the SP mode.**

(3) Initializing the NVRAM

1. **Enter the SP mode.**
2. **Select "Engine Maint."> [#Enter].**

   SP No.
   5831001

3. **Enter "5831001"> [#Enter].**
4. **Press [#Enter].**
5. **Press [#Enter].**

   OK?

6. **Press [#Enter].**
7. **Exit the SP mode.**
8. **Turn the machine off, and then turn it on again.**

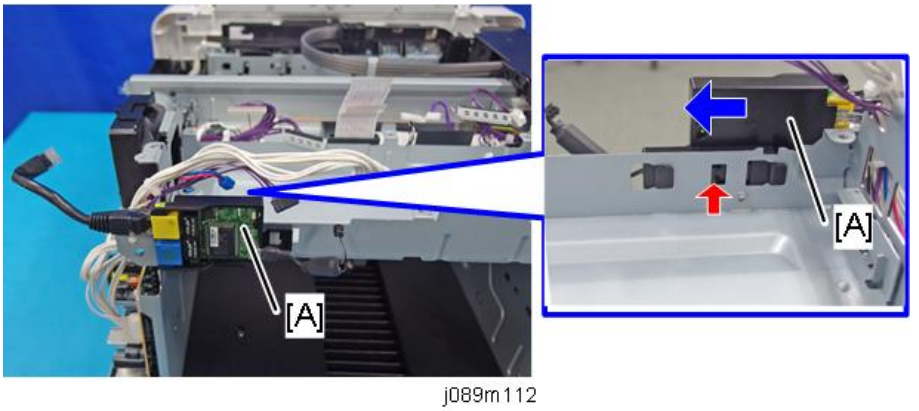
Changing the destination influences the following settings:

Settings	NA		EU		AS/CH	
	Spec.	Value	Spec.	Value	Spec.	Value
Page Size	A4:SEF	133	A4:SEF	133	A4:SEF	133
Time Zone	GMT-5	7	GMT 0	12	GMT 0	12
mm /inch	inch	1	mm	0	mm	0
Summer Time Setting	Enabled	1	Enabled	1	Disabled	0
Month to Start the Summer Time	Mar.	3	Mar.	3	Oct.	10
The Number of Times the Summer Time Started	2nd	1	Final (4 or 5)	4	Final (4 or 5)	4
Time to Start the Summer Time	2:00 AM	2	0:00 AM	0	2:00 AM	2
Month to Finish the Summer Time	Nov.	11	Oct.	10	Mar.	3
The Number of Times the Summer Time Finished	1st	0	Final (4 or 5)	4	1st	0

Settings	NA		EU		AS/CH	
	Spec.	Value	Spec.	Value	Spec.	Value
Time to Finish the Summer Time	2:00 AM	2	1:00 AM	1	0:00 AM	0
Language	English (UK)	2	English (UK)	2	English (UK)	2
DHCPv4	Enabled	1	Enabled	1	Enabled	1
SNMPv1 Community Name 2.	admin	admin	admin	admin	admin	admin

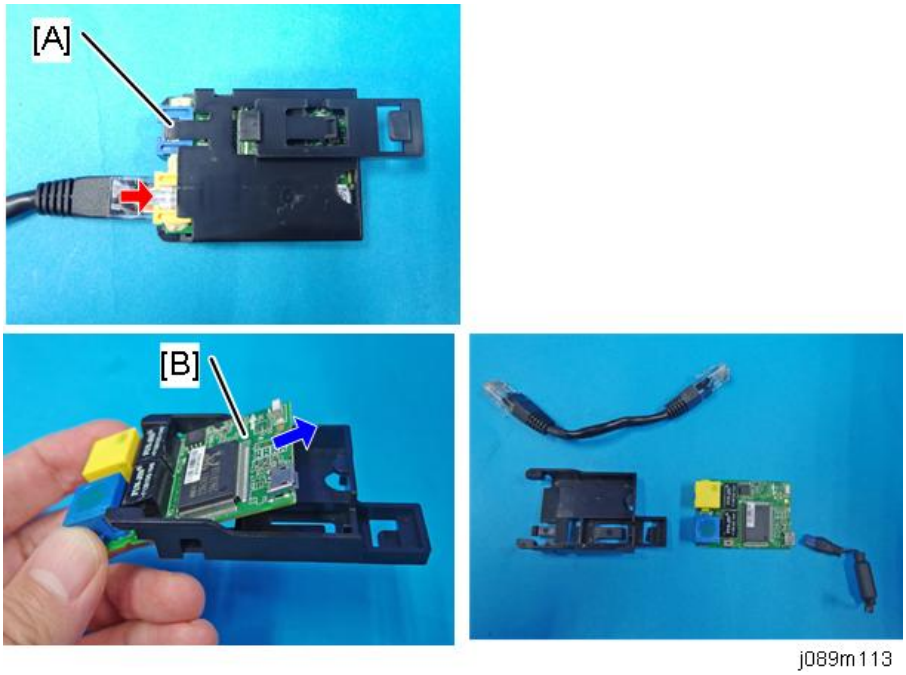
Wireless LAN Board

1. **Remove the CTL board. (page 113 "Printer Engine CTL Board")**
2. **Release the tab and slide the wireless LAN board unit [A] to remove it.**



j089m112

3. **Release the tab [A] and remove the wireless LAN board [B].**

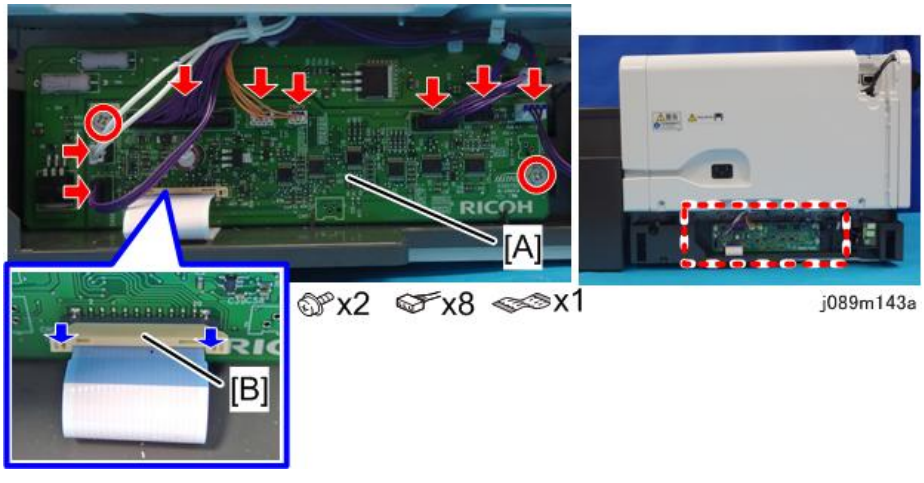


j089m113

Relay Board

1. **Remove the left lower cover. (page 66 "Left Lower Cover")**
2. **Remove the relay board [A].**

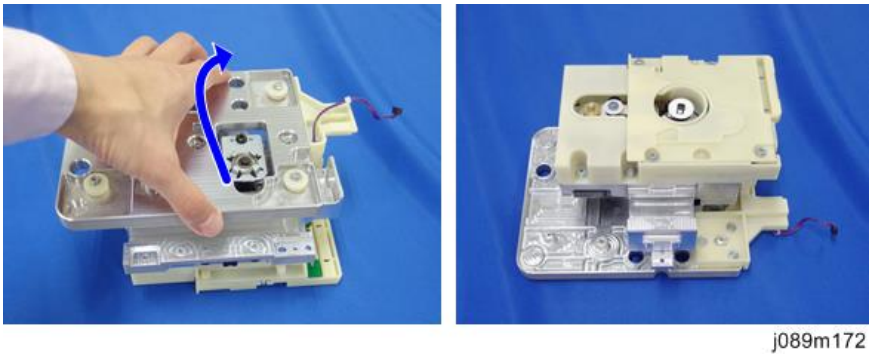
   Unlock the FFC lock [B], and disconnect the FFC.



j089m143a

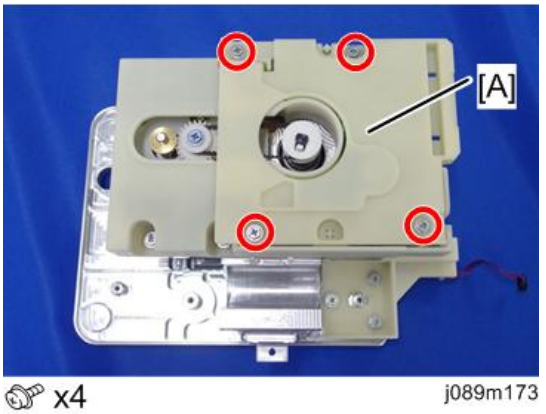
Lift Board

1. Remove the cassette carriage. (page 95 "Cassette Carriage")
2. Flip the cassette carriage upside down and lay it down.



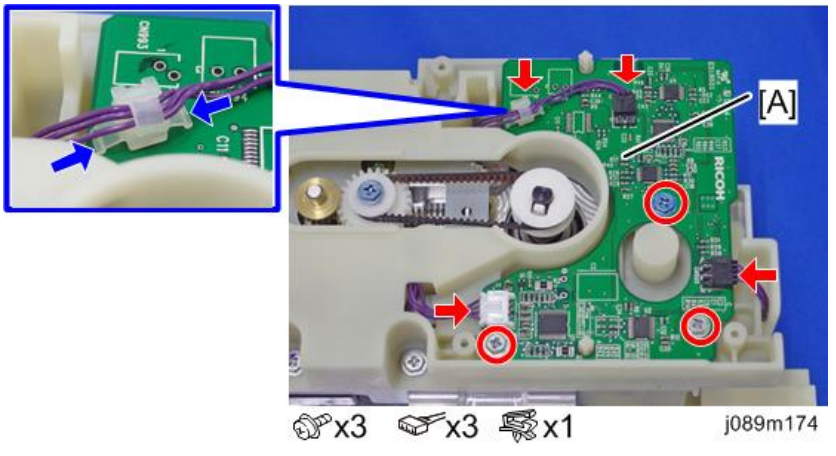
j089m172

3. Remove the lift board cover. [A].



x4 j089m173

4. Remove the lift board [A].



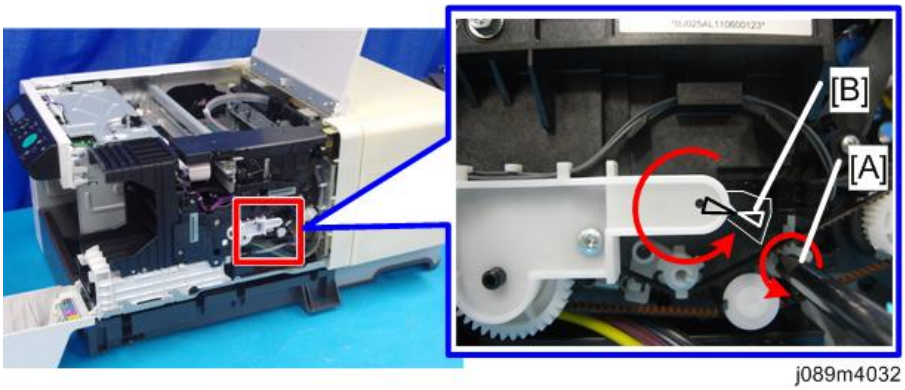
x3 x3 x1 j089m174

RTB 1: Notes added to this procedure

HRB (Head Relay Board)

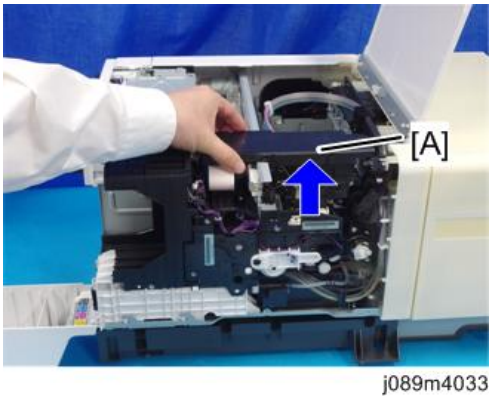
1. **Remove the canopy cover. (page 68 "Canopy Cover")**
2. **Insert the tip of a screwdriver into the hole [A] and turn it counter-clockwise to rotate the lower triangle [B] up to the other triangle until they are aligned.**

   When the triangles are aligned, the carriage is unlocked.



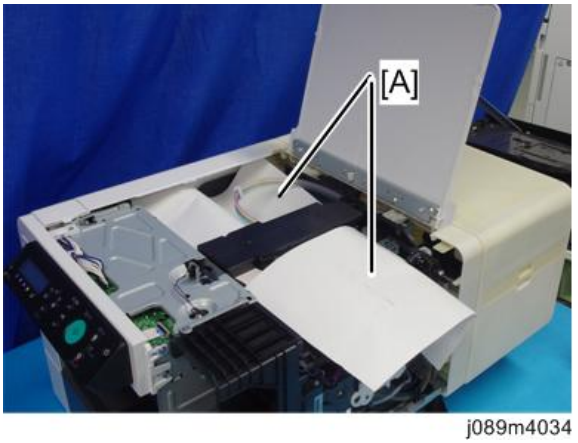
j089m4032

3. **Push the carriage [A] to the center of the machine.**



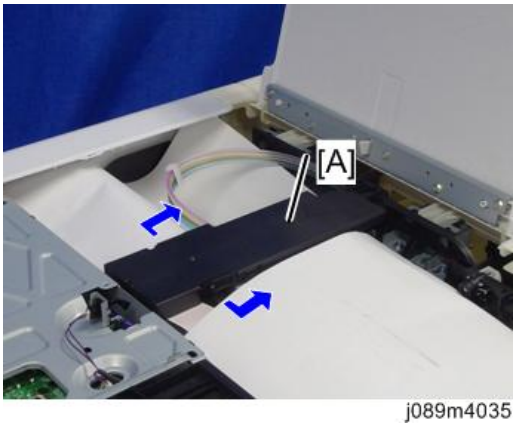
j089m4033

4. **Cover the horizontal encoder strip with paper [A] to prevent it from staining or being damaged.**



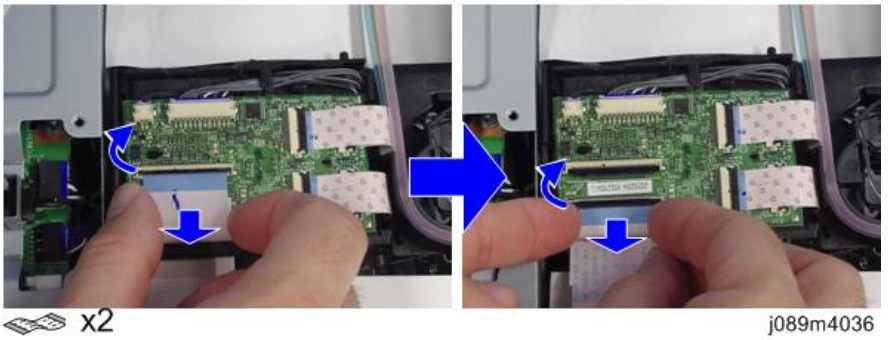
j089m4034

5. **Remove the carriage top cover [A].**



j089m4035

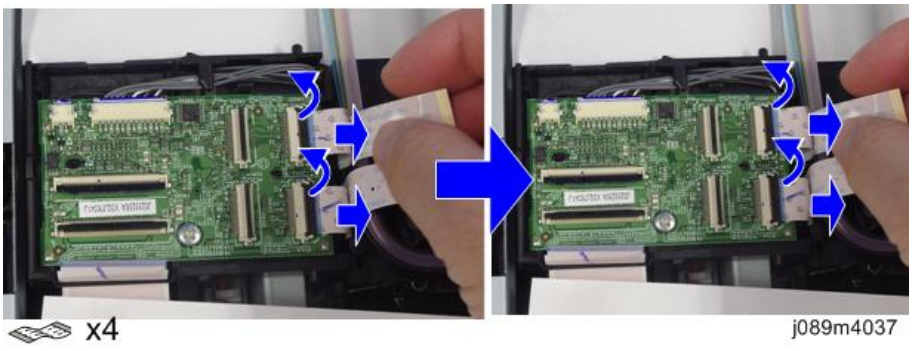
6. **Release the locks and disconnect the 2 FFCs.**



x2

j089m4036

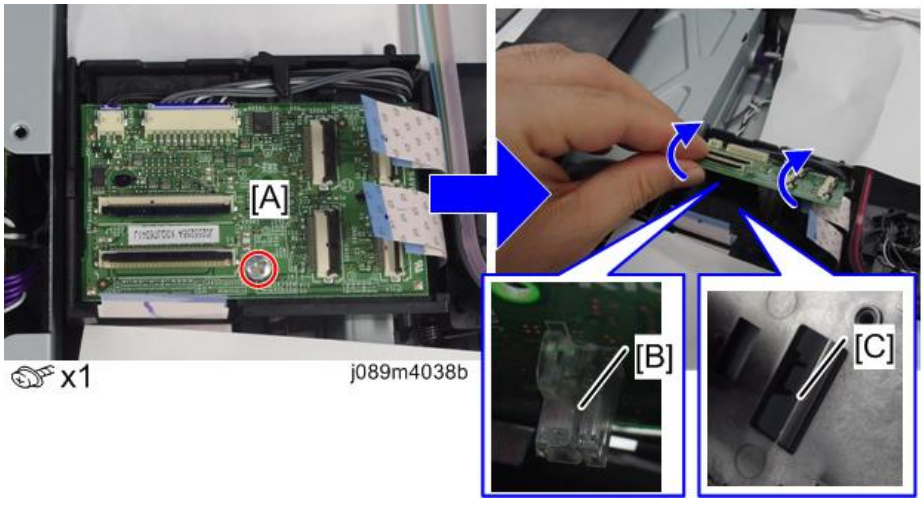
7. **Release the locks and disconnect the 4 small FFCs.**



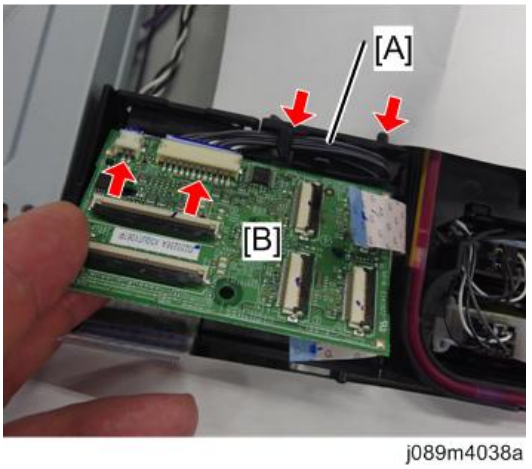
8. **Lift the HRB [A] as shown.**

Note

- Be sure to lift the HRB in the way shown. If you lift it in a different way, the sensor groove [B] on the back of the HRB may catch on the horizontal encoder strip [C] and damage it.



9. **Release the harnesses [A] from the harness guides, and disconnect the 2 connectors to remove the HRB [B].**



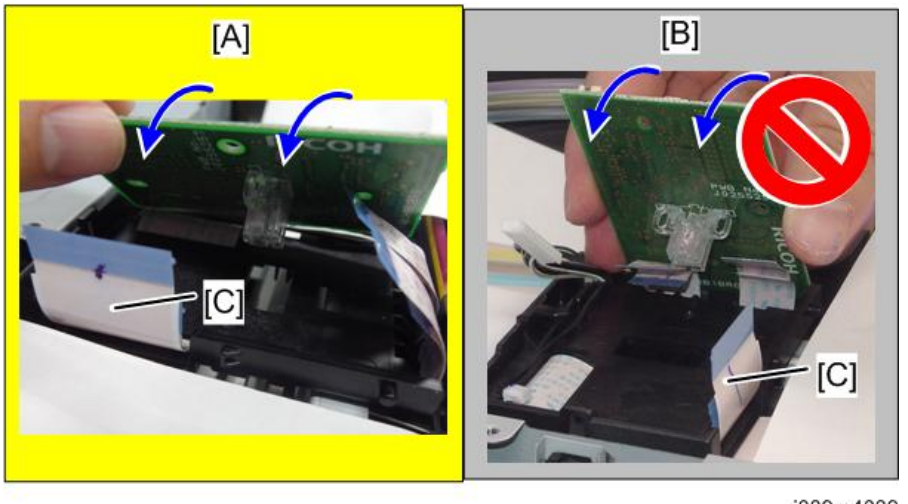
j089m4038a

Re-installing the HRB

Note

- Be sure to attach the HRB in the way shown below. Attaching it in a different way will damage the horizontal encoder strip.
- Attaching the HRB (Note the position of the FFC [C].)

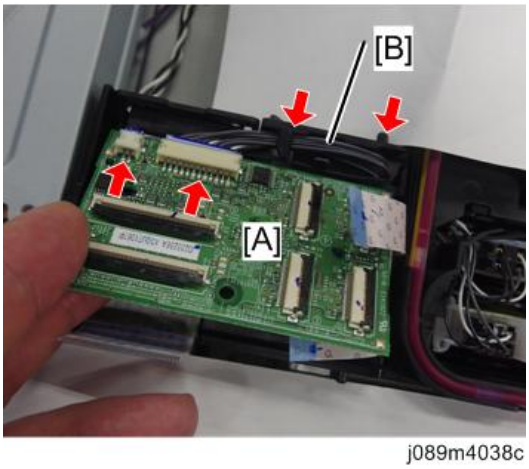
[A]: Correct (The horizontal encoder strip does not catch on the sensor groove.)
[B]: Incorrect (The horizontal encoder strip catches on the sensor groove.)



j089m4039

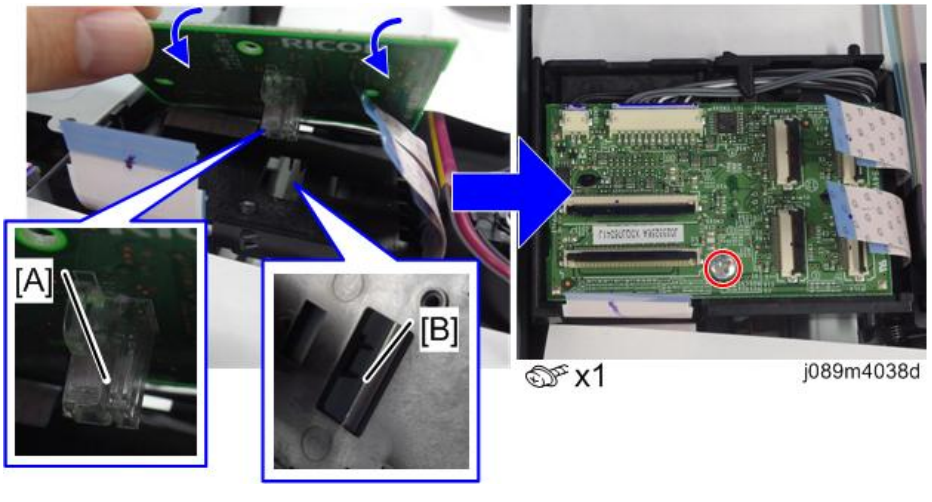
- When attaching the HRB, be very careful not to fold, bend, or strongly warp the horizontal encoder strip. Also, do not deform the slit on the strip. If a problem occurs, replace the horizontal encoder strip with a new one.

1. **Connect the 2 connectors to the HRB [A], and route the harnesses [B] along the harness guides.**



j089m4038c

2. **Attach the HRB, making sure that the sensor groove [A] on its back is engaged with the horizontal encoder strip [B].**

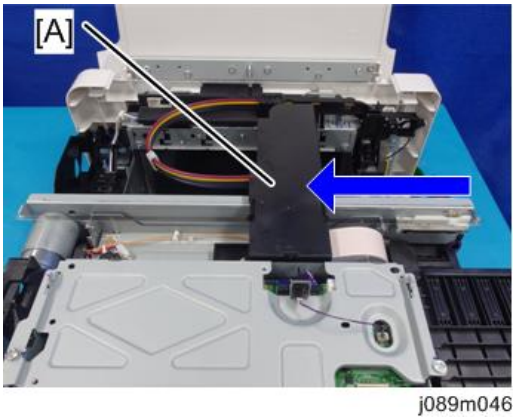


j089m4038d

Motors, Bearing Race

Horizontal Motor

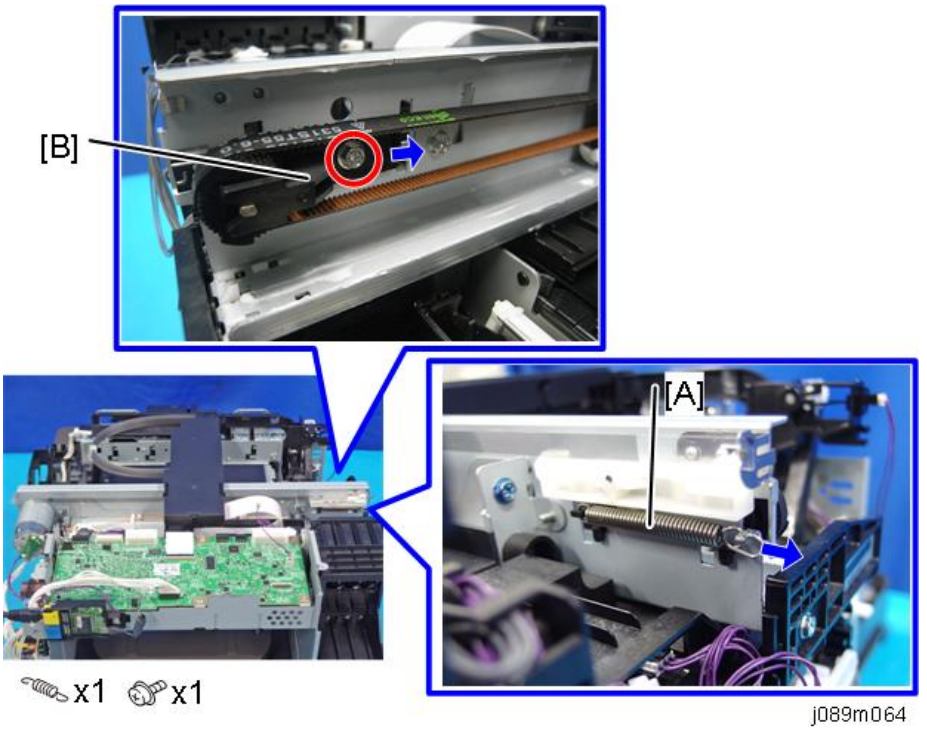
1. Remove the cooling fan and fan bracket. (page 137 "Cooling Fan")
2. Unlock the carriage [A] and push it to the center. (page 87 "Maintenance Unit")



j089m046

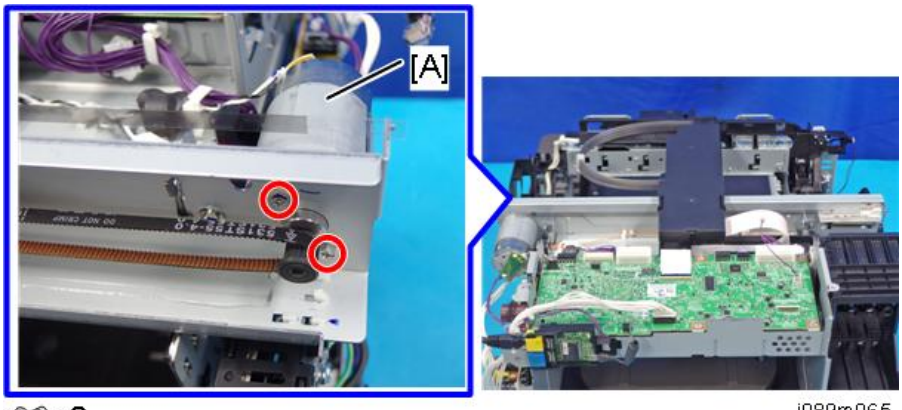
3. Remove the spring [A], and slide the bracket [B] to the right to loosen the belt tension.

   Be careful because the tension of the spring [A] is strong.



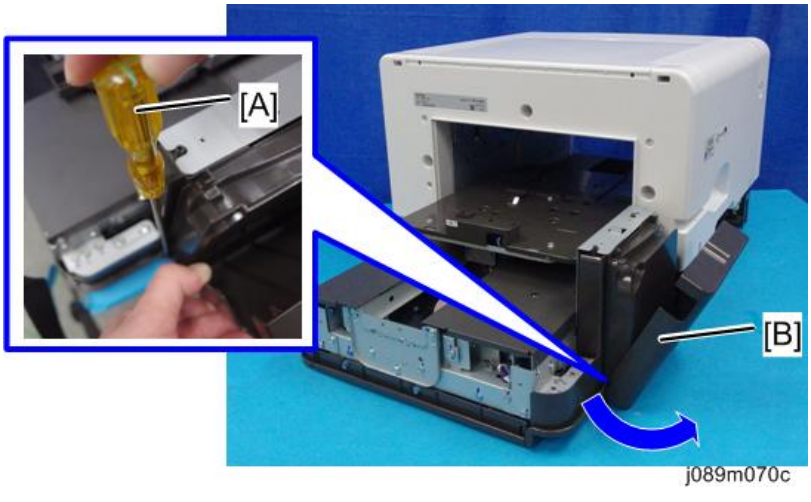
j089m064

4. Remove the horizontal motor [A].

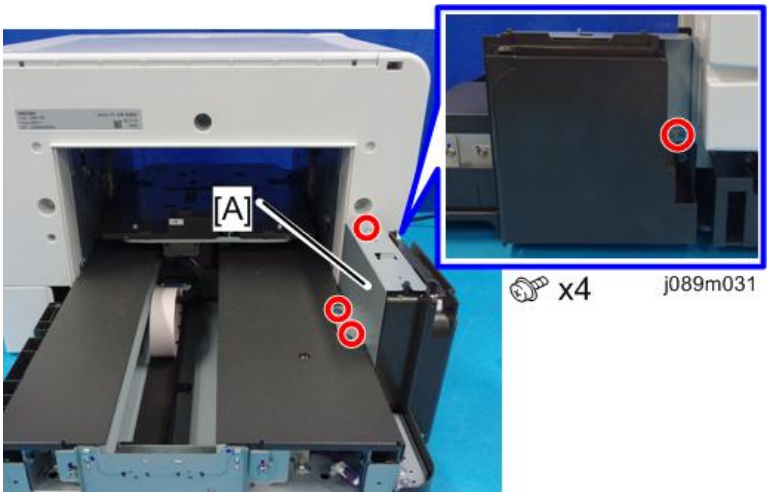


Vertical Motor

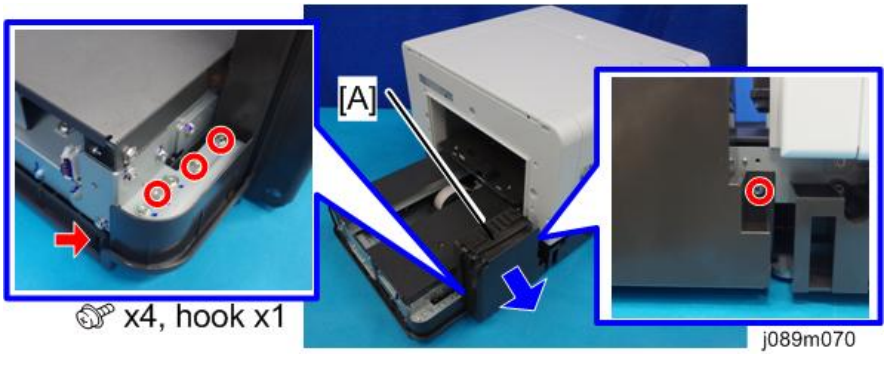
1. Remove the left lower cover. (**page 66 "Left Lower Cover"**)
2. Remove the rear transport cover. (**page 75 "Rear Transport Cover"**)
3. To enlarge the gap between the power cord cover and its door, insert a flathead screwdriver [A].
4. Remove the door of the power cord cover [B].



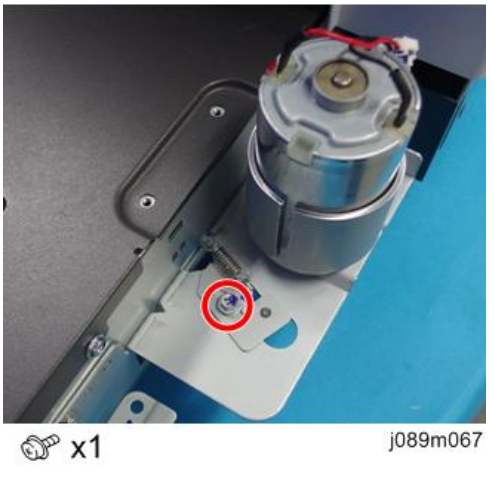
5. **Remove the vertical motor cover [A].**



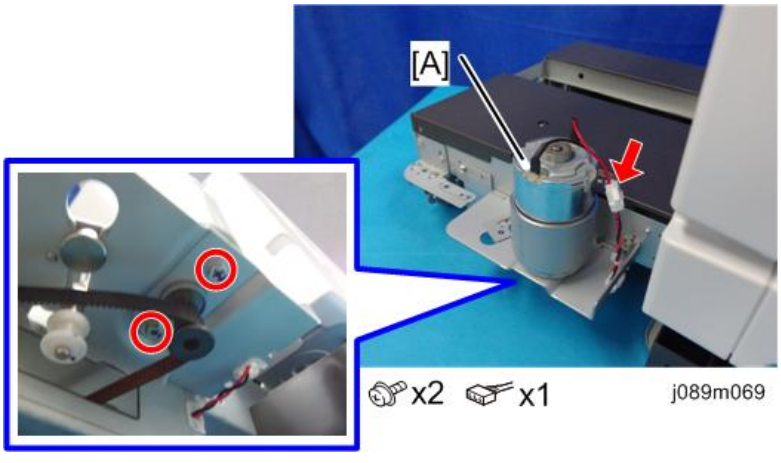
6. **Remove the power cord cover [A].**



7. **Loosen the screw to loosen the belt tension.**

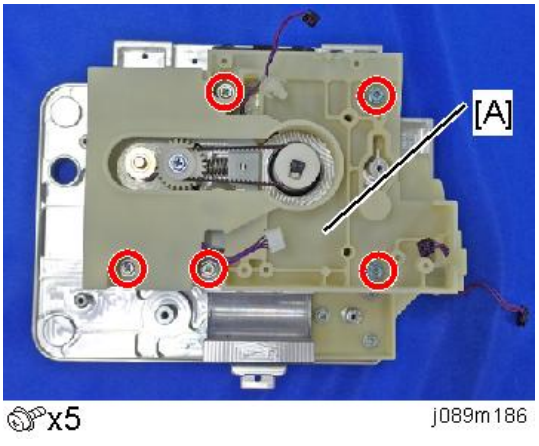


8. Remove the vertical motor [A].

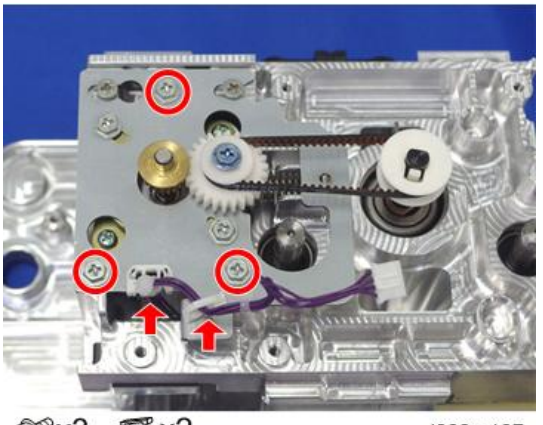


Lift Motor Unit

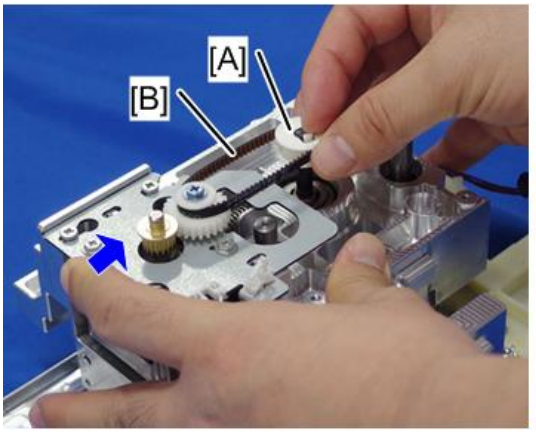
1. Remove the lift board. (page 120 "Lift Board")
2. Remove the lift board bracket [A].

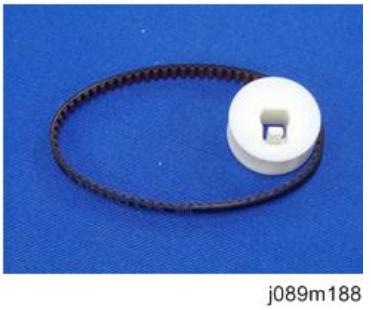


3. **Remove 3 screws and release 2 clamps.**



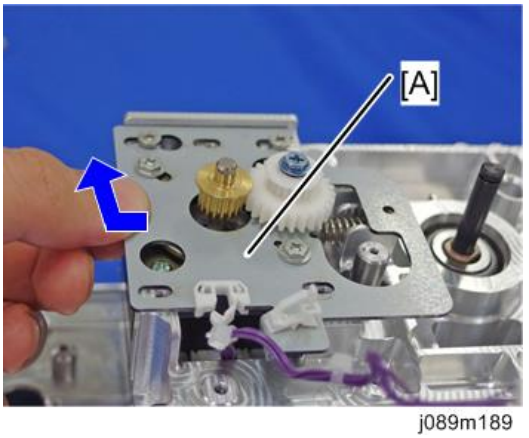
4. **Remove the gear [A] and the belt [B].**





j089m188

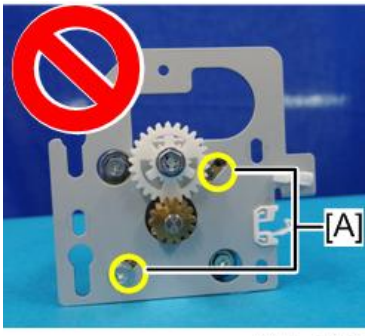
5. **Remove the lift motor unit [A].**



j089m189

Note

- Do not remove or loosen the 2 screws [A], as this will prevent accurate engagement of the gears.



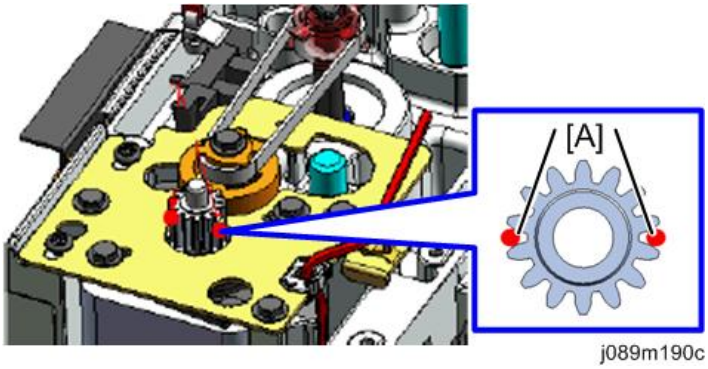
j089m190f

Applying Grease When Installing the Lift Motor Unit

When attaching the lift motor unit to the cassette carriage again, apply grease to the gears according to the following procedure.

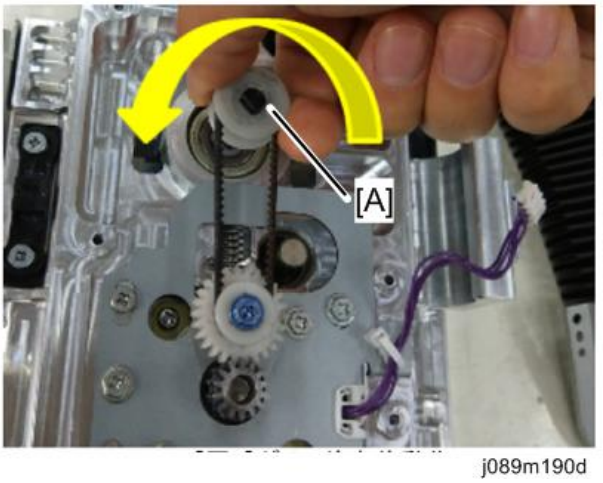
Recommended grease: MOLYKOTE G-1077

1. **Apply the specified amount of grease to both sides [A] of the gear on the lift motor side.**



j089m190c

2. **Squeeze the pulley gear [A] between your finger tips and rotate it once counterclockwise.**

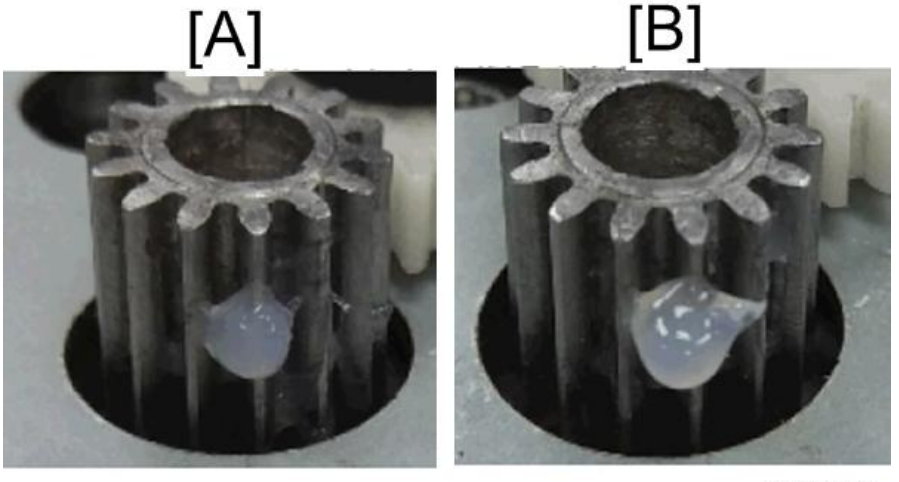


j089m190d

3. **Carry out steps 1 and 2 again.**

Note

- The amount of grease that should be applied to each location is 30 mg ± 6mg. Apply grease using the following photographs as a guide.



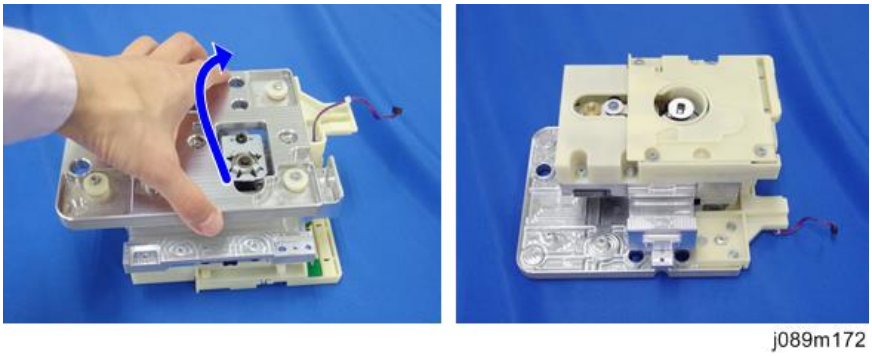
j089m190e

- [A]: Amount of grease applied = 24 mg
- [B]: Amount of grease applied = 36 mg

Lifting Shaft Bearing Race

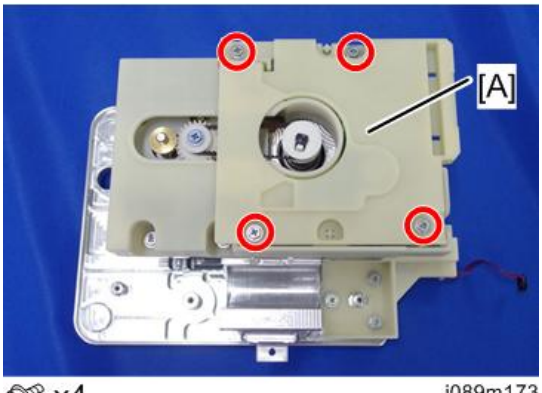
1. **Remove the cassette carriage. (page 95 "Cassette Carriage")**

2. **Flip the cassette carriage upside down and lay it down.**



j089m172

3. **Remove the lift board cover. [A].**



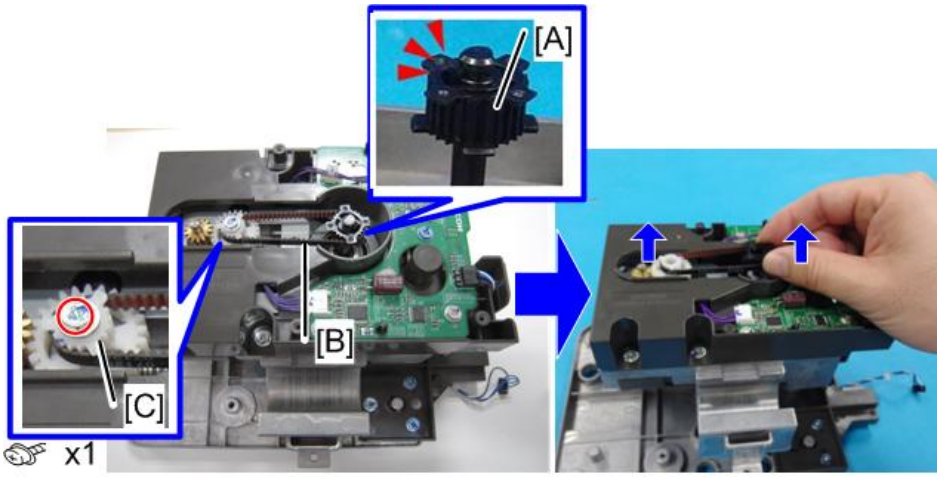
x4 j089m173

4. **Remove the gear [A] and the belt [B].**

You can smoothly remove the gear by removing the screw and slightly lifting the gear [C] at the lift motor.

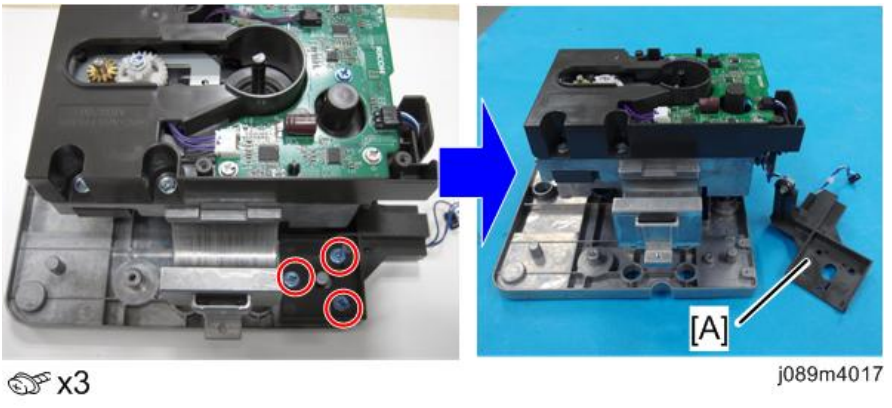
Note

- During the assembly, be sure to re-attach the screw that was removed in step 4.



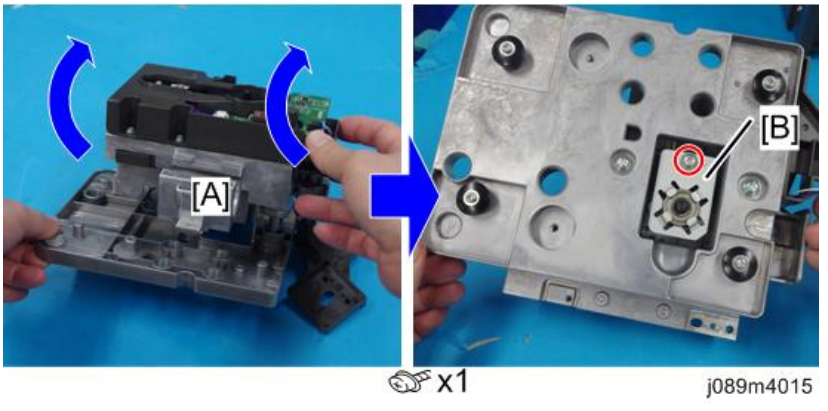
j089m4013

5. **Release the plastic bracket [A].**



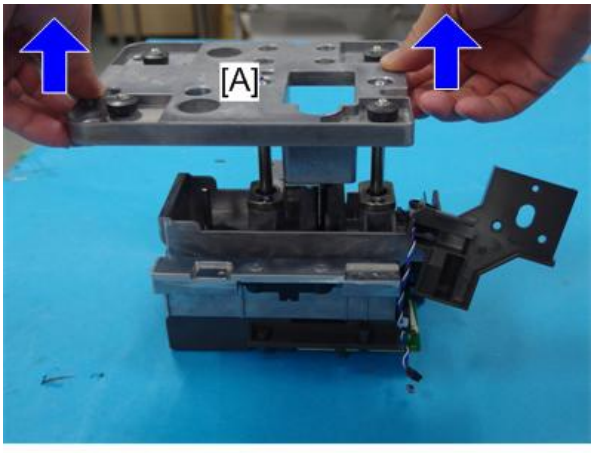
j089m4017

6. **Turn the cassette carriage [A] its top side up, and remove the bracket [B]. (M3 screw with washer ×1)**



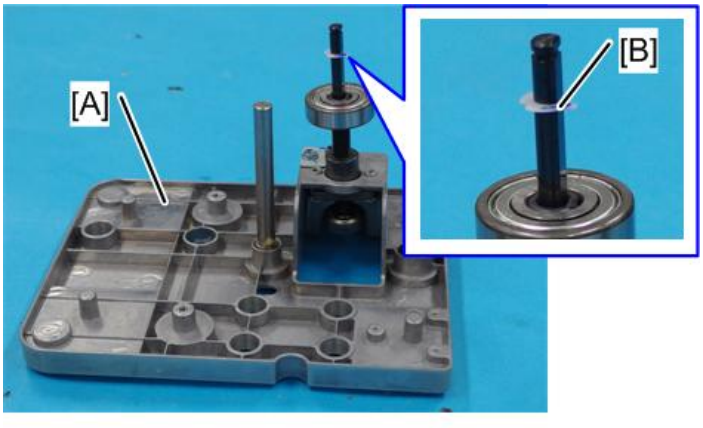
j089m4015

7. Pull up the upper part of the cassette carriage [A].



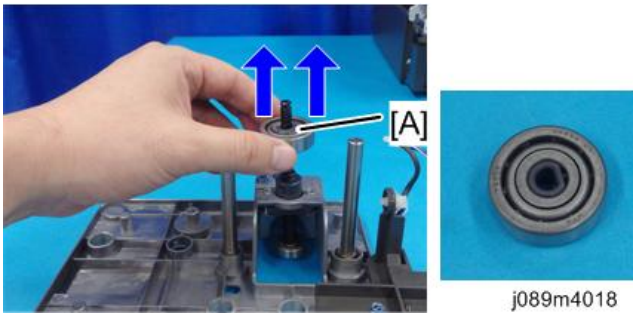
j089m4014

8. Place the upper part of the cassette carriage [A], and remove the stopper [B].



j089m4019

9. Remove the bearing race [A].



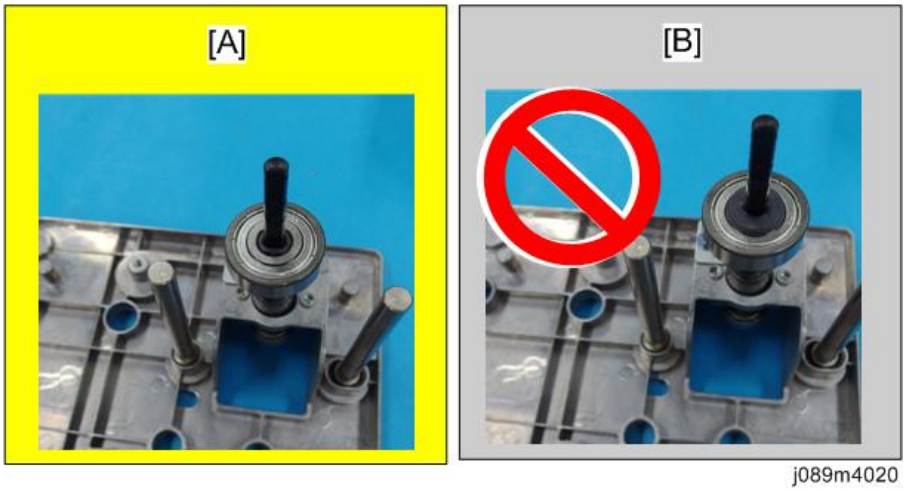
j089m4018

Notes on Mounting the Bearing / Reassembling the Cassette Carriage

1. When mounting the bearing on the shaft, mount it with the flanged side face down.

   [A]: Flanged side face down (OK)

   [B]: Flanged side face up (Not OK)

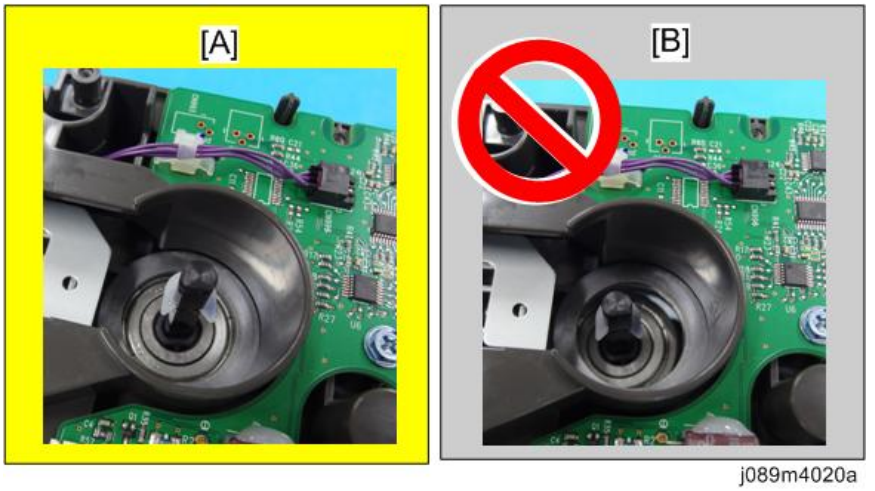


j089m4020

2. When reattaching the upper part of the cassette carriage, make sure that the bearing is seated in the housing hole.

   [A]: The bearing is seated in the housing hole. (OK)

   [B]: The bearing is not seated in the housing hole. (Not OK)

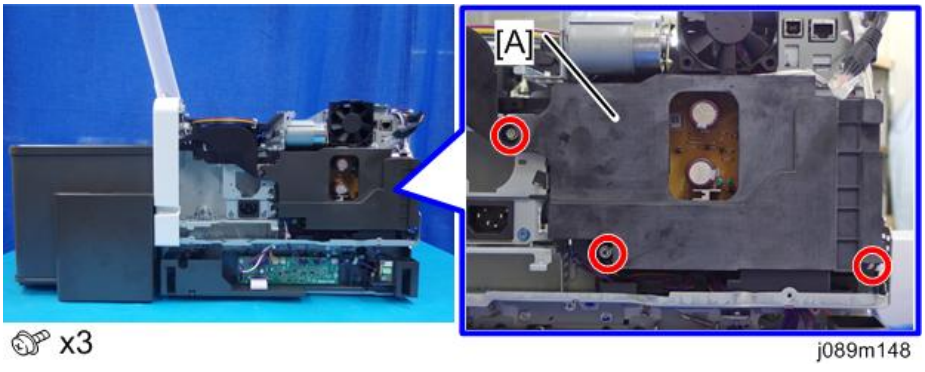


j089m4020a

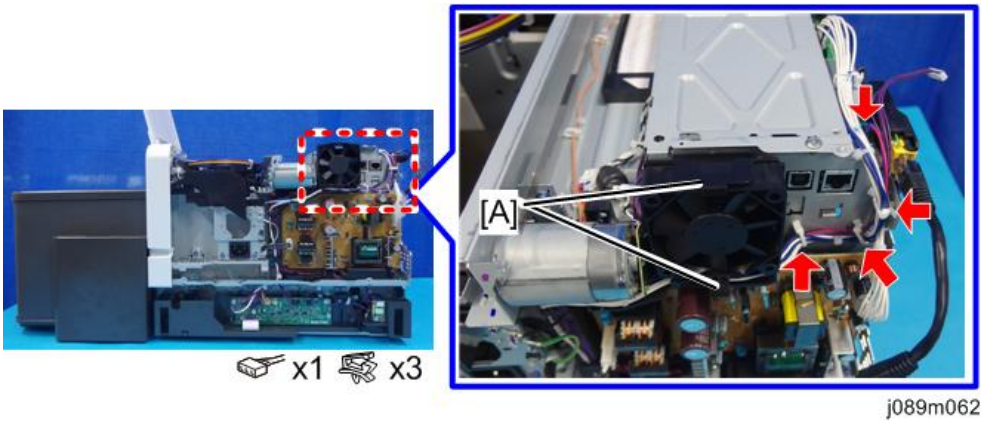
Fan

Cooling Fan

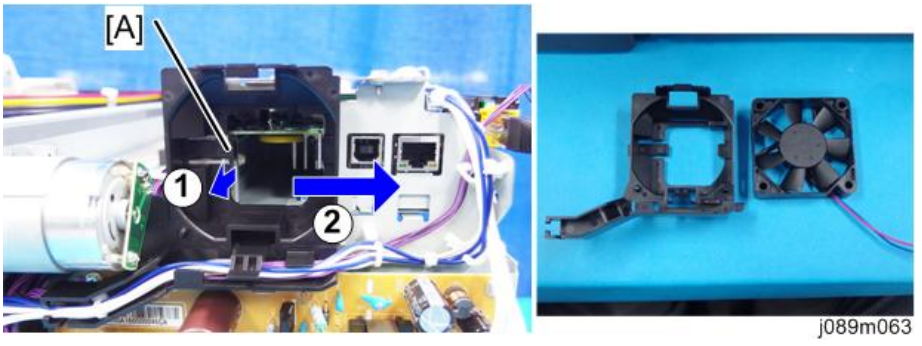
1. Remove the left cover. (**page 66 "Left Cover"**)
2. Remove the PSU cover [A].



3. Release the 2 tabs [A] and remove the fan from its bracket.

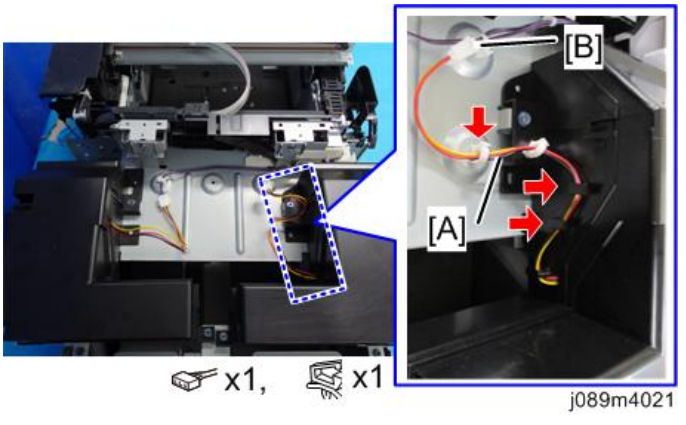


4. Release the hook [A] and remove the bracket.

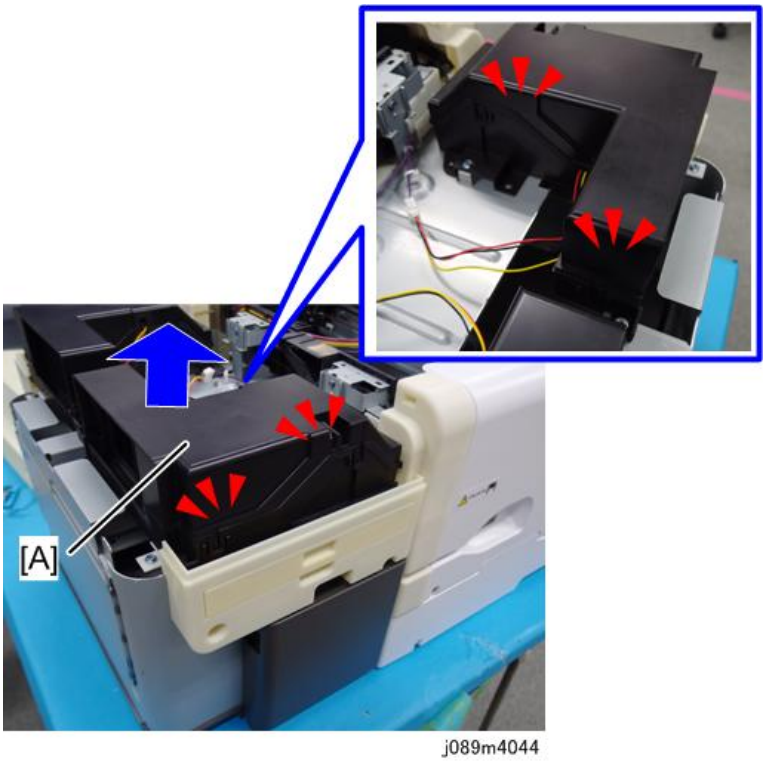


Ink Mist Collecting Fan (Left)

1. Remove the rear top cover. (page 73 "Rear Top Cover, Top Cover")
2. Release the harness [A] from the cable guides and the harnesses, and disconnect the connector [B].



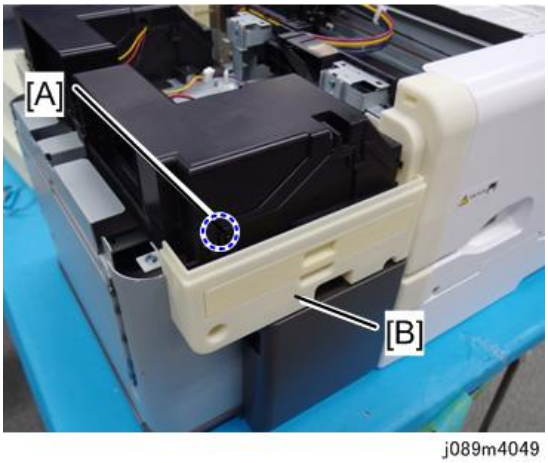
3. **Remove the upper part of the duct [A]. (hook x4)**



j089m4044

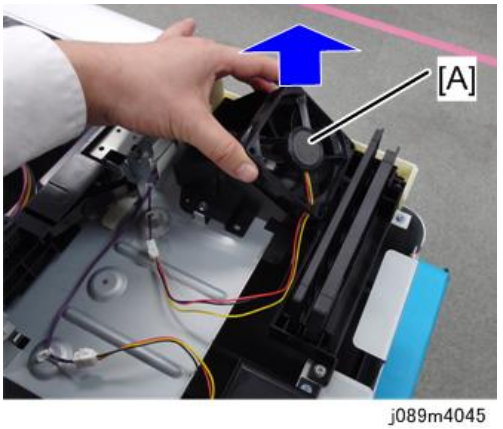
Note

- If the hook at [A] is difficult to disengage, remove the filter cover [B]. For details about how to remove the filter cover, see page 65 "Filter (Left)".



j089m4049

4. **Remove the ink mist collecting fan (left) [A].**

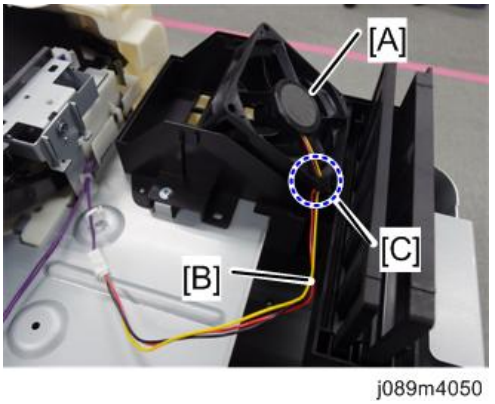


j089m4045

Notes on When Installing the Ink Mist Collecting Fan (Left)

1. Attach the fan.

   When you attach it, make sure that the labeled side [A] is face up and the harness [B] is engaged with the part [C] as shown.

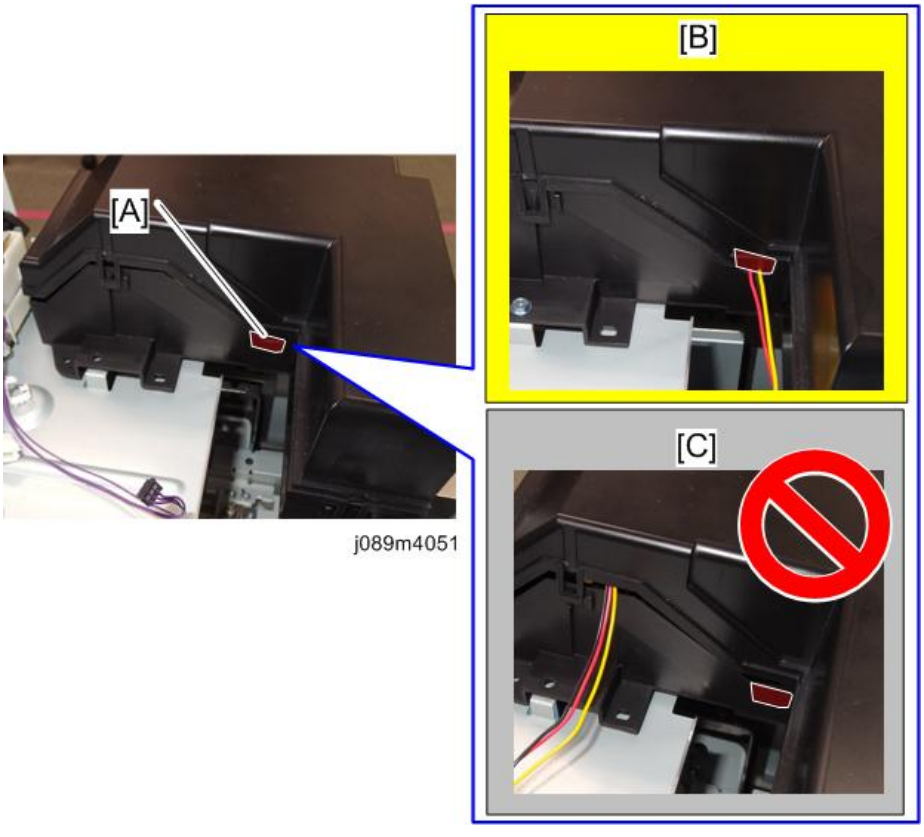


j089m4050

2. Have the fan's harness come out from the cutout on the duct, as shown by red shading [A] in the figure.

   [B]: The harness comes out from the duct's cutout. (OK)

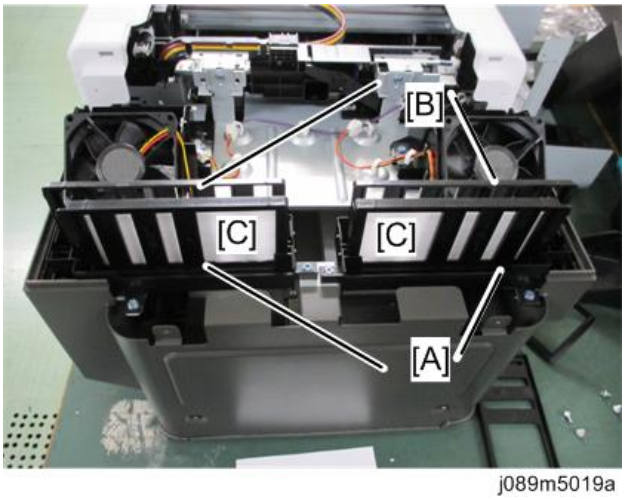
   [C]: The harness is caught by the duct's edge. (Not OK)



j089m4051

Note

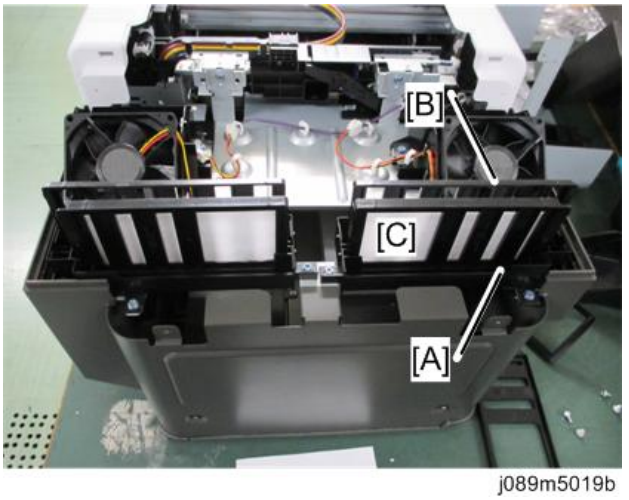
- If the flow adjustment plates (outer plates [A] and inner plates [B]) and filter element [C] in the fan unit come off when removing the upper part of the duct, reinstall them in their original positions. (The parts are all identical. Each part has a guide rib that engages with the guide groove on the bottom of the unit to prevent misalignment.)



j089m5019a

Duct Bottom Plate (Left)

1. **Remove the ink mist collecting fan (left). (page 138 "Ink Mist Collecting Fan (Left)")**
2. **Remove the flow adjustment plates (outer plates [A] and inner plates [B]) and filter element [C].**

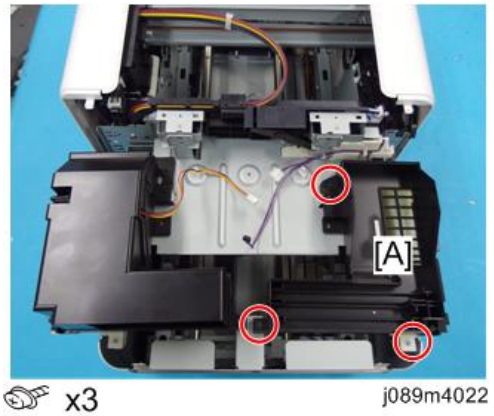


j089m5019b

Note

- Each part has a guide rib that engages with the guide groove on the duct bottom plate to prevent misalignment.

3. **Remove the duct bottom plate (left) [A].**

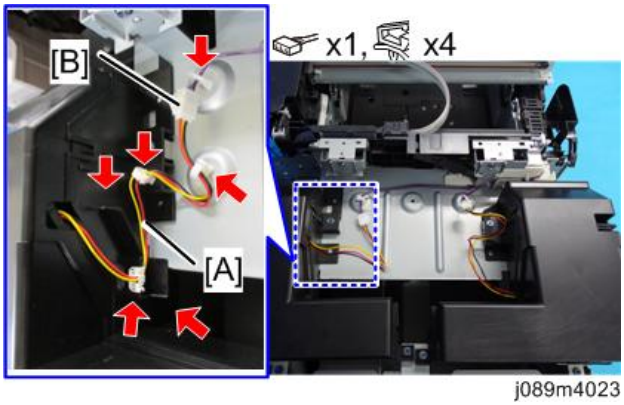


j089m4022

Ink Mist Collecting Fan (Right)

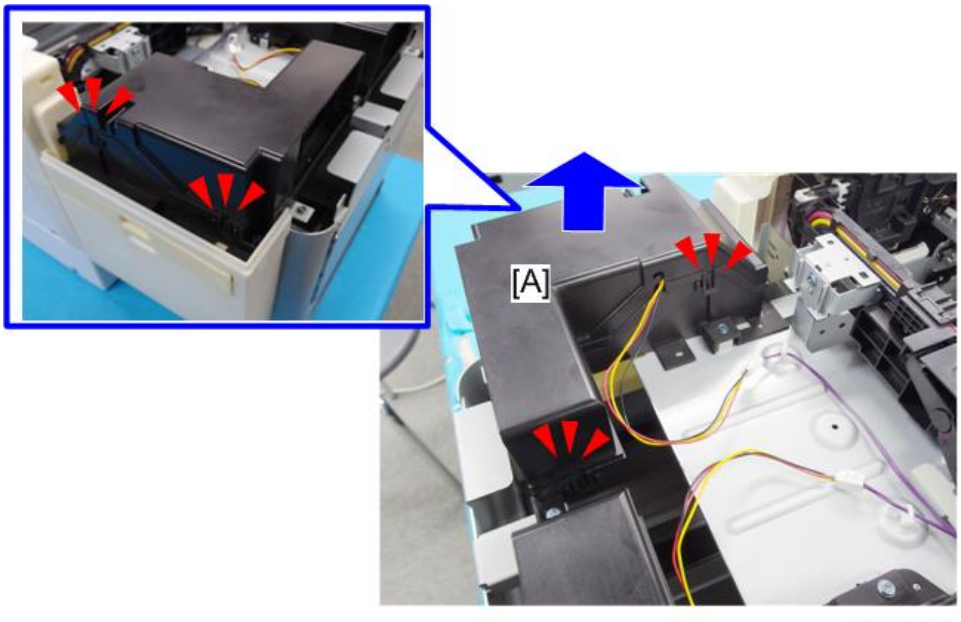
1. **Remove the rear top cover. (page 73 "Rear Top Cover, Top Cover")**

2. Release the harness [A] from the cable guides and the harnesses, and disconnect the connector [B].



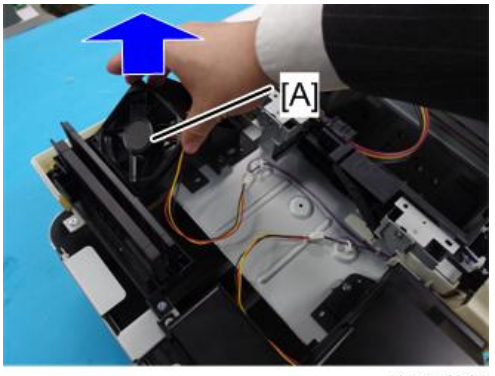
j089m4023

3. Remove the upper part of the duct [A]. (hook x4)



j089m4046

4. **Remove the ink mist collecting fan (left) [A].**

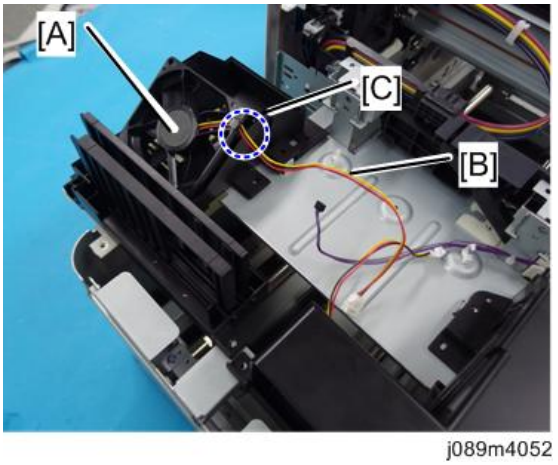


j089m4047

Notes on When Installing the Ink Mist Collecting Fan (Right)

1. Attach the fan.

   When you attach it, make sure that the labeled side [A] is face up and the harness [B] is engaged with the part [C] as shown.

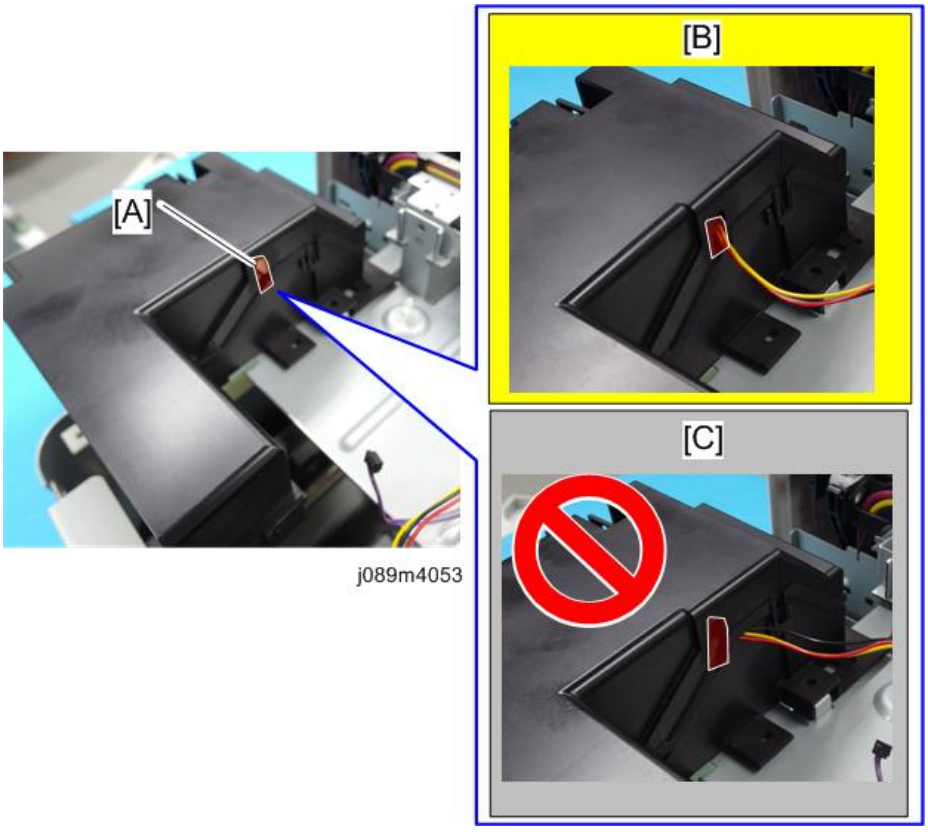


j089m4052

2. Have the fan's harness come out from the cutout on the duct, as shown by red shading [A] in the figure.

   [B]: The harness comes out from the duct's cutout. (OK)

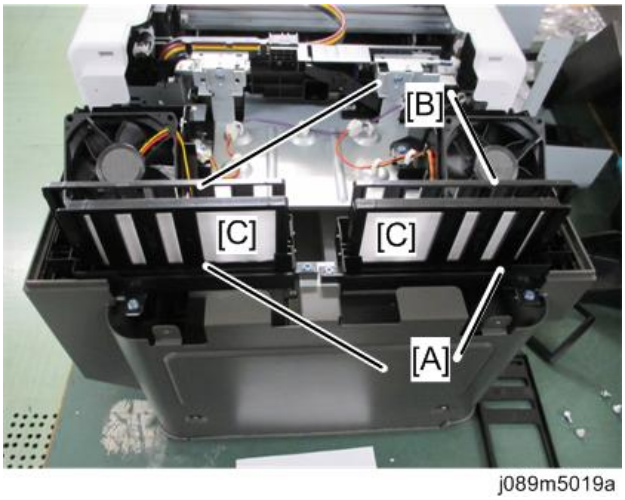
   [C]: The harness is caught by the duct's edge. (Not OK)



j089m4053

Note

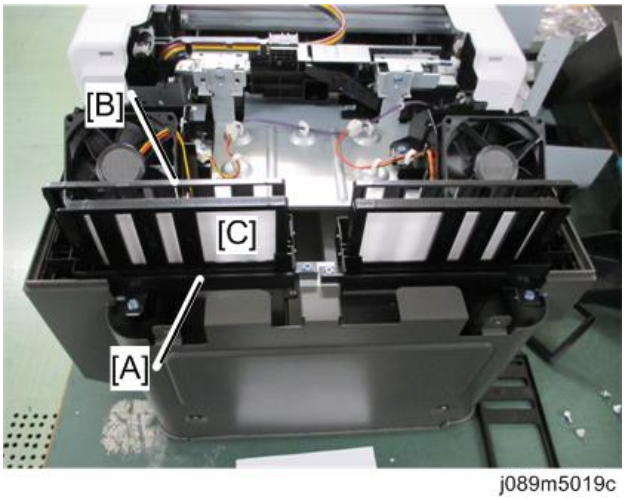
- If the flow adjustment plates (outer plates [A] and inner plates [B]) and filter element [C] in the fan unit come off when removing the upper part of the duct, reinstall them in their original positions. (The parts are all identical. Each part has a guide rib that engages with the guide groove on the bottom of the unit to prevent misalignment.)



j089m5019a

Duct Bottom Plate (Right)

1. **Remove the ink mist collecting fan (right). (page 142 "Ink Mist Collecting Fan (Right)")**
2. **Remove the flow adjustment plates (outer plates [A] and inner plates [B]) and filter element [C].**

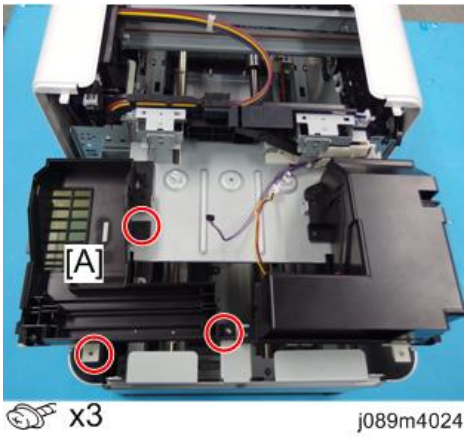


j089m5019c

Note

- Each part has a guide rib that engages with the guide groove on the duct bottom plate to prevent misalignment.

3. **Remove the duct bottom plate (right) [A].**

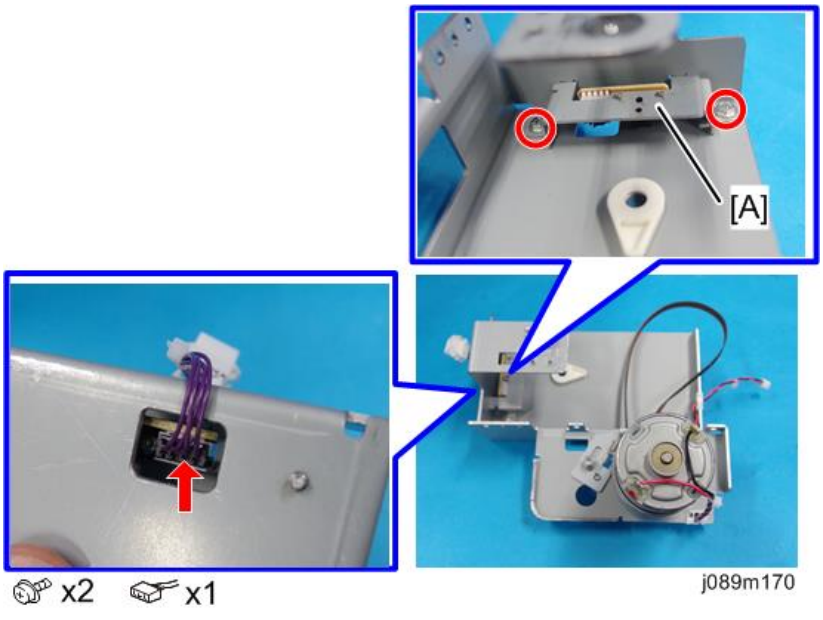


j089m4024

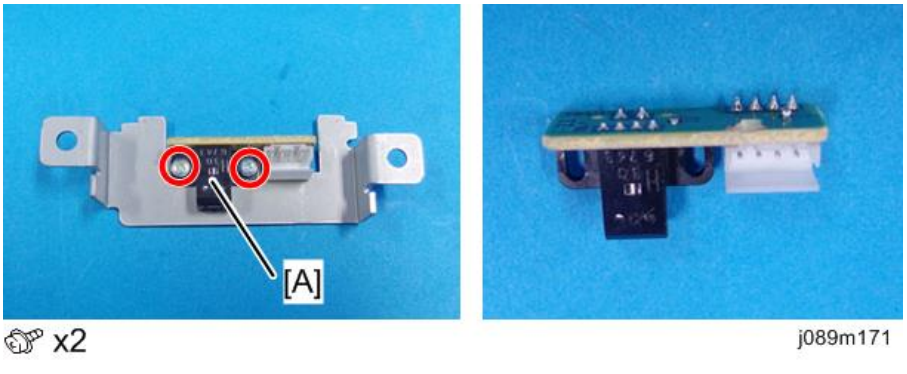
Sensors, Switches

Vertical Encoder Sensor

1. Remove the vertical encoder wheel. (page 101 "Vertical Encoder Wheel")
2. Remove the vertical encoder sensor unit [A].



3. Remove the vertical encoder sensor [A].



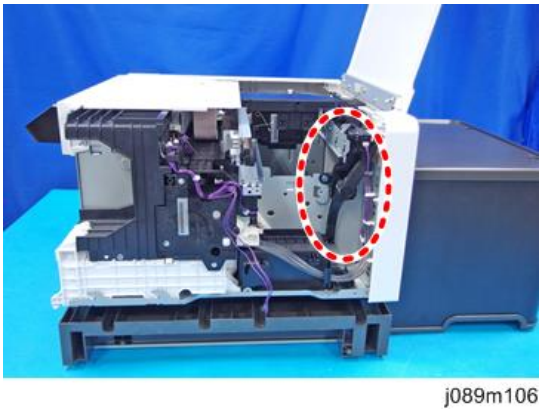
Ink Level Sensor

1. Remove the maintenance unit. (page 87 "Maintenance Unit")

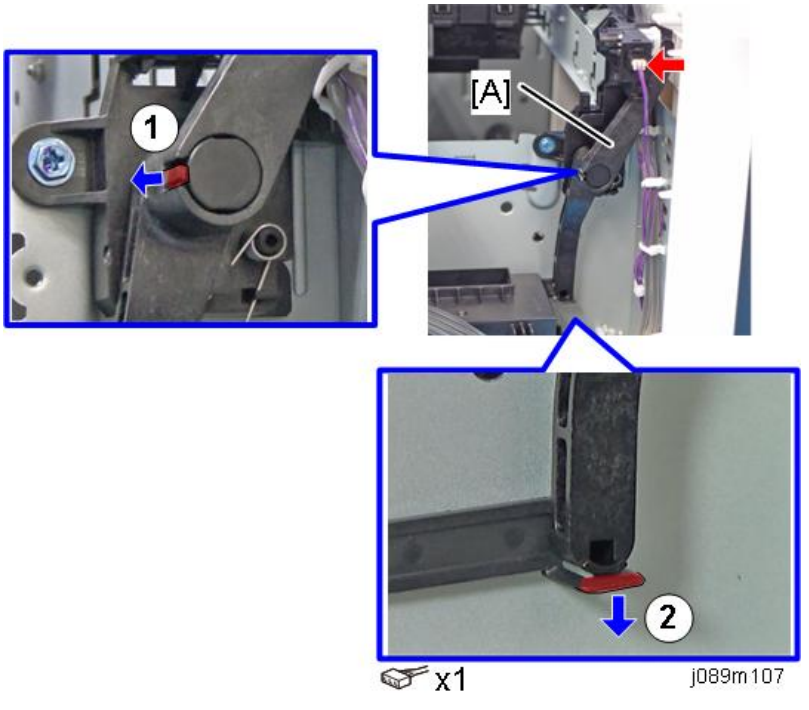
2. Release the hooks [1] [2] and remove the air purge lever [A].

Important

- Be careful not to damage the hook [1]. It can break easily.



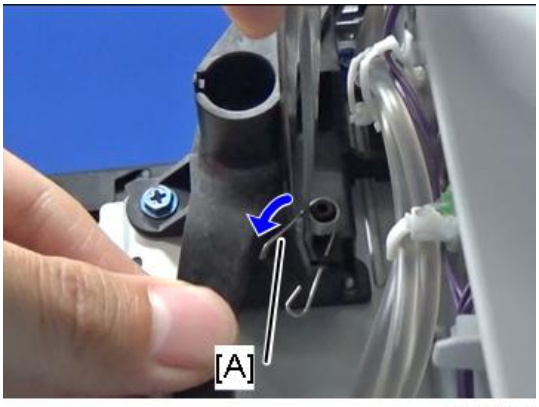
j089m106



j089m107

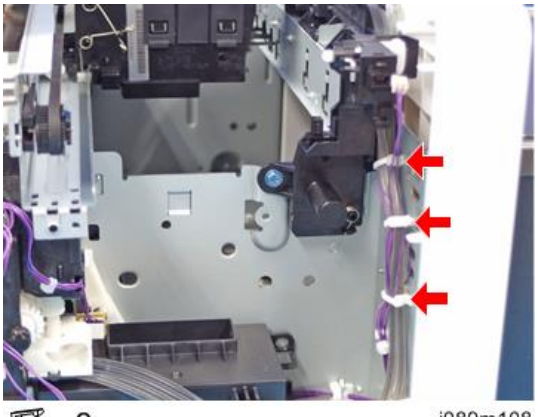
Note

- When attaching the air purge lever, lower the spring [A].



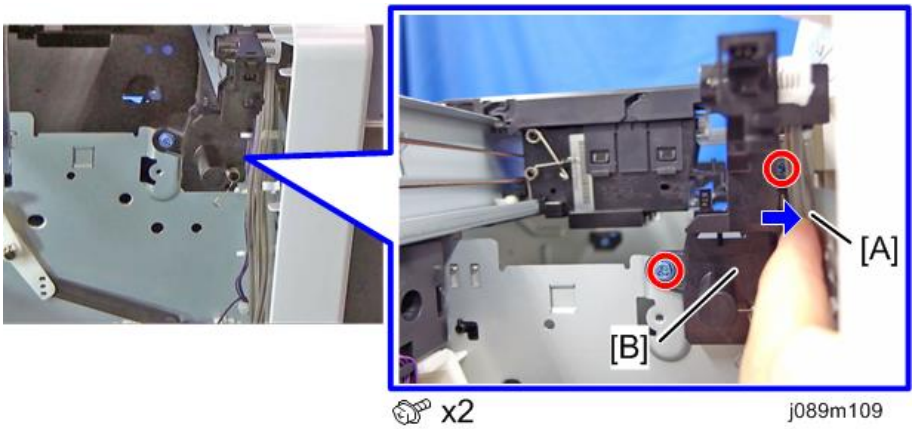
j089m138

3. **Release the 3 clamps.**



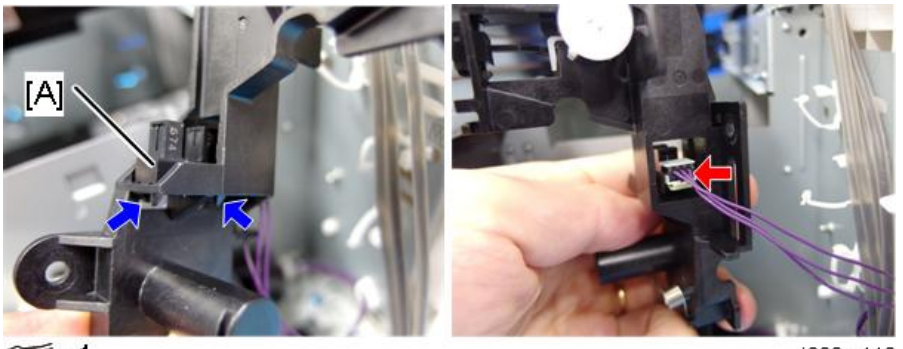
x3 j089m108

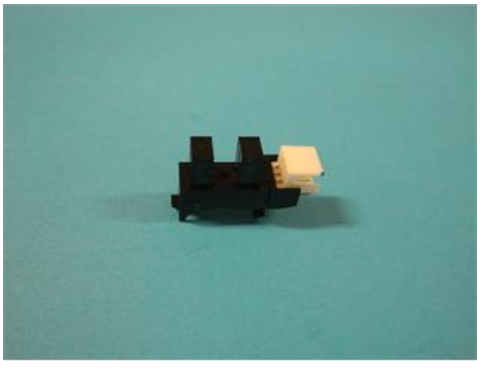
4. **Press the ink tubes [A] to expose the screw holes, remove the screws, and remove the air purge unit [B].**



x2 j089m109

5. Remove the ink level sensor [A].

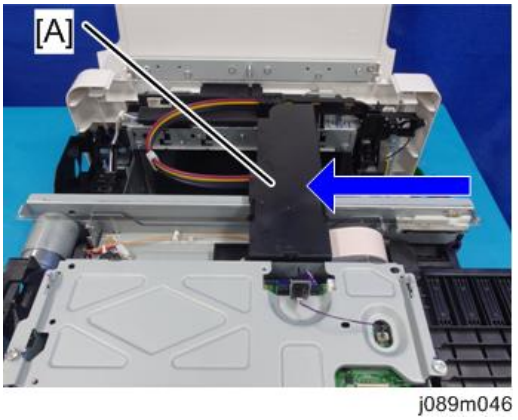




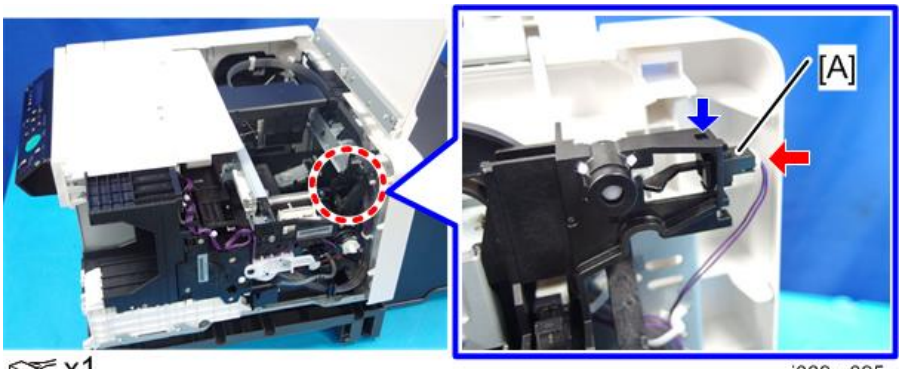
j0271108

Air Purge Detection Switch

1. Unlock the carriage [A] and push it to the center. (page 87 "Maintenance Unit")



2. Remove the air purge detection switch [A].



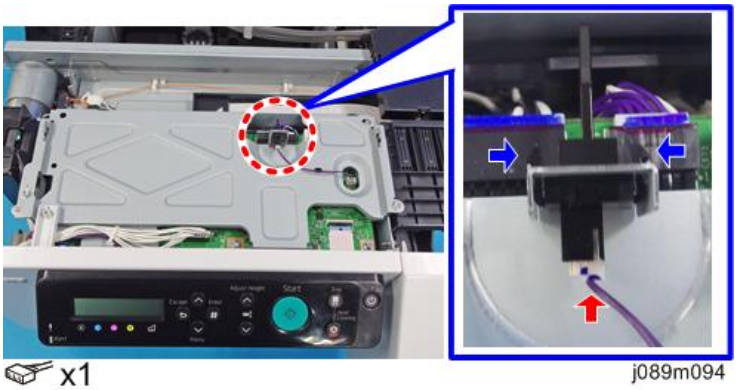
x1

j089m095

j0271177

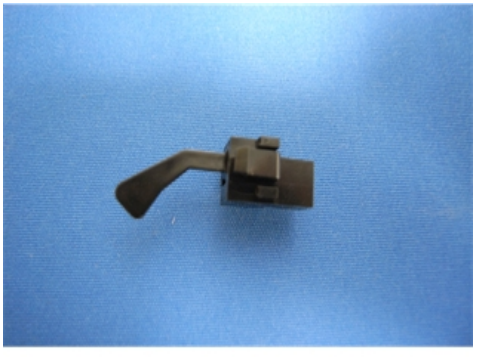
Top Cover Switch

1. Remove the canopy cover. (page 68 "Canopy Cover")
2. Remove the top cover switch.



x1

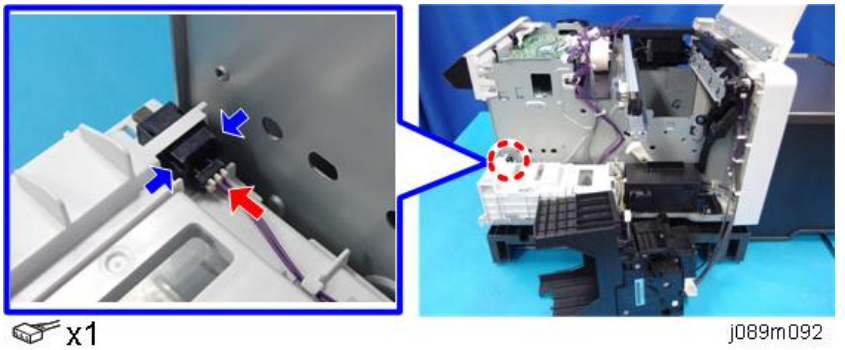
j089m094



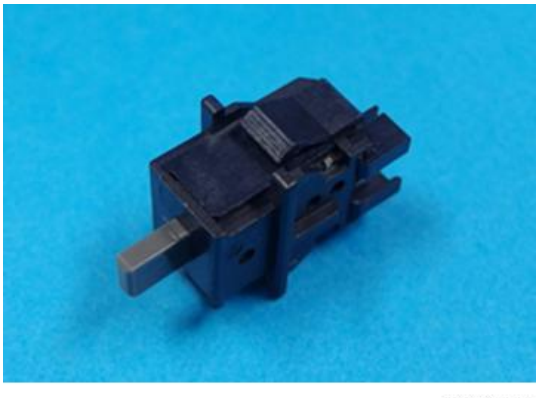
j0271177

Front Right Cover Switch

1. Remove the ink supply unit. (page 160 "Ink Supply Unit")
2. Remove the front right cover switch.



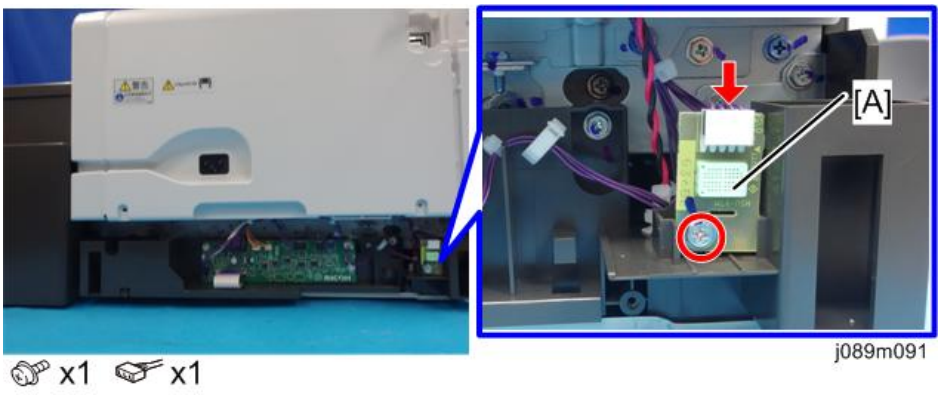
j089m092



j089m093

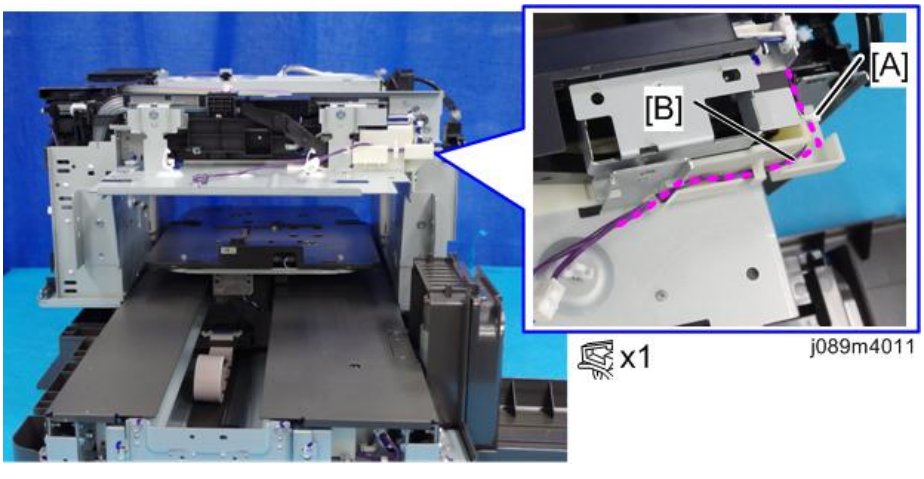
Temperature/Humidity Sensor

1. Remove the left lower cover. (page 66 "Left Lower Cover")
2. Remove the temperature/humidity sensor [A].

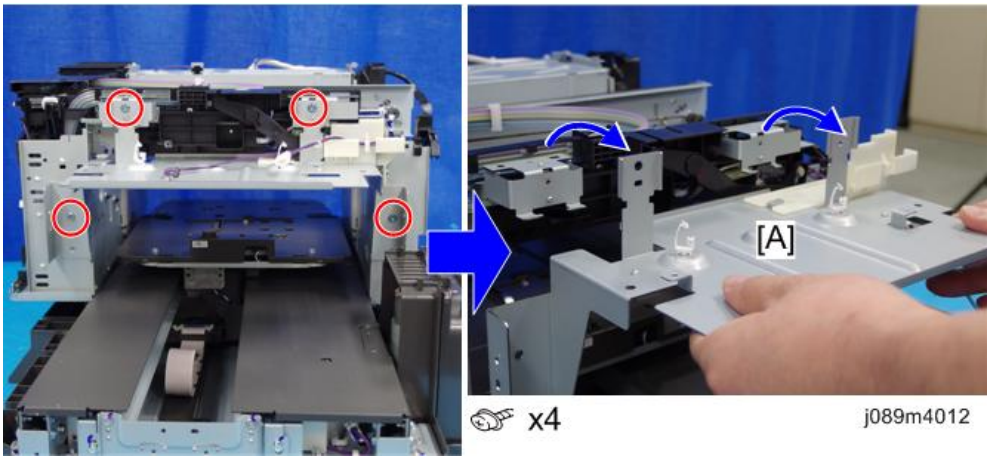


Interlock Switch

1. Remove the rear transport cover. (page 75 "Rear Transport Cover")
2. Remove the rear cover (right). (page 64 "Rear Cover (Right)")
3. Remove the rear cover (left). (page 67 "Rear Cover (Left)")
4. Release the clamp [A], and release the harness [B] from the harness guides.



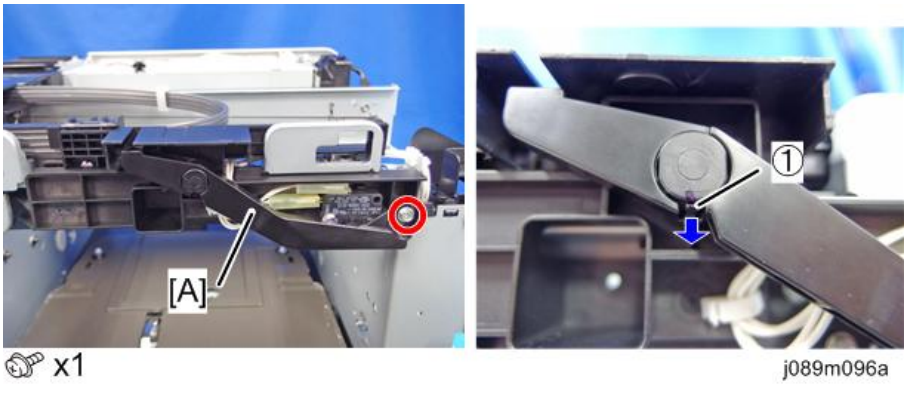
5. Remove the fan unit base [A].



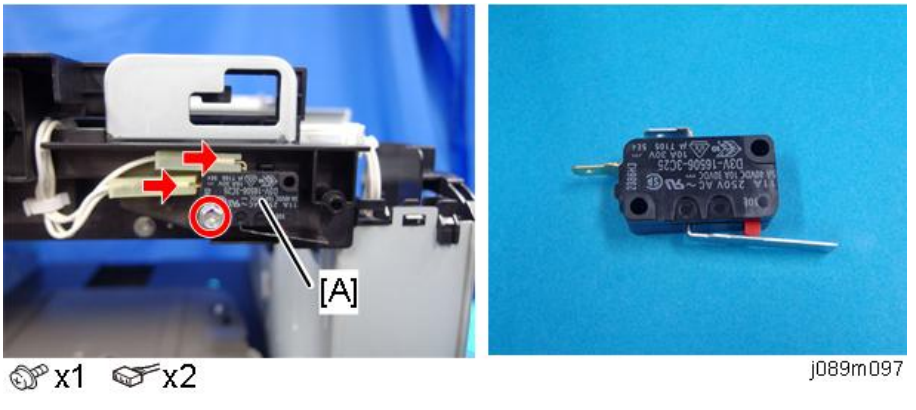
6. Remove the crank [A].

Important

- Be careful not to damage the hook [1]. It can break easily.



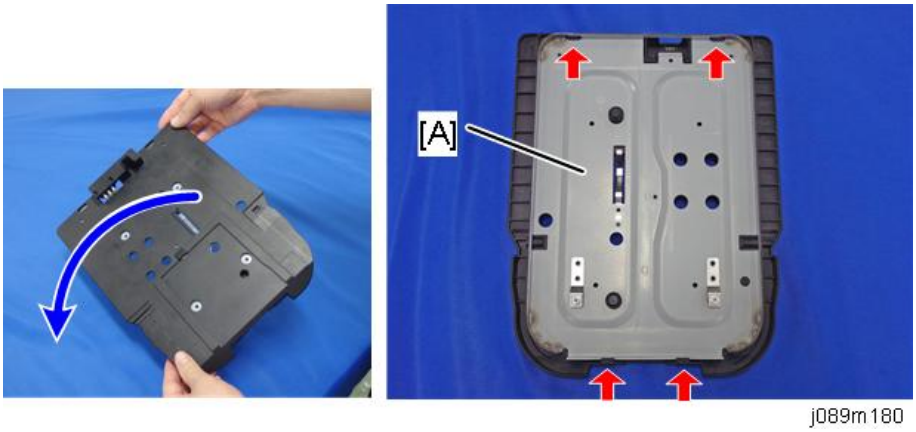
7. Remove the interlock switch [A].



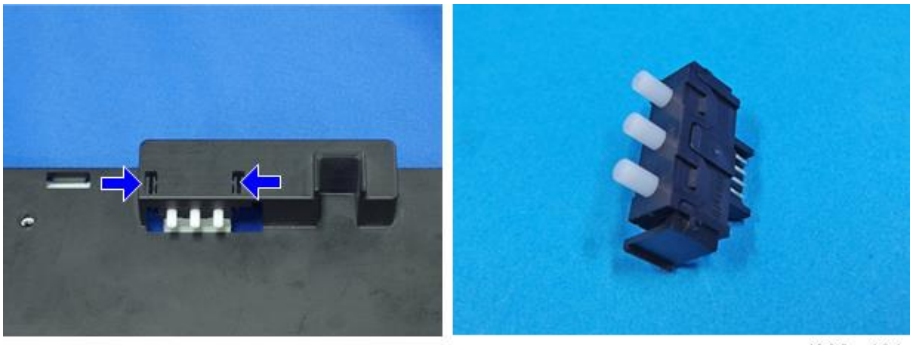
Cassette Size Sensor

1. Remove the cassette stand. (page 91 "Cassette Stand")
2. Remove 3 screws.

3. Release the 4 tabs and remove the back cover. [A].



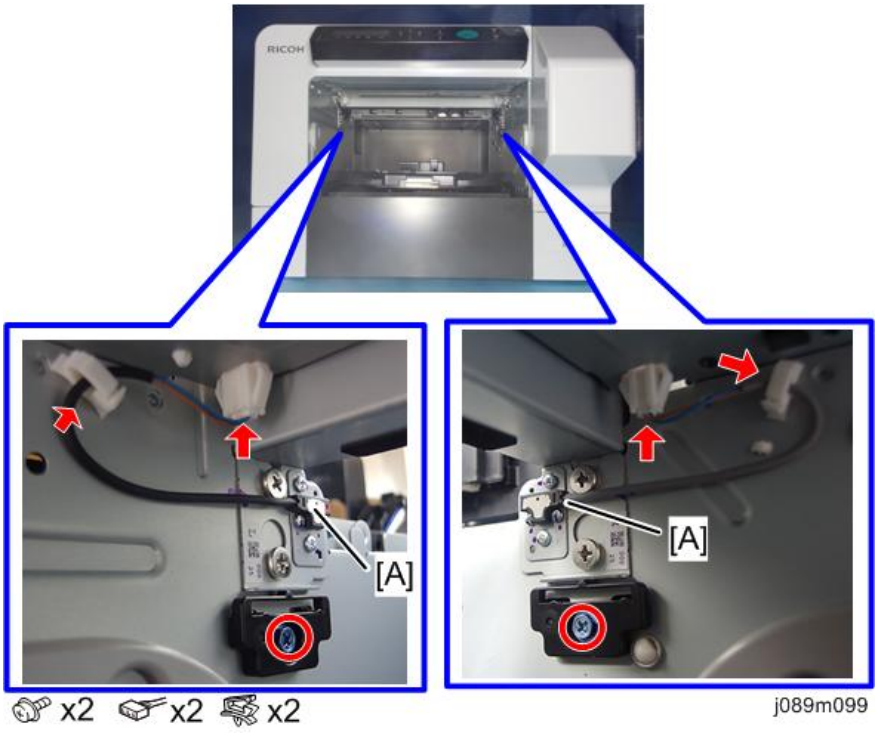
4. **Remove the cassette size sensor.**



j089m181

Height Sensor

1. **Remove the height sensors [A].**

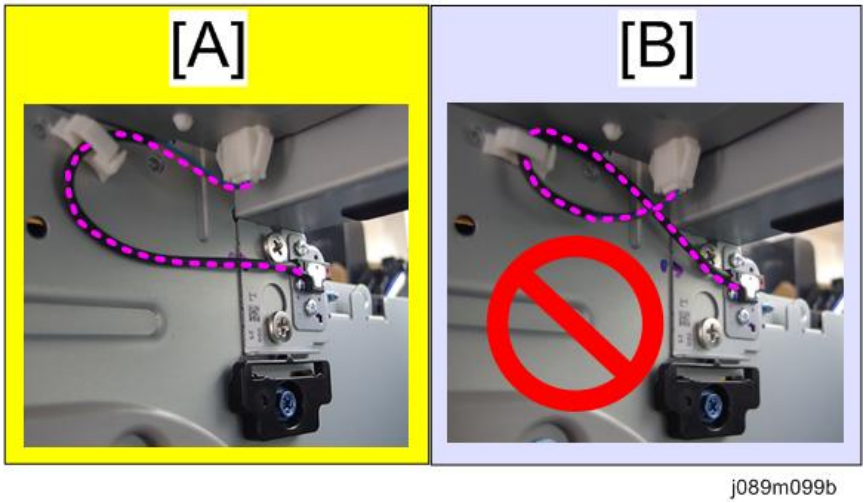


j089m099

j089m100

Note

- When you attach the height sensor, do not cross the harness over itself. If you do, the harness may get caught and be broken when the cassette cover is inserted.
  [A]: OK
  [B]: Not OK

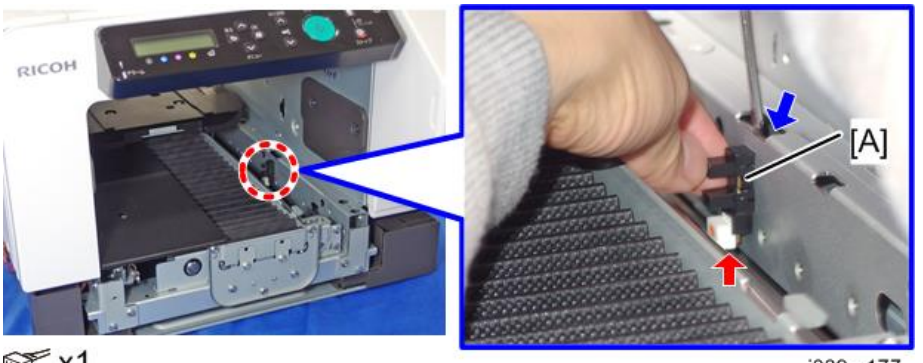


j089m099b

Cassette Carriage HP Sensor (Front)

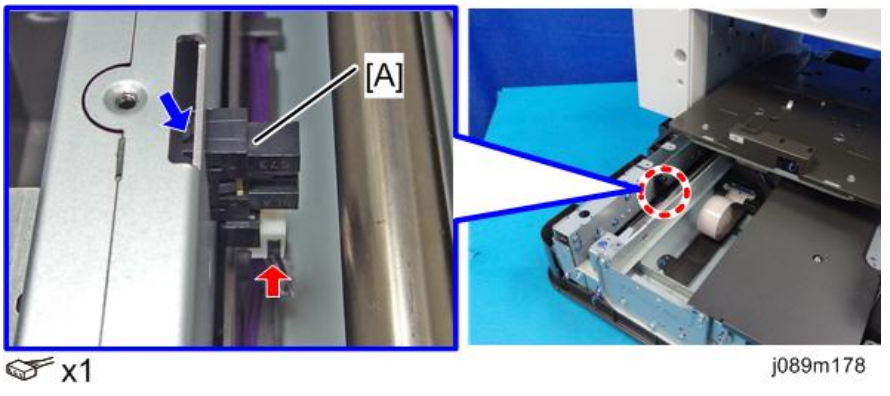
1. **Remove the right guide rail cover. (page 77 "Right Guide Rail Cover")**

2. Remove the cassette carriage HP sensor (front) [A].



Cassette Carriage HP Sensor (Rear)

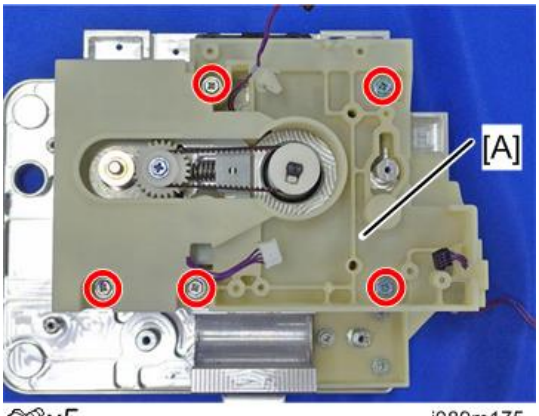
1. Remove the right guide rail cover. (page 77 "Right Guide Rail Cover")
2. Remove the cassette carriage HP sensor (rear) [A].



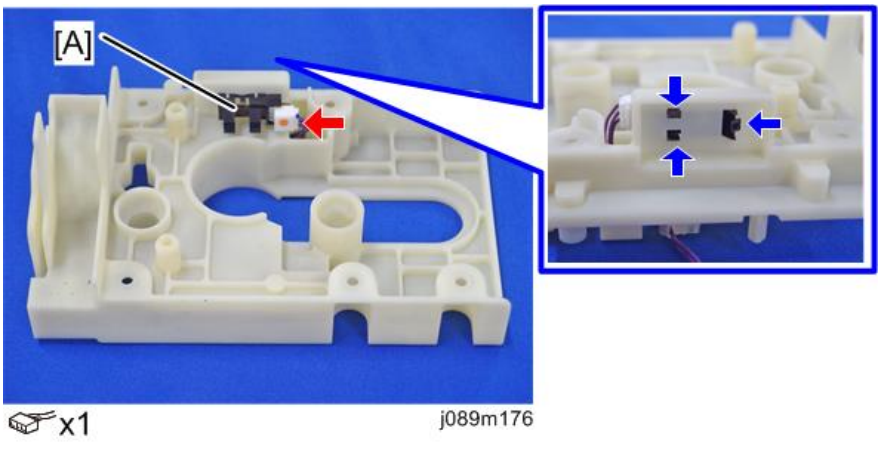
Lift Tray HP Sensor

1. Remove the lift board. (page 120 "Lift Board")

2. **Remove the lift board bracket [A].**



3. **Remove the lift tray HP sensor [A] on the back of the bracket.**



Carriage Unit

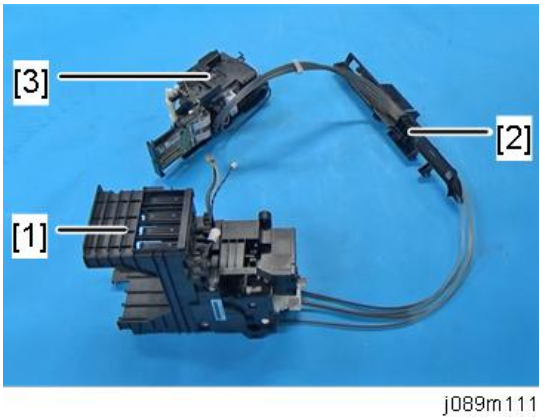
Removing the Carriage Unit

The carriage unit contains the following parts:

1. Ink Supply Unit (page 160 "Ink Supply Unit")
2. Ink Tube Guide (page 165 "Ink Tube Guide")
3. Carriage (page 166 "Carriage")

Each unit is connected by ink tubes.

To remove the carriage unit, remove in order of 1, 2 and 3.

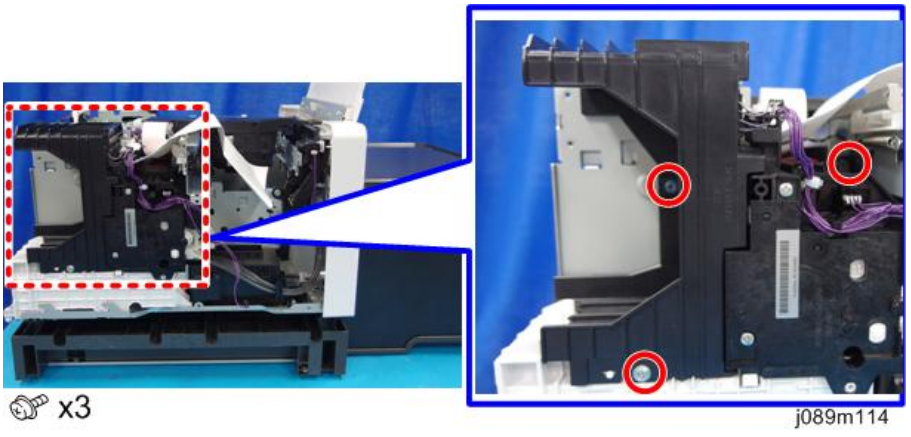


j089m111

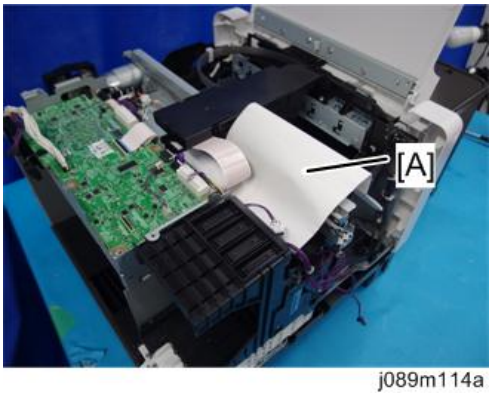
Ink Supply Unit

1. **Remove the CTL board cover. (page 113 "Printer Engine CTL Board")**
2. **Remove the maintenance unit. (page 87 "Maintenance Unit")**

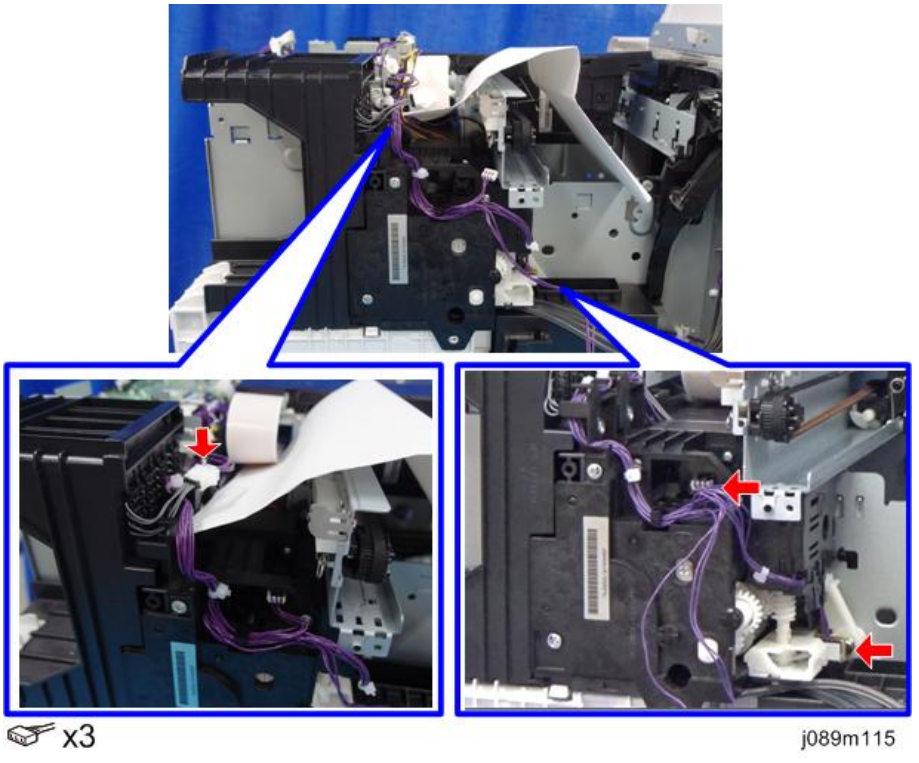
3. **Remove the screws of the ink supply unit.**



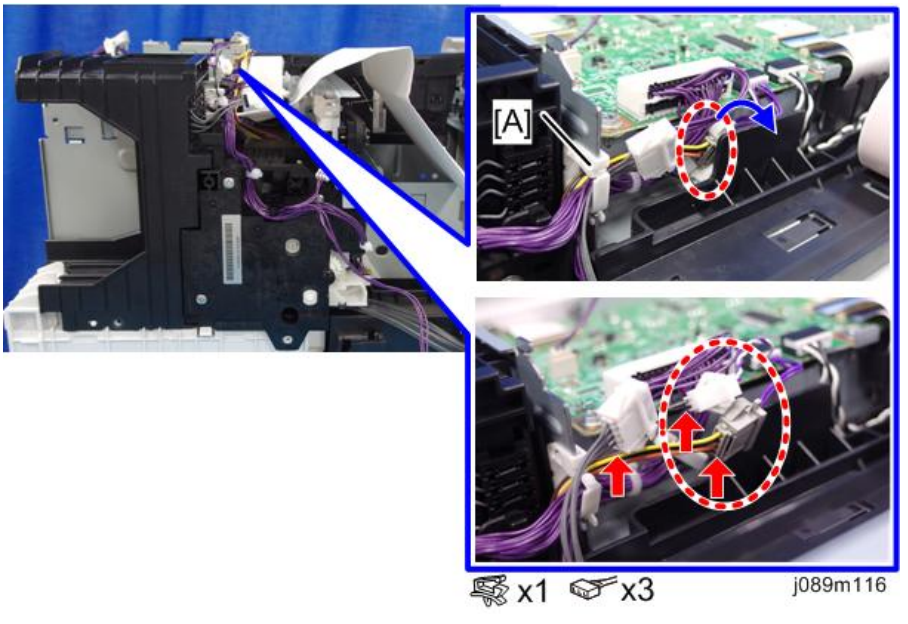
4. **Cover the right side of the horizontal encoder strip with paper [A] to protect the strip from staining.**



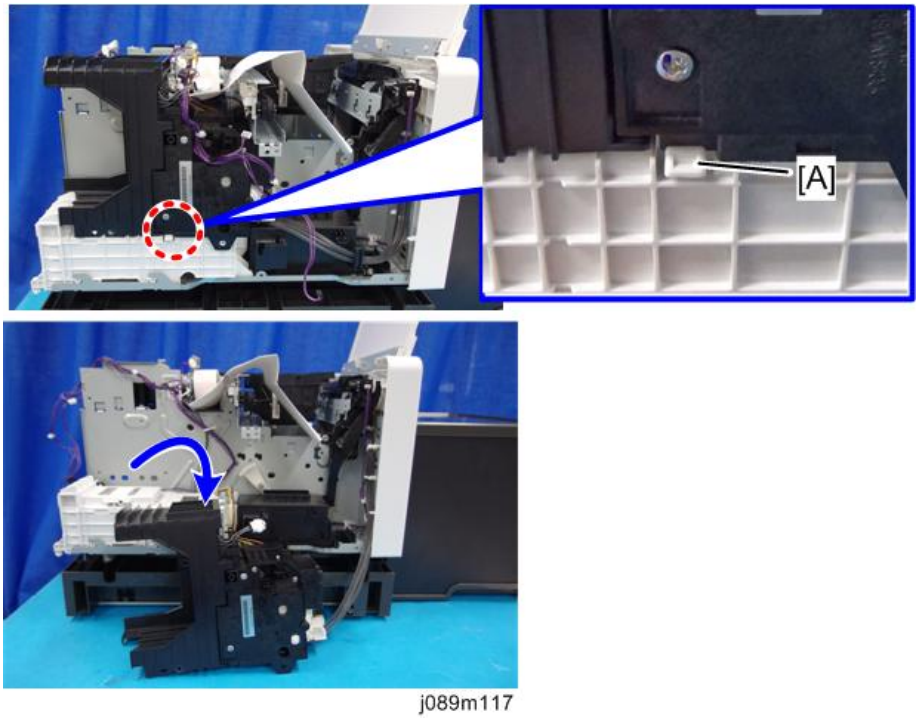
5. **Disconnect the connectors, and then remove the routed harness.**



6. **Release the clamp [A], pull out the 2 concealed connectors, and then remove them. Remove the exposed connector, too.**



7. **Release the tab [A] and remove the ink supply unit. (Do not disconnect the ink tubes.)**

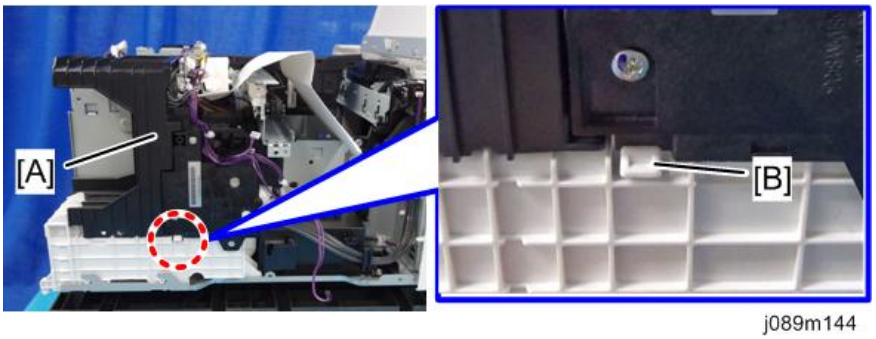


j089m117

Installing the Ink Supply Unit

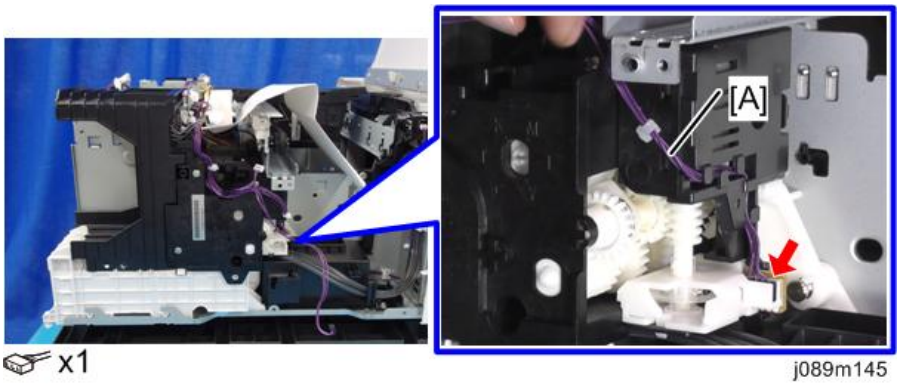
When installing the ink supply unit, do the following procedure.

1. **Attach the ink supply unit [A] using hook [B]. (Do not secure with screws at this time.)**

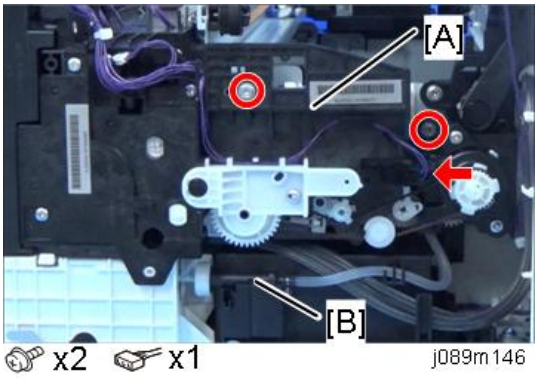


j089m144

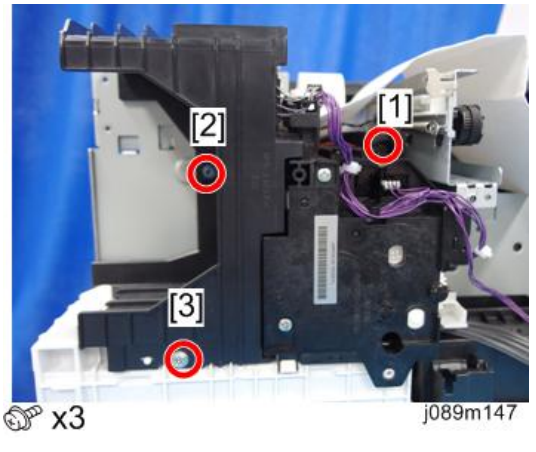
2. Connect the right side connector and route the harness [A].



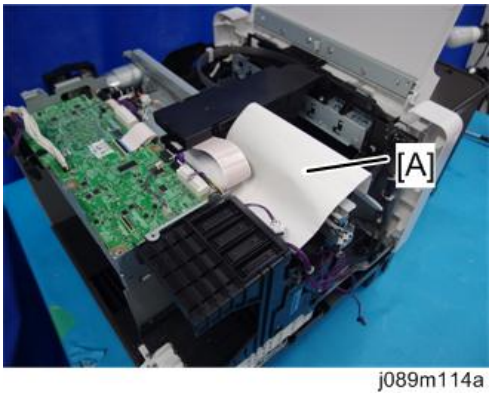
3. Attach the maintenance unit [A] and the injector [B].



4. Tighten the 3 screws of the ink supply unit in order of 1, 2 and 3.



5. Cover the right side of the horizontal encoder strip with paper [A] to protect the strip from staining.

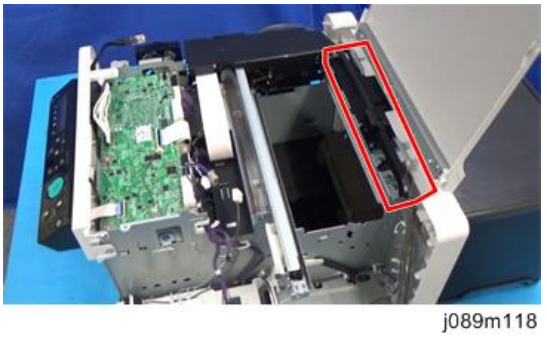


j089m114a

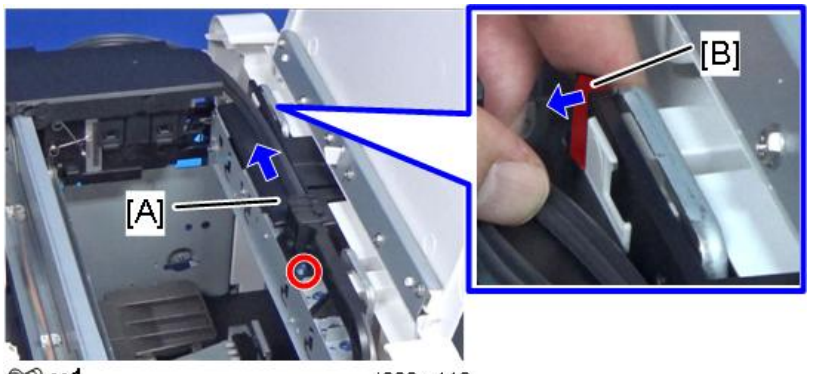
6. Connect all the connectors of the ink supply unit and route the harnesses.
7. Remove the paper that you put in step 5 and attach the CTL board cover. (**page 113 "Printer Engine CTL Board"**)

Ink Tube Guide

1. Remove the right ink sump. (**page 89 "Right Ink Sump"**)
2. Remove the air purge unit. (**page 147 "Ink Level Sensor"**)
3. Slide the ink tube guide [A], release the tab [B], and then remove the guide.

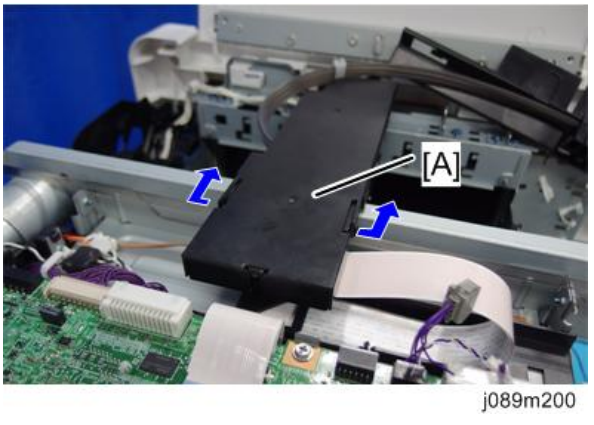


j089m118

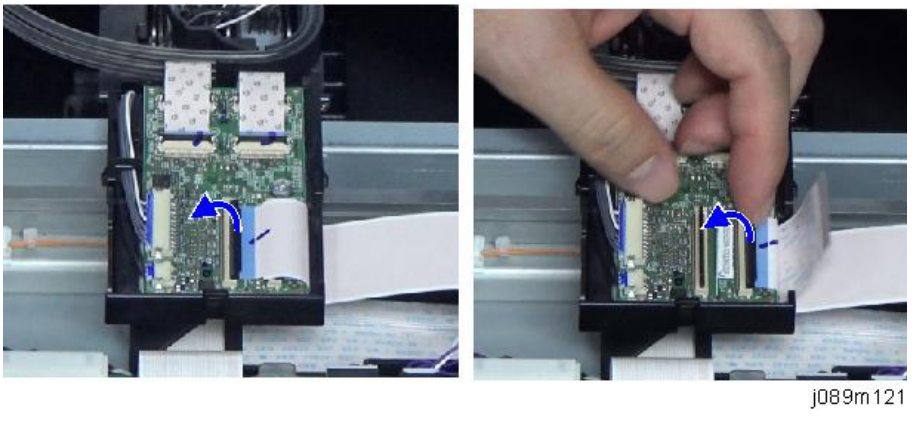


Carriage

1. Remove the ink tube guide. (page 165 "Ink Tube Guide")
2. Remove the carriage top cover [A].



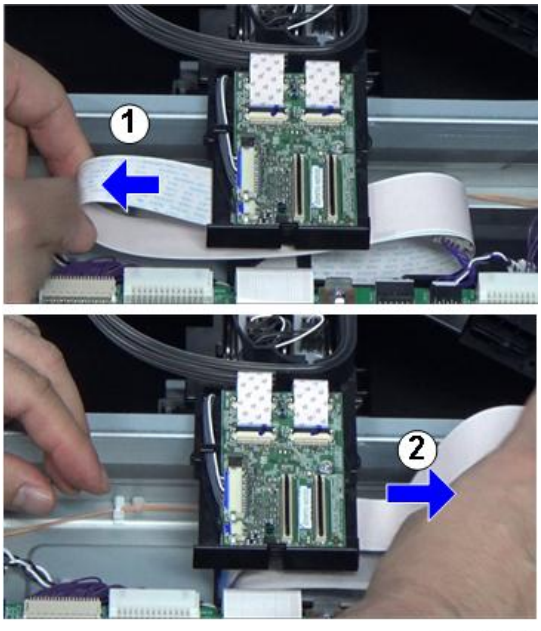
3. Release the locks and disconnect the 2 FFCs.



4. **Remove the FFC holder [A].**

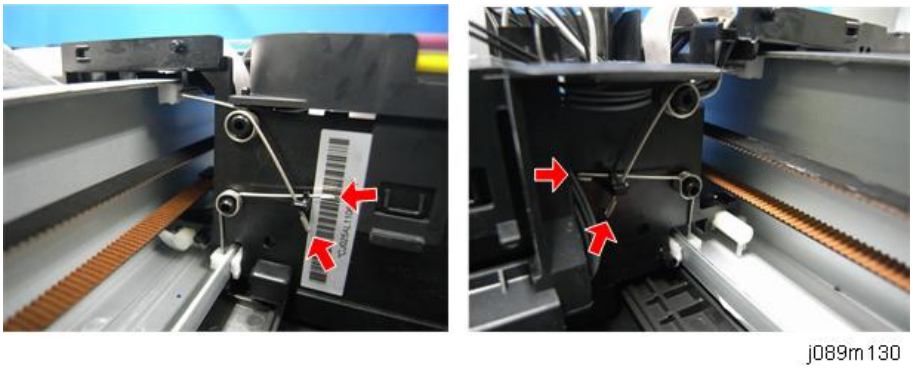
j089m122

5. **Pull the FFCs to the left side. Then pull the FFCs to the right side to remove them.**



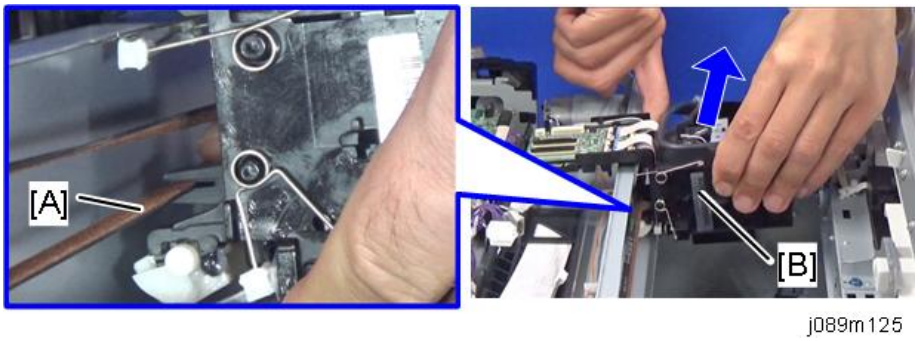
j089m123

6. **Unlock the springs on both sides of the carriage.**



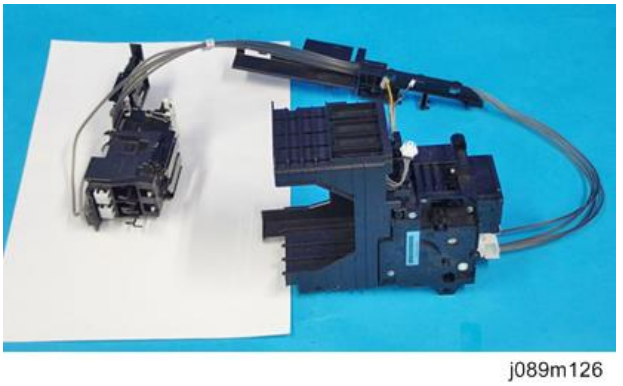
j089m130

7. **Release the carriage [B] from the timing belt [A].**



j089m125

8. **Place the carriage on a contamination protection mat to prevent ink stains.**



j089m126

Installing the Carriage Unit

1. **Engage the carriage with the timing belt.**

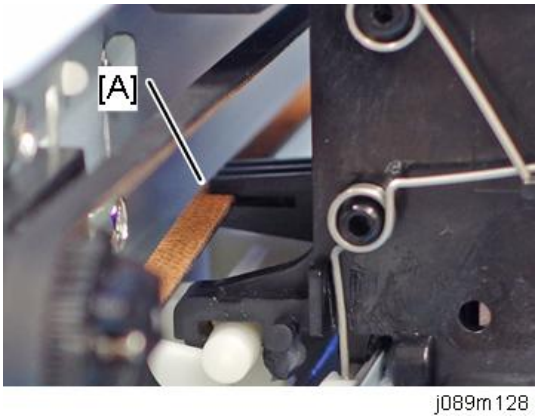
   If the carriage is insufficiently engaged with the timing belt, the movement of the carriage becomes disordered, resulting in problems such as a disproportionately scaled or blurred printed image.

   - Correct engagement

j089m127

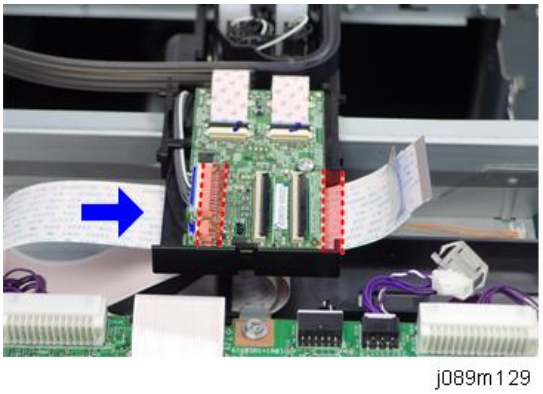
- Incorrect engagement (likely to cause a malfunction)

  The belt protrudes from the tip of the engaged part [A].



j089m128

2. **Lock the springs on both sides of the carriage.**
3. **Route the 2 FFCs through the 2 cable guides at the back of the carriage.**



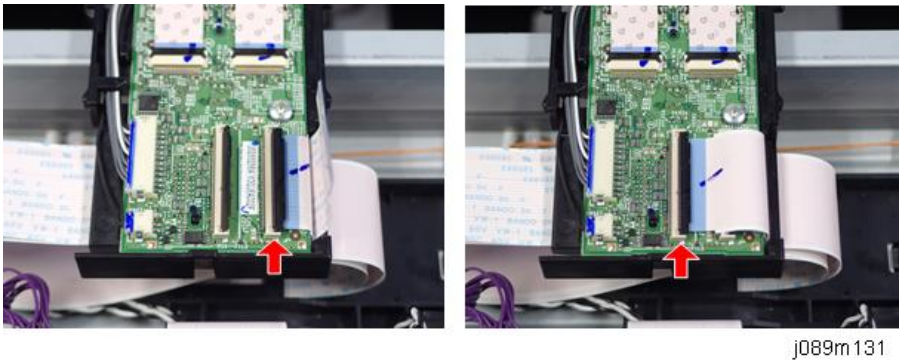
j089m129

Note

- If the FFCs snag in the middle of insertion, it helps to route them through with a piece of thick paper [A].

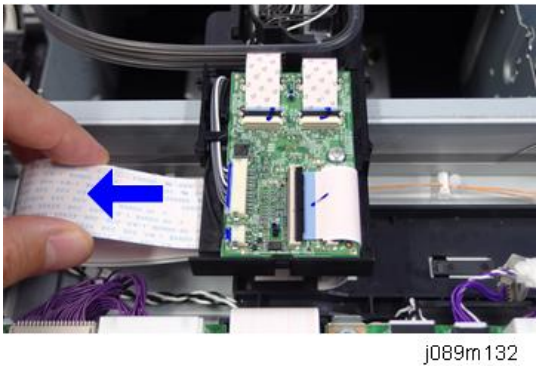
j089m134

4. **Connect the 2 FFCs to the connector.**



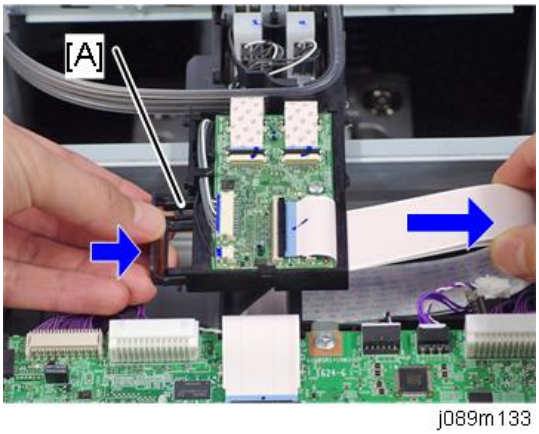
j089m131

5. **To prevent the FFCs from becoming too slack, pull them to the left.**



j089m132

6. **Then pull the FFCs to the right to take up the slack, and attach the FFC holder [A].**



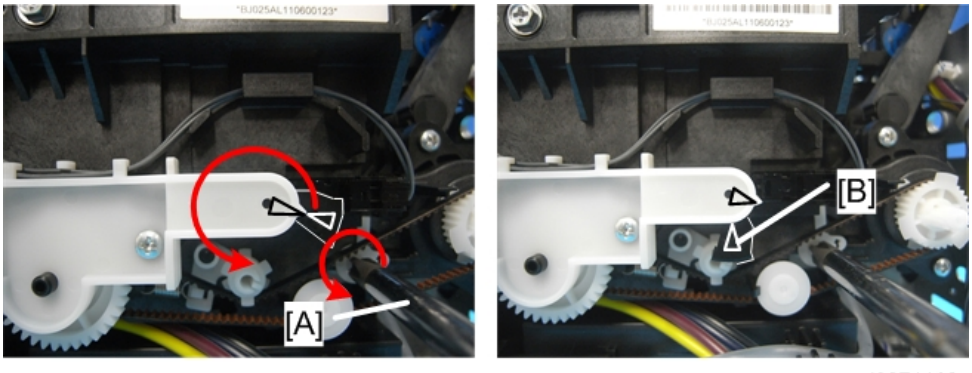
j089m133

7. **Attach the carriage top cover.**

Locking the Carriage

Make sure the carriage is locked before re-attaching the machine covers.

1. **Turn the screwdriver [A] counter-clockwise to rotate the triangle.**
2. **Stop rotating when the triangle is at the lock position [B].**



j0271162

Note

- Never rotate the screwdriver clockwise. It may cause a malfunction.

After Replacing the Carriage Unit

1. **With the machine OFF, open the front right cover.**

   Important

   - The front right cover must be open before you switch the machine on.
   - With the front right cover open, the printer will not perform auto maintenance (this can waste ink).

2. **Switch the machine on.**
3. **Enter the SP mode.**
4. **Select "Engine Maint."> [#Enter].**
5. **Enter "3009002"> [#Enter].**
6. **Press [#Enter].**
7. **Press [#Enter].**
8. **Exit the SP mode.**
9. **Switch the machine off.**
10. **Replace the four ink cartridges with new ones.**

    If any ink remains in the removed ink cartridge, you can use it again by re-installing it.

11. **Replace the ink collector unit (new one provided).**

    Important

    - You must replace the ink collector unit with the ones provided.
    - If you do not replace them, the machine will issue an error and prompt you to install the new ink collector unit.

12. **After you have installed the new ink cartridges and the ink collector unit, close the front right cover.**
13. **Switch the machine on.**
14. **Wait for the machine to fill the print head ink tanks. This may take about 7 minutes.**
15. **After filling the print head ink tanks, check and adjust the following carriage unit settings.**
    1. Do the "Nozzle Check". (page 175 "Nozzle Check")
    2. Do the "Head Position". (page 179 "Head Position")
    3. Do the "Registration". (page 181 "Registration")
16. **Press [▼/Menu], select "List/Test Print"> [#Enter].**
17. **Select "Color Demo Page">[#Enter].**
18. **Print the color fish pattern.**
19. **Select "Config. Page">[#Enter].**

20. **Confirm that all the settings have been initialized.**
21. **Press [Escape] until you see the "Ready" message.**

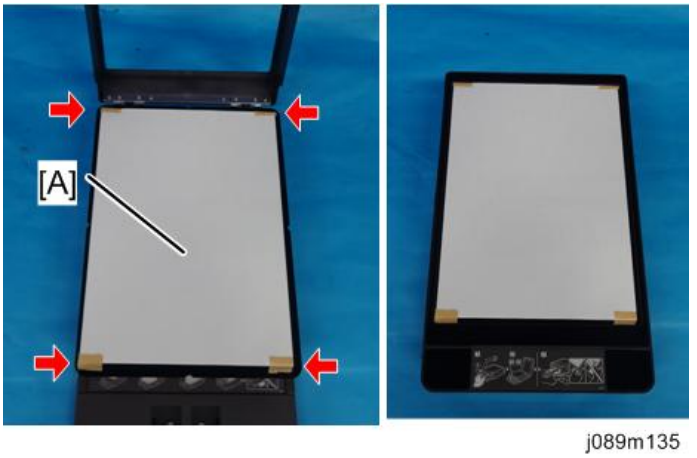
    This completes the carriage replacement procedure.
22. **Switch the machine off.**

Print Head Cleaning and Adjustment

You can see the image adjustment features in the "Maintenance" menu of the machine operation panel.

Preparing for Test Printing

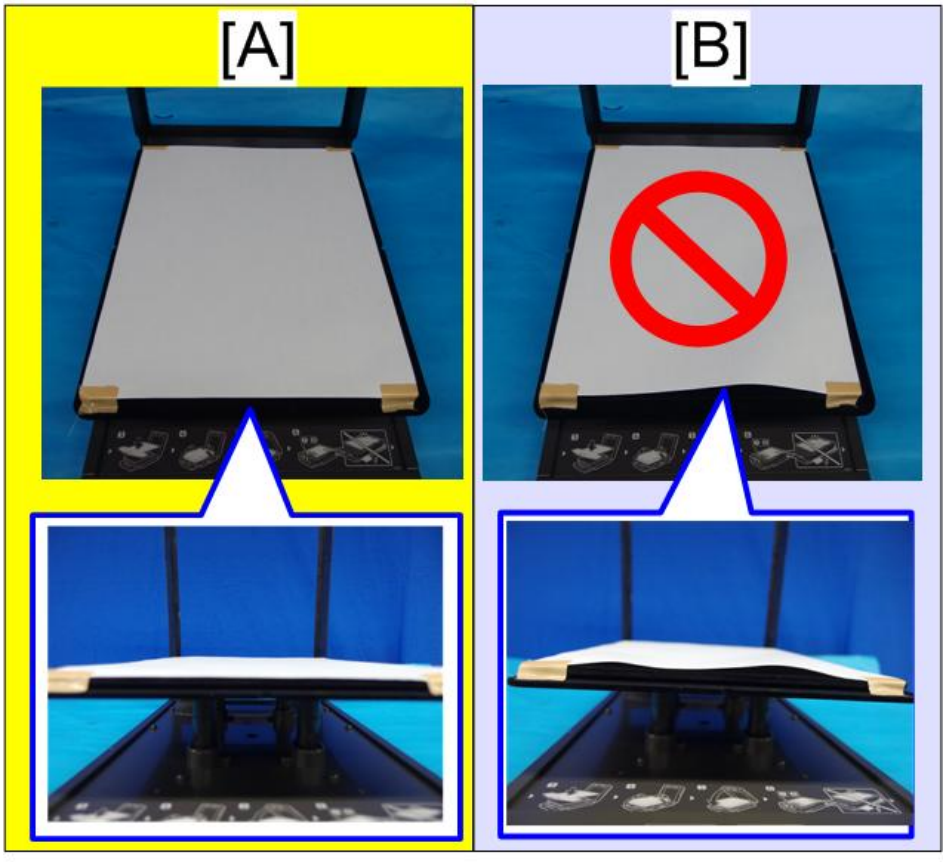
1. **Place a A4 size piece of printing media [A] onto the cassette, and then fix the 4 corners with tape. (See note below)**



j089m135

Note

- Fix the printing media so that it does not raise or curl up, otherwise a height sensor error will occur.



- [A]: Fix correctly (the printing media not raised).
- [B]: Not fix correctly (the printing media is raised).

2. **Attach the cassette to the printer.**
3. **Make sure the machine is ready to print.**

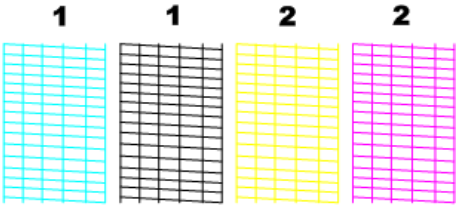
Nozzle Check

Do this procedure to print the Nozzle Check test pattern. Look at the pattern to determine if the printer is operating properly or not.

1. **Prepare for test printing. (page 174 "Preparing for Test Printing")**
2. **Press [▼/Menu], select "Maintenance", and press [#Enter].**
3. **Select "Nozzle Check" and press [#Enter]. The Nozzle Check pattern prints.**

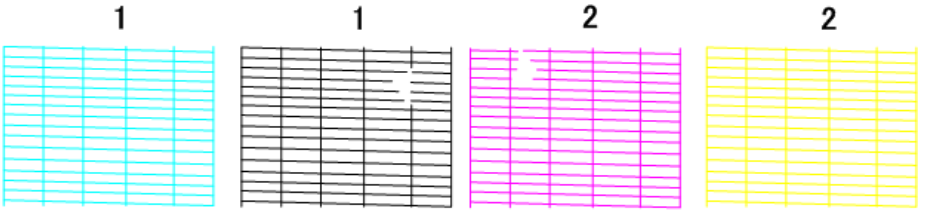
4. **Examine the Nozzle Check pattern for broken lines or white patches. The first sample below is normal, the second sample shows white patches.**

Normal Pattern



j0270024

Abnormal Pattern



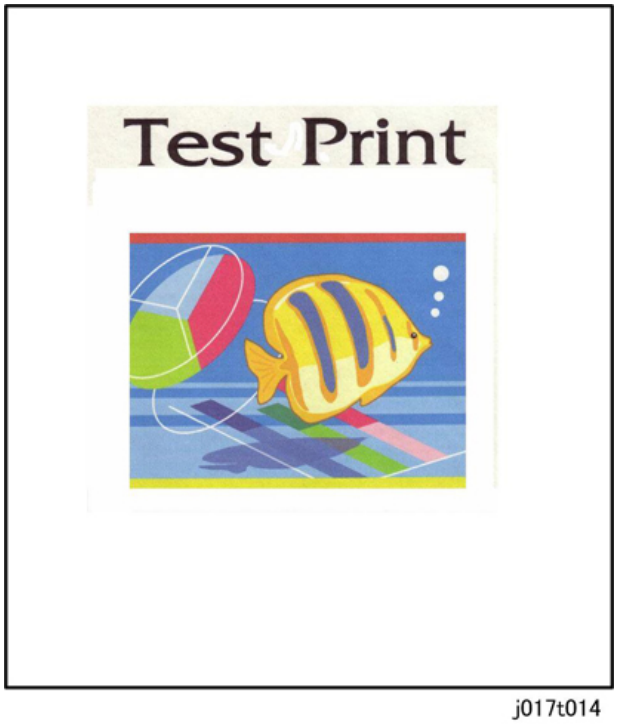
j0270025

Color Demo Print

The color demo (Test Print) is printed from the printer operation panel to demonstrate the color quality of the printer.

1. **Prepare for test printing. (page 174 "Preparing for Test Printing")**
2. **At the "Ready" prompt, press [▼/Menu] and select "List/Test Print" and press [#Enter].**
3. **Select "Color Demo Page" and press [#Enter].**
4. **Press [Start].**

   The color demo pattern prints.



j017t014

Print Head Cleaning

If the ink cartridge is empty, replace it instead of doing print head cleaning. After an ink cartridge is replaced, a print head cleaning will be done automatically.

Important

- Print head cleaning consumes ink. Do this procedure only if you see a problem in the Nozzle Check test pattern.

1. Prepare for test printing. (page 174 "Preparing for Test Printing")
2. Do the "Nozzle Check" to determine which nozzles are blocked. (page 175 "Nozzle Check")
3. Select "Head-cleaning" and press [#Enter].
4. Select the print heads to be cleaned: "All Heads" (all print heads), "Head 1" (Cyan/Black), "Head 2" (Yellow/Magenta) > [#Enter] .

   Important

   - Do not try to start another procedure and never switch the machine off while head cleaning is in progress.
5. [Escape] > To the previous level.

6. **Prepare for test printing. (page 174 "Preparing for Test Printing")**
7. **Print another Nozzle Check test pattern and check the result.**
8. **If the Nozzle Check test pattern is normal, the procedure is finished.**
   -or-

   If there is still a problem in the Nozzle Check pattern, repeat this procedure and print another Nozzle Check pattern. Do the procedure again if the results are still not satisfactory.

   If three consecutive Nozzle Check pattern prints and head-cleanings do not solve the problem, then flush the print heads. (See the procedure below.)

   Important

   - **While head cleaning is in progress, do not try to start another procedure and never switch the machine off.**

Print Head Flushing

Flushing the print heads consumes much more ink than print head cleaning. Do not flush the print heads until you have done the print head cleaning procedure (see above) at least three times.

1. **Prepare for test printing. (page 174 "Preparing for Test Printing")**
2. **Press [▼/Menu], select "Maintenance", and press [#Enter].**
3. **Select "Head-flushing" and press [#Enter].**
4. **Select the print heads to be flushed: "All Heads" (all print heads), "Head 1" (Cyan/Black), "Head 2" (Yellow/Magenta) > [#Enter].**

   Do not start any other operation until cleaning stops.

   Important

   - **While head cleaning is in progress, do not try to start another procedure and never switch the machine off.**
5. **[Escape] > to return to the previous level.**
6. **Print another Nozzle Check test pattern and check the result.**
7. **If the Nozzle Check test pattern is normal, the procedure is finished.**
   - If there is still a problem in the Nozzle Check pattern, allow the machine to remain idle for 10 minutes and repeat the procedure.
   - If the problem persists, allow the machine to remain idle for 8 hours, and then flush the print heads again.

Head Position

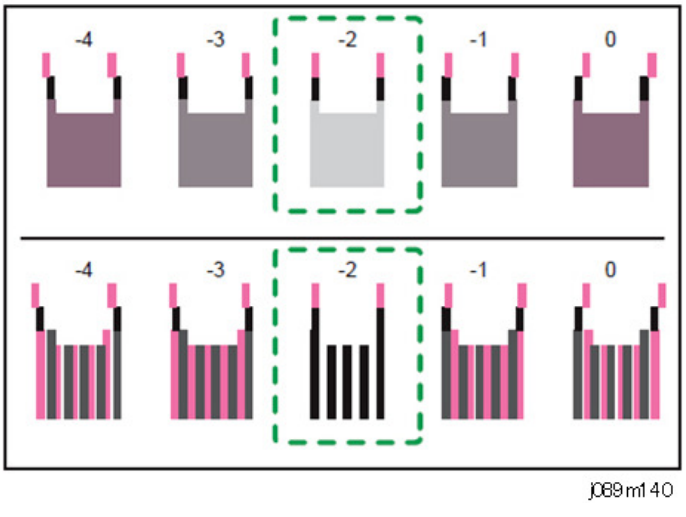
Adjusts the print head. Do this procedure if printed lines are vertically misaligned or printed colors are blurred.

To check adjustment values, print test patterns applying "Thick, Standard", "T-shirt Fine", "T-shirt Speed", "T-shirt Vivid" settings.

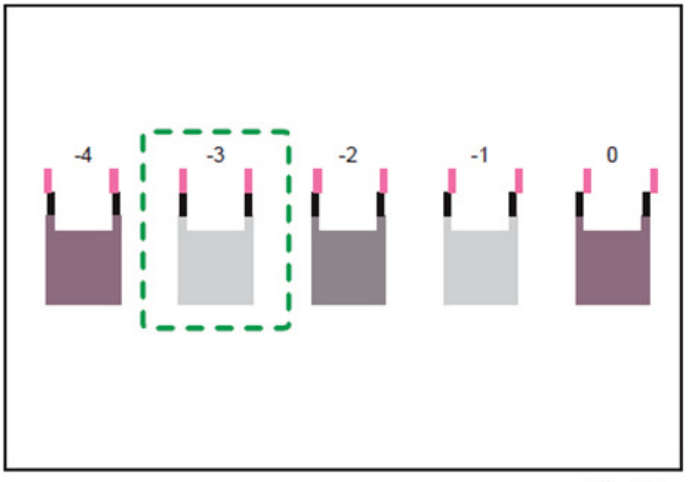
If there are several lines in the test pattern, check the adjustment values for each line, and adjust the print head positions. If the adjustment value is set to "0", adjustment is not necessary. Adjust all lines so their adjustment values indicate "0".

1. **Prepare for test printing. (page 174 "Preparing for Test Printing")**
2. **Press [▼/Menu], select "Maintenance" and press [#Enter].**
3. **Select "Head Position" and press [#Enter].**
4. **Select "Select "Pr. Test Pattern" and press [#Enter].**
5. **Select the target's resolutions: "Thick, Standard", "T-shirt Fine", "T-shirt Speed", or "T-shirt Vivid" and press [#Enter].**
6. **Press [Start].**

   A test pattern to adjust print head positions is printed.
7. **Look at the patterns and determine the adjustment value. In the following examples, -2 is the value.**
   1. Select the square that is faintest (closest to white).
   2. Select the square whose internal lines overlap to form a single color.

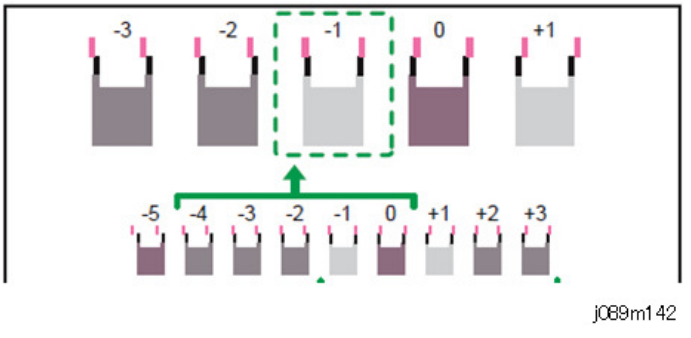


   3. If you cannot determine the adjustment value, select the square that is between the straightest lines. In this example, -3 is the value.



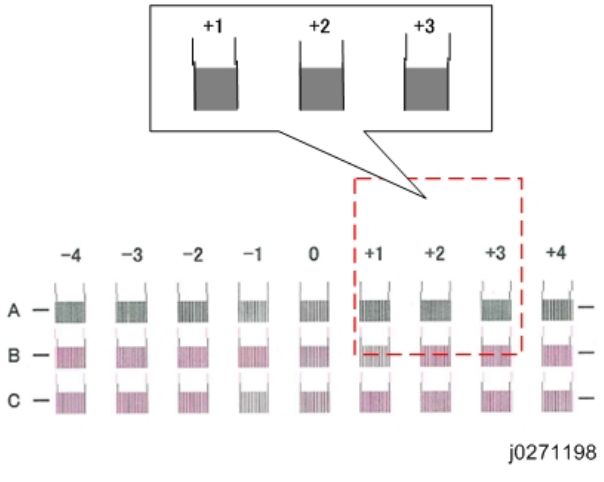
j089m141

4. If you still cannot determine the adjustment value, locate the square that is between adjacent squares whose lines form a symmetry. Adjacent squares can be one or two places either side (at positions ±1 or ±2). This illustration indicates an adjustment value that is set to "-1".



j089m142

- The pattern setting is read as a matrix value from the pattern. For example, if the best pattern is in column "+2", line "A", the entry for adjustment will be "A" then "+2"



j0271198

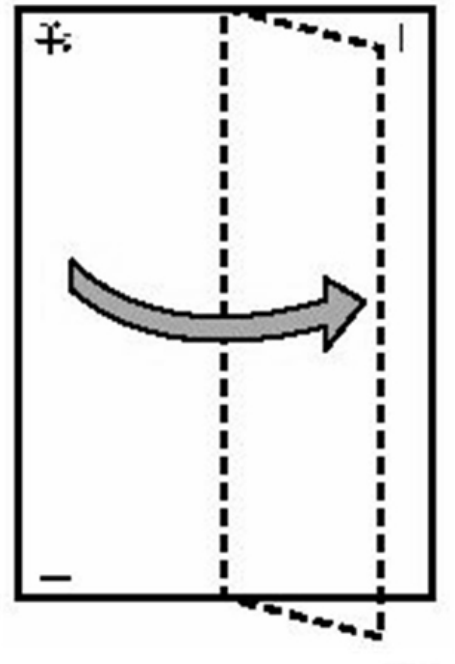
8. Select "Adjustment" and press [#Enter].
9. Select the same setting selected for "Pr. Test Pattern" in step 4 and press [#Enter].
10. Select the letter of the line that contains the best pattern noted in step 7 and press [#Enter].
11. Select the number of the column that contains the best pattern noted in step 7 and press [#Enter]. This completes the adjustment.
12. Press [Escape] to leave the Menu mode.

Registration

Do this procedure to adjust the print start position. The print start position is the point at the upper left corner of each sheet where printing begins.

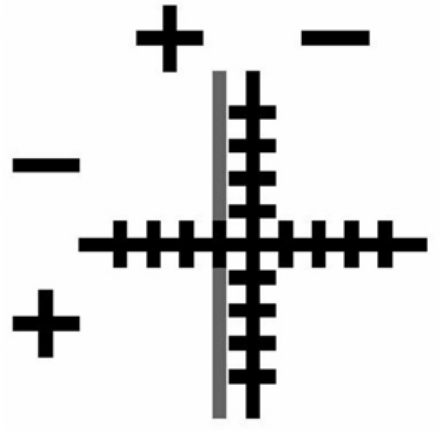
1. Prepare for test printing. (page 174 "Preparing for Test Printing")
2. Press [▼/Menu], select "Maintenance" and press [#Enter].
3. Select "Registration" and press [#Enter].
4. Select "Pr. Test Sheet" and press [#Enter].
5. Press [Start].

   The test pattern for Registration is printed.
6. Fold the printed sheet in half lengthwise as shown.



j017t011

7. **Hold the corner of the folded sheet in front of a light and look at the cross-pattern overlapping the single vertical line below.**
8. **Determine the 1st adjustment for the "Read Direction".**
   - The adjustment value in the "Read Direction" is the difference between the single vertical line and vertical line of the cross.
   - If the difference is one calibration mark on the "+" side, for example, the adjustment is +1.0.



j107t012

9. **Fold the sheet in half widthwise.**
10. **Determine the 2nd adjustment for the "Feed Direction". The value read after folding the sheet widthwise, is the adjustment value for the "Feed Direction".**
11. **Select "Adjustment" and press [#Enter].**
12. **Enter the adjustment for the "Read Direction" determined in step 8 and press [#Enter].**
13. **Enter the adjustment for the "Feed Direction" determined in step 10 and press [#Enter]. This completes the adjustment.**
14. **Press [Escape] to leave the Menu mode.**

Cleaning

The responsibility of the service technician is limited because this machine is adjusted for optimum performance at the factory before it is shipped.

There are no parts that require scheduled maintenance or replacement. However, the service technician should do the procedures in this section when a service call is requested.

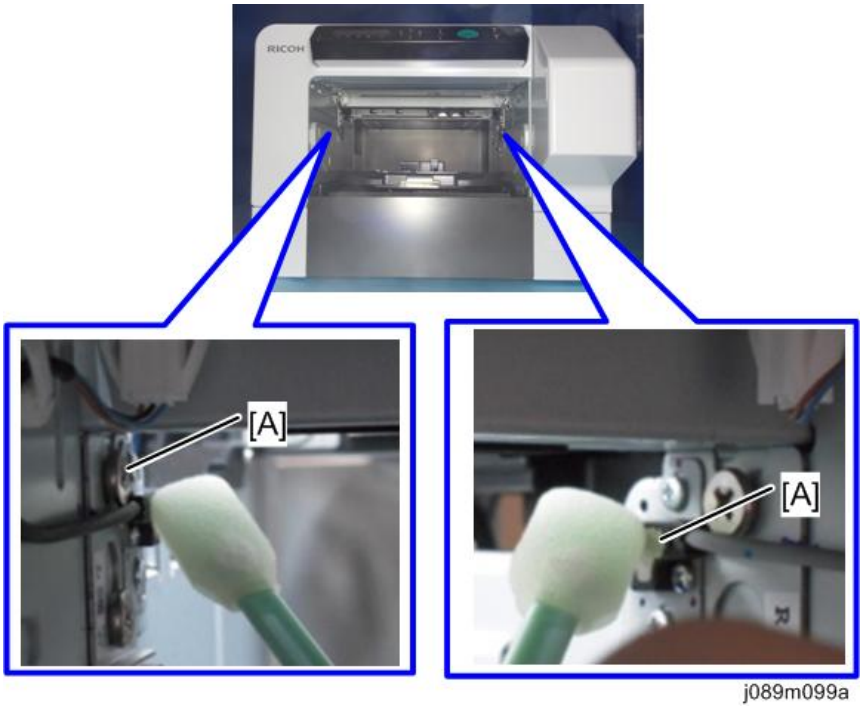
Here is a summary of the procedures in this section.

Description	At Service Call (or When Necessary)
External Covers	Damp cloth.
Printer Operation, Print Quality	Print a Nozzle Check Pattern and check the results. Clean the print heads if necessary.
Ink Collector Unit	A message on the printer operation panel prompts you to replace the ink collector unit after it has become full.
Maintenance unit	For details about cleaning the maintenance unit, see “Maintenance Manual” and "Operating Instructions".
Height Sensor.	See the following section "Height Sensor Cleaning".
Horizontal Encoder Sensor	See page 184 "Horizontal Encoder Sensor Cleaning ".
Internal Cleaning	See page 195 "Clean Internals".

Height Sensor Cleaning

Moisten a cotton swab or similar cleaning article with the supplied cleaning liquid (see page 46 "Installation") and use it to wipe off the stains on the left and right height sensors [A].

When using the supplied cleaning stick to wipe off the stains, use the corners of the cleaning stick head to wipe the uneven parts as well.



j089m099a

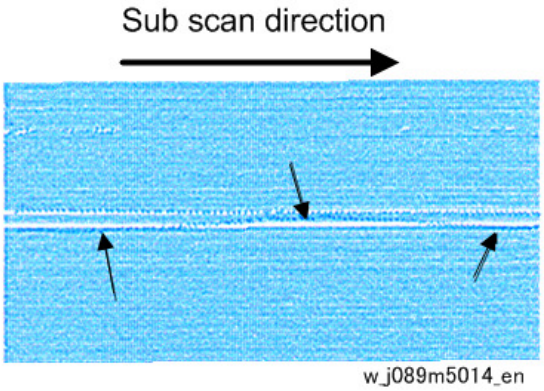
Horizontal Encoder Sensor Cleaning

This section explains how to clean the encoder sensor when you replace the horizontal encoder strip.

Important

- To clean the horizontal encoder strip, be sure to use the following service parts.
- Horizontal encoder strip for cleaning (made of plastic): Part No. J0253531
- Cleaning felts (2 pieces): Part No. J0253531
- Do not clean and reattach the horizontal encoder strip. If the following conditions occur, replace the horizontal encoder strip. For details about the replacing horizontal encoder strip, see page 105 "Horizontal Encoder Strip".
  - Vertical white lines on an image
  - Double image
  - Broken vertical lines
  - JAM 14

Example image of horizontal white lines



Preparation

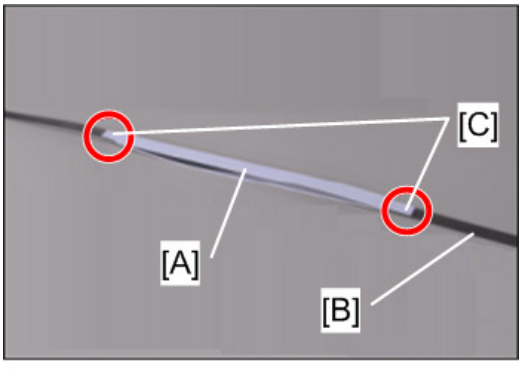
1. **Remove the old horizontal encoder strip (page 105 "Horizontal Encoder Strip").**
2. **Prepare a horizontal encoder strip for cleaning (made of plastic).**

Note

- The horizontal encoder strip used for cleaning is made of plastic. The horizontal encoder strip that is actually attached is made of metal. Make sure to use the metal horizontal encoder when attaching (see page 105 "Horizontal Encoder Strip").

- [A]: Horizontal encoder strip made of plastic (for cleaning use)
- [B]: Horizontal encoder strip made of metal

3. **Paste 2 cleaning felts [A] on both sides of the strip prepared in Step 2 [B] at the center.**



j0271229

Note

- There are double-sided adhesive tapes [C] at both ends of each cleaning felt
- Make sure that the cleaning felts are straightened.

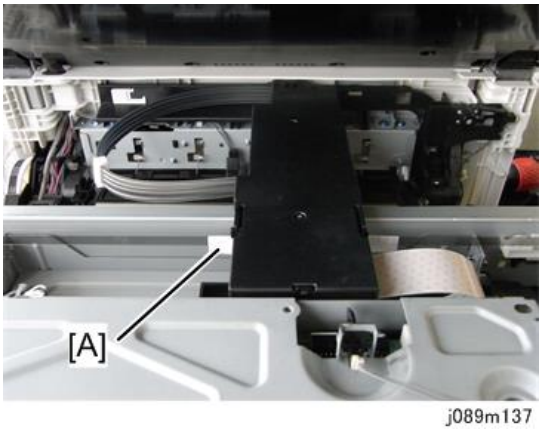
Cleaning

1. **Dampen the felts with alcohol.**

Note

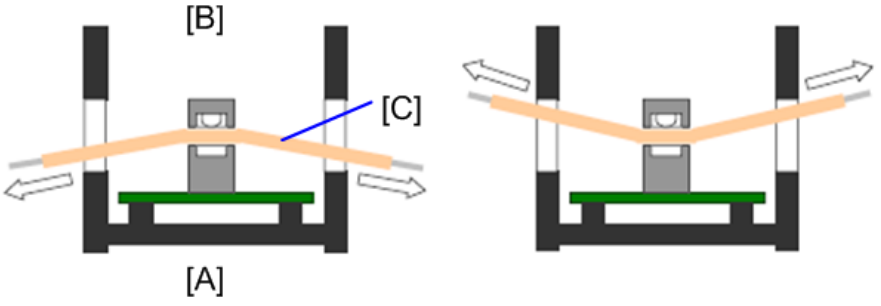
- Make sure that the adhesive tapes on the ends of the felts stay free of alcohol.

2. **Insert the strip [A] with the felt into the horizontal encoder sensor in the carriage.**



j089m137

3. **Holding the felt against the front or rear part of the sensor's recess, move the strip back and forth to wipe off the stain.**



j0271230

[A] Machine's front

[B] Machine's rear

[C] Cleaning felt

Note

- Wipe each of the front and rear parts back and forth a few times.
- Shift the strip with the felt horizontally a few times to completely wipe off the stain.
- The cleaning is over if the felt does not become stained by ink any more.

4. **After completing the cleaning, install the new horizontal encoder strip in the machine (see page 105 "Horizontal Encoder Strip").**

Moving the Print-Heads

If a foreign object remains inside the machine, move the print head and remove it. The machine reboots when the operations are completed. Print a [Nozzle Check] test pattern to check whether the print head nozzles are clogged.

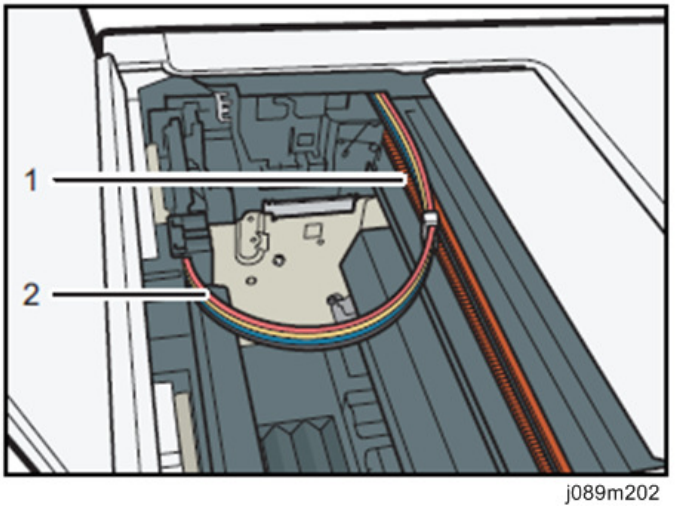
⚠CAUTION

- Do not open the cover while the machine is operating and keep your hands or fingers clear of the machine. Doing so might cause your hands or fingers to get trapped in the machine, potentially causing injury.

Important

- **After moving the print head and turning the power off, be sure to turn the power back on. Do not keep the print head moving.**
- **Do not touch the toothed rubber belt and ink tube. Moreover, pay attention not to have your sleeves caught on the ink tube or cables.**
  1. Toothed rubber belt

2.Ink tubes



j089m202

- When the cartridge runs out, the machine will not operate. After replacing the ink cartridge, perform this operation.
- Do not use tools with sharp tips to remove stuck foreign objects. Using it may cause a failure.

1. **Check that the top cover is closed.**
2. **Press the [▼/Menu] key.**
3. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**

<Menu>
Maintenance

4. **Press the [▲] or [▼/Menu] key to display [Move Print-Heads], and then press the [#Enter] key.**

<Maintenance>
Move Print-Heads

5. **Open the top cover.**
6. **Remove stuck foreign objects.**

   Remove the foreign objects carefully.
7. **Check that there are no foreign objects, and then close the top cover.**

   The machine turns off and on automatically, and then it returns to the usual condition.
8. **Press the [▼/Menu] key.**

9. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**

<Menu>
Maintenance

10. **Press the [▲] or [▼/Menu] key to display [Nozzle Check], and then press the [#Enter] key.**

<Maintenance>
Nozzle Check

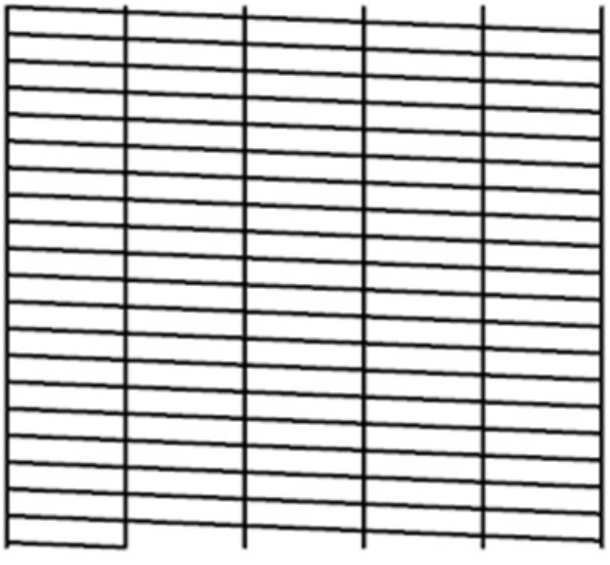
11. **Press the [Start] key.**

    A test pattern is printed.

12. **Press the [Escape] key.**

    Check the printed test pattern.

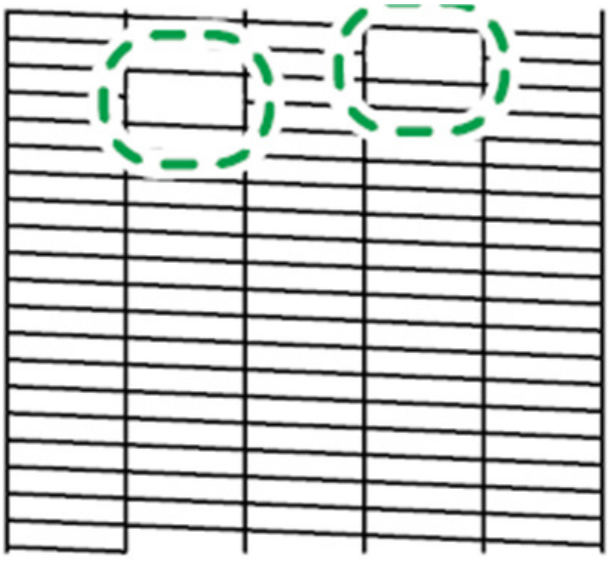
    Normal



j089m203

    When print heads are clogged

    If the print head is clogged, perform Head Cleaning. See page 174 "Print Head Cleaning and Adjustment".



j089m204

Cleaning the Maintenance Unit

You can move the Maintenance Unit to the position for cleaning. If a message prompting you to provide regular maintenance appears, clean the Maintenance Unit.

Note

- Do not touch the toothed rubber belt or ink tubes when cleaning the Maintenance Unit. Also, take care not to have your sleeves caught with cables or ink tubes.
- The cleaning cloth cannot be used to clean the Maintenance Unit. Use the cleaning stick to clean it.
- If you have not cleaned the print head nozzles, proceed to clean them.
- When cleaning the Maintenance Unit, be careful not to drop the cleaning stick into the machine.

1. **Press the [▼/Menu] key.**
2. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**

<Menu>
Maintenance

3. **Press the [▲] or [▼/Menu] key to display [Clean Maint Unit], and then press the [#Enter] key.**

<Maintenance>
Clean Maint Unit

4. **Press the [#Enter] key.**

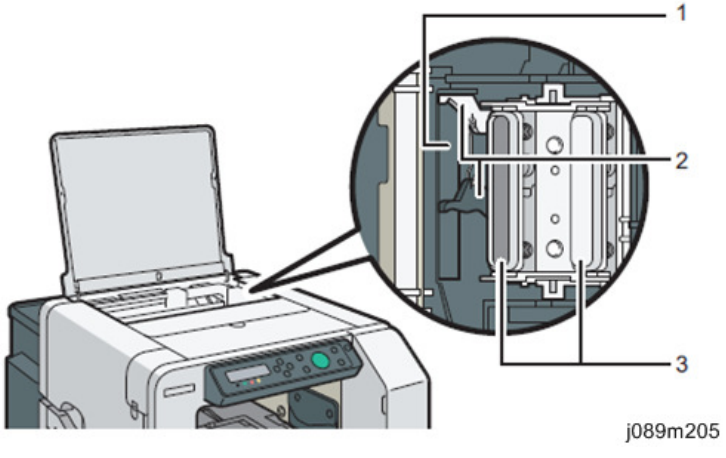
Press # to
clean Maint Unit

5. **When "Open Top Cover to clean unit" is displayed, open the top cover.**

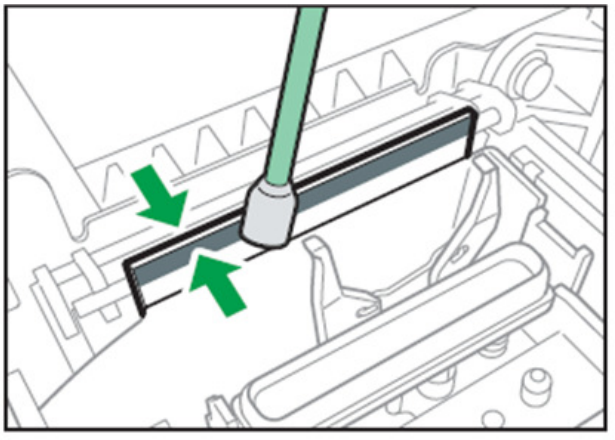
   The Maintenance Unit will move to a position where you can clean it.

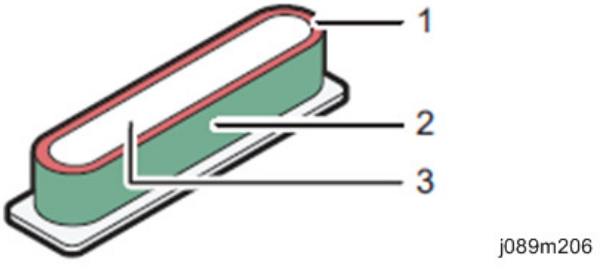
6. **Wipe off any dirt in the area shown in the figure with the cleaning stick moistened with the cleaning liquid.**

   For the top part of the cap (shown in red in the figure), wipe it gently.



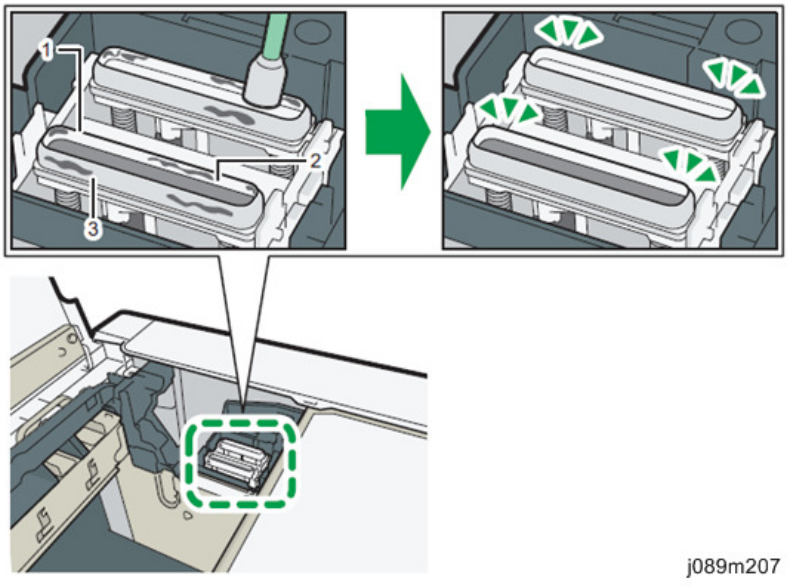
1. Wiper (back and front)
2. Lever
3. Cap (side part, top part, and inner part)





1. Top part
2. Side part
3. Inner part

Wipe the side part, top part, and inner part of the cap until all the solidified ink is removed.



1. Top part
2. Inner part
3. Side part

The video instructions we provide also explain how to clean the Maintenance Unit. For details, see the manufacturer's website.

7. **After cleaning the Maintenance Unit, close the top cover.**

   Head-cleaning starts after restart, after which the machine returns to the usual condition.

Auto Head Maintenance

You can clean the print head nozzles automatically. If the message prompting you to provide regular maintenance appears, clean the print head.

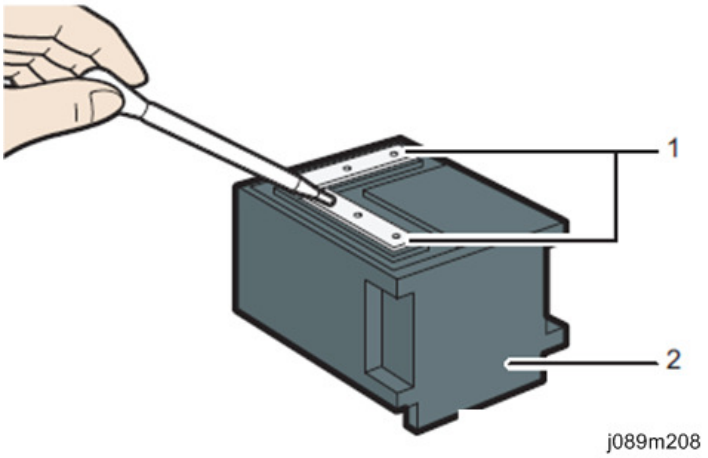
Note

- Do not put your hands inside the machine while cleaning of the print head nozzles is automatically performed. Your fingers may be trapped and injured inside the machine.
- You cannot reuse the absorbent. After using it, be sure to dispose it properly.
- If you have not cleaned the maintenance unit, proceed to clean it.

1. **Attach the two absorbents to the cleaning tool, and then use the dropper to moisten the absorbent with the cleaning liquid.**

   Use the dropper to suck cleaning liquid up to the scale 2 on the dropper. Use half of this for each absorbent swab.

Be sure to moisten the absorbent with the cleaning liquid until the absorbent is completely wet.



1. Absorbent
2. Cleaning Tool

2. **Press the [▼/Menu] key.**
3. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**

<Menu> Maintenance

4. **Press the [▲] or [▼/Menu] key to display [Auto Head Maint.], and then press the [#Enter] key.**

<Maintenance> Auto Head Maint.

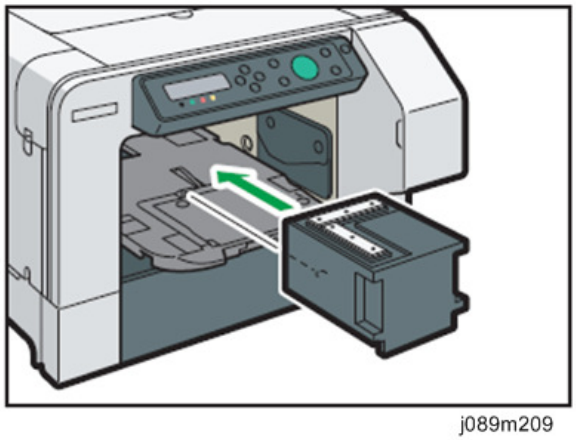
The print heads will move to a position where you can clean it.

5. **Press the [#Enter] key.**

Press # to start maintenance head

6. **When "Remove Tray" is displayed, remove the cassette.**
7. **When "Set Maint. Kit Press Start key" is displayed, attach the cleaning tool to the cassette stand.**

Push the cleaning tool to the back until it clicks.



j089m209

8. **Press the [Start] key.**

   Cleaning of the print head nozzles will start automatically. It takes 10 to 15 minutes.

9. **When "Remove Maint Kit Press Start key" is displayed, detach the cleaning tool, and then press the [Start] key.**

   This machine will return to the usual condition.

Clean Internals

Note

- This work should usually be carried out by the user. However, if the user does not expect to use the machine for one month or longer after it is repaired, this work shall be carried out by CE.
- In this case, use the cleaning cartridge model matching the cartridge owned by the user.

The internal compartments clean automatically. Clean the interior if user do not use the machine for a long time.

When cleaning the interior, use the optional dedicated cleaning cartridge owned by the user.

⚠CAUTION

- Once cleaning of the interior has started, it cannot be canceled. Cleaning must be completed before the machine can be used again. Once cleaning is completed, replace the ink cartridge, turn the machine on, and provide the initial supply of ink. Once the message "Ready" appears after the initial supply of ink is provided, you can use the machine.
- When cleaning the interior, a large amount of waste fluid is generated. Moreover, when cleaning fails, a new ink cartridge or ink collector unit may be required due to additional ink consumption or waste fluid generation. Clean the interior only if you do not use the machine for three months or longer. For details, see maintenance manual and operating instructions.

- When using this machine again after cleaning the interior, an initial supply of ink is required. The initially supplied ink is consumed. In order to avoid an ink shortage during the initial supply of ink and consumption of the ink cartridge, when using this machine again, attach a new ink cartridge.

Important

- **When cleaning the interior, use a new dedicated cleaning cartridge.**
- **The cleaning cartridges for each color are single use. Even if the liquid remains inside, do not use the cartridge. When reusing the cleaning cartridge, cleaning may not be completed.**
- **If the Maintenance Unit is not cleaned and automatic print head maintenance is not performed, cleaning of the interior may fail. When the Maintenance Unit is not cleaned and automatic print head maintenance is not performed, carry out this maintenance before cleaning the interior. For details, see maintenance manual or operating instructions.**
- **Do not operate this machine while the interior is being cleaned. Doing so may result in a cleaning failure. When the ink collector unit is full during cleaning, a message may appear. However, do not operate until cleaning is completed. Moreover, do not perform printing or access the machine from a computer.**
- **When storing the machine after cleaning the interior, store it with a cleaning cartridge attached. Replace the ink cartridge using this machine again.**

1. **Turn the machine on.**

   Confirm that "Ready" appears.

2. **Confirm that the ink collector unit has sufficient available capacity.**

   When the ink collector unit is almost full or full, replace it with a new ink collector unit.

   For details, see operating instructions.

3. **Press the [▼/Menu] key.**
4. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**

   <Menu>
   Maintenance

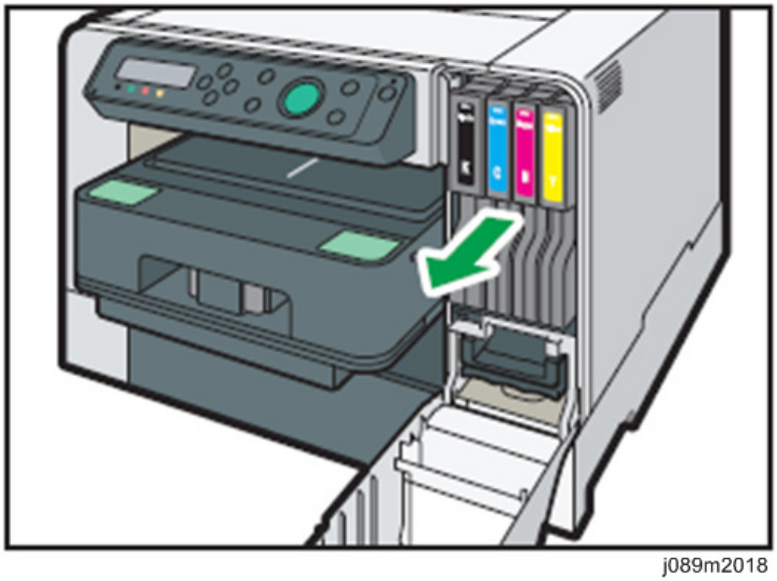
5. **Press the [▲] or [▼/Menu] key to display [Clean Internals], and then press the [#Enter] key.**

   <Maintenance>
   Clean Internals

6. **Remove the new cleaning cartridge from the box.**
7. **Open the right front cover.**

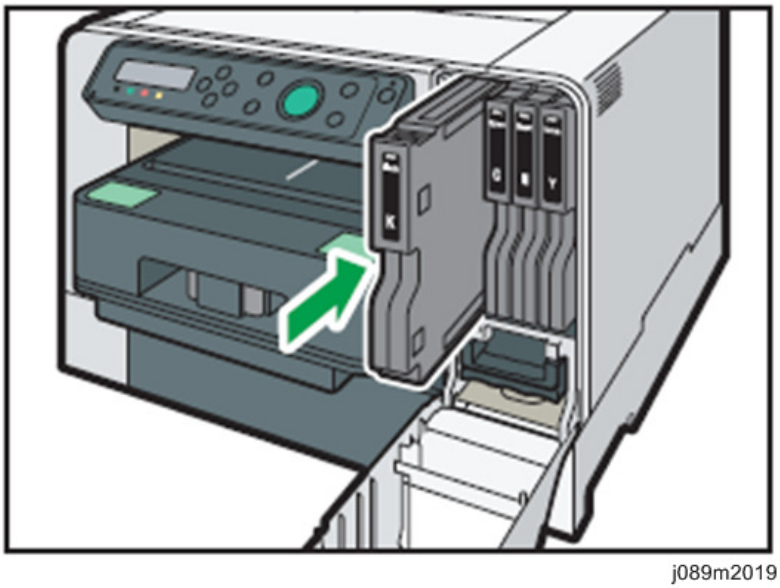
8. **Take out the ink cartridges.**

   While taking out the cartridges, be sure to hold the machine firmly so that it does not move.



j089m2018

9. **Check the cartridges' orientation, and then install them carefully.**



j089m2019

10. **Close the right front cover.**

11. Press the [▲] or [▼/Menu] key to display [Execute], and then press the [#Enter] key.

< Clean Internal >
Execute

12. Press the [#Enter] key.

Press # to start
Clean Internals

Insert Cleaning
Cartridge

Cleaning of the interior will start. It takes 16 minutes to clean the interior.

13. When "Cleaning finish Restart machine" is displayed, hold down the [Power] key to turn off the power.

When cleaning of the interior fails

When cleaning of the interior fails, a message regarding the solution appears after the display of "Maintenance failed".

Take appropriate actions according to the message that appears.

- When "Open Front Cover / Reset Cartridge" appears, reset the cleaning cartridge correctly, and then clean the interior again.
- When "Open Front Cover / Replace Ink Crtg" appears, a cleaning cartridge which has been used once is attached. Replace it with a new cleaning cartridge, and then clean the interior again.
- When "Prepare new Ink Collector Unit" appears, replace it with a new ink collector unit, and then clean the interior again.
- Upon returning to the menu of "<Clean Internal>", raise the room temperature to 10°C (approx. 50°F) or higher, and then clean the interior again from the beginning.
- When "Right Front Cover is open / Close Right Front Cover" appears, close the right front cover, and then clean the interior again.
- When "SC(28000) Power Off On / Call Service if error reoccurs" appears without "Maintenance failed" being displayed, replace it with a new ink cartridge and clean the Maintenance Unit and perform automatic print head maintenance. Once the Maintenance Unit is cleaned and automatic print head maintenance is performed, clean the interior again from the beginning using a new cleaning cartridge.

If the problem still persists even after the actions mentioned above are taken, clean the interior again from the beginning using a new cleaning cartridge.

Note

- If the ink collector unit is full during cleaning, a message may appear. If the message "Cleaning finish Restart machine" appears after the cleaning operation, cleaning is successfully completed.
- After cleaning the interior, the machine can be stored for approximately one and half years within the period of the product life cycle.

Adjusting the Height of the Cassette

Adjusting the Height of the Cassette Automatically

Important

- **Remove the garment from the cassette before performing auto adjustment. Do not perform auto adjustment while the garment is on the cassette.**
- **When you perform auto adjustment, the height of the cassette is adjusted appropriately according to the cassette that is set. Perform auto adjustment again every time a different cassette is set.**
- **When you perform auto adjustment, the height of the cassette is adjusted so it is suitable for loading thin garments, such as T-shirts. When loading thick garments in the cassette, fine-tune the height of the cassette using the [Adjust Height▼] key after sending the print job. For details about how to adjust the height of the cassette manually, see the next section.**

When printing starts, the machine adjusts the height of the cassette according to the height value specified in the [Maintenance] menu. If the printed image is blurry or there is dust stuck to it, or the height of the cassette may not be adjusted appropriately, adjust the height of the cassette using the [Maintenance] menu.

1. **Load the cassette without a garment on it.**
2. **Press the [▼/Menu] key.**
3. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**
4. **Press the [▲] or [▼/Menu] key to display [Height Adjust], and then press the [#Enter] key.**
5. **Press the [▲] or [▼/Menu] key to display [Auto Adjust], and then press the [#Enter] key.**
6. **Check that "Press # to start" is displayed, and then press the [#Enter] key.**

   Auto adjustment starts after the cassette is loaded into the machine. After auto adjustment is completed, the cassette returns and stops in position so that you can see the cassette positioning line on the left side of it.

Note

- The value set by adjustment is stored in [Manual Adjust] in the [Maintenance] menu.
- If an error occurs during auto adjustment, perform the operation from Step 1 again.

Adjusting the Height of the Cassette Manually

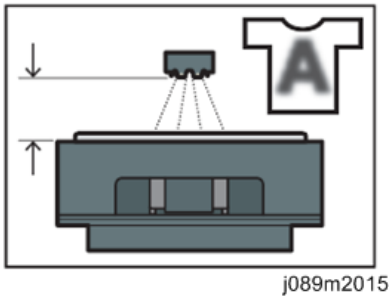
Even though a similar item is described in "Notes for Users" (J088-6648), read this section that it contains the latest information.

Important

- **If you enter a negative value as the height value, the height position sensor in the machine may react. Load the fabric correctly so that the printing surface can be flat.**
- **If the fabric is not correctly set after the height of the cassette is adjusted manually, the machine might not start printing because a height position sensor in the machine reacts when you send a print job. In this case, remove the cassette, load the fabric into the cassette correctly, and then load the cassette into the machine. The image quality might deteriorate if you change the height value significantly. In this case, adjust the registration.**
- **Adjust the height little by little so that the print side is not rubbed.**

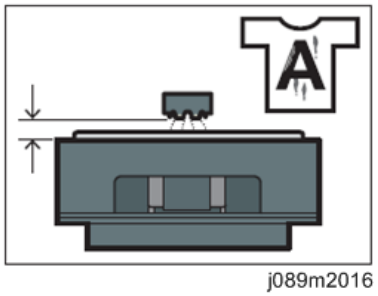
Normally, the height of the cassette is automatically adjusted at the start of printing. If the printed image is blurry or there is dust stuck to it, or the height of the cassette may not be adjusted appropriately, adjust the height of the cassette manually using the [Maintenance] menu.

If the distance between the print head and the fabric is too large, the printed image might be blurry. If this is the case, enter a negative value as the height value.



j089m2015

If the distance between the print head and the fabric is too small, dust might stick to the fabric. If this is the case, clean both the Maintenance Unit and print head. If the problem is not resolved, enter a positive value as the height value.



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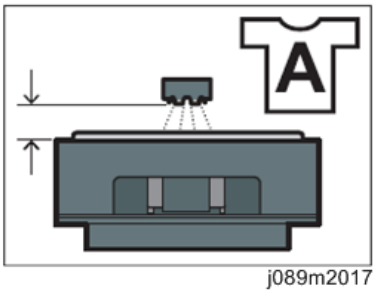
When the distance between the print head and the fabric is suitable, the printed image is satisfactory as shown in the figure.



1. **Press the [▼/Menu] key.**
2. **Press the [▲] or [▼/Menu] key to display [Maintenance], and then press the [#Enter] key.**
3. **Press the [▲] or [▼/Menu] key to display [Height Adjust], and then press the [#Enter] key.**
4. **Press the [#Enter] key.**
5. **Press the [▲] or [▼/Menu] key to enter the height value, and then press the [#Enter] key.**
    - You can enter a height value from -20 to 20 • in increments of 0.1. We recommend changing the existing setting by entering values in increments of ±0.1 to 0.3.
    - If the printed image is blurry when the A4 standard tray or A5 tray is used, first enter "-2.0" as the height value, and then increase the value in increments of 0.1 to 0.3 until the error message is not displayed. While adjusting the height, load the fabric into the cassette so that the printing surface can be flat.
    - If you enter a negative value as the height value and the value is too small, the machine might not start printing because the height position sensor in the machine reacts. Adjust the height of the cassette by pressing the [Adjust Height▲] or the [Adjust Height▼] key.

Note

- The value you set in Step 5 remains after the machine is turned off.
- If you enter "-2.0"as the height value and want to increase the value in Step 5, press the [Stop] key to cancel printing whenever you enter a new height value.

Refurbishing

Clean the Machine

These are general guidelines for cleaning and maintenance.

Item	Action
External Covers	Clean with a damp cloth.
Right Ink Sump	Clean with a damp cloth.
Ink Collection Tank	Replace then reset the counter with **SP3-008-003**

5. System Maintenance Reference

Service Mode and Engine Maintenance Mode

There are two modes for service in this machine:

- **Service Mode:**

  This mode is menu driven and includes important items for some adjustments as well as other important functions such as displaying the firmware version number, clearing the memory, printing reports, and so on.

- **Engine Maintenance (SP) Mode:**

  Consists of SP codes SP1-XXX to SP9-XXX. These are printer engine SP adjustments, primarily but not exclusively used by designers for machine adjustments.

Service Mode

Entering/Exiting Service Mode

To enter Service Mode:

1. **Enter the Service Mode.**
2. **[▼/Menu] or [▲]> "Service Menu"> [#Enter].**

   There are 11 sub-menus in the Service Mode as shown below:

   - Bit Switch
   - Remote Service
   - Reset Settings
   - Service Summary
   - Version Display
   - Serial No. Edit
   - Counter Setting
   - Fax No. (Not Used)
   - E. Saver Display
   - Maintenance
   - Wireless LAN

To Exit the Service Mode:

1. **Press [Escape]> "Service Menu".**

2. **[▼/Menu] or [▲] > "End"> [#Enter]> Standby**

   -or-

   If you changed a setting the machine may switch off. Press [Power] to switch the machine on again. This enables the new setting(s).

These items are available on the Service Menu.

Item	Function
Bit Switch	Bit switches 1 to 8. (Explained in detail below.)

Item	Function

Remote Service	• **Regist Status**
	Displays whether it is a device subject to @Remote Service.
	• **Letter Number**
	Inputs the request number for using @Remote Service.
	• **Confirm Execute**
	Displays the request number sent from @Remote Service.
	• **Confirm Result**
	Displays the result of the inquiry to @Remote Service
	• **Confirm Place**
	Displays information about the installation environment of the machine sent from @Remote Service.
	• **Register Execute**
	Registers the machine with @Remote Service.
	• **Register Result**
	Displays the result of registration with @Remote Service.
	• **Error Code**
	Displays the error code of the confirmation result
	• **Install Clear**
	Initializes @Remote Service information.
	• **CE Call**
	Notifies the Service Center of a manual call.
	• **Call Setting**
	Enables and disables various notifications.
	  • Notification of the arrangement of consumables
	  • Service call
	  • Notification that CE replacement parts are at the end or near the end of their lifespan
	  • Repair request notification
	  • Communication test
	  • Notification of information about the device

Item	Function
Reset Settings	• **Initialize Sys** Clears all SP code settings are restores their default settings. • **Clear Counters** Clears all counters.
Service Summary	Prints the Service Summary. The service summary lists information about the current status of the machine. For more details, see Section 4.
Version Display	• **Printer Version** Displays the version of the printer's engine. • **WLAN Version**(J029 only) Displays the version of the wireless LAN interface.
Serial No. Edit	You can display the machine's serial number and edit it.
Counter Settings	• **Counter Display** Switches the counter display on and off. • **LevColor Disp** Switches the level counter display on and off. • **Coverage Count** Switches the coverage counter on and off. • **Double Count** Switches double counting on and off. The default setting for all these items is "Off".
Fax No.	Not Used.
E. Saver Display	You can specify whether or not to display the setting to enable/disable the Energy Saver timer in the user menu.
Maintenance	This is the same as "Maintenance" in the user menu. You can access it also from the service menu.
Wireless LAN	• **WLAN Enable** You can enable/disable the wireless LAN. • **Destination** Specify the territory in which the machine will be used.

Bit Switch Settings

Bit SW 1

Bit	Function	Default	Details
0	Not Used	---	---
1	Not Used	---	---
2	Not Used	---	---
3	Not Used	---	---
4	Capping print heads after printing	0	You can specify whether or not to cap print heads immediately after printing. If the capping is not executed immediately, it is executed nine seconds after printing because of the capping timer. 0: Cap immediately. 1: Do not cap immediately.
5	Not Used	---	---
6	Not Used	---	---
7	Not Used	---	---

Bit SW 2 to Bit SW 4: Not used. Do not change these settings.

Bit SW 5. Functions Common to All Models

Bit	Function	Default	Details
0	Not Used	---	---
1	Counter menu display for charge on printer use, printing enabled after coverage counted up.	1	This is a GW specification. 0: Does not print. 1: Prints
2	Not Used	---	---
3	Not Used	---	---
4	Not Used	---	---

Bit	Function	Default	Details
5	Counter Display	1	Switches the counter display on/off. 0: Counter not displayed. 1: Counter is displayed
6	Not Used	---	---
7	Not Used	---	---

Bit SW 6. Enable Functions for Individual Printer Models

Bit	Function	Default	Details
0	Flushing Mist Prevention	0	This switch determines whether the machine waits for a while before printing at low temperatures (15°C or less). 0: OFF (No waiting) 1: ON (Waiting until the flushing mist at low temperatures goes off.)
1	Not Used	---	---
2	Double-Count	0	This switch sets whether the double-count counter is printed out in the system summary. 0: OFF (Not printed) 1: ON (Printed)
3	Not Used	---	---
4	Not Used	---	---
5	Not Used	---	---
6	Fix or Cancel USB Serial No.	0	A function to prevent recognition as a new device with Plug&Play when connecting a AIs/ Pro(DOM) substitute machine. 0: Keeps the serial No. as an NV value 1: Fixes the serial No. as 0 (However, the NV value is not changed.)
7	Not Used	---	---

Bit SW 7. Not Used

Bit SW 8: GW Bit Switch

Bit	Function	Default	Details
0	Not Used	---	---
1	Design Waveform Switching	0	**DFU** Designates the waveform switch 0: For product 1: For design
2	Not Used	---	---
3	Not Used	---	---
4	Not Used	---	---
5	Not Used	---	---
6	Not Used	---	---
7	Not Used	---	---

Engine Maintenance (SP) Mode

Entering/Exiting SP Mode

To enter SP Mode

1. **Enter the Service Mode.**

SYSTEM Ver. nnn Service Menu

2. **[▼/Menu] or [▲]> "Engine Maint."> [#Enter].**
   - Engine Maint. allows changing the settings of individual SP codes
   - For more about individual SP code settings, refer to the tables in this section.
   - There are no settings available for the following groups: SP1-XXX, SP3-XXX, SP5-XXX, SP7XXX, SP9XXX

To exit SP mode

1. **At any level in the SP mode, press [Escape] to return to the first level.**

SYSTEM Ver. nnn Service Menu

2. **[▼/Menu] or [▲]> "End"> [#Enter].**

   The machine returns to standby mode.

   -or-

   If you changed a setting, the machine may switch off. Press [Power] to switch the machine on again. This enables the new setting(s).

Using SP Mode Menus

Entering an Engine SP Code Directly

Do this procedure to enter an SP code directly if you know the number.

1. **In the service tables of this section, look up the number and name of the SP code to set.**

   Example: Set SP1-001-003 FDLEN:OFFSET for -2.5mm

   "Adjust Amount of LF Offset in Sub Scan Direction"

   Range: [-128 to +127/0/1/0.1mm]

2. **Enter the Service Mode.**

SYSTEM Ver. 0.08 Service Menu

3. **[▼/Menu] or [▲]> "Engine Maint."> [#Enter].**

SP No. 1000000

4. **"1" is entered at the first digit. Press [#Enter] to move the cursor to the 2nd digit.**
5. **Press [#Enter] twice to confirm the entry of "0" in the second and third fields.**
6. **Press [▲] once to display "1" in the fourth field, and then press [#Enter] to confirm the entry.**
7. **Press [#Enter] twice to confirm the entry of "0" in the fifth and sixth fields.**

8. **Press [▲] once to display "3" in the seventh field, and then press [#Enter] to confirm the entry.**

FDLEN:OFFSET 1001003

9. **Press [#Enter].**

FDLEN:OFFSET _000

10. **The first digit is blank. This is the digit for the sign (plus or minus). When this digit is empty, the value is set for plus (+) but the plus sign is not displayed.**
11. **[▼/Menu] or [▲]> "-000"> [#Enter]> The cursor moves to the 1st zero.**

FDLEN:OFFSET -000

12. **[▲]> "-000"> This enters the first "0", then moves the cursor to the 2nd "0".**
13. **[#Enter] x2 times> "-020"> [#Enter] This enters "2" at the 2nd zero, then moves the cursor to the 3rd "0".**
14. **[▲] x5 times> "-025"> [#Enter].**

FDLEN:OFFSET -025

15. **[#Enter] To save the setting.**

SP No. 1001003

16. **[Escape]> "Engine Maint."**
17. **[▼/Menu] or [▲]> "End"> [#Enter]. The machine returns to standby mode.**

    -or-

    If you changed a setting, the machine may switch off. Press [Power] to switch the machine on again. This enables the new setting(s).

SP Mode Service Tables

SP Table Key

Notation	What It Means	
[range/**default**/step/units]	Example: [-127 to +128/**4.5**/1/0.1 mm].	
	-127 to +128	Range
	4.5	Default
	1	Screen increments
	0.1 mm	Unit change for every screen increment.

Here is a summary of common terms and abbreviations used in the SP code descriptions.

Term	What It Means
DFU	Denotes “Design or Factory Use”. Do not change this value.
DNA This Series (J089/J098/J099)	Does not Apply. Applies to a machine of another GELJET series, not J089/J098/J099.
DOM	"Domestic" market only (Japan)
EUA	Europe/Asia
EXP	"Export" markets (North America, Europe, Asia)
FA	"Factory Adjusted". The default setting is set at the factory or service center.
FU	Future Use. These SP codes appear but they are not enabled at this time.
This Series Only	Applies to the J089/J098/J099 only.
NA	North America

SP1-XXX (Feed)

SP No.	SP Name	[Min to Max/Init./Step/Unit]
1-001-001	FDLEN:F	[-1481620 to 1481620/0/1/0.1mm]
1-001-002	FDLEN:U	[-1481620 to 1481620/0/1/0.1mm]
1-001-003	FDLEN:OFFSET	[-128 to 127/0/1/0.1mm]
1-001-004	REG:FD1:NORM:F	Not Used
1-001-005	REG:FD1:NORM:U	Not Used
1-001-006	REG:FD:GLOS:F	Not Used
1-001-007	REG:FD:GLOS:U	Not Used
1-001-008	REG:FD2:NORM:F	Not Used
1-001-009	REG:FD2:NORM:U	Not Used
1-001-010	REG:FD3:NORM:F	Not Used
1-001-011	REG:FD3:NORM:U	Not Used
1-001-012	REG:F	[-128 to 127/-26/1/0.1mm]
1-001-013	REG:U	[-128 to 127/0/1/0.1mm]
1-001-014	REG:FD2:GLOS:F	Not Used
1-001-015	REG:FD2:GLOS:U	Not Used
1-001-016	REG:FD3:GLOS:F	Not Used
1-001-017	REG:FD3:GLOS:U	Not Used
1-001-018	REG:FDM:GLOS:F	Not Used
1-001-019	REG:FDM:GLOS:U	Not Used
1-002-001	ADJ:SIDEBORAD	[-128 to 127/0/1/0.1mm]
1-002-002	REG:TR1:NORM:F	Not Used
1-002-003	REG:TR1:NORM:U	Not Used
1-002-004	REG:TR2:NORM:F	Not Used

SP No.	SP Name	[Min to Max/Init./Step/Unit]
1-002-005	REG:TR2:NORM:U	Not Used
1-002-006	REG:TR3:NORM:F	Not Used
1-002-007	REG:TR3:NORM:U	Not Used
1-002-008	REG:MAN:NORM:F	[-128 to 127/8/1/0.1mm]
1-002-009	REG:MAN:NORM:U	[-128 to 127/0/1/0.1mm]
1-002-010	REG:TR1:GROS:F	Not Used
1-002-011	REG:TR1:GROS:U	Not Used
1-002-012	REG:TR2:GROS:F	Not Used
1-002-013	REG:TR2:GROS:U	Not Used
1-002-014	REG:TR3:GROS:F	Not Used
1-002-015	REG:TR3:GROS:U	Not Used
1-002-016	REG:MAN:GROS:F	Not Used
1-002-017	REG:MAN:GROS:U	Not Used
1-003-001	GAP:HEIGHT:F	[0 to 0xffff/000.89/1/0.01mm]
1-003-002	GAP:HEIGHT:U	[-327678to 32767/00000/1/0.01mm]
1-010-001	CHG:W1:EDGE:1	Not Used
1-010-002	CHG:W1:MIDL:1	Not Used
1-010-003	CHG:W1:EDGE:2	Not Used
1-010-004	CHG:W1:MIDL:2	Not Used
1-010-005	CHG:W1:EDGE:3	Not Used
1-010-006	CHG:W1:MIDL:3	Not Used
1-010-007	CHG:W1:EDGE:4	Not Used
1-010-008	CHG:W1:MIDL:4	Not Used
1-010-009	CHG:W1:EDGE:9	Not Used
1-010-010	CHG:W1:MIDL:9	Not Used

SP No.	SP Name	[Min to Max/Init./Step/Unit]
1-010-011	CHG:W1:EDGE:10	Not Used
1-010-012	CHG:W1:MIDL:10	Not Used
1-010-013	CHG:W1:EDGE:11	Not Used
1-010-014	CHG:W1:MIDL:11	Not Used
1-010-015	CHG:W1:EDGE:12	Not Used
1-010-016	CHG:W1:MIDL:12	Not Used
1-011-001	CHG:W2:EDGE:1	Not Used
1-011-002	CHG:W2:MIDL:1	Not Used
1-011-003	CHG:W2:EDGE:2	Not Used
1-011-004	CHG:W2:MIDL:2	Not Used
1-011-005	CHG:W2:EDGE:3	Not Used
1-011-006	CHG:W2:MIDL:3	Not Used
1-011-007	CHG:W2:EDGE:4	Not Used
1-011-008	CHG:W2:MIDL:4	Not Used
1-011-009	CHG:W2:EDGE:9	Not Used
1-011-010	CHG:W2:MIDL:9	Not Used
1-011-011	CHG:W2:EDGE:10	Not Used
1-011-012	CHG:W2:MIDL:10	Not Used
1-011-013	CHG:W2:EDGE:11	Not Used
1-011-014	CHG:W2:MIDL:11	Not Used
1-011-015	CHG:W2:EDGE:12	Not Used
1-011-016	CHG:W2:MIDL:12	Not Used
1-012-001	CHG:TEMP:B	Not Used
1-012-002	CHG:HUMI:B	Not Used
1-012-003	CHG:AREA:EDGE:F	Not Used

SP No.	SP Name	[Min to Max/Init./Step/Unit]
1-012-004	CHG:AREA:EDGE:B	Not Used
1-012-005	CHG:AREA:MIDL:F	Not Used
1-012-006	CHG:AREA:MIDL:B	Not Used
1-012-007	CHG:REGION	Not Used

SP2-XXX

Not used.

SP3-XXX (Process)

SP No.	SP Name	[Min to Max/Init./Step/Unit]
3-001-001	GAP:T-shirt Fine:A:F	[-128 to 127/-10/1/cnt]
3-001-002	GAP:T-shirt Fine:A:U	[-128 to 127/0/1/cnt]
3-001-003	GAP:T-shirt Fine:B:F	[-128 to 127/-4/1/cnt]
3-001-004	GAP:T-shirt Fine:B:U	[-128 to 127/-12/1/cnt]
3-001-005	GAP:T-shirt Fine:C:F	[-128 to 127/0/1/cnt]
3-001-006	GAP:T-shirt Fine:C:U	[-128 to 127/4/1/cnt]
3-001-011	GAP:Thick, Standard:A:F	[-128 to 127/-10/1/cnt]
3-001-012	GAP:Thick, Standard:A:U	[-128 to 127/0/1/cnt]
3-001-013	GAP:Thick, Standard:B:F	[-128 to 127/-4/1/cnt]
3-001-014	GAP:Thick, Standard:B:U	[-128 to 127/0/1/cnt]
3-001-015	GAP:Thick, Standard:C:F	[-128 to 127/-12/1/cnt]
3-001-016	GAP:Thick, Standard:C:U	[-128 to 127/0/1/cnt]
3-001-021	GAP:MJ3:A:F	Not Used
3-001-022	GAP:MJ3:A:U	Not Used

SP No.	SP Name	[Min to Max/Init./Step/Unit]
3-001-023	GAP:MJ3:B:F	Not Used
3-001-024	GAP:MJ3:B:U	Not Used
3-001-025	GAP:MJ3:C:F	Not Used
3-001-026	GAP:MJ3:C:U	Not Used
3-001-031	GAP:T-shirt Speed:A:F	[-128 to 127/-10/1/cnt]
3-001-032	GAP:T-shirt Speed:A:U	[-128 to 127/0/1/cnt]
3-001-033	GAP:T-shirt Speed:B:F	[-128 to 127/-4/1/cnt]
3-001-034	GAP:T-shirt Speed:B:U	[-128 to 127/0/1/cnt]
3-001-035	GAP:T-shirt Speed:C:F	[-128 to 127/-12/1/cnt]
3-001-036	GAP:T-shirt Speed:C:U	[-128 to 127/-10/1/cnt]
3-001-041	GAP:T-shirt Vivid:A:F	[-128 to 127/0/1/cnt]
3-001-042	GAP:T-shirt Vivid:A:U	[-128 to 127/0/1/cnt]
3-001-043	GAP:T-shirt Vivid:B:F	[-128 to 127/-4/1/cnt]
3-001-044	GAP:T-shirt Vivid:B:U	[-128 to 127/0/1/cnt]
3-001-045	GAP:T-shirt Vivid:C:F	[-128 to 127/-12/1/cnt]
3-001-046	GAP:T-shirt Vivid:C:U	[-128 to 127/0/1/cnt]
3-002-001	HRANK:H1:W	[0 to 4/4/1/]
3-002-002	HRANK:H2:W	[0 to 4/4/1/]
3-002-005	HRANK:H1:V	[0 to 7/4/1/]
3-002-006	HRANK:H2:V	[0 to 7/4/1/]
3-004-001	DAC:Y1:B	[0 to 0xff/84/1/]
3-004-002	DAC:Y1:T	[0 to 0xff/6/1/]
3-004-003	DAC:Y2:B	[0 to 0xff/63/1/]
3-004-004	DAC:Y2:T	[0 to 0xff/29/1/]
3-004-005	DAC:C1	[0 to 0xff/90/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
3-004-006	DAC:C2	[0 to 0xff/92/1/]
3-004-007	DAC:X1	[0 to 0xff/40/1/]
3-004-008	DAC:X2	[0 to 0xff/180/1/]
3-004-009	DAC:C3	[0 to 0xff/220/1/]
3-005-001	C:INKCONSUME:T1	[0 to 0xffffff/00007734/1/]
3-005-002	C:INKCONSUME:T2	[0 to 0xffffff/00007734/1/]
3-005-003	C:INKCONSUME:T3	[0 to 0xffffff/00007734/1/]
3-005-004	C:INKCONSUME:T4	[0 to 0xffffff/00007734/1/]
3-006-001	C:ENDMARGINE:K	[0 to 0xffff/00819/1/]
3-006-002	C:ENDMARGINE:C	[0 to 0xffff/00503/1/]
3-006-003	C:ENDMARGINE:M	[0 to 0xffff/00524/1/]
3-006-004	C:ENDMARGINE:Y	[0 to 0xffff/00579/1/]
3-007-001	TH:WASTE:R	[0 to 4294967295/0/1/nl]
3-007-002	TH:WASTE:R:FULL	[0 to 4294967295/0/1/nl]
3-007-003	TH:WASTE:L	[0 to 4294967295/0/1/nl]
3-007-004	TH:WASTE:L:FULL	[0 to 4294967295/0/1/nl]
3-007-005	TH:WASTE:RF	[0 to 4294967295/0/1/nl]
3-007-006	TH:WASTE:RF:FULL	[0 to 4294967295/0/1/nl]
3-008-001	RST:INIT CNT:F	[0 to 1/0/1/-]
3-008-002	RST:INIT CNT:A	[0 to 1/0/1/-]
3-008-003	RST:WASTE:RC	[0 to 1/0/1/-]
3-008-004	RST:WASTE:R	[0 to 1/0/1/-]
3-008-005	RST:FACT	[0 to 1/0/1/-]
3-009-001	WASHING	[0 to 1/0/1/-]
3-009-002	CARRIAGE CHANGE	[0 to 1/0/1/-]

SP4-XXX

Not used.

SP5-XXX (Mode)

SP No.	SP Name	[Min to Max/Init./Step/Unit]
5-501-001	PM Alarm Level	[0 to 255/6/1/-]
5-504-001	Jam Alarm	[0 to 3/3/1/-]
5-507-003	Ink S/A Set	[0 to 1/0/1/-]
5-507-006	WasteInk S/A Set	[0 to 1/0/1/-]
5-507-021	Supply Display	[0 to 1/1/1/-]
5-507-080	Supply Trigger	[0 to 1/0/1/-]
5-515-001	SC Call Setting	[0 to 1/1/1/-]
5-515-002	PartsNearEnd Set	[0 to 1/0/1/-]
5-515-003	PartsEnd Set	[0 to 1/0/1/-]
5-515-004	User Call Set	[0 to 1/1/1/-]
5-515-006	Comm Test Set	[0 to 1/1/1/-]
5-515-007	Dev Notice Set	[0 to 1/1/1/-]
5-515-008	Alarm Notice	[0 to 1/0/1/-]
5-515-009	NonGenuineInkSet	[0 to 1/1/1/-]
5-515-010	Supply Auto Set	[0 to 1/1/1/-]
5-515-011	SupplyManage Set	[0 to 1/1/1/-]
5-515-012	Jam/DoorOpen Set	[0 to 1/0/1/-]
5-515-101	ErrorAlarmLevel	[0 to 10/7/1/-]
5-515-102	Jam Count Level	[0 to 255/20/1/-]
5-804-001	PLOTTER NUMBER	[0 to 0xffffffff/JJ089Q00020/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
5-804-002	PLOTTER SW1	[0 to 0xff/0/1/]
5-804-003	PLOTTER SW2	[0 to 0xff/0/1/]
5-804-004	INPUT:SENSCHK1	[0 to 0xffff/0/1/]
5-804-005	INPUT:SENSCHK2	[0 to 0xffff/0/1/]
5-804-006	INPUT CHK HTEMP	[0x80000000 to 0x7fffffff/240/1/0.1deg]
5-804-007	INPUT CHK HUTMP	[0x80000000 to 0x7fffffff/245/1/0.1deg]
5-804-008	INPUT CHK HUMI	[0x80000000 to 0x7fffffff/522/1/0.1deg]
5-804-009	INPUT CHK AIR1	[0 to 0xffffffff/55/1/]
5-804-010	INPUT CHK AIR2	[0 to 0xffffffff/148/1/]
5-804-011	INPUT CHK AIR3	[0 to 0xffffffff/77/1/]
5-804-012	INPUT CHK AIR4	[0 to 0xffffffff/60/1/]
5-804-015	INPUT CHK CART	[0 to 0xffff/0/1/]
5-804-016	INPUT CHK RES:Y	[0 to 0xff/40/1/%]
5-804-017	INPUT CHK RES:M	[0 to 0xff/32/1/%]
5-804-018	INPUT CHK RES:C	[0 to 0xff/35/1/%]
5-804-019	INPUT CHK RES:K	[0 to 0xff/55/1/%]
5-804-020	INPUT CHK MENC	[0x80000000 to 0x7fffffff/401/1/]
5-804-021	INPUT CHK SENC	[0x80000000 to 0x7fffffff/12536/1/]
5-804-022	INPUT CHK DTEMP	[0x80000000 to 0x7fffffff/300/1/0.1deg]
5-804-023	INPUT CHK RCWS	[0 to 0xffffffff/1/1/]
5-804-024	INPUT CHK RCWR	[0 to 0xffffffff/89/1/]
5-804-025	INPUT CHK RCWC	[0 to 0xffffffff/0015929202/1/]
5-807-001	Area Selection	[0 to 6/0/1/-]
5-811-003	ID2 Code	[0 to 0/0/0/-]
5-812-001	Service Tel No.	[0 to 0/0/0/-]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
5-812-003	Supply Tel No.	[0 to 0/0/0/-]
5-816-002	Exec CE Call	[0 to 1/0/1/-]
5-816-003	Function Flag	[0 to 1/0/1/-]
5-816-021	RCG-C Registed	[0 to 1/0/1/-]
5-816-022	RCG Reg. State	[0 to 2/0/1/-]
5-816-025	GW URL	[0 to 0/0/0/-]
5-816-026	Polling Interval	[60 to 99999/60/1/sec]
5-816-027	Connect Timeout	[1 to 90/30/1/sec]
5-816-028	Send Timeout	[1 to 100/30/1/sec]
5-816-029	Receive Timeout	[1 to 100/30/1/sec]
5-816-030	Retry Interval	[0 to 65535/3/1/sec]
5-816-031	Retry Count	[0 to 255/3/1/times]
5-816-032	Send Delay	[0 to 255/5/1/sec]
5-816-033	Max Multipart	[1 to 10/10/1/-]
5-816-039	Rescue URL	[0 to 0/0/0/-]
5-816-040	Reg. Notify Type	[0 to 5/0/1/-]
5-816-041	Count NotifyType	[0 to 5/0/1/-]
5-816-042	Reg. Notify D/T	[0 to 4294967295/0/1/-]
5-816-043	Count Notify D/T	[0 to 4294967295/0/1/-]
5-816-045	NextReg. Notify	[0 to 4294967295/0/1/-]
5-816-046	Next CountNotify	[0 to 4294967295/0/1/-]
5-816-047	Next Total Count	[0 to 4294967295/0/1/-]
5-816-048	CenterPollingD/T	[0 to 4294967295/0/1/-]
5-816-052	Test Flag	[0 to 1/0/1/-]
5-816-053	Update Result	[0 to 255/0/1/-]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
5-816-060	Valid Adv.Notice	[1552000 to 2592000/2592000/1/min]
5-816-061	CertExpireTiming	[0 to 4294967295/0/1/-]
5-816-062	Use Proxy	[0 to 1/0/1/-]
5-816-063	Proxy Host	[0 to 0/0/1/-]
5-816-064	Proxy PortNumber	[0 to 65535/0/1/-]
5-816-065	Proxy User Name	[0 to 0/0/0/-]
5-816-066	Proxy Password	[0 to 0/0/0/-]
5-816-067	CERT:Up State	[0 to 255/0/1/-]
5-816-068	CERT:Error	[0 to 255/0/1/-]
5-816-069	CERT:Up ID	[0 to 0/0/0/-]
5-816-087	CERT:Macro Ver.	[0 to 0/0/0/-]
5-816-088	CERT:PAC Ver.	[0 to 0/0/0/-]
5-816-095	Server CN Check	[0 to 1/0/1/-]
5-816-102	Cipher Strength	[0 to 1/1/1/-]
5-816-121	CERT:GW URL	[0 to 0/0/0/-]
5-816-122	CERT:Use Pass	[0 to 1/0/1/-]
5-816-123	CERT:Pass Phrase	[0 to 0/0/0/-]
5-816-124	CERT:Use MAC	[0 to 1/0/1/-]
5-816-135	Reg. Notify Int.	[0 to 4294967295/0/1/-]
5-816-136	Reg. Notify Week	[0 to 6/0/1/-]
5-816-137	CountNotify Int.	[0 to 4294967295/0/1/-]
5-816-138	CountNotify Week	[0 to 6/0/1/-]
5-816-200	Execute Polling	[0 to 1/0/1/-]
5-816-201	Regist Status	[0 to 4/0/1/-]
5-816-202	Letter Number	[0 to 0/0/0/-]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
5-816-203	Confirm Execute	[0 to 1/0/1/-]
5-816-204	Confirm Result	[0 to 255/0/1/-]
5-816-205	Confirm Place	[0 to 0/0/0/-]
5-816-206	Register Execute	[0 to 1/0/1/-]
5-816-207	Register Result	[0 to 255/0/1/-]
5-816-208	Error Code	[-2147483647 to 2147483647/0/1/-]
5-816-209	Instl Clear	[0 to 1/0/1/-]
5-831-001	Set Init Value	[0 to 1/0/1/-]
5-844-011	USB POWER MODE	[0 to 1/0/1/-]
5-849-001	Install Date	[0 to 0xffffffffffffffff/0/1/-]
5-849-002	InstallDate Prnt	[0 to 1/1/1/-]
5-880-001	FAN:CHG:SPEED	[0 to 9/9/1/-]
5-880-002	FAN:FILTER:CNT	[00000 to 99999/0/1/-]
5-880-003	FAN:FILTER:RST	[-/-/-]
5-907-001	Plug & Play	[0 to 6/0/1/-]
5-990-002	PRINT SMC	[0 to 1/0/1/-]

SP6-XXX

Not used.

SP7-XXX (Data Log)

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-001-001	INIT CNT:A	[0x80000000 to 0x7fffffff/19/1/]
7-001-002	LIFE TOTAL CNT	[0 to 0xffffffff/19/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-002-001	USER CL CNT:H1	[0 to 0xffff/0/1/times]
7-002-002	USER CL CNT:H2	[0 to 0xffff/0/1/times]
7-002-005	USER RF CNT:H1	[0 to 0xffff/0/1/times]
7-002-006	USER RF CNT:H2	[0 to 0xffff/0/1/times]
7-002-009	AOFL CNT:S:H1	[0 to 0xff/0/1/times]
7-002-010	AOFL CNT:S:H2	[0 to 0xff/0/1/times]
7-002-013	AOFL CNT:I:H1	[0 to 0xff/0/1/times]
7-002-014	AOFL CNT:I:H2	[0 to 0xff/0/1/times]
7-002-017	AOFL CNT:P:I:H1	[0 to 0xff/0/1/times]
7-002-018	AOFL CNT:P:I:H2	[0 to 0xff/0/1/times]
7-002-021	AOFL CNT:A:H1	[0 to 0xffff/0/1/times]
7-002-022	AOFL CNT:A:H2	[0 to 0xffff/0/1/times]
7-002-025	AOFL CNT:P:A:H1	[0 to 0xffff/1/1/times]
7-002-026	AOFL CNT:P:A:H2	[0 to 0xffff/1/1/times]
7-002-029	AOFL CNT:H:H1	[0 to 0xff/0/1/times]
7-002-030	AOFL CNT:H:H2	[0 to 0xff/0/1/times]
7-002-033	AOFL CNT:P:H:H1	[0 to 0xff/0/1/times]
7-002-034	AOFL CNT:P:H:H2	[0 to 0xff/1/1/times]
7-002-037	SND LQD TUP:H1	[0 to 0xff/0/1/times]
7-002-038	SND LQD TUP:H2	[0 to 0xff/0/1/times]
7-002-041	SND LQD TUP:H:H1	[0 to 0xff/0/1/times]
7-002-042	SND LQD TUP:H:H2	[0 to 0xff/0/1/times]
7-002-045	LONG PUMP AIR:H1	[0 to 0xff/0/1/times]
7-002-046	LONG PUMP AIR:H2	[0 to 0xff/0/1/times]
7-002-049	AIR CNT:P:T1	[0 to 0xff/1/1/times]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-002-050	AIR CNT:P:T2	[0 to 0xff/1/1/times]
7-002-051	AIR CNT:P:T3	[0 to 0xff/0/1/times]
7-002-052	AIR CNT:P:T4	[0 to 0xff/1/1/times]
7-002-055	AIRLEAKCHK:TH	[0 to 0xff/0/1/]
7-002-056	AIRLEAKCHK:TIM	[0x80000000 to 0x7fffffff/0000151922/1/]
7-002-057	AIRLEAKCHKCNT:H1	[0 to 0xff/1/1/times]
7-002-058	AIRLEAKCHKCNT:H2	[0 to 0xff/1/1/times]
7-002-061	ACL CNT:P:H1	[0 to 0xffff/0/1/times]
7-002-062	ACL CNT:P:H2	[0 to 0xffff/0/1/times]
7-002-065	ACL CNT:B:H1	[0 to 0xffff/0/1/times]
7-002-066	ACL CNT:B:H2	[0 to 0xffff/0/1/times]
7-002-069	ACL CNT:D:H1	[0 to 0xffff/0/1/times]
7-002-070	ACL CNT:D:H2	[0 to 0xffff/0/1/times]
7-002-073	ALNMNT CNT:TM1	[0 to 0xffff/0/1/times]
7-002-074	ALNMNT CNT:TM2	[0 to 0xffff/0/1/times]
7-002-075	ALNMNT CNT:TM3	[0 to 0xffff/0/1/times]
7-002-076	ALMMNT CNT:TM4	[0 to 0xffff/0/1/times]
7-002-077	ALNSPURG CNT:H1	[0 to 0xffff/0/1/times]
7-002-078	ALNSPURG CNT:H2	[0 to 0xffff/0/1/times]
7-002-081	ALNLPURG CNT:H1	[0 to 0xffff/0/1/times]
7-002-082	ALNLPURG CNT:H2	[0 to 0xffff/0/1/times]
7-002-085	ALNCL CNT:H1	[0 to 0xffff/3/1/times]
7-002-086	ALNCL CNT:H2	[0 to 0xffff/3/1/times]
7-002-089	ALNAOFL CNT:H1	[0 to 0xffff/1/1/times]
7-002-090	ALNAOFL CNT:H2	[0 to 0xffff/1/1/times]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-002-093	ALNSNDLQD CNT:H1	[0 to 0xffff/0/1/times]
7-002-094	ALNSNDLQD CNT:H2	[0 to 0xffff/0/1/times]
7-002-095	AOFL CNT:TM:H1	[0 to 0xff/0/1/times]
7-002-096	AOFL CNT:TM:H2	[0 to 0xff/0/1/times]
7-003-001	WASTE CNT:R:FULL	[0 to 0xffffffff/0015929202/1/nl]
7-003-002	WASTE CNT:RF:FUL	[0 to 0xffffffff/0001378538/1/nl]
7-003-003	MIST CNT:T1	[0 to 0xffffffff/0/1/nl]
7-003-004	MIST CNT:T2	[0 to 0xffffffff/0/1/nl]
7-003-005	MIST CNT:T3	[0 to 0xffffffff/0/1/nl]
7-003-006	MIST CNT:T4	[0 to 0xffffffff/0/1/nl]
7-003-009	FEED CNT:H1	[0 to 0xffff/0/1/p]
7-003-010	FEED CNT:H2	[0 to 0xffff/0/1/p]
7-003-013	DECAP TIME	[0 to 0xffff/0/1/sec]
7-003-014	HUMI:ACL:AL	[0 to 0xff/139/1/%]
7-004-001	START:SNDLQD:H1	[0x800000 to 0x7fffff/6777215/1/]
7-004-002	START:SNDLQD:H2	[0x800000 to 0x7fffff/6777215/1/]
7-004-005	START:PM STOP:T1	[0x8000 to 0x7fff/6341/1/]
7-004-006	START:PM STOP:T2	[0x8000 to 0x7fff/6341/1/]
7-004-007	START:PM STOP:T3	[0x8000 to 0x7fff/6341/1/]
7-004-008	START:PM STOP:T4	[0x8000 to 0x7fff/6341/1/]
7-005-001	STOP:PON PUMP:T1	[0 to 0xffffff/0/1/hour]
7-005-002	STOP:PON PUMP:T2	[0 to 0xffffff/0/1/hour]
7-005-003	STOP:PON PUMP:T3	[0 to 0xffffff/0/1/hour]
7-005-004	STOP:PON PUMP:T4	[0 to 0xffffff/0/1/hour]
7-006-001	ENV:ACL DECAPTIM	[0 to 0xffff/0/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-007-001	JDG:LIQUID MNT	[0 to 0xff/0/1/]
7-008-001	TEMP:DIFF POS:H1	[0 to 0xffff/245/1/]
7-008-002	TEMP:DIFF POS:H2	[0 to 0xffff/245/1/]
7-009-001	HUMI:DIFF POS:H1	[0 to 0xffff/522/1/]
7-009-002	HUMI:DIFF POS:H2	[0 to 0xffff/522/1/]
7-010-001	HTEMP:FIN MNT:H1	[0 to 0xff/024/1/deg]
7-010-002	HTEMP:FIN MNT:H2	[0 to 0xff/024/1/deg]
7-011-001	PURGE INKCNT:CAP	[0 to 0xffffffff/0/1/]
7-012-001	PURG CNT:C:H1	[0 to 0xff/0/1/times]
7-012-002	PURG CNT:C:H2	[0 to 0xff/0/1/times]
7-012-003	PURG CNT:C2:H1	[0 to 0xff/0/1/times]
7-012-004	PURG CNT:C2:H2	[0 to 0xff/0/1/times]
7-013-001	CART CHG CNT:K	[0 to 0xff/1/1/times]
7-013-002	CART CHG CNT:C	[0 to 0xff/1/1/times]
7-013-003	CART CHG CNT:M	[0 to 0xff/1/1/times]
7-013-004	CART CHG CNT:Y	[0 to 0xff/1/1/times]
7-013-005	CART RFIL CNT:K	[0 to 0xff/0/1/times]
7-013-006	CART RFIL CNT:C	[0 to 0xff/0/1/times]
7-013-007	CART RFIL CNT:M	[0 to 0xff/0/1/times]
7-013-008	CART RFIL CNT:Y	[0 to 0xff/0/1/times]
7-013-009	EMPTY CNT:C1	[0 to 0xff/0/1/times]
7-013-010	EMPTY CNT:C2	[0 to 0xff/0/1/times]
7-013-011	EMPTY CNT:C3	[0 to 0xff/0/1/times]
7-013-012	EMPTY CNT:C4	[0 to 0xff/0/1/times]
7-014-001	PWAIT:DATE	[0 to 0xffffffff/0/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-014-002	START:DATE	[0 to 0xffffffff/0/1/]
7-014-003	SC CODE1	[0 to 0xffff/211/1/]
7-014-004	SC CODE2	[0 to 0xffff/0/1/]
7-014-005	SC CODE3	[0 to 0xffff/0/1/]
7-014-006	SC CODE4	[0 to 0xffff/0/1/]
7-014-007	SC CODE5	[0 to 0xffff/0/1/]
7-014-008	SC COUNT1	[0 to 0xffffffff/4/1/]
7-014-009	SC COUNT2	[0 to 0xffffffff/0/1/]
7-014-010	SC COUNT3	[0 to 0xffffffff/0/1/]
7-014-011	SC COUNT4	[0 to 0xffffffff/0/1/]
7-014-012	SC COUNT5	[0 to 0xffffffff/0/1/]
7-014-013	JAM CODE1	[0 to 0xff/26/1/]
7-014-014	JAM CODE2	[0 to 0xff/26/1/]
7-014-015	JAM CODE3	[0 to 0xff/26/1/]
7-014-016	JAM CODE4	[0 to 0xff/26/1/]
7-014-017	JAM CODE5	[0 to 0xff/26/1/]
7-014-018	JAM CODE6	[0 to 0xff/26/1/]
7-014-019	JAM CODE7	[0 to 0xff/26/1/]
7-014-020	JAM CODE8	[0 to 0xff/14/1/]
7-014-021	JAM CODE9	[0 to 0xff/26/1/]
7-014-022	JAM CODE10	[0 to 0xff/26/1/]
7-014-023	JAM COUNT1	[0 to 0xffffffff/0/1/]
7-014-024	JAM COUNT2	[0 to 0xffffffff/0/1/]
7-014-025	JAM COUNT3	[0 to 0xffffffff/0/1/]
7-014-026	JAM COUNT4	[0 to 0xffffffff/0/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-014-027	JAM COUNT5	[0 to 0xffffffff/0/1/]
7-014-028	JAM COUNT6	[0 to 0xffffffff/0/1/]
7-014-029	JAM COUNT7	[0 to 0xffffffff/0/1/]
7-014-030	JAM COUNT8	[0 to 0xffffffff/0/1/]
7-014-031	JAM COUNT9	[0 to 0xffffffff/0/1/]
7-014-032	JAM COUNT10	[0 to 0xffffffff/0/1/]
7-014-033	FILL PROGRESS1	[0 to 0xffffffff/0/1/]
7-014-034	FILL PROGRESS2	[0 to 0xffffffff/0/1/]
7-014-035	FILL PROGRESS3	[0 to 0xffffffff/0/1/]
7-014-036	FILL PROGRESS4	[0 to 0xffffffff/0/1/]
7-014-037	LAST MNT TM1	[0 to 0xffffffff/0/1/]
7-014-038	LAST MNT TM2	[0 to 0xffffffff/0/1/]
7-014-039	LAST MNT TM3	[0 to 0xffffffff/0/1/]
7-014-040	LAST MAINTE1	[0 to 0xff/0/1/]
7-014-041	LAST MAINTE2	[0 to 0xff/0/1/]
7-014-042	LAST MAINTE3	[0 to 0xff/0/1/]
7-014-043	LAST MNT CNT1	[0x800000 to 0x7fffff/0/1/]
7-014-044	LAST MNT CNT2	[0x800000 to 0x7fffff/0/1/]
7-014-045	LAST MNT CNT3	[0x800000 to 0x7fffff/0/1/]
7-014-046	LAST MNT TM:H1	[0 to 0xffffffff/0/1/]
7-014-047	LAST MNT TM:H2	[0 to 0xffffffff/0/1/]
7-014-050	LAST MAINTE:H1,2	[0 to 0xff/0/1/]
7-014-051	SC SUB CODE1	[0 to 0xff/0/1/]
7-014-052	SC SUB CODE2	[0 to 0xff/0/1/]
7-014-053	SC SUB CODE3	[0 to 0xff/0/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-014-054	SC SUB CODE4	[0 to 0xff/0/1/]
7-014-055	SC SUB CODE5	[0 to 0xff/0/1/]
7-014-056	JAM POS1	[0 to 0xff/0/1/]
7-014-057	JAM POS2	[0 to 0xff/0/1/]
7-014-058	JAM POS3	[0 to 0xff/0/1/]
7-014-059	JAM POS4	[0 to 0xff/0/1/]
7-014-060	JAM POS5	[0 to 0xff/0/1/]
7-014-061	JAM POS6	[0 to 0xff/0/1/]
7-014-062	JAM POS7	[0 to 0xff/0/1/]
7-014-063	JAM POS8	[0 to 0xff/0/1/]
7-014-064	JAM POS9	[0 to 0xff/0/1/]
7-014-065	JAM POS10	[0 to 0xff/0/1/]
7-014-066	LAST AOFLMNT TM1	[0 to 0xffff/0/1/day]
7-014-067	LAST AOFLMNT TM2	[0 to 0xffff/0/1/day]
7-015-001	INIT POS:T1	[0 to 0xffff/879/1/]
7-015-002	INIT POS:T2	[0 to 0xffff/1670/1/]
7-015-003	INIT POS:T3	[0 to 0xffff/1842/1/]
7-015-004	INIT POS:T4	[0 to 0xffff/2706/1/]
7-015-007	FULL POS:T1	[0 to 0xffff/935/1/]
7-015-008	FULL POS:T2	[0 to 0xffff/1615/1/]
7-015-009	FULL POS:T3	[0 to 0xffff/1911/1/]
7-015-010	FULL POS:T4	[0 to 0xffff/2654/1/]
7-015-013	DIFF POS:T1	[0x8000 to 0x7fff/120/1/]
7-015-014	DIFF POS:T2	[0x8000 to 0x7fff/128/1/]
7-015-015	DIFF POS:T3	[0x8000 to 0x7fff/111/1/]

SP No.	SP Name	[Min to Max/Init./Step/Unit]
7-015-016	DIFF POS:T4	[0x8000 to 0x7fff/144/1/]
7-015-019	DCL CNT:H1	[0 to 0xff/0/1/times]
7-015-020	DCL CNT:H2	[0 to 0xff/0/1/times]
7-015-023	PTMOUT CNT:T1	[0 to 0xff/0/1/times]
7-015-024	PTMOUT CNT:T2	[0 to 0xff/0/1/times]
7-015-025	PTMOUT CNT:T3	[0 to 0xff/0/1/times]
7-015-026	PTMOUT CNT:T4	[0 to 0xff/0/1/times]
7-015-029	PMNT CNT	[0 to 0xff/0/1/times]
7-016-001	EMERG:START	Not Used
7-016-002	EMERG:STP:FLG	Not Used
7-016-003	EMERG:CNT	Not Used
7-016-004	EMERG:NUM	Not Used
7-016-005	EMERG:STP:TIM	Not Used
7-016-006	EMERG:STP:NUM	Not Used
7-016-007	EMERG:STP:AIR	Not Used
7-016-008	EMERG:STP:INKEND	Not Used
7-016-009	EMERG:PRINT CNT	Not Used
7-016-010	EMERG:TH	Not Used

SP8-XXX

Not used.

Status Reports

Four reports can be printed to tell you what you know to need about the machine for setting and servicing. This section shows you how to print these reports:

- Page Counter
- Config. List List (System Summary)
- Service Summary
- Engine Summary Chart

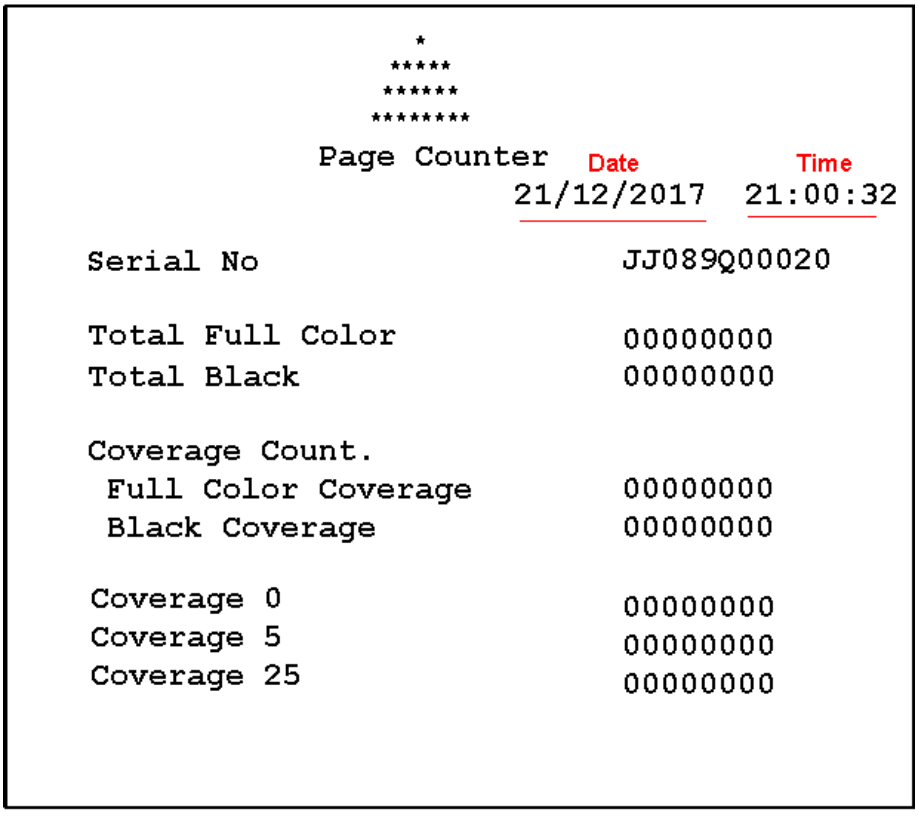
The Config. List contains the base system information. The Service Summary also contains not only the base system information but includes other information such as Bit Switch settings, etc. The Service Summary is the more comprehensive report and is only two pages long (the same length as the Config. List.)

Here is a quick reference list that tells what type information is found in each report.

Item	Report Name	
Bit Switch		Service Summary
BRAND NAME	Config. List	Service Summary
Host Interface	Config. List	Service Summary
Interface Information	Config. List	Service Summary
Language	Config. List	Service Summary
Log Data		Service Summary
Maintenance	Config. List	Service Summary
Maintenance Adjustment		Service Summary
Secondary Counter		Service Summary
Total Full Color	Page Counter	Service Summary
Total Black	Page Counter	Service Summary
Total Economy Color	Page Counter	Service Summary
Coverage Count.	Page Counter	Service Summary
Cartridge Use Number		Service Summary
Manual Maintenance Counter		Service Summary

Item	Report Name	
Paper Input	Config. List	Service Summary
Printer Log		Service Summary
Serial No.	Page Counter	
Service Menu		Service Summary
System	Config. List	Service Summary
System Reference	Config. List	Service Summary

1. Page Counter



w_j089m713_en

The counter lists the number of prints. The print totals do not include the number of test patterns that have been printed. The counter keeps totals for these items:

- **Date**, **Time**. The date is displayed DD/MM/YY, the time is 24-hour time hh:mm:ss.

- **Total Full Color**. The total number of sheets printed in color.
- **Total Mono Color**. The total number of sheets printed in monochrome.

1. **[▼/Menu]> "Counter"> [#Enter]> "Show Counter"**
2. **[▼/Menu] or [▲]> "Print"> [#Enter]>"Press # Key"> [#Enter]**
3. **[Start]> "Processing..."**

Note

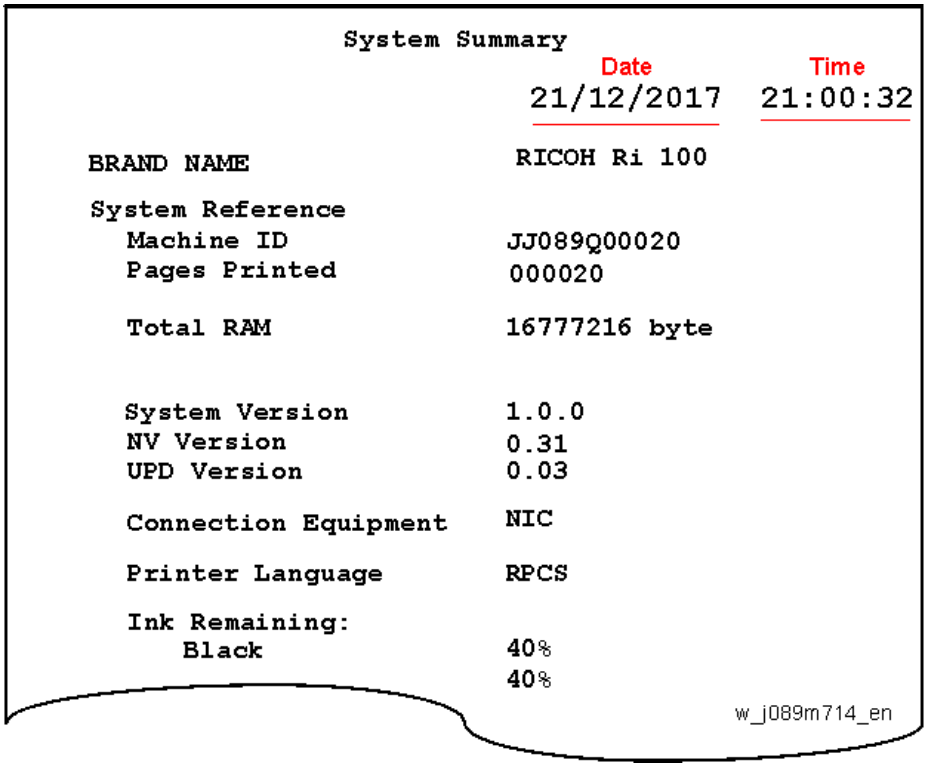
- A printed single-sided sheet counts as "1".
- A printed double-sided sheet counts as "2".
- The counter limit is 99,999.

2. Config. List (System Summary)

The Config. List lists information about the configuration of the machine.

Important

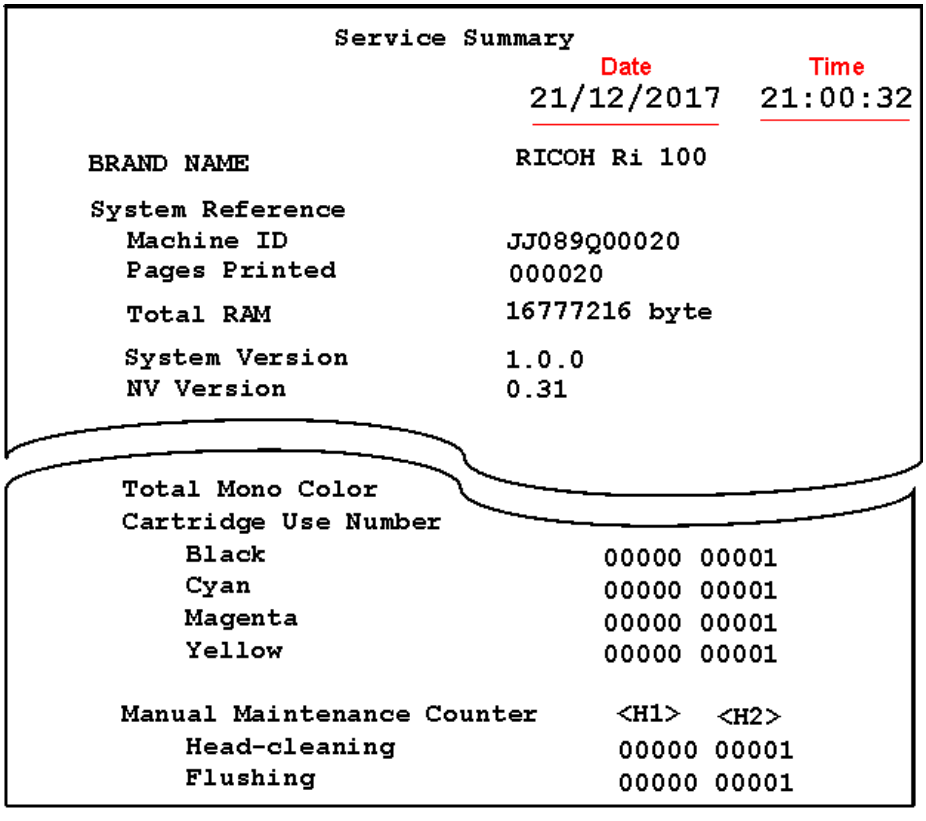
- **This report does not show the log data. To see the log data, print the Service Summary.**



To print the Config. List:

1. Prepare for test printing. (page 174 "Preparing for Test Printing")
2. [▼/Menu]> "Counter"> [▲] or [▼/Menu]> "List/Test Print".
3. [#Enter]> "Config. Page"> [#Enter]> "Processing..."
4. [Start]> "Processing..."

3. Service Summary

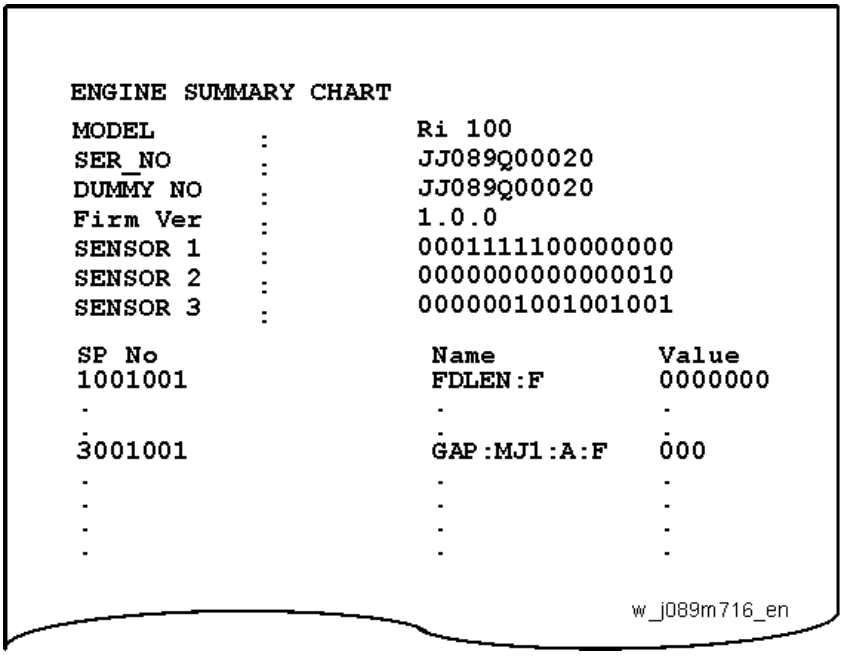


w_j089m715_en

1. Enter the Service Menu.
2. [#Enter]> "Bit Switch"> [▲] or [▼/Menu]> "Service Summary"
3. [#Enter]> "Press # to Start"> [#Enter]
4. [Start]> "Processing..."

4. Engine Summary Chart

The Engine Summary Chart lists all the current SP code settings.



```
ENGINE SUMMARY CHART
MODEL       :    Ri 100
SER_NO      :    JJ089Q00020
DUMMY NO    :    JJ089Q00020
Firm Ver    :    1.0.0
SENSOR 1    :    0001111100000000
SENSOR 2    :    0000000000000010
SENSOR 3    :    0000001001001001

SP No          Name          Value
1001001        FDLEN:F       0000000
.              .             .
.              .             .
3001001        GAP:MJ1:A:F   000
.              .             .
.              .             .
.              .             .
.              .             .
```

w_j089m716_en

To print the Engine Summary Chart:

1. **Prepare for test printing.(page 174 "Preparing for Test Printing")**

   Note

   - The report is about 7 pages long.

2. **Enter the Service Menu.**

SYSTEM Ver. nnn
Service Menu

3. **[▼/Menu]> "Engine Maint."**

SP No.
5990002

4. **Using [▲] or [▼/Menu], enter "5990002".**

PRINT SMC
5990002

5. **[#Enter].**

PRINT SMC
EXEC

6. **[#Enter].**

OK?

7. **[#Enter] > "Processing...".**
8. **[Start]> "Processing...".**
   - Wait for the report to print (it does not start immediately).
   - Printing requires about 2 min.
9. **Exit the Service Menu, and switch the machine off.**
10. **[Power] to switch the machine on.**

Here is a brief summary of what is listed in the Engine Summary Chart.

Heading	Meaning
MODEL	Number of the Printer Model
SER_NO	Printer Serial Number
DUMMY_NO	
Firm Ver	Version number of the firmware in the printer
SENSOR 1	See details below.
SENSOR 2	
SENSOR 3	
SP No, Name, Value	SP number, name, value of current setting

Sensor 1: Input Sensors (1 of 2)

The status of these sensors are also displayed with SP5-804-004.

No.	Meaning	No.	Meaning
0	Top Cover Switch	8	Not Used
1	Cassette Size Sensor	9	Not Used
2	Not Used	10	Not Used
3	Not Used	11	Not Used
4	Not Used	12	Not Used
5	1st Registration Sensor	13	Ink Level Sensor (Feeler)

No.	Meaning	No.	Meaning
6	Cassette Carriage HP Sensor (Rear)	14	Maintenance HP Sensor
7	Cassette Carriage HP Sensor (Front)	15	Front Right Cover Switch

Sensor 2: Input Sensors (2 of 2)

The status of these sensors are also displayed with SP5-804-005.

No.	Meaning
0	USB Connection Detection
1	GJ10 Option Detection
2	Jam Wheel Cover Switch
3	Not Used
4	Not Used
5	Not Used
6	Not Used
7	Not Used
8	HRB Fuse Blown Detection

Sensor 3: Ink Cartridge Sensors

The status of these sensors are also displayed with SP5-804-015.

No.	Meaning	No.	Meaning
0	K Ink Cartridge Set	8	M Ink Cartridge Refill
1	K Ink Cartridge New	9	Y Ink Cartridge Set
2	K Ink Cartridge Refill	10	Y Ink Cartridge New
3	C Ink Cartridge Set	11	Y Ink Cartridge Refill

No.	Meaning	No.	Meaning
4	C Ink Cartridge New	12	Not Used
5	C Ink Cartridge Refill	13	
6	M Ink Cartridge Set	14	
7	M Ink Cartridge New	15	

Firmware Updates

Operating Environment and Other Requirements

If the machine is connected to computers by network peer-to-peer or directly via a single USB cable, successful updates are guaranteed.

Supported Operating Systems (as of Feb, 2018)

Note

- Supported operating systems may increase in the future.
- Microsoft® Windows® 7 Starter
- Microsoft® Windows® 7 Home Premium
- Microsoft® Windows® 7 Professional
- Microsoft® Windows® 7 Ultimate
- Microsoft® Windows® 7 Enterprise
- Microsoft® Windows® 8.1
- Microsoft® Windows® 8.1 Pro
- Microsoft® Windows® 8.1 Enterprise
- Microsoft® Windows® 10 Home
- Microsoft® Windows® 10 Pro
- Microsoft® Windows® 10 Enterprise
- Microsoft® Windows® 10 Education
- Microsoft® Windows® 10 Mobile
- Microsoft® Windows® 10 Mobile Enterprise
- Microsoft® Windows Server® 2008 Foundation
- Microsoft® Windows Server® 2008 Standard
- Microsoft® Windows Server® 2008 Enterprise
- Microsoft® Windows Server® 2008 Datacenter
- Microsoft® Windows Server® 2008 for Itanium-based Systems
- Microsoft® Windows® Web Server 2008
- Microsoft® Windows® HPC Server 2008
- Microsoft® Windows Server® 2008 R2 Foundation
- Microsoft® Windows Server® 2008 R2 Standard
- Microsoft® Windows Server® 2008 R2 Enterprise

- Microsoft® Windows Server® 2008 R2 Datacenter
- Microsoft® Windows Server® 2008 R2 for Itanium-based Systems
- Microsoft® Windows® Web Server 2008 R2
- Microsoft® Windows® HPC Server 2008 R2
- Microsoft® Windows Server® 2012 Foundation
- Microsoft® Windows Server® 2012 Essentials
- Microsoft® Windows Server® 2012 Standard
- Microsoft® Windows Server® 2012 Datacenter
- Microsoft® Windows Server® 2012 R2 Foundation
- Microsoft® Windows Server® 2012 R2 Essentials
- Microsoft® Windows Server® 2012 R2 Standard
- Microsoft® Windows Server® 2012 R2 Datacenter
- Microsoft® Windows Server® 2016 Datacenter
- Microsoft® Windows Server® 2016 Standard
- Microsoft® Windows Server® 2016 Essentials
- Microsoft® Windows Server® 2016 MultiPoint Premium
- Microsoft® Hyper-V® Server 2016

You must login as an administrator or as a user with administrator privileges.

About Printer Drivers

Printing is possible provided the printer's driver is installed.

Update Cautions

Caution 1

Before performing updates, check your computer's power options: make sure [Put the computer to sleep] is set to "Never".

To check your computer's Power Options under Windows 7 (procedures for other operating systems will differ):

1. **Click the [Start] menu.**
2. **Click [Control Panel].**
3. **Click [Hardware and Sound].**
4. **Click [Change when the computer sleeps].**
5. **Make sure [Put the computer to sleep] is set to "Never".**

Caution 2

During updates, make sure the machine's power is not turned off and the network or USB cable remains connected. Also, during updates, do not print any jobs or run applications that use the printer driver or Status Monitor.

Caution 3

If the machine's power is turned off or the USB or network cable is disconnected during updates, the update will fail and must be performed again.

Caution 4

During updates, do not put the computer into [Put the computer to sleep] manually.

Caution 5

If you want to use the SmartDeviceMonitor port to update the firmware over a network, be sure to uncheck the [Use Extended Features] check box of SmartDeviceMonitor for Client.

Caution 6

During updates, do not put the computer into [Put the computer to sleep]

Bidirectional communication is not available it you are running SmartDeviceMonitor port under a 64-bit operating system. It you are using a 64-bit operating system, see page 247 "Firmware Update (Bidirectional-Disabled)", and perform the update procedure.

Preparation

Depending on the printer driver and its settings, update procedures might vary.

- If "bidirectional support" has been enabled in the printer properties dialog box:

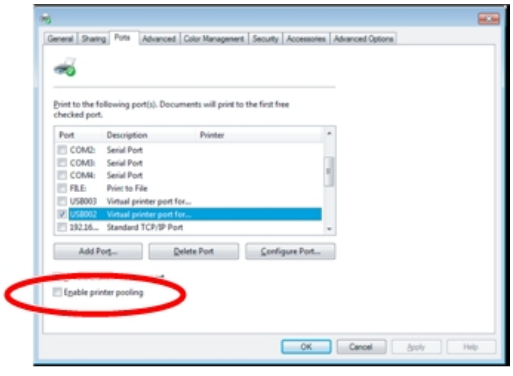
  Update the firmware by following the update procedure shown in page 245 "Firmware Update (Bidirectional-Enabled)".

- If "bidirectional support" in the printer properties dialog box has been disabled:

  Update the firmware by following the update procedure shown in page 247 "Firmware Update (Bidirectional-Disabled)" (We recommend you enable bidirectional support.)

Before you start the update, make sure of the following:

- The machine is in standby mode.
- No applications are running on the computer.
- The machine is connected to the computer with a USB cable or via network peer-to-peer.
- Open the properties dialog box for the machine in use and check the port status.



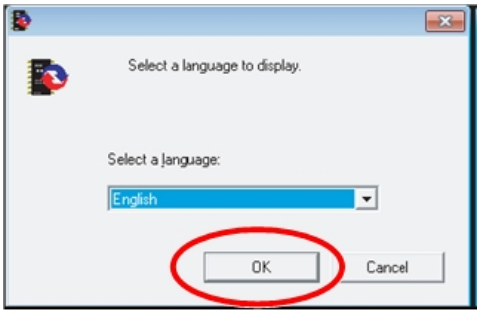
j0271205

Firmware Update (Bidirectional-Enabled)

1. **Double-click [Ri100Haokanp1 _VX.XX_g_upd.exe] to start the update.**

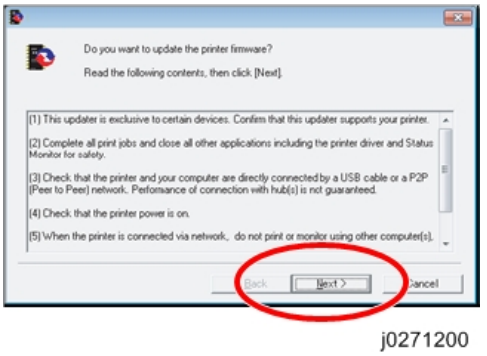
   VX.XX represents the version.

2. **Select [English], and then click [OK].**



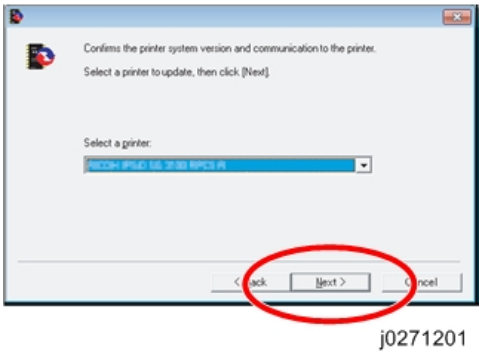
j0271199

3. **The following screen appears. Check the displayed details, and then click [Next >].**



j0271200

4. **Select the machine name, and then click [Next >].**

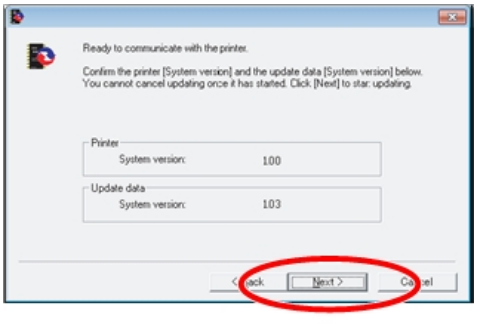


j0271201

5. **Check that the system version for [Update data] is later than the system version for [Printer], and then click [Next >].**

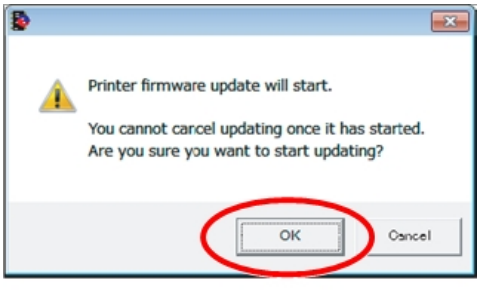
Note

- The following screen is an example. The versions that actually appear may be different.



j0271206

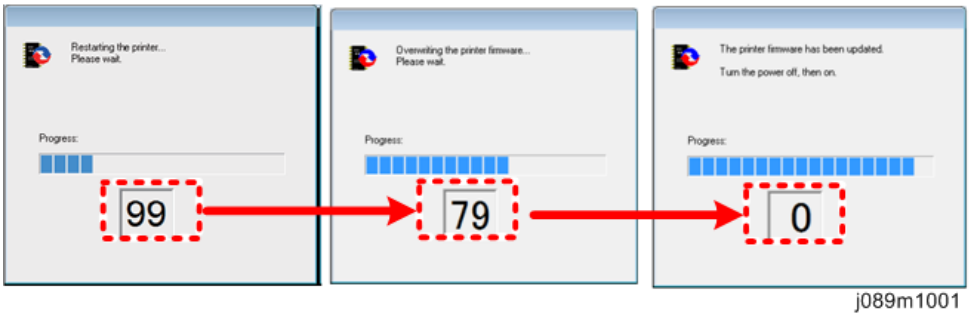
6. **Click [OK].**



j0271202

7. **Updating starts.**

Do not switch the machine off while updating. The machine is switched back on automatically.



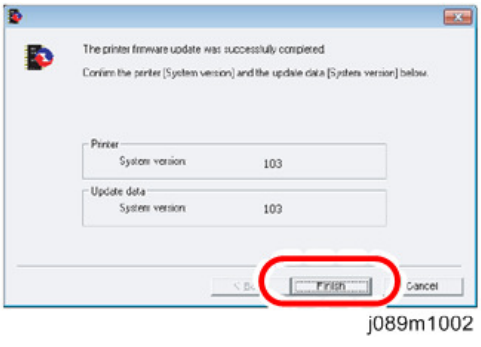
j089m1001

8. **After updating, check the version, and then click [Finish].**

   Update is complete.

Note

- The following screen is an example. The versions that actually appear may be different.



j089m1002

Firmware Update (Bidirectional-Disabled)

Note

- To update the firmware when bidirectional communication is disabled, read page 243 "Update Cautions", and then check the following:
- You must be able to view the machine's control panel.
- The procedure requires you to check the machine's status on the control panel. Make sure you are able to view the machine's control panel when updating the firmware.
- Check the current firmware version and the firmware version you want to install. Take care to install only firmware versions that are later than the version that is already installed. For details about how to check the current firmware version, see below.

How to check the current firmware version

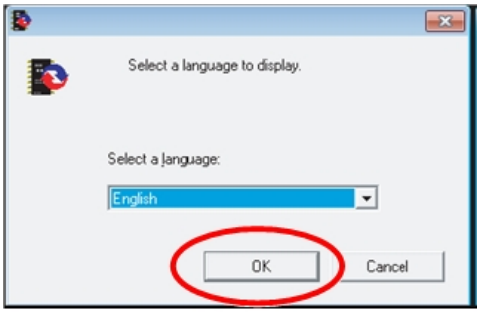
1. **Press the [▼/Menu] key.**

2. Press the [▲] or [▼/Menu] key to display [List/Test Print], and then press the [#Enter] key.
3. Press the [▲] or [▼/Menu] key to display [List/Test Print], and then press the [#Enter] key.
4. The System Summary is printed.
5. Check the version number under "System Version".

How to Update the Firmware When Bidirectional Communication is Disabled

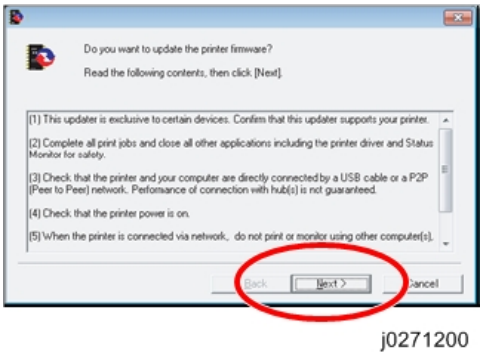
1. Double-click [Ri100Haokanp1 _VX.XX_g_upd.exe] to start the update.

   VX.XX represents the version.
2. Select [English], and then click [OK].



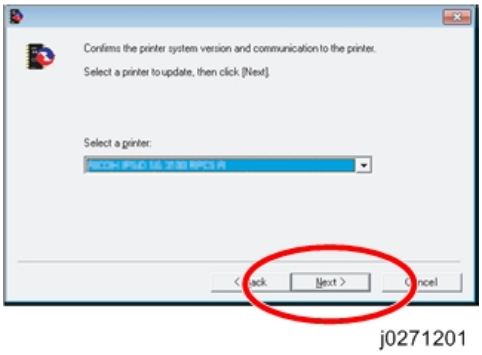
j0271199

3. The following screen appears. Check the displayed details, and then click [Next >].



j0271200

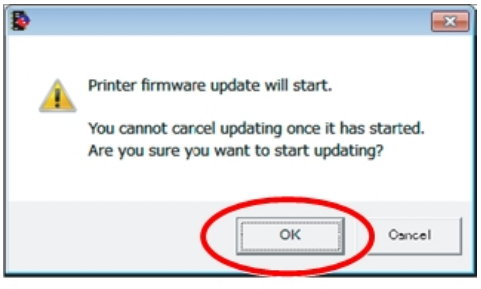
4. **Select the machine name, and then click [Next >].**



j0271201

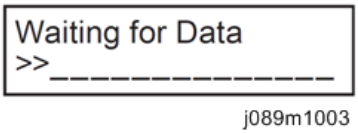
5. **After checking the following, click [OK].**
   - A functional machine has been selected.
   - The machine is not offline.
   - The machine is available and not currently inactive.
   - There are no remaining print jobs displayed on the task bar.

   Check the control panel for the next step.



j0271202

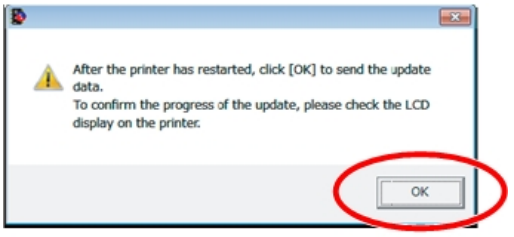
6. **Check that the message "Waiting for Data" is displayed on the machine's control panel.**



j089m1003

7. **Click [OK].**

   Check the control panel for the next step.

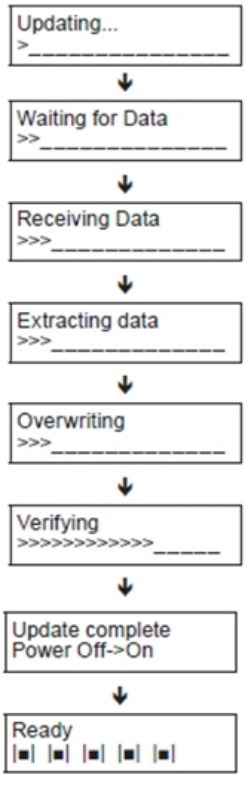


j0271203

8. **Updating starts.**

   Check the update progress displayed on the LCD of the machine's control panel.

   The progress of the update is displayed on the LCD of the machine's control panel in the following order.



j0271204

9. **When the "Ready" message appears, the machine is ready to print.**
10. **After the update, check that the new firmware version is displayed.**

    For details, see page 247 "How to check the current firmware version".

11. **The update is complete.**

6. Troubleshooting

Image Problems

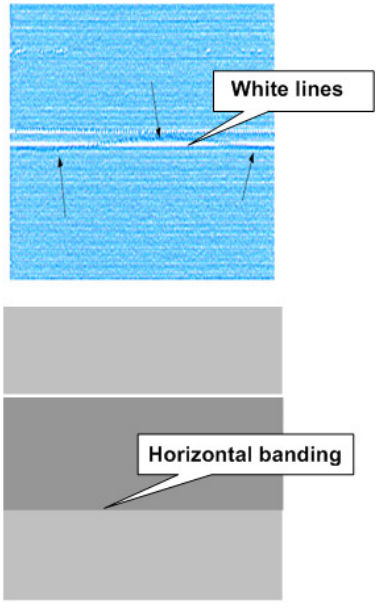
Basic Check Points and Specifications

Work environment	**Is there a problem at the printer location?**
	• Make sure that the printer is level. Place the printer in a location where it will not be subject to shaking or excessive force. • Make sure the temperature and humidity are within the acceptable ranges: Temperature: 10° C to 45°C (50°F to 113°F) Humidity: 5% to 90% rH
Ink cartridge	**Is an old print cartridge being used?**
	• Print cartridges should be opened before their expiration date and used within six months of being opened. Use new cartridge. • To replace all ink inside the print head tank, perform print head flushing 4 times.
	Is a genuine print cartridge being used?
	• Using a cartridge other than a genuine print cartridge or using a cartridge refilled with ink will lower the print quality and could cause a breakdown. • Always use a genuine print cartridge.
Garment	**Is the garment too thick or too thin?**

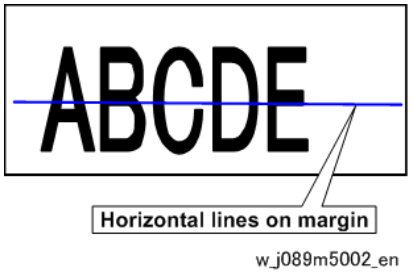
	Check that the thickness of the garment is within the following range when printing: • A4 (standard)/A5 (option) cassette 0 mm - 4 mm • Multi tray (option): 0 mm - 32 mm **Note** • The values above do not guarantee that printing can be performed. Note that when values, which include sagging or raising from when setting the media, exceed the upper limit, automatic height detection cannot be performed.
Driver settings	**Is the driver setting correct for the cassette size?**
	• Open the printer driver. • Make sure that the cassette size setting in the printer driver is correct. • Check the settings in the "Print On:" list in the Printer Properties dialog box.
	Is the driver setting correct for the garment type?
	• Open the printer driver. • Make sure that the garment type setting in the printer driver is correct. • Check the settings in the "Print On:" list in the Printer Properties dialog box.
	Have the print quality settings been made?
	• Open the printer driver • In the "Select Print Quality:" box, check and set the "Quality Priority" and "Speed Priority" settings for the job.
Application	**Does the same problem occur with other applications?**
	Confirm whether the problem occurs with only one application or with other applications as well. • If the problem does not occur with another application use that application to do the print job. • If the problem occurs with the same file using other applications, try saving the file under a different name and then printing out this renamed file.
Firmware	**Has the firmware in the machine been updated to the latest version?**

	If not, update the firmware to the latest version.

Problems and Solutions

White lines, horizontal banding	
 w_j089m5001_en	**1. Are nozzles clogged?** Print out the nozzle check pattern and check if any of the nozzles are clogged. If there is a blockage, start the cleaning procedure for the print head(s) in question. **Note**: In some cases, this will only solve the problem temporarily. If the problem persists, clean the maintenance unit. **Cleaning Sequence To Solve the Problem:** 1. Nozzle check 2. Head cleaning 3. Nozzle check 4. Leave the machine 5 to 10 minutes 5. Do Steps 2, 3 twice 6. Head flushing 7. Nozzle check 8. Leave the machine 8 hours 9. Nozzle check **2. If none of the above work** **Note**: If the operator prints out an image comprised mainly of photos or solid filled areas, horizontal lines may still appear on the printouts after performing the recommended action. The machine needs to be repaired. • Ink built-up in maintenance unit, or maintenance unit failed. Clean or replace maintenance unit. • Vertical encoder wheel dirty or damaged. Clean or replace vertical encoder wheel • Print head failed. Replace the carriage unit.

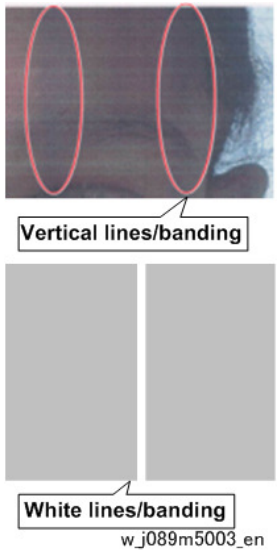
Horizontal lines on the margin



1. No action

Due to print head failure, the machine needs to be swapped. It cannot be repaired. Replace the carriage unit.

Vertical lines, vertical banding



1. Are all adjustments correct?

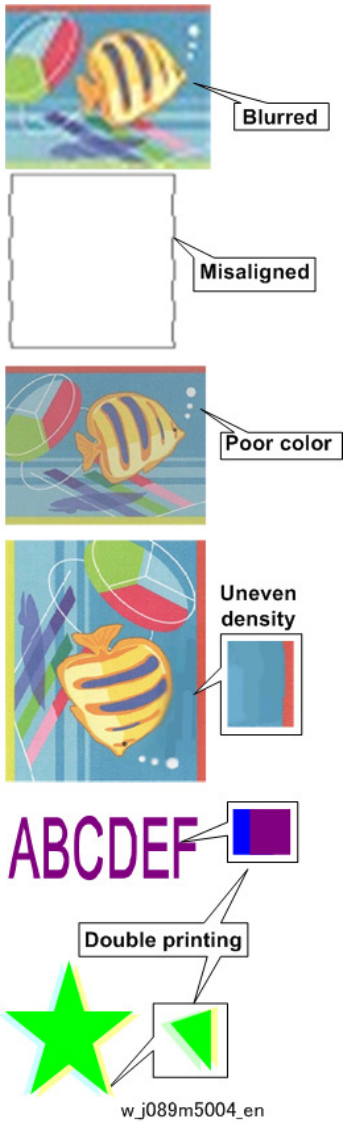
Check and adjust the head position.

2. If none of the above work

The machine needs to be repaired.

- The horizontal encoder sheet may be dirty, damaged, or installed incorrectly.
- Replace the horizontal encoder strip.

- **Image blurred, misaligned**
- **Poor color, uneven density**
- **Double printing**



1. Is the distance between the print heads and the garment too large?

- Stretch out any wrinkles and flatten the garment to be printed.
- Perform maintenance (clean the print heads).
- Adjust the height of the tray.

2. The height of the cassette cannot be detected because the height sensor is stained with ink or the like.

Clean the height sensor (see page 183 "Height Sensor Cleaning").

3. Are the nozzles clogged?

Print out the nozzle check pattern and check if any of the nozzles are clogged. If there is a blockage, start the cleaning procedure for the print head(s) in question.

Note: In some cases, this will only solve the problem temporarily. If the problem persists, clean the maintenance unit.

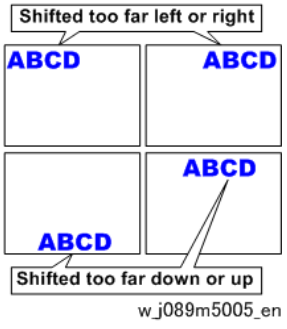
Cleaning Sequence To Solve the Problem:

1. Nozzle check
2. Head Cleaning
3. Nozzle check
4. Leave the machine 5 to 10 minutes
5. Do Steps 2, 3 twice
6. Head flushing
7. Nozzle check
8. Leave the machine 8 hours
9. Nozzle check

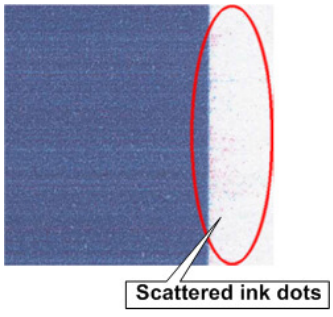
4. If none of the above work

The machine needs to be repaired:

- Horizontal encoder strip dirty, damaged. Replace horizontal encoder strip.
- Carriage cover over the 1st registration sensor is loose, missing or damaged. Attach the cover correctly or replace it.

Misaligned printing	
 w_j089m5005_en	**1. Is the distance between the print heads and the garment too large?** • Stretch out any wrinkles and flatten the garment to be printed. • Perform maintenance (clean the print heads). • Adjust the height of the tray. **2. Are all the adjustments correct?** Check registration and adjust as necessary. **3. If none of the above work** The machine needs to be repaired: • Horizontal encoder strip is dirty or damaged. Replace horizontal encoder strip. • Vertical encoder wheel dirty or damaged. Replace vertical encoder wheel. • Carriage cover missing or damaged. Re-attach or replace carriage cover. • Replace the carriage unit.

Ink scatter



w_j089m5006_en

1. Is the distance between the print heads and the garment too large?

- Stretch out any wrinkles and flatten the garment to be printed.
- Perform maintenance (clean the print heads).
- Adjust the height of the tray.

2. Are the ink nozzles clogged?

Print out the nozzle check pattern and check if any of the nozzles are clogged. If there is a blockage, start the cleaning procedure for the print head(s) in question.

Note: In some cases, this will only solve the problem temporarily. If the problem persists, clean the maintenance unit.

Cleaning Sequence To Solve the Problem:

1. Nozzle check
2. Head Cleaning
3. Nozzle check
4. Leave the machine 5 to 10 minutes
5. Do Steps 2, 3 twice
6. Head flushing
7. Nozzle check
8. Leave the machine 8 hours
9. Nozzle check

3. If none of the above work

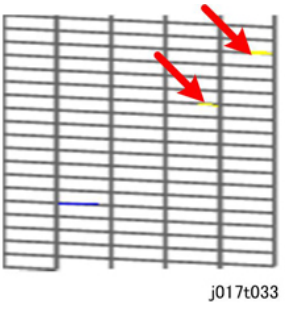
The machine needs to be repaired:

- Replace maintenance unit. Ink build-up or maintenance unit may have failed.
- Replace the carriage unit.

Mixed colors

1. Are the ink nozzles clogged?

Print out the nozzle check pattern and check if any of the nozzles are clogged. If there is a blockage, perform the cleaning procedure on the print head(s) in question. If any of the lattice patterns show ink mixing (e.g., yellow ink appears on the lattice pattern for black), perform cleaning on the print head for that lattice pattern.



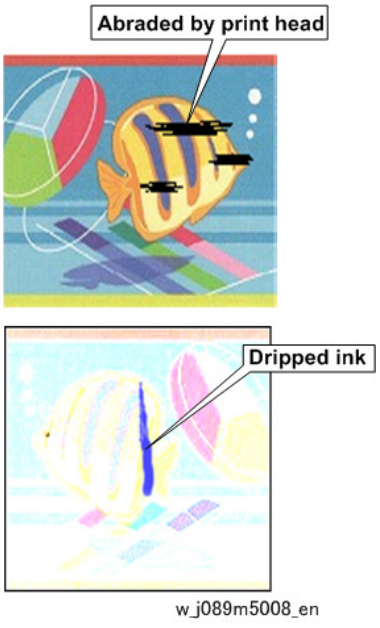
Note: In some cases, this will only solve the problem temporarily. If the problem persists, clean the maintenance unit.

2. If none of the above work

The machine needs to be repaired:

- Replace the maintenance unit. Ink has built up or the unit has failed.

Output dirty, ink running



1. **Is the distance between the print heads and the garment too large?**

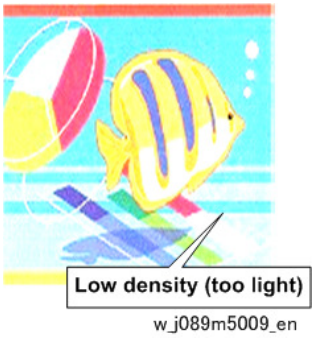
- Stretch out any wrinkles and flatten the garment to be printed.
- Perform maintenance (clean the print heads).
- Adjust the height of the tray.

2. If none of the above work

The machine needs to be repaired:

- Transport belt dirty or damaged. Clean transport belt.
- Replace the carriage unit.

Light density

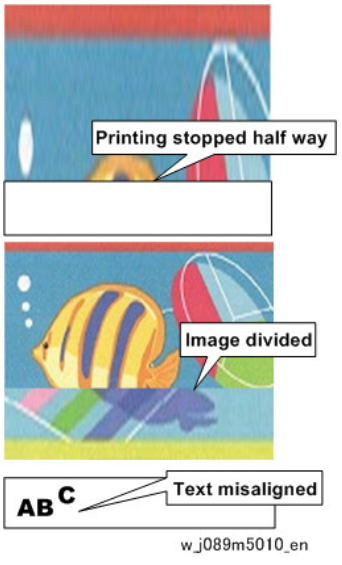


1. Change the driver settings.

2. If none of the above work

Adjust the printing density.

Abnormal image



1. Is the ink cartridge empty, or has the printer job been canceled?

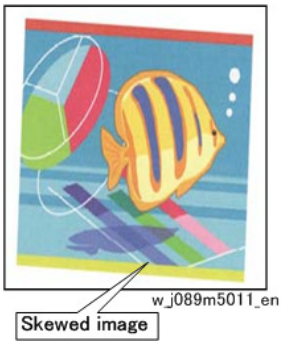
- Check the amount of ink remaining.
- Confirm whether [Cancel] was pressed. This is possible from the PC in cases where the Ink End condition has stopped the print job.

2. If none of the above work

The machine needs to be repaired:

- Controller board failure, replace controller board.

Skew



1. Is the garment set correctly?

Check that the garment is set correctly.

2. Check inside the machine.

Confirm whether there are any fragments of jammed garment still inside the machine (especially in the rear area).

3. If none of the above work

This is product specification.

Error Codes

Operation Panel Display

Messages follow a priority in keeping the operator informed about the status of the machine.

- The LCD [A] and Alert LED [B] are used to indicate errors.
- If two or more status messages are issued at the same time, the message with the highest priority is displayed first.
- The table below shows the priority of how status messages are displayed on the operation panel.

Error Priority Table

Priority	Error Type		Alarm LED (Red)	LCD Display
High	SC		Lit	Error Display
	Operator Call		Lit	
	Normal Status	Warning Condition	Blinking	Message Display
Low		Diagnostic Error	Blinking	

- There are two types of error display, one uses text messages and another uses numbers.

Error Classifications

Error Type	Description	Main Error
Warning Condition	The machine can print, but a warning is issued to the operator because the machine will stop printing if the condition is left unattended and not corrected.	• Left ink sump near full • Ink collector unit near full • Ink low • Print head maintenance failed • Temperature out of operation range • Ink filling
Abnormal Conditions	An abnormal condition exists that prevents the machine from printing. The machine cannot print until the condition has been corrected. Once the condition has been corrected, the machine can resume printing without cycling the machine off/on. The corrective measures can be done by the operator to restore operation.	• Ink cartridge empty (printing possible) • Ink cartridge empty (printing not possible) • Ink end print error • Used ink cartridge • Ink collector unit full • Used ink collector unit • Garment/Printing Media jam • Confirmation after re-filling • Cover Open • Unit not detected • Print Cartridge(s) Not Detected/Cover Open • Garment/Printing Media size or type mismatch error • Garment/Printing Media size error • No Garment/Printing Media present • Temperature out of operation range

Error Type	Description	Main Error
Breakdown or failure error (SC)	An abnormal condition exists indicating a breakdown that prevents the machine from printing. After the cause of the problem has been removed, the machine must be cycled off/on to restore normal operation. The machine basically requires servicing (the problem cannot be solved by the operator).	See the "Error Code" table.
Print/Data Errors	The designated print operation cannot function, or there is a print data error.	• Memory overrun • Work memory overrun • Data flow interruption
Diagnostic Error	The machine fails to operate due to a problem with the CTL board or a controller option.	• Parallel interface error • Memory error • Flash memory error

Temperature Range Errors

At power on	At power on, the printer is ready to print and Ready status is maintained	Once the machine has entered the usable temperature range that guarantees optimum operation, the machine automatically enters the Ready status.
Printing...	Operation has been interrupted to wait for the machine to resume the Ready status.	Maintains machine Ready status. The machine needs to be cycled off/on.

- Once the machine falls below or exceeds the usable temperature range, quality printing can no longer be assured so an error message will alert the operator that printing will stop until normal temperature has been restored.
- If such an error occurs, the machine should be moved to a location where ambient temperature is 10°C to 45°C (50°F to 113°F).

Operation Panel Messages

1. Status Messages

No.	Message	Action
01	Loading Ink... / WAIT! N minutes	Ink being filled. "N" indicates time required for this operation. Do not touch any keys during the operation.
02	Maintenance in Process...	Print head cleaning or flushing is in progress. Wait for print head maintenance to finish.
03	Press Start Key	Printing data was received, Press the [Start] key and start printing.
04	Processing...	The machine is printing.
05	Ready	The machine is able to print.
06	Resetting Job...	The machine is reinitializing a print job. Wait a moment.
07	Setting Change...	The machine is updating the network interface. Wait a moment.
08	Waiting...	Wait a moment.

2. Status Message

No.	Message	Causes	Action
1	Adjust height, press Start to / reset or Tray set to reset garment	Wrinkles, slacks or floats remain on the fabric or the edges of the fabric are protruding from the cassette.	Detach the cassette, and load the fabric again. If the message reappears, adjust the height of the cassette manually.
		The height of the cassette cannot be detected because the height sensor is stained with ink or the like.	Clean the height sensor (see page 183 "Height Sensor Cleaning").
2	Cannot use High Temp./ Power Off On	Machine temperature is high and has exceeded the high temperature range for normal operation.	Re-locate the machine to a location within the temperature range and wait for the machine to acquire room temperature.

No.	Message	Causes	Action
3	Cannot use Low Temp./Power Off On	Machine temperature is low and has fallen below the low temperature range for normal operation.	Re-locate the machine to a location within the temperature range and wait for the machine to acquire room temperature.
4	Hardware Problem: Ethernet Board	Ethernet error occurred.	Disconnect all connected cables, and then cycle the machine off/on. If the message reappears, replace the Ethernet board (see page 118 "Wireless LAN Board").
5	Indepdnt.ink set --or-- Indepdnt.ink set / Replace Ink Crtg --or-- Indepdnt.ink set / Press # to continue	An ink tank cartridge unapproved for use with this machine has been installed.	Use of ink cartridges not approved for use with this machine, or attempting to re-fill depleted ink cartridges, will diminish print quality. Always use new Ricoh ink cartridges specifically designed for use with these machines.
6	Ink Collector is not set/Set the Ink Collector Unit	The replaceable ink collector unit is not set correctly.	Set the ink collector unit correctly.
7	Ink Collector Unit is full/ Replace Ink Collector Unit	Ink collector unit is full.	Replace the ink collector unit.
8	Low Ink	Ink cartridge is almost empty.	Note the color of the ink cartridge where ink supply is low, and then procure a new cartridge of the same color.
9	Maintenance. failed	Head cleaning, head flushing, or another maintenance operation failed.	Run the maintenance again after clearing the error. The machine can be released from the error by one of the following conditions. • When the next job request is detected • After the [#] key is pressed

No.	Message	Causes	Action
10	Open Front Cover / Replace Ink Crtg	Ink cartridge is empty.	Replace the empty cartridge with a new one.
11	Open Front Cover / Reset Cartridge	Ink cartridge is not installed. Or, the ink cartridge is installed but not set correctly. Alternatively, an ink cartridge not meant for this machine may be installed.	Set the ink cartridge for this machine correctly.
12	Panel Locked Cannot use	You have pressed a locked key.	Unlock the key. For details, see the operating instructions.
13	Prepare new Ink Collector Unit	The ink collector unit is almost full.	Make sure you have a new ink collector on hand. If an ink cartridge starts running out of ink when the ink collector unit is almost full, the alert indicator will flash and a message informing you of the cartridge's low ink level will appear on the display. To prevent job delay due to a full ink collector unit, always have a new ink collector unit ready.
14	Press Tray key	The cassette is not loaded correctly.	Detach the cassette, and then load it again.
15	Right Front Cover is open / Close Right Front Cover	The front right cover is open	Close the front right cover.
16	Right Int. Unit almost full	Right ink sump is full.	Replace the right ink sump.
17	SCXXX-XX Power Off On / Call Service if error reoccurs	An error has occurred.	Cycle the machine off/on. If this message is displayed again, follow the SC table below (page 267 "Service Call Conditions").
18	Set Tray	The cassette is not loaded.	Load the cassette on the cassette stand.

No.	Message	Causes	Action
19	Temp. alert Please wait...	The machine is too hot or cold at start-up.	Wait until "Ready" appears on the display.
20	Top Cover is open close it to / restart machine /Power Off On	The top cover is open.	Close the top cover.
21	Used Ink Collect Unit is set/ Replace Ink Collector Unit	-	A used ink collector unit has been installed. Install a new ink collector unit.
22	Open Front Cover /Replace Ink Crtg	-	Ink cartridge has run out for the color indicated on the operation panel display. Replace the ink cartridge for the color indicated on the operation panel display.

Service Call Conditions

SC code display patterns and how to clear them

Pattern	Display/Description	How to clear the SC code	SC call/alarm for customer support
A	An SC code appears on the control panel and the machine becomes inaccessible (Safety-related SC).	The service engineer must reset the machine. Enter the SP mode, turn the main power switch off and then back on.	Occurrence & alarm count => reports immediately.
B	When a function is selected, an SC code appears on the control panel and the machine becomes inaccessible.	The user must reset the machine. Turn the power key or the main power switch off and then back on.	Occurrence & alarm count => Turn the main power switch off and then back on. => Alarm count and reporting is performed only if it occurs again.

Pattern	Display/Description	How to clear the SC code	SC call/alarm for customer support
C	The SC code does not appear on the control panel and the machine remains accessible.	Only the logging is counted.	Occurrence => Logging count and alarm count
D	An SC code appears on the control panel and the machine becomes inaccessible (machine error SC).	The user must reset the machine. Turn the power key or the main power switch off and then back on.	Occurrence & alarm count => Turn the main power switch off and then back on. => Alarm count and reporting is performed only if it occurs again.

Note

- If the usual SC code appears (pattern D), the machine automatically reboots itself. Even in the case of a usual SC, if the machine calls the customer support, it does not reboot itself. After the machine automatically reboots itself, a message reporting the rebooting appears.
- However, if an event that requires successive rebooting occurs, the machine will display the SC code without rebooting and perform logging count. If you print the service summary, the events that required successive rebooting will be displayed with asterisks.
- In this machine, the only SC subject to the automatic rebooting function is "SC (82300) Self-diagnostic error".

Service Call Code Tables

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20000	D	The drive motor is not in the home position.
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the maintenance unit. 3. Remove the adhered ink 4. Remove the foreign object.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20200	D	Failure to form negative pressure in the maintenance unit (while assessing the negative pressure in the tank)
		-
		-
		1. Turn the main power switch off and then back on. 2. Turn the main power switch off and then back on again, and then determine the modules that may have caused this SC by checking which of errors SC202-11 to SC202-54 are triggered.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20211	D	Failure to form negative pressure in the maintenance unit (air leak) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20212	D	Failure to form negative pressure in the maintenance unit (air leak) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20213	D	Failure to form negative pressure in the maintenance unit (air leak) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20214	D	Failure to form negative pressure in the maintenance unit (air leak) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20221	D	Failure to form negative pressure in the maintenance unit (nozzle/filter clogging (**Tank 1** error) or insufficient suction)
		-
		This may occur when the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20222	D	Failure to form negative pressure in the maintenance unit (nozzle/filter clogging (**Tank 2** error) or insufficient suction)
		-
		This may occur when the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20223	D	Failure to form negative pressure in the maintenance unit (nozzle/filter clogging (**Tank 3** error) or insufficient suction)
		-
		This may occur when the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20224	D	Failure to form negative pressure in the maintenance unit (nozzle/filter clogging (**Tank 4** error) or insufficient suction)
		-
		This may occur when the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20230	D	Failure to form negative pressure in the maintenance unit (nozzle/filter clogging or insufficient suction)
		-
		This may occur when the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20241	D	Failure to form negative pressure in the maintenance unit (failure to release air (due to ink intrusion, etc.)) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20242	D	Failure to form negative pressure in the maintenance unit (failure to release air (due to ink intrusion, etc.)) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20243	D	Failure to form negative pressure in the maintenance unit (failure to release air (due to ink intrusion, etc.)) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20244	D	Failure to form negative pressure in the maintenance unit (failure to release air (due to ink intrusion, etc.)) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20251	D	Failure to form negative pressure in the maintenance unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20252	D	Failure to form negative pressure in the maintenance unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20253	D	Failure to form negative pressure in the maintenance unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20254	D	Failure to form negative pressure in the maintenance unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20300	D	Failure to form negative pressure in the ink supply unit (while assessing the negative pressure in the tank)
		-
		-
		1. Turn the main power switch off and then back on. 2. Turn the main power switch off and then back on again, and then determine the modules that may have caused this SC by checking which of errors SC203-11 to SC203-54 are triggered.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20311	D	Failure to form negative pressure in the ink supply unit (air leak) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20312	D	Failure to form negative pressure in the ink supply unit (air leak) (**Tank 2** error)
		-
		_
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20313	D	Failure to form negative pressure in the ink supply unit (air leak) (**Tank 3** error)
		-
		_
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20314	D	Failure to form negative pressure in the ink supply unit (air leak) (**Tank 4** error)
		-
		_
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20321	D	Failure to form negative pressure in the ink supply unit (failure to release air (due to ink intrusion, etc.)) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20322	D	Failure to form negative pressure in the ink supply unit (failure to release air (due to ink intrusion, etc.)) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20323	D	Failure to form negative pressure in the ink supply unit (failure to release air (due to ink intrusion, etc.)) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20324	D	Failure to form negative pressure in the ink supply unit (failure to release air (due to ink intrusion, etc.)) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20331	D	Failure to form negative pressure in the ink supply unit (failure send ink by the pump) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20332	D	Failure to form negative pressure in the ink supply unit (failure send ink by the pump) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20333	D	Failure to form negative pressure in the ink supply unit (failure send ink by the pump) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20334	D	Failure to form negative pressure in the ink supply unit (failure send ink by the pump) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20351	D	Failure to form negative pressure in the ink supply unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 1** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20352	D	Failure to form negative pressure in the ink supply unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 2** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20353	D	Failure to form negative pressure in the ink supply unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 3** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20354	D	Failure to form negative pressure in the ink supply unit (misalignment (failure to detect by the feeler) / occasional failure to release air) (**Tank 4** error)
		-
		-
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20400	D	The drive switching motor is not in the home position.
		-
		Drive switching motor is defective. Failure of the maintenance HP sensor.
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit. 3. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20501	D	Drive motor error (error in the motor drive period) [during maintenance operation]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the maintenance unit. 3. Replace the ink supply unit. 4. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20502	D	Drive motor error (error in the motor output) [during maintenance operation]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the maintenance unit. 3. Replace the ink supply unit. 4. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20503	D	Drive motor error (error in the motor's direction of rotation) [during maintenance operation]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the maintenance unit. 3. Replace the ink supply unit. 4. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20601	D	Drive motor error (error in the motor drive period) [during maintenance operation]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit. 3. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20602	D	Drive motor error (error in the motor output) [during ink supply]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit 3. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20603	D	Drive motor error (error in the motor's direction of rotation) [during ink supply]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit 3. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20701	D	Drive motor error (error in the motor drive period) [during air release]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit 3. Replace the CTL board. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20702	D	Drive motor error (error in the motor output) [during air release]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit 3. Replace the CTL board. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
20703	D	Drive motor error (error in the motor's direction of rotation) [during air release]
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the ink supply unit 3. Replace the CTL board. 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
21000	D	Horizontal encoder error
		-
		The horizontal encoder strip is not attached correctly. Deformation or twisting of the horizontal encoder strip. Failure of the horizontal encoder strip Failure of the horizontal motor
		1. Turn the main power switch off and then back on. 2. Replace the horizontal encoder strip. 3. Replace the horizontal motor

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
21100	D	Failure to detect the signal from the horizontal encoder
		-
		The horizontal encoder strip is not attached correctly. Failure of the horizontal encoder strip Failure of the horizontal motor
		1. Turn the main power switch off and then back on. 2. Attach the horizontal encoder strip correctly. 3. Replace the horizontal encoder strip. 4. Replace the horizontal motor

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28000	D	Air sensor error
		-
		Failure of the air sensor Ink suction cannot be executed. This may occur if the maintenance unit is not cleaned.
		1. Turn the main power switch off and then back on. 2. Clean the maintenance unit. 3. Replace the maintenance unit. 4. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28111	D	Ink supply timeout error (**Tank 1** error)
		-
		• Air purge is not successful. • Failure of the pins of the air sensor • The feeler of the ink level sensor cannot be scanned properly (print heads position error) • Ink tube crack • Air inclusion in the supply system (ink supply unit) due to the poor connection of the ink cartridge.
		1. Turn the main power switch off and then back on. 2. Install the ink cartridge securely. **When the SC occurs at ink initialization:** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover, and turn the main power on. 3. The ink initialization restarts. **When the SC occurs after an ink cartridge is replaced (after 20 sheets are printed)** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover. 3. Do head-flushing for all colors in User Mode 3. Replace the parts as shown if the SC cannot be repaired even after executing steps 1 to 3. • Ink Supply Unit • Carriage Unit • CTL board 4. Replace the machine if the SC cannot be repaired with step 4.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28112	D	Ink supply timeout error (**Tank 2** error)
		-
		• Air purge is not successful. • Failure of the pins of the air sensor • The feeler of the ink level sensor cannot be scanned properly (print heads position error) • Ink tube crack • Air inclusion in the supply system (ink supply unit) due to the poor connection of the ink cartridge.
		1. Turn the main power switch off and then back on. 2. Install the ink cartridge securely. **When the SC occurs at ink initialization:** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover, and turn the main power on. 3. The ink initialization restarts. **When the SC occurs after an ink cartridge is replaced (after 20 sheets are printed)** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover. 3. Do head-flushing for all colors in User Mode 3. Replace the parts as shown if the SC cannot be repaired even after executing steps 1 to 3. • Ink Supply Unit • Carriage Unit • CTL board 4. Replace the machine if the SC cannot be repaired with step 4.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28113	D	Ink supply timeout error (**Tank 3** error)
		-
		• Air purge is not successful. • Failure of the pins of the air sensor • The feeler of the ink level sensor cannot be scanned properly (print heads position error) • Ink tube crack • Air inclusion in the supply system (ink supply unit) due to the poor connection of the ink cartridge.
		1. Turn the main power switch off and then back on. 2. Install the ink cartridge securely. **When the SC occurs at ink initialization:** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover, and turn the main power on. 3. The ink initialization restarts. **When the SC occurs after an ink cartridge is replaced (after 20 sheets are printed)** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover. 3. Do head-flushing for all colors in User Mode. 4. Replace the parts as shown if the SC cannot be repaired even after executing steps 1 to 3. • Ink Supply Unit • Carriage Unit • CTL board 5. Replace the machine if the SC cannot be repaired with step 4.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28114	D	Ink supply timeout error (**Tank 4** error)
		-
		• Air purge is not successful. • Failure of the pins of the air sensor • The feeler of the ink level sensor cannot be scanned properly (print heads position error) • Ink tube crack • Air inclusion in the supply system (ink supply unit) due to the poor connection of the ink cartridge.
		1. Turn the main power switch off and then back on. 2. Install the ink cartridge securely. **When the SC occurs at ink initialization:** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover, and turn the main power on. 3. The ink initialization restarts. **When the SC occurs after an ink cartridge is replaced (after 20 sheets are printed)** 1. Push the ink cartridge until it is inserted all the way. 2. Close the front right cover. 3. Do head-flushing for all colors in User Mode 3. Replace the parts as shown if the SC cannot be repaired even after executing steps 1 to 3. • Ink Supply Unit • Carriage Unit • CTL board 4. Replace the machine if the SC cannot be repaired with step 4.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28221	D	Air detection frequency error (**Print Head 1** error)
		-
		Deterioration of the head tank seal (slow leak)
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28222	D	Air detection frequency error (**Print Head 2** error)
		-
		Deterioration of the head tank seal (slow leak)
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
28223	D	Air detection frequency error (**Print Head 1, 2** error)
		-
		Deterioration of the head tank seal (slow leak)
		1. Turn the main power switch off and then back on. 2. Replace the carriage unit.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
29201	D	Auto washing error
		-
		• Auto washing failed due to an ink supply timeout error. • When Auto washing is executed when there are air bubbles in the head tank (When Auto washing is executed within 24 hours after power-on).
		When the SC occurs at the start of Auto washing: 1. Change the cartridges to normal ones. 2. Turn the main power switch off and then back on, and then replace the ink cartridges to new ones. 3. After loading ink, leave the machine for 72 hours with power on. **When the SC occurs during Auto washing:** 1. Change the cartridges to normal ones. 2. Turn the main power switch off and then back on, and then execute Auto washing again. 3. Replace the defective parts (Air purge detection switch or Air purge unit). 4. Replace the machine if the SC cannot be repaired even after executing steps 1 to 3.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
29300	D	Auto head maintenance error (maintenance kit detection error)
		-
		• Maintenance kit is not detected 3 times consecutively.
		1. Turn the main power switch off and then back on. 2. Replace the maintenance kit. 3. Replace the lift board. 4. Replace the relay board. 5. Replace the lift Tray HP Sensor 6. Replace the harness between the lift board and the relay board. 7. Replace the harness between the relay board and the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
29500	D	Air release error
		-
		Air purge detection switch error Air release lever error
		1. Turn the main power switch off and then back on. 2. Remove the foreign object. 3. Replace the horizontal encoder strip. 4. Replace the defective parts (Air purge detection switch or Air purge unit). 5. Replace the machine if the SC cannot be repaired even after executing steps 1 to 4.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
49002	D	The right ink sump is full.
		-
		-
		1. Turn the main power switch off and then back on. 2. Replace the right ink sump.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
52000	D	Vertical motor error
		-
		-
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
52100	D	Cassette carriage HP sensor (front) error
		-
		• Cassette carriage HP sensor (front) error • Cassette did not reach the target position within the designated time.
		1. Turn the main power switch off and then back on. 2. Replace the cassette carriage HP sensor (front). 3. Replace the CTL board. 4. Replace the vertical motor. 5. Replace the harness between the cassette carriage HP sensor (front) and the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
52200	D	Cassette Carriage HP Sensor (rear) error
		-
		• Cassette Carriage HP Sensor (rear) error • Cassette did not reach the target position within the designated time.
		1. Turn the main power switch off and then back on. 2. Replace the cassette carriage HP sensor (rear) 3. Replace the CTL board. 4. Replace the relay board. 5. Replace the vertical motor. 6. Replace the harness between the cassette carriage HP sensor (rear) and the relay board. 7. Replace the harness between the relay board and the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
52400	D	Lift Tray HP Sensor Error
		-
		• Failure of the lift tray HP sensor • Cassette did not reach the expected position.
		1. Turn the main power switch off and then back on. 2. Replace the lift board 3. Replace the lift tray HP sensor. 4. Replace the lift motor. 5. Replace the harness between the lift board and the relay board. 6. Replace the harness between the relay board and the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
53001		Ink mist collecting fan (right) error
		-
		• Ink mist collecting fan (right) is defective.
		1. Turn the main power switch off and then back on. 2. Replace the ink mist collecting fan (right).

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
53002		Ink mist collecting fan (left) error
		-
		• Ink mist collecting fan (left) is defective.
		1. Turn the main power switch off and then back on. 2. Replace the ink mist collecting fan (left).

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
53003		Ink mist collecting fans (right and left) error
		-
		• Ink mist collecting fans (right and left) are defective.
		1. Turn the main power switch off and then back on. 2. Replace the right and left ink mist collecting fans.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
57001	D	Power Pack failure
		The machine detects the PSU error.
		Power pack is defective.
		1. Turn the main power switch off and then back on. 2. Replace the PSU.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
57100	D	Print head thermal sensor error
		-
		Print head thermistor is defective. Print head thermistor (inside the print head) connector dropout (bad connection)
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
57300	D	Humidity sensor error
		-
		Temperature/humidity sensor is defective. Temperature/humidity sensor connector dropout (bad connection)
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
57301	D	Thermal sensor error
		-
		Temperature/humidity sensor is defective Temperature/humidity sensor connector dropout (bad connection)
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
57400	D	K correction error
		-
		CTL board is defective. Unexpected KAKA correction values are written on the CTL board.
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
58000	D	37V power detection timeout
		The machine cannot detect 37V power from the power supply within a designated time.
		CTL board is defective. PSU is defective.
		1. Turn the main power switch off and then back on. 2. Replace the PSU. 3. Replace the CTL board. 4. Replace the relay board. 5. replace the harness of the top cover switch 6. Replace the interlock switch.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
82300	D	Self-diagnostic error: NIC
		This appears if sum value error occurs three times in a row during the attempt to read the Mac address stored in the EEPROM when turning the power on.
		EEPROM (NV memory) error EEPROM (NV memory) connection error CTL board error
		1. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
84000	D	EEPROM access error
		This appears if reading of the data stored in the EEPROM fails or writing on the EEPROM fails.
		EEPROM (NV memory) error EEPROM (NV memory) connection error CTL board error
		1. Replace the CTL board.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
93200	D	Thermal error in the DRV circuit
		-
		Thermistor for DRV is defective. Fan is defective.
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
93300	D	HRB fuse blown
		-
		Recovery not possible
		1. Replace the CTL board. 2. Replace the relay board. 3. replace the harness of the top cover switch 4. Replace the carriage unit. 5. Replace the interlock switch.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
93400	D	HRB version not matching
		-
		HRB version is not correct. Harness disconnection between HRB and CTL.
		1. Turn the main power switch off and then back on.

SC	Pattern	Error Name / Detection Criteria / Major Cause / Solution
93500	D	The maximum number of garments that can be printed by the prototype control board has been exceeded.
		-
		-
		1. Turn the main power switch off and then back on.

Jam Codes

Depending on the garment jam location, the branch number (-xx) is displayed to identify the jam location more precisely. The JAM code does not appear on the machine's panel display. Check it on the printer driver's Status Monitor.

Here is a list of jam codes and what they mean. A separate list is provided for each machine.

Jam Codes

Jam 14	Carriage Jam
Message	Garment Misfeed Press the Tray key to remove the tray from the machine and then remove the garment from the tray. Ensure that the garment is set on the tray correctly. If you cannot remove the tray, then turn the machine off and then back on again.
Cause	• The carriage failed to reach its target position within the prescribed time. • Garment is not loaded in the cassette properly.
Details	An obstruction is blocking movement of the carriage unit.
Action	1. Open the top cover. 2. Press the [Tray] key. 3. Remove the stuck fabric or foreign object through the top cover opening. 4. Close the top cover.

Jam 16	Carriage Unit Homing Failure
Message	Garment Misfeed Press the Tray key to remove the tray from the machine and then remove the garment from the tray. Ensure that the garment is set on the tray correctly. If you cannot remove the tray, then turn the machine off and then back on again.
Cause	• Something is blocking the movement of the carriage unit. • Garment is not loaded in the cassette properly.
Details	The machine detected an obstruction blocking operation of carriage unit at power ON or after stuck fabric was removed.
Action	1. Open the top cover. 2. Press the [Tray] key. 3. Remove the stuck fabric or foreign object through the top cover opening. 4. Close the top cover.

Jam 26	Cassette height error jam

Message	Garment Misfeed Adjust height with the Adjust Height key, then press the Start key to restart printing or press the Tray key to remove the tray and reset the garment correctly.
Cause	The printing surface of the garment is not flat. Wrinkles, slacks or flat remain on the printing surface.
Details	After adjusting the height of the cassette, the height sensor detects the garment again.
Action	• Adjust the height of the cassette up and down by pressing the [Adjust Height] keys, and then press the [Start] key to resume printing. • Press the [Tray] key to remove the jammed garment, and then reload it.

Jammed garment location

Only fabric jams that occur in the cassette are displayed as a JAM code. (The branch code that indicates the position of the jam inside the machine is limited to "00".)

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Status Monitor Messages

Cannot recover error page(s)

Depending on the printing result, resolve the error using any of the following procedures:

If Nothing is Printed

If the cassette is not automatically ejected, press the [Tray] key and move the cassette stand to the front.

Remove the cassette and reload the fabric correctly. After reloading the cassette, press the [Start] key to resume printing.

If printing does not start, adjust the height of the cassette, and then press the [Start] key.

If Partially Printed

Cancel printing.

Cartridge Almost Empty

One of the ink cartridges is almost empty.

Check which color ink cartridge will soon have to be replaced, and then have a new cartridge handy.

Cartridge Empty

The ink has run out.

Replace the cartridge.

Cover Open

The top or front right cover is open.

1. Check the covers.
2. Open and close them.

Maintenance Failed

Head cleaning, head flushing, or other maintenance operations have failed.

Run the maintenance again after clearing the error.

You can clear a maintenance error as follows:

- The printer receives another print job.
- Press the [#Enter] key.

Ink Collector Unit Not Detected/Wrong Unit

1. Open the front right cover.
2. Check that the ink collector is installed.
3. Pull it out and set it again.

Ink Collector Unit Almost Full

The ink collector unit is almost full.

Have a new ink collector unit handy.

Ink Collector Unit Full

The ink collector unit is full.

Replace the ink collector unit.

No Tray

The cassette is not installed or is incorrectly installed.

Resolve the error using any of the following procedures:

- Load the cassette.
- Remove the cassette.
- Cancel printing.

No Response From Machine

1. Make sure the machine is switched on.
2. Check the connection of the USB cable at the printer and computer.
3. Make sure "USB" is selected on the "Ports" sheet of the printer driver.
4. On the [Start] menu, click [Devices and Printers].

   For Windows 10: Right-click [Start], click [Control Panel], and then click [View devices and printers].
5. Right-click the machine icon, and then click [Printer properties].
6. Click the [Ports] tab.
7. Check that USB is selected in the [Print to the following port(s)] list.

Out of Printable Temperature Range

- Room too cold or too warm?

1. Printer must be located where the temperature range is 10 to 45°C (50 to 113°F)
2. Turn the printer off and allow it to cool.

   Note: If humidity is higher than 54%, the high end of the temperature range will be lower. The printer will not return to standby mode until it has acclimated to the room temperature. Wait for the Power lamp to stop flashing.

Garment Misfeed

The fabric or cassette is incorrectly installed. Alternatively, a piece of fabric or foreign object may be stuck inside the machine.

Resolve the error using any of the following procedures:

- Load the fabric or cassette correctly.
- Adjust the height of the cassette.
- Remove the piece of fabric or foreign object.

Garment Size Mismatch

The cassette of the specified size or type is not loaded.

Resolve the error using any of the following procedures:

- Change the printing size.
- Cancel printing.

Print Cartridge(s) Not Detected/Wrong Cartridge/Cover Open

- The front right cover is open. Close the front right cover.
- The print cartridges are not installed or are installed incorrectly. Install the print cartridges correctly.
- The print cartridges not designed for this printer may have been installed. Install the print cartridges designated for this printer.

Printer Error

An error has occurred in the printer. An error code ("SC###-"##") appears at the end of the message.

1. Cycle the printer off/on.
2. If the printer has just been moved from a cold location to a warm room, wait at least 1 hour and try again.

Used Cartridge

The installed print cartridge is empty. Printing cannot continue. Replace the ink cartridge with a new one.

Used Ink Collector Unit

A used ink collector unit has been installed. Remove and replace it with a new one.

Network Interface Error

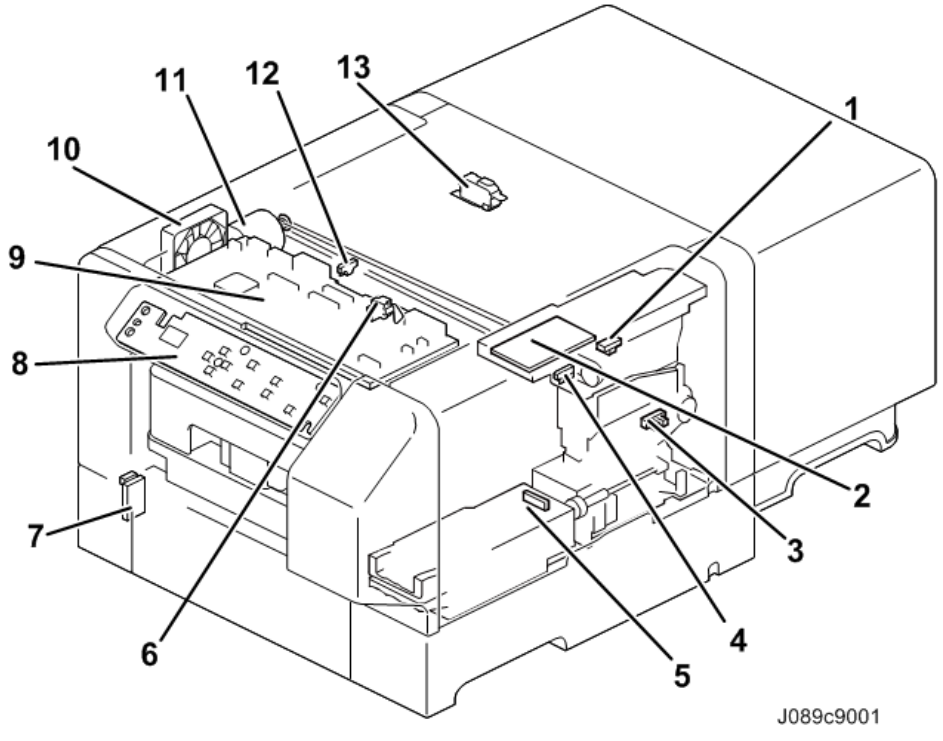
An error in the Ethernet port network function has occurred.

Turn the machine off, and then turn it on again.

7. Detailed Description

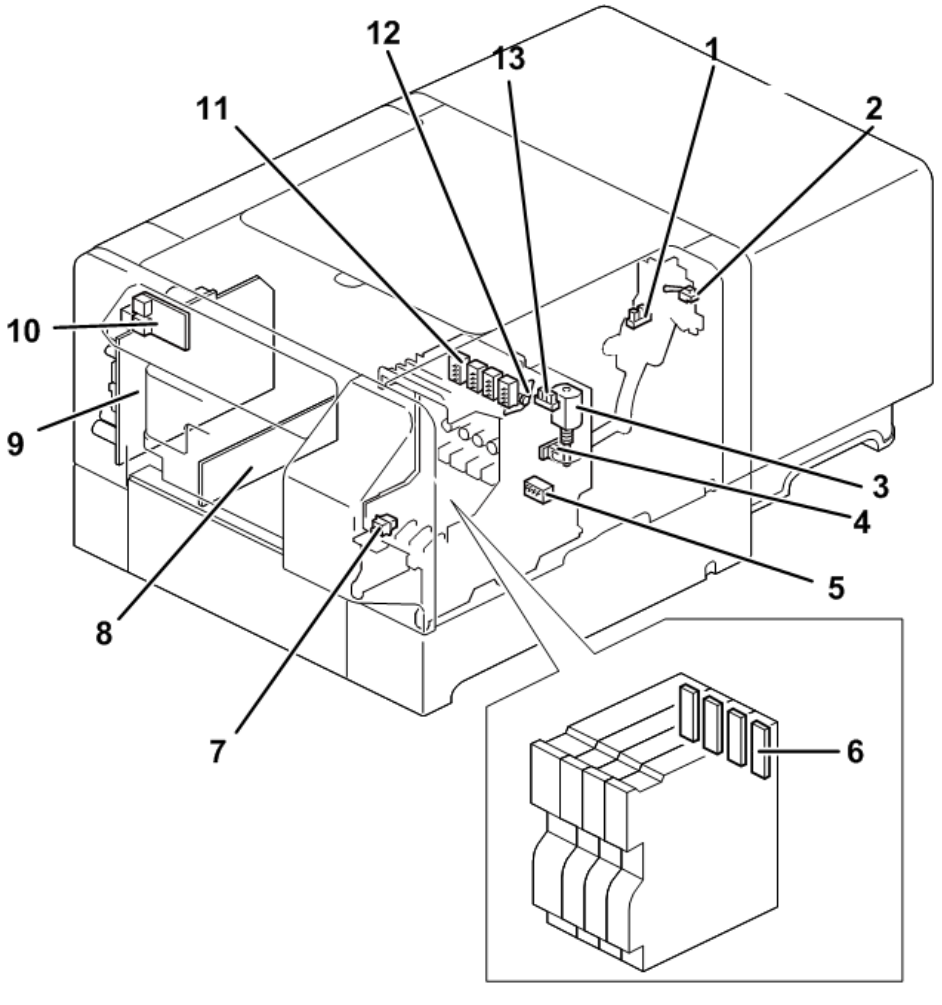
Electrical Components

Parts Layout



No.	Part Name	No.	Part Name
1	Registration Sensor	8	Operation Panel Unit
2	HRB	9	CTL Board
3	Maintenance HP Sensor	10	Cooling Fan
4	Height Sensor (IN)	11	Horizontal Motor
5	ID Chip (Ink Collector Unit)	12	Height Sensor (Out)
6	Top Cover Switch	13	Interlock Switch

No.	Part Name	No.	Part Name
7	Temperature/Humidity Sensor	–	–



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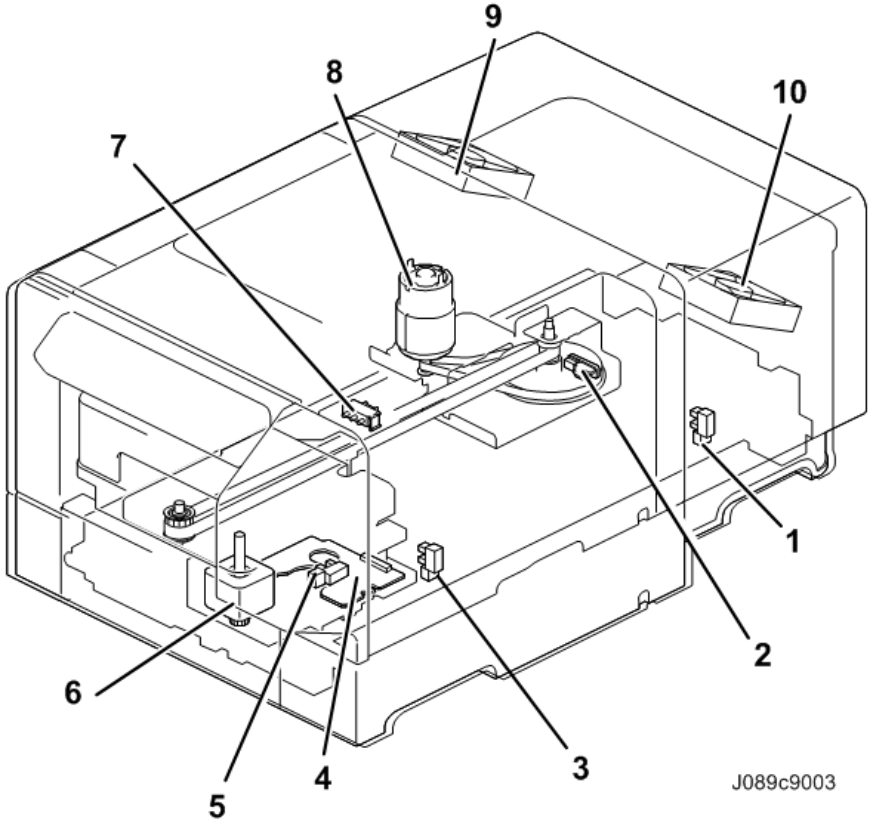
No.	Part Name	No.	Part Name
1	Ink Level Sensor	8	Relay Board
2	Air Purge Detection Switch	9	PSU
3	Drive Motor	10	Wireless LAN Board
4	Maintenance Encoder Sensor	11	CCB

No.	Part Name	No.	Part Name
5	WTR	12	Drive Switching Motor
6	ID Chip (Ink Cartridge)	13	Maintenance CAM Sensor
7	Front Light Cover Switch	–	–



No.	Part Name	No.	Part Name
1	Cassette Carriage HP Sensor (Rear)	6	Lift Motor
2	Vertical Encoder Sensor	7	Cassette Size Sensor
3	Cassette Carriage HP Sensor (Front)	8	Vertical Encoder Motor
4	Lift Board	9	Ink mist collecting fan (left)
5	Lift Tray HP Sensor	10	Ink mist collecting fan (right)

Electrical Component Summary

No.	Component	Function
Motors		
MT	Cooling Fan	Mounted next to the interface port on the left part of the machine. This fan pulls hot air from the interior of the printer and pushes it out through a ventilation port.
MT	Horizontal Motor	Mounted on the left side of the printer, drives forward and reverse to control the timing belt that moves the carriage left and right during printing. The operation of the motor is controlled by the horizontal encoder sensor (a long film strip) mounted behind the carriage.
MT	Drive Motor (DC Motor)	Mounted in the drive switching module. The four ink pump motors, maintenance motor, and air release solenoid of previous models have been combined into a single DC motor. The power produced by the motor is transferred by the drive switching module to perform each operation (black, cyan, magenta and yellow ink supply, maintenance, or air release).
MT	Drive Switching Motor	Mounted in the drive switching module. Its cam is rotated by the drive switching motor to switch between supplying ink (black and cyan or magenta and yellow), releasing air, and performing maintenance.
MT	Vertical Motor	Mounted on the left side of the rear transport cover. This motor, controlled by the rotation of the vertical encoder wheel, drives the cassette carriage that drive the cassette.
MT	Lift Motor	Mounted in the cassette carriage module, the lift motor raises and lowers the cassette carriage.
MT	Ink mist collecting fans (left and right)	A fan attached on the upper rear part of the machine, one each on the left and right. Collects the ink mist inside the machine by the filter and discharges the mist.
PCBs		

No.	Component	Function
PCB	CTL (Control) Board	Mounted on top of the printer and below the top cover (protected by a metal plate). Controls overall operation of the printer, mainly: 1) image data processing, 2) interface management (USB, LAN, etc.) 3) all sensors, motors, other devices.
PCB	HRB (Head Relay Board)	Mounted on the top part of the carriage unit. This board performs many important functions: 1) contains the horizontal encoder sensor that reads the horizontal encoder (the film strip) that controls the reverse/forward timing of the horizontal motor that moves the carriage during printing, 2) relays the readings of the registration sensor mounted on the left edge of the carriage, 3) contains a small thermistor that detects the temperature around the print heads, 4) receives and relays signals from the ink collector unit to the control board.
PCB	ID Chip (Y)	The ID chip of the yellow ink cartridge.
PCB	ID Chip (M)	The ID chip of the magenta ink cartridge.
PCB	ID Chip (C)	The ID chip of the cyan ink cartridge.
PCB	ID Chip (K)	The ID chip of the black ink cartridge.
PCB	Operation Panel Unit	Mounted behind the machine's front cover. Controls the operation of the operation panel.
PCB	PSU (Power Supply Unit)	Mounted vertically on the left side of the machine. Supplies power to the all components in the printer.
PCB	ID Chip (Ink Collector Unit)	Contacts the WTR when the ink collector is inserted in the machine. This tells the machine the tank is inserted correctly. Also, stores the software count for the service life of the ink collector tank. The ink collector unit is completely sealed and there are no serviceable parts inside the unit. Full ink collector units are discarded.
PCB	Wireless LAN Board	Located on the rear of the operation panel on the upper left of the front of the machine. Controls the wireless LAN function.
PCB	Lift Board	Mounted in the cassette carriage module. Controls the raising and lowering operations of the cassette carriage.

No.	Component	Function
PCB	Relay Board	Mainly relays signals between the lift board and the CTL board. Also responsible for relaying signals between the sensors (cassette carriage HP sensor, height sensor, cassette size detection sensor, etc.) This also controls the ink mist collecting fans.
Print Heads		
PH	Print Head 1	Contains 2 ink tanks: K, C
PH	Print Head 2	Contains 2 ink tanks: Y, M
Sensors		
SN	Registration Sensor	Attached to the left side of the carriage. As the carriage moves from side to side during printing. The registration sensor performs two important functions for print control: 1) It detects the leading edge of the printing media and 2) it detects the width of the printing media when the carriage and sensor pass horizontally over the vertical edge of the printing media as it feeds.
SN	Air Sensors	A pair of vertical pins at the top of each ink tank. This pair of pins detects changes in the voltage differential on the surface of the ink inside the print head tank. When these terminals detect air in the tank, this actuates the air release solenoid and vents air from the tank through the air release valve. This allows more ink to enter the tank.
SN	CCB (Cartridge Connection Board = Ink Cartridge Set Switch)	A micro-switch for each ink cartridge connected in series and mounted on the ink cartridge detection plate at the back of the right front cover that holds the ink cartridges. A metal contact on the back of the ink cartridge makes contact with the microswitch when the ink cartridge is inserted. This tells the machine whether the ink cartridge is inserted or inserted correctly.
SN	Ink Level Sensor	Monitors the positions of the ink level lever of each ink tank. The vacuum created inside the ink tanks as ink is consumed gradually draws the base of the spring-loaded arms in against the sides of the tank. Drawing the base closer to the side of the tank forces the tip of the arm out. The ink level sensor detects the position of the tip every time it passes through the gap of the sensor.

No.	Component	Function
SN	Maintenance HP Sensor	An interrupt sensor mounted in the maintenance unit that controls the operation of the maintenance motor in the print head cleaning cycle. At the beginning of the cleaning cycle, a feeler leaves the gap of this sensor and switches the motor on. At the end of the cleaning cycle the feeler rotates into the gap, switches the sensor off. This switches the motor off and the caps and wiper remain down at the home position.
SN	Temperature/ Humidity Sensor	Located inside the printer near the transport belt. The temperature/humidity sensor constantly measures temperature and humidity around the transport belt. The printer uses these readings to adjust the amount of charge applied to the areas of the belt that contact the leading edge, center, and trailing edge of the printing media .
SN	Vertical Encoder Sensor	This sensor reads the code on the rim of the vertical encoder wheel as it rotates to control the operation of the vertical motor.
SN	Horizontal Encoder Sensor	Mounted on the carriage with the horizontal encoder (a film strip) positioned in its gap. This sensor reads the code on the edge of the horizontal encoder as the carriage and print heads move horizontally to control the operation of the horizontal motor during printing as the carriage moves left and right during printing.
SN	Height Sensor (OUT)	Located in the upper left middle of the cassette insertion area of the printer, the height sensor (OUT) is a photo sensor (light-emitting part) that detects the height of printing media placed on the cassette.
SN	Height Sensor (IN)	Located in the upper right middle of the cassette insertion area of the printer, the height sensor (IN) is a photo sensor (light-receiving part) that detects the height of printing media placed on the cassette.
SN	Cassette Carriage HP Sensor (Front)	A sensor for preventing excessive travelling of the cassette carriage unit. Mounted to the inner wall on the bottom right side in front of the inner cassette insertion area, the protruding part of the bracket for fixing the cassette carriage passes through the sensor to detect the position.

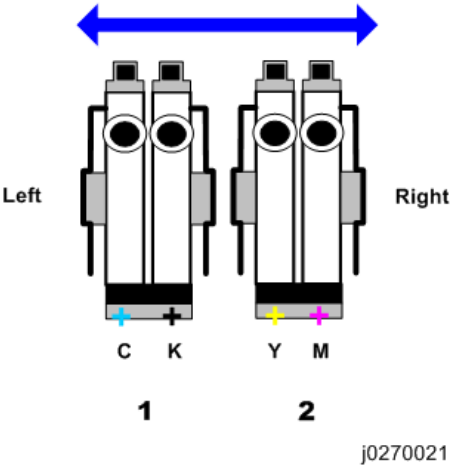
No.	Component	Function
SN	Carriage HP Sensor (Rear)	A sensor for preventing excessive travelling of the cassette carriage. Mounted to the inner wall on the bottom right side inside the rear transport cover. The protruding part of the bracket for fixing the cassette carriage passes through the sensor to detect the position.
SN	Cassette Size Sensor	Mounted to the rear of the cassette stand, it detects the size of the cassette.
SN	Lift Tray HP Sensor	Located inside the cassette carriage, it detects the home position in the vertical direction of the lift tray.
SN	Maintenance Encoder Sensor	Mounted on the bottom of the drive switching module. This sensor controls the speed and period of rotation of the drive motor (DC motor).
SN	Maintenance CAM Sensor	Mounted on top of the drive switching module. The shape of the cam in the drive switching module enables the feeler to detect the position of the drive switching gear for each operation.
Switches		
SW	Top Cover Switch	Mounted under the front edge of the top cover of the printer. Detects when the top cover of the printer is open or closed. The printer will not operate if the top cover is open.
SW	Front Right Cover Switch	A micro-switch mounted at the lower right corner of the machine. Detects when the cartridge door is opened and closed. The machine will not operate until the front right cover is closed and locked.
SW	Interlock Switch	Mounted on the rear of the machine at the top. Detects when the top cover is opened and closed. The machine will not operate until the top cover is closed.
SW	Air Purge Detection Switch	Mounted on the rear of the machine at the upper right. It detects the status of the release latch, which actuates the head tank's air release valve. If it cannot detect the status correctly, ink filling and maintenance operations, which require air to be released, cannot be performed.
SW	WTR (Waste Tank Relay)	The WTR is inside the printer. When the ID chip on the rear end of the ink collector tank contacts this switch when it is inserted in the machine, this tells the machine that collector is set correctly.

No.	Component	Function
Thermistor		
TH	Thermistor	A small bulb thermistor on the end of a wire attached to the HRB in the carriage unit. This thermistor measures the temperature around the print heads.

Print Heads

The basic mechanisms that supply ink from the ink cartridges to the print heads are identical for all printer models.

Print Head Configurations

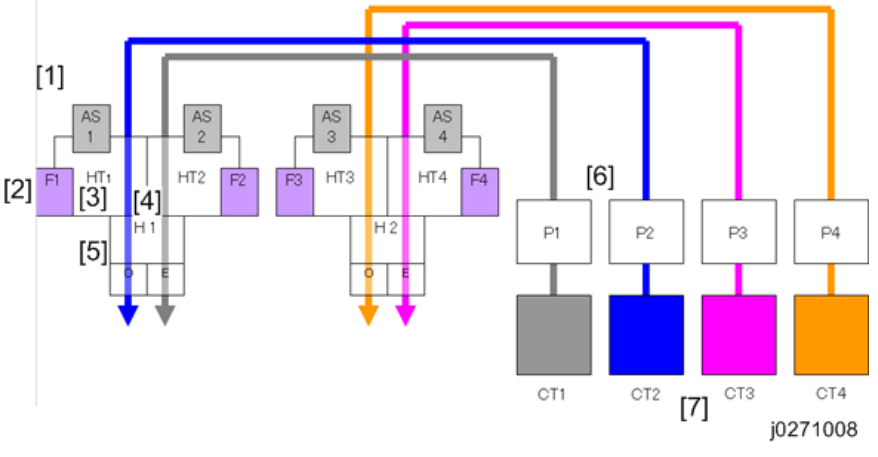


j0270021

The machine have two print head units with two print head ink tanks on each unit (see above).

Print Heads	Nozzles	Nozzles/Color
2	4 (C, K, Y, M)	1

Print Head Detailed Configuration



j0271008

No.	Description	
1	AS	Air Sensors x4
2	F	Feelers x4
3	HT	Head Tanks x4
4	---	Filter Units x2
5	H	Print Heads x 2 * Head 1 (Bk, C), Head 2 (M,Y)
6	P	Pumps x4
7	CT	Ink Cartridges x4

When a request to supply ink is received, the drive switching motor turns the gear of the drive switching module to the position for supplying ink, and ink is supplied by the drive motor.

Ink is supplied from the print cartridge [7] to each head tank [3] by the pump [6]. Ink is supplied at different gear positions for head tanks (black and cyan) and head tanks (magenta and yellow).

The drive motor is also used to release air from the head tanks and to effect maintenance operations. Ink supplied to the head tanks passes through the filter unit and is supplied at constant pressure to the print heads.

The ink level sensor detects the ink remaining in each head tank according to the position of the feeler on the side of each tank and requests ink supply if the ink is low.

The air sensor [1] detects air in the head tanks. If it detects excess air, the gear of the drive switching module turns to the position where the air release lever presses the valve to release the air and fill the tanks with ink.

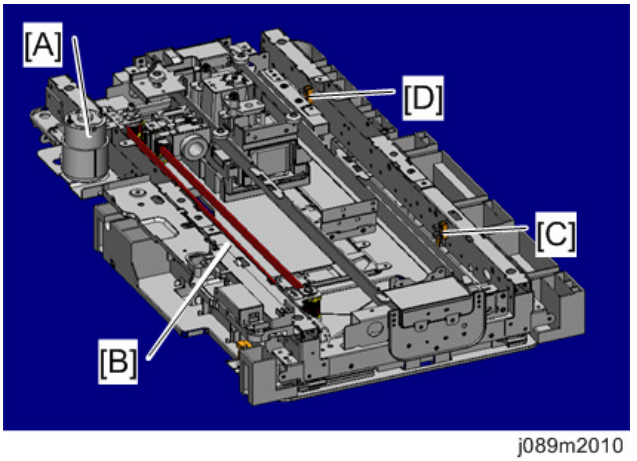
Cassette/Cassette Carriage Movement

Basic Operation

The cassette is mounted on the cassette carriage via the cassette stand.

- Back-and-forth movement of the cassette (cassette carriage):

  This is effected by the vertical motor [A] via the timing belt [B]. The range of movement is controlled by the Cassette Carriage HP Sensor (front [C], rear [D]).

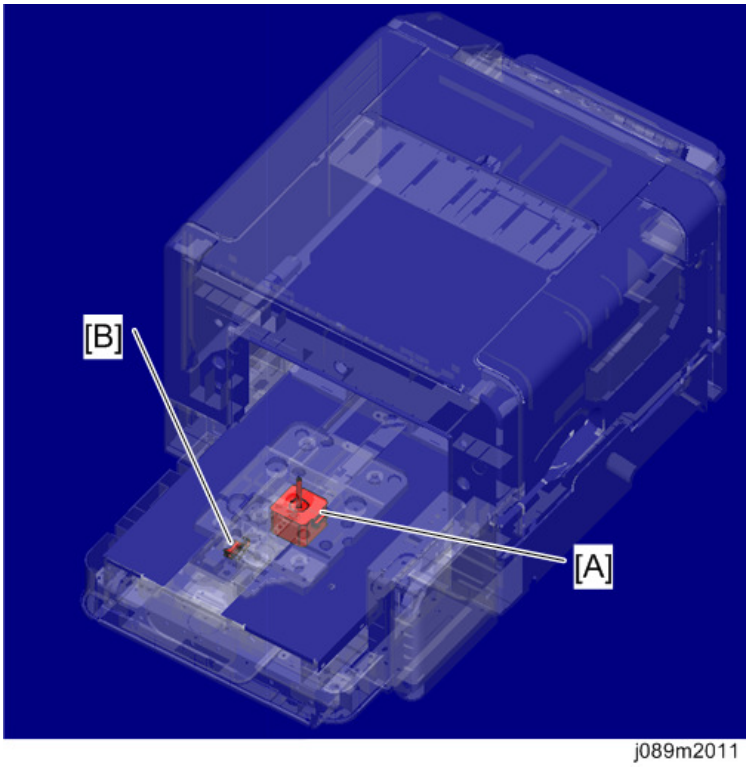


j089m2010

- Cassette (cassette carriage) height adjustment:

  This is effected the by the lift motor [A] in the cassette carriage.

  The range of vertical movement is controlled by the Lift Tray HP Sensor [B]. (The maximum range of vertical movement between the highest and lowest positions is 21 mm.)

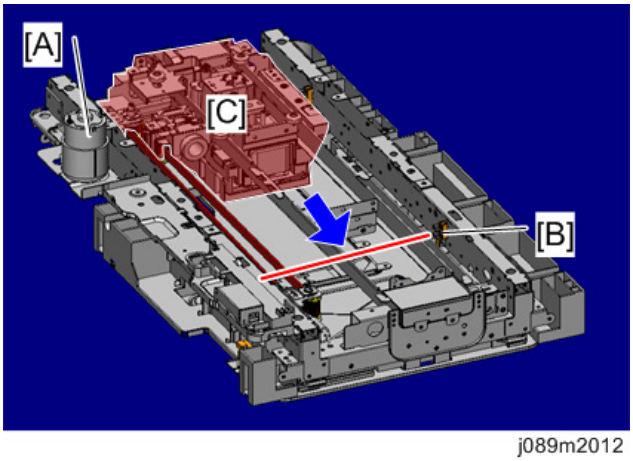


j089m2011

Initialization when Turning on Power (Preparation for Mounting Cassette)

When you turn the power on, the vertical motor [A] starts and moves the cassette carriage [C] to the position at the front of the machine where the cassette can be attached and detached (initial position).

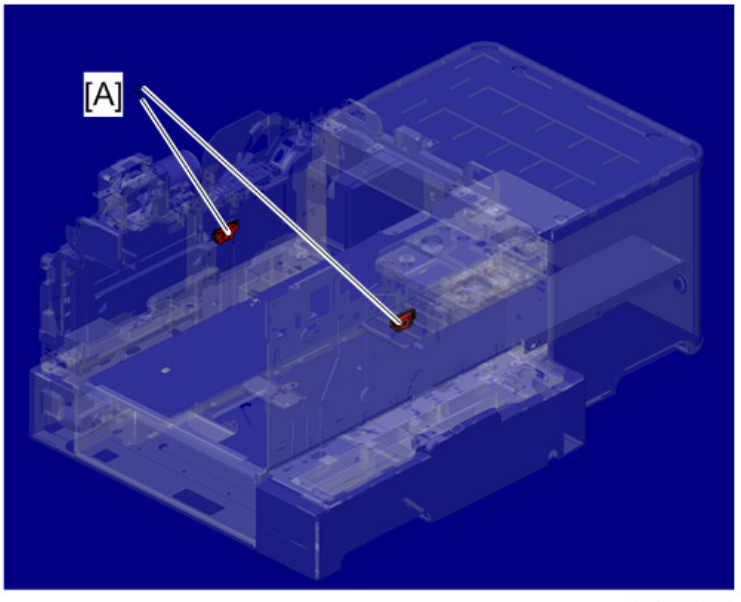
The position where the cassette can be attached and detached is detected by the Cassette Carriage HP Sensor [B] (front). The vertical motor stops when the cassette carriage reaches the detected position.



j089m2012

Detecting Height (Unevenness due to Wrinkles and Bulges) of Printing Media

1. If you press the START button with the cassette attached, the vertical motor starts and moves the cassette to the rear. The vertical motor stops moving the cassette when the center part of the cassette reaches the height sensor [A].

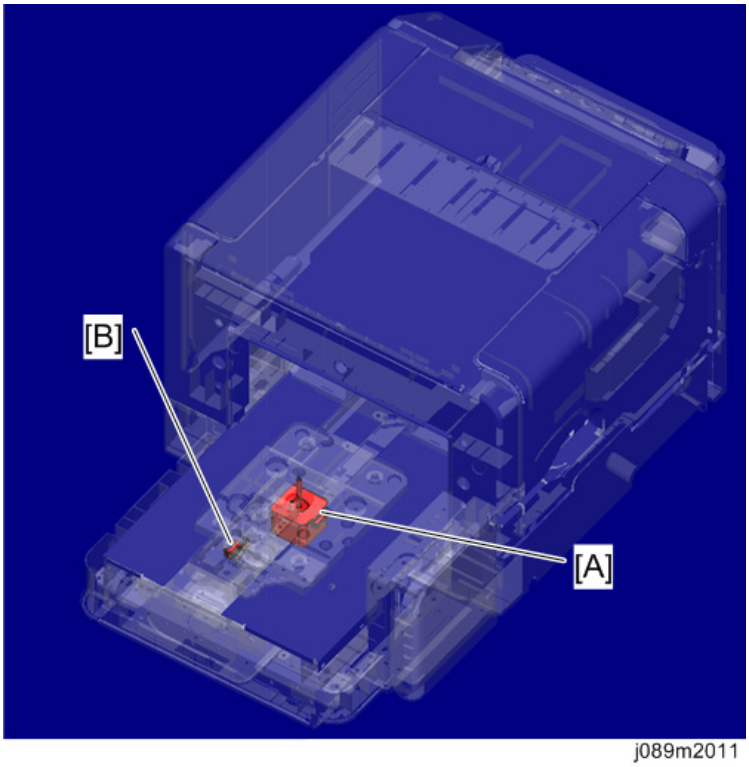


j089m2013

   At this time, the height sensor detects the unevenness due to wrinkles and bulges in the center part of the printed media in the cassette. According to the detected value, the gap (distance between the print heads and printing media) is determined.

2. After determining the gap, the vertical motor moves the cassette to the home position at the rear (the position detected by the Cassette Carriage HP Sensor [B] [rear]). The cassette moves forward from that position and at the same time the height sensor operates again to detect the unevenness of the printing media surface from the trailing edge to the leading edge of the media.
3. If the result of the detection in Step 2 (the distance between the uneven part of the printing media surface and print heads) is less than the gap specified in Step 1, a message prompting you to reduce the height of the cassette appears. If so prompted, perform one of the following until the error is no longer detected:
   - Reload the printing media.
   - Press the Adjust Height [▼] button to lower the cassette and increase the gap between the print heads and printing media.

   Pressing the Adjust Height [▼] button causes the lift motor [A] to lower the cassette. At the same time, the Lift Tray HP Sensor [B] operates to prevent excessive lowering of the cassette.



4. After Step 3, press the START button. The height is automatically detected again.

Printing

If the height detection result does not indicate an error, printing starts.

Printing is carried out as follows:

1. The carriage, while moving from right to left as seen from the position of the front cover, ejects ink to print in the main scanning direction.
2. The cassette moves forward the preset distance and stops.
3. Steps 1 and 2 are repeated until printing completes.
4. After printing, the cassette returns to the position where printing started and stops.

To print with a narrower gap because of the printing media condition or print mode, operate the Adjust Height [▲] button to move the printing media surface closer to the print heads.

Air Flow

The filter's life is 2,000 prints and must be replaced by the user.

If an alert message appears on the operation panel, replace both the left and right filters at the same time.

After replacing the filter, the user must reset the counter on the UP menu. (The machine can continue printing even without resetting. Instruct the user to reset it.)

Path

1. Collecting the ink mist with the filter
2. Passing through the fan. Lowering the airflow by the 2 straightening boards and discharging the air.
3. If there is some ink mist that could not be collected in Step 1, it is collected by the filter between the straightening boards (to prevent staining the user's wall with ink).