MG6100 series

Service Manual

(MG6110 / MG6120 / MG6130 / MG6140 / MG6150 / MG6170 / MG6180)

Revision 0

QY8-13DA-000

COPYRIGHT©2010 CANON INC. CANON MG6100 series 082010 XX 0.00-0

Scope

This manual has been issued by Canon Inc., to provide the service technicians of this product with the information necessary for qualified persons to learn technical theory, installation, maintenance, and repair of products. The manual covers information applicable in all regions where the product is sold. For this reason, it may contain information that is not applicable to your region.

This manual does not provide sufficient information for disassembly and reassembly procedures.
Refer to the graphics in the separate Parts Catalog.

Revision

This manual could include technical inaccuracies or typographical errors due to improvements or changes made to the product. When changes are made to the contents of the manual, Canon will release technical information when necessary. When substantial changes are made to the contents of the manual, Canon will issue a revised edition.

The following do not apply if they do not conform to the laws and regulations of the region where the manual or product is used:

Trademarks

Product and brand names appearing in this manual are registered trademarks or trademarks of the respective holders.

Copyright

All rights reserved. No parts of this manual may be reproduced in any form or by any means or translated into another language without the written permission of Canon Inc., except in the case of internal business use.

Copyright © 2010 by Canon Inc.
CANON INC.
Inkjet Device Market Support Management Div.
451, Tsukagoshi 3-chome, Saiwai-ku, Kawasaki-shi, Kanagawa 212-8530, Japan

INTRODUCTION

[How to use this Service Manual]

This manual is intended to solve printer problems smoothly, with each section representing the typical service procedures, as shown below.

Troubleshooting	Identify the problem, and handle it accordingly.
⇩	
Repair	When a part needs to be replaced, see this section.
⇩	
Adjustment & Settings	After repair, perform the necessary adjustment and settings.
⇩	
Verification	At the end of the servicing, verify the machine following the inspection flow in this section.
Appendix	Information that will be necessary for maintenance and repair of the machine

This manual does not provide sufficient information for disassembly and reassembly procedures. Refer to the graphics in the separate Parts Catalog.

TABLE OF CONTENTS

1. TROUBLESHOOTING

1-1. Troubleshooting by Symptom

1-2. Operator Call Error Troubleshooting

1-3. Service Call Error Troubleshooting

2. REPAIR

2-1. Major Replacement Parts and Adjustment

2-2. Part Replacement Procedures

(1) External housing, scanner unit, and document cover removal

(2) Operation panel removal

(3) Document window R removal

(4) Carriage unlocking

(5) ASF unit removal

(6) Carriage unit removal

(7) Spur unit and platen unit removal

(8) Purge drive system unit (right plate) and switch system unit (left plate) removal

(9) Engine unit reassembly

(10) Cable wiring and connection

(11) Ink absorber replacement

3. ADJUSTMENT / SETTINGS

3-1. Adjustment

3-2. Adjustment and Maintenance in User Mode

3-3. Adjustment and Settings in Service Mode

(1) Service mode operation procedures

(2) Service Tool functions

(3) LF / Eject correction

(4) Button and LCD test

(5) Ink absorber counter setting

(6) Disc label print position correction

(7) Capacitive sensor sensitivity setting

3-4. Grease Application

3-5. Special Notes on Servicing

(1) For smeared printing, uneven printing, or non-ejection of ink

(2) Paper feed motor adjustment

(3) Carriage unit replacement

(4) Document pressure sheet (sponge sheet) replacement
(5) Ink absorber counter setting
(6) Preventive replacement of ink absorber

4. VERIFICATION AFTER REPAIR

4-1. Standard Inspection Flow
4-2. Integrated Inspection Pattern Print
4-3. Ink Absorber Counter Value Print

5. APPENDIX

5-1. Customer Maintenance
5-2. Special Tools
5-3. Sensors
5-4. Serial Number Location

6. MACHINE TRANSPORTATION

<TABLE OF CONTENTS>

1. TROUBLESHOOTING

1-1. Troubleshooting by Symptom

	Symptom	Solution
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	(1) Confirm cable connection: - DC harness ass'y - Power switch harness ass'y => No incomplete connection, cable breakage, or cable caught in units (2) Replace the following item(s): - Logic board ass'y - AC adapter - Power switch harness ass'y - Document top cover unit
	A strange noise occurs.	(1) Examine and remove any foreign material from the drive portions. (2) Replace the following item(s): - The part generating the strange noise - Logic board ass'y
	The LCD does not display properly. A portion of the LCD is not displayed. The display flickers.	(1) Confirm cable connection: - LCD FFC - Panel FFC => No incomplete connection, cable breakage, or cable caught in units (2) Replace the following item(s): - LCD viewer unit - Panel cable - Document top cover unit - Logic board ass'y
	Paper feed problems (multi-feeding, skewed feeding, no feeding).	(1) Examine and remove any foreign material from the following parts: - ASF unit - PE sensor - Paper guide unit - Pressure roller unit - Spur unit (2) Confirm that the paper guides are set properly. (3) Confirm the PF rear cover and the cassette conditions. (4) Confirm cable connection: - PE sensor cable - Paper feed relay harness ass'y => No incomplete connection, cable breakage, or cable caught in units (5) Replace the following item(s):

		- ASF unit (for paper feeding error from the rear tray) - Pick-up arm unit (for paper feeding error from the cassette) - PE sensor board ass'y - Pressure roller unit - PE sensor cable - Cassette unit
	Faulty scanning (no scanning, strange noise).	(1) Confirm cable connection: - Scanner motor relay harness ass'y - CIS cable => No incomplete connection, cable breakage, or cable caught in units (2) Replace the following item(s): - Scanner unit - Logic board ass'y
	The disc tray is not pulled in the feeder[*2].	(1) Confirm that the reflector on the back of the disc tray is clean: - Cleaning of the reflector (2) Replace the following item(s): - Logic board ass'y - CDR tray ass'y - Platen unit
Unsatisfactory print quality	No printing, or no color ejected. Faint printing, or white lines on printouts. Uneven printing. Improper color hue.	See 3-5. Special Notes on Servicing, (1)For smeared printing, uneven printing, or non-ejection of ink, for details. (1) Confirm the ink tank conditions: - No remainder of the outer film (the air-through must be opened) - Re-setting of an ink tank - Whether the ink tank is Canon-genuine one or not - Whether the ink tank is refilled one or not (2) Remove foreign material from the purge unit caps, if any. (3) Perform cleaning or deep cleaning of the print head. (4) Perform print head alignment. (5) Replace the following item(s): - Print head[*1], and ink tanks - Logic board ass'y - Purge drive system unit
	Paper gets smeared.	(1) Clean the inside of the machine. (2) Perform bottom plate cleaning. (3) Perform paper feed roller cleaning. (4) Replace the following item(s): - Pressure roller unit (if smearing is heavy) - Print head[*1] (when smearing is caused by

		the print head)
	The back side of paper gets smeared.	(1) Clean the inside of the machine. (2) Perform bottom plate cleaning. (3) Examine the platen ink absorber. (4) Examine the paper eject roller. (5) Replace the following item(s): - The part in the paper path causing the smearing
	Graphic or text is enlarged on printouts in the carriage movement direction.	(1) Confirm that the carriage slit film is free from smearing or scratches: - Cleaning of the timing slit film. (2) Replace the following item(s): - Timing slit strip film - Carriage unit - Logic board ass'y - Scanner unit (for copying)
	Graphic or text is enlarged on printouts in the paper feed direction.	(1) Confirm that the LF / EJ slit film is free from smearing or scratches: - Cleaning of the LF / EJ slit film. (2) Replace the following item(s): - Timing slit disk feed film, or timing slit disk eject film - Timing sensor unit - Platen unit - Logic board ass'y - Scanner unit (for copying)
	Smearing in disc label printing[*2]. Streaks on the printed disc label[*2].	(1) Check if the printable disc is the recommended one or not: - Change of the printer driver settings (2) Replace the following item(s): - CDR tray ass'y - Pressure roller unit (if smearing is heavy) - Platen unit
Faulty scanning	No scanning.	(1) Confirm cable connection (CIS cable). (2) Replace the following item(s): - Scanner unit - Logic board ass'y
	Streaks or smears on the scanned image.	(1) Clean the platen glass and the document pressure sheet. (2) Confirm the position of the document pressure sheet. (3) Replace the following item(s): - Scanner unit - Document pressure sheet - Logic board ass'y
Network connection problem	No printing.	(1) Examine if printing is performed properly via USB connection.

		(2) Confirm the network connection. (3) Replace the following item(s): - Logic board ass'y - Wireless LAN board ass'y

*1: Replace the print head only after the print head deep cleaning is performed 2 times, and when the problem persists.

*2: Only for disc label printing supported regions.

1-2. Operator Call Error (by Alarm LED Lit in Orange) Troubleshooting

Errors and warnings are displayed by the following ways:

1. Operator call errors are indicated by the Alarm LED lit in orange, and the error and its solution are displayed on the LCD in text and by icon.
2. Messages during printing from a computer are displayed on the printer driver Status Monitor.
3. Error codes (the latest 10 error codes at the maximum) are printed in the "operator call/service call error record" area in EEPROM information print

Buttons valid when an operator call error occurs:

1. ON button: To turn the machine off and on again.
2. OK button: To clear and recover from an error. In some operator call errors, the error will automatically be cleared when the cause of the error is eliminated, and pressing the OK button may not be necessary.
3. Stop button: To cancel the job at error occurrence, and to clear the error.

Error	Error code	U No.	Message on the LCD	Solution	Parts that are likely to be faulty
No paper in the rear tray.	[1000]	---	Rear tray. There is no paper. Load paper and press [OK].	Confirm that the rear tray is selected as the paper source. Set the paper in the rear tray, and press the OK button. If the error is not cleared, confirm that no foreign material is inside the paper feed slot.	- PE sensor board ass'y - ASF unit - Pressure roller unit
No disc tray*1.	[1001]	---	There is no disc tray. Set the tray and press [OK].	Set the disc tray, and press the OK button. If the error is not cleared, confirm that the disc tray is not cracked or damaged.	- CDR tray ass'y - Carriage unit
No printable disc*1.	[1002]	---	Printable disc is not set. Place a disc on the disc tray and press [OK].	Set a printable disc in the disc tray, and insert the disc tray in the proper position. Then, press the OK button. If the error is not cleared, re-set the printable disc in the tray, and try again.	- CDR tray ass'y - Carriage unit
No paper in the	[1003]	---	Cassette.	Confirm that the cassette is	- Pick-up

cassette.			There is no paper. Load paper and press [OK].	selected as the paper source. Set the paper in the cassette, and press the OK button. Note that the cassette is for plain paper only.	arm unit - Pressure roller unit - Cassette unit
Paper jam.	[1300]	---	The paper is jammed. Clear the paper and press [OK].	Remove the jammed paper and press the OK button. For paper jam in the rear guide, confirm that the rear guide is not dislocated.	- Pick-up arm unit - ASF unit - Pressure roller unit - Cassette unit - Rear guide unit
Paper jam in the rear guide.	[1303]	---			
Paper jam in the under guide.	[1304]	---			
Ink may have run out.	[1600]	U041	The ink may have run out. Replacing the ink tank is recommended.	Replace the applicable ink tank, or press the OK button to clear the error without ink tank replacement. When the error is cleared by pressing the OK button, ink may run out during printing.	- Spur unit
Ink tank not installed.	[1660]	U043	The following ink tank cannot be recognized. (Applicable ink tank icon)	Install the applicable ink tank(s) properly, and confirm that the LED's of all the ink tanks light red.	- Ink tank - Carriage unit
Print head not installed, or not properly installed.	[1401]	U051	Print head is not installed. Install the print head.	Install the print head properly. If the error is not cleared, confirm that the print head contact pins of the carriage are not bent.	- Print head - Carriage unit
Faulty print head ID.		U052	The type of print head is incorrect. Install the correct print head.	Re-set the print head. If the error is not cleared, the print head may be defective. Replace the print head. If the error still persists, confirm that the print head contact pins of the carriage are not bent.	- Print head - Carriage unit
Print head temperature sensor error.	[1403]				
Faulty EEPROM data of the print head.	[1405]				
Inner cover error	[1841*2], [1846*2], [1851*1], [1856*1]	---	Inner cover is open. close the inner cover and press [OK].	Close the inner cover, and press the OK button. If the error is not cleared, examine that the inner cover sensor is properly installed.	- Spur unit - Inner cover unit

	[1850*1], [1855*1]		Open the inner cover, set the disc tray and press [OK].	Open the inner cover, set the disc tray, and press the OK button.	- Spur unit - Inner cover unit
Time-out in disc label printing	[1830*1]	---	Timeout error has occurred.	A prescribed period of time (12 minutes) has elapsed without the disc tray inserted since the message appears to indicate that the machine was preparing for printing. Press the Stop button to clear the error.	
Multiple ink tanks of the same color installed.	[1487]	U071	More than one ink tank of the following color is installed.	Replace the wrong ink tank(s) with the correct one(s).	- Ink tank
Ink tank in a wrong position.	[1680]	U072	Some ink tanks are not installed in place.	Install the ink tank(s) in the correct position.	- Ink tank
Warning: The ink absorber becomes almost full.	[1700]	---	The ink absorber is almost full. Press [OK] to continue printing. Contact the service center for replacement.	Replace the ink absorber, and reset its counter. [See 3-3, Adjustment and Settings in Service Mode.] Pressing the OK button will exit the error, and enable printing without replacing the ink absorber. However, when the ink absorber becomes full, no further printing can be performed unless the applicable ink absorber is replaced.	- Absorber kit
The connected digital camera or digital video camera does not support Camera Direct Printing.	[2001]	---	Incompatible device detected. Remove the device.	Remove the cable between the camera and the machine.	
Automatic two-sided printing cannot be performed.	[1310]	---	This paper is not compatible with two-sided printing. Remove the paper and press [OK].	The paper length is not supported for two-sided printing. Press the OK button to eject the paper being used at error occurrence. Data which was to be printed on the back side of paper at error occurrence is skipped (not printed).	- Duplex paper feed roller unit - PE sensor board ass'y
Failed in automatic print head alignment.	[2500]	---	Auto head align has failed. Press [OK] and repeat operation. <See manual>	Press the OK button to clear the error, then perform the automatic print head alignment again. (Use Matte Photo Paper MP-101.)	- Carriage unit - Print head

				If the alignment pattern was not printed properly (faint printing, etc.), perform print head cleaning, then perform the print head alignment again.	- Purge drive system unit
The remaining ink amount unknown (raw ink present).	[1683]	U130	(Applicable ink tank icon) The remaining level of the ink cannot be correctly detected. Replace the ink tank.	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one. Printing with a once-empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the machine EEPROM that the function to detect the remaining ink amount was disabled.	- Ink tank - Spur unit
Ink tank not recognized.	[1684]	U140	The following ink tank cannot be recognized. (Applicable ink tank icon)	A non-supported ink tank is installed (the ink tank LED is turned off). Install the supported ink tanks.	- Ink tank
Ink tank not recognized.	[1682]	U150	The following ink tank cannot be recognized. (Applicable ink tank icon)	A hardware error occurred in an ink tank (the ink tank LED is turned off). Replace the ink tank (s).	- Ink tank
No ink (no raw ink).	[1688]	U163	The ink has run out. Replace the ink tank. (Applicable ink tank icon)	Replace the empty ink tank(s), and close the scanning unit (cover). Printing with an empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the machine that the function to detect the remaining ink amount was disabled.	- Ink tank - Spur unit
Non-supported hub.	[2002]	---	An unsupported USB hub is connected. Remove the hub.	Remove the applicable USB hub from the PictBridge (USB) connector.	
Time-out for the	[2700]	---	Timeout error has	The buffer became full in the	

scanner device.			occurred. Press [OK].	middle of scanning operation, and 60 minutes have elapsed since then, making re-scanning unstable. Press the OK button to clear the error.	
Premium Contents print error.	[4100]	---	Cannot print the data.	Install the supported (Canon-genuine) ink tanks.	- Ink tank

*1: Only for disc label printing supported regions.

*2: Only for disc label printing non-supported regions.

1-3. Service Call Error (by Cyclic Blinking of Alarm and Power LEDs) Troubleshooting

Service call errors are indicated by the number of cycles the Alarm and Power LEDs blink, and the corresponding error code with the message, "Printer error has occurred. Turn off power then back on again. If problem persists, see the manual." is displayed on the LCD.

1) Check each point in "Check points & Solution," and perform the solution if it applies.
2) When no solution in "Check points & Solution" is effective, then replace the part listed under "Parts to be replaced" one by one from the one most likely to be faulty. The parts are listed in the order of likeliness to be faulty.

Cycles of blinking of Alarm and Power LEDs	Error	Error code	Check points & Solution	Parts to be replaced (when no solution is effective)
2 times	Carriage error	[5100]	(1) Smearing or scratches on the carriage slit film: Clean the film using lint-free paper. (2) Foreign material that obstructs the carriage movement: Remove foreign material. (3) Ink tank conditions: Re-set the ink tanks. (4) Cable connection: - CR FFC (CN401, CN402, CN403) - Motor multi harness ass'y Re-connect the cables. If any damage or breakage of the cable is found, replace the cable. (5) Scratches or damages to the carriage slit film: Replace the timing slit strip film. (6) Black debris around the carriage rail or pressure roller: Replace the carriage unit.	- Logic board ass'y - Carriage motor - Carriage unit - Motor multi harness ass'y
3 times	Line feed error	[6000]	(1) Opening and closing of the paper output tray: Remove obstacles from around the paper output tray so that the tray	- Timing slit disk feed film - Timing slit disk eject film

			opens and closes properly. (2) Smearing or scratches on the LF / EJ slit film: Clean the LF / EJ slit film using lint-free paper. (3) Foreign material in the LF drive: Remove foreign material. (4) Cable connection: - LF encoder cable - PE sensor cable - Paper feed relay harness ass'y - Paper feed motor harness ass'y Re-connect the cables. If any damage or breakage of the cable is found, replace the cable. (5) LF lock arm spring: Attach the spring properly.	- Timing sensor unit - Paper feed roller unit - Logic board ass'y - Paper feed motor
4 times	Purge cam sensor error	[5C00]	(1) Foreign material around the purge drive system unit: Remove foreign material. (2) Cable connection: - Valve cam harness (CN700) Re-connect the cable. (3) Strange sound at power-on: Replace the purge drive system unit.	- Purge drive system unit - Logic board ass'y
5 times	ASF (cam) sensor error	[5700]	(1) Cable connection: - PE sensor cable Re-connect the cable. If any damage or breakage of the cable is found, replace the cable.	- ASF unit - PE sensor board ass'y - Logic board ass'y
6 times	Internal temperature error	[5400]	(1) Cable connection: - Ink absorber multi harness (CN701) Re-connect the cable. If any damage or breakage of the cable is found, replace the spur unit.	- Spur unit - Logic board ass'y - Print head
7 times	Ink absorber full	[5B00] [5B01]	(1) Ink absorber condition: Replace the ink absorber, and reset the ink absorber counter value in the EEPROM.	
8 times	Print head temperature rise error	[5200]	(1) Print head condition (face surface and mold): If a burn mark or heat deformation is seen on the face surface or the mold, replace the print head. (2) Head contact pin condition of the carriage unit: If the pin is bent or deformed, replace the carriage unit.	- Print head - Logic board ass'y - Carriage unit

			(3) Cable connection: - CR FFC (CN401, CN402, CN403) Re-connect the cable. If any damage or breakage of the cable is found, replace the carriage unit.	
9 times	EEPROM error	[6800] [6801]	(1) Part replacement: Replace the logic board ass'y.	
10 times	VH monitor error	[B200]	(1) Print head condition (face surface and mold): If a burn mark or heat deformation is seen on the face surface or the mold, replace the print head and the logic board in set. (Be sure to replace them at the same time.) (2) Burn mark or heat deformation of the logic board: If a burn mark or heat deformation is seen on the logic board, replace the print head and the logic board in set. (Be sure to replace them at the same time.) (3) Head contact pin condition of the carriage unit: If the pin is bent or deformed, replace the carriage unit. (4) Cable connection: - CR FFC (CN401, CN402, CN403) Re-connect the cable. If any damage or breakage of the cable is found, replace the carriage unit.	- AC adapter - Carriage unit
11 times	Carriage lift mechanism error	[5110]	(1) Foreign material that obstructs the carriage movement: Remove foreign material.	- Switch system unit - Carriage unit
12 times	APP position error	[6A80]	(1) Cap absorber and wiper blade: If the cap absorber contacts the wiper blade, lower the cap absorber so that it will not contact the wiper blade. (2) Foreign material around the purge drive system unit: Remove foreign material. (3) Ink absorber right beneath the purge drive system unit: Confirm that the absorber stays in place and does not contact the unit. (4) Foreign material around the ASF unit: Remove foreign material.	- Timing slit disk APP film - PE sensor board ass'y - Purge drive system unit - Logic board ass'y
	APP position error during initial purging	[6A81]		

14 times	APP sensor error	[6A90]	(5) APP slit film condition: Clean the APP slit film using lint-free paper. (6) APP code wheel gear condition: If the gear wears, replace the gear. (7) Cable connection: - PE sensor cable - Motor multi harness ass'y Re-connect the cables. If any damage or breakage of the cable is found, replace the cable.	
	Paper feed cam sensor error	[6B10]	(1) Ink absorber counter value: If the value exceeds 60%, replace the ink absorber. Follow the "*Guideline for Preventive Replacement of the Ink Absorber*." (2) Jammed paper or foreign material in the under guide: Remove the jammed paper and foreign material.	- Pick-up arm unit - Duplex paper feed roller unit
15 times	USB host Vbus overcurrent	[9000]	(1) Part replacement: Replace the logic board ass'y.	
16 times	Pump roller sensor error	[5C20]	(1) Cable connection: - Valve cam harness (CN700) Re-connect the cable.	- Purge drive system unit
17 times	Paper eject encoder error	[6010]	(1) Smearing on the LF / EJ slit film: Clean the LF / EJ slit film using lint-free paper. (2) Foreign material in the paper path: Remove foreign material. (3) Cable connection: - LF encoder cable - PE sensor cable Re-connect the cable. If any damage or breakage of the cable is found, replace the cable. (4) Scratches on the LF / EJ slit film: Replace the timing slit disk feed film or the timing slit disk eject film.	- Timing sensor unit - Platen unit - Logic board ass'y - Paper feed motor
19 times	Ink tank position sensor error	[6502]	(1) Ink tank position: Confirm the ink tank position. (2) Re-set or replacement of ink tanks: If the error persists, replace the ink tanks. (3) Cable connection: - Ink absorber multi harness (CN701) Re-connect the cable.	- Spur unit - Logic board ass'y
20 times	Other errors	[6500]	(1) Cable connection:	- Logic board

			- Wireless LAN cable Re-connect the cable. If any damage or breakage of the cable is found, replace the cable.	ass'y - Wireless LAN board ass'y
21 times	Drive switch error	[C000]	(1) Foreign material in the drive switch area of the purge drive system unit: Remove foreign material. (2) Ink tank conditions: Confirm that the ink tanks are seated properly and they do not interfere with the carriage movement.	- Purge drive system unit - ASF unit - Carriage unit
22 times	Scanner error	[5011]	(1) Cable connection: - CIS FFC (CN1100) - Lamp harness ass'y - Scanner motor relay harness ass'y Re-connect the cables. (2) Document pressure sheet conditions: Re-attach the document pressure sheet, or replace it.	- Scanner unit - Logic board ass'y - Scanner motor relay harness - Lamp harness ass'y
	FB motor error	[5012]	(1) Cable connection: - FB motor harness (CN902) Re-connect the cables.	- Scanner unit
	Scanner electric circuit error	[5050]	(1) Cable connection: - CIS FFC (CN1100) - Lamp harness ass'y - Scanner motor relay harness ass'y Re-connect the cables.	- Scanner unit
23 times	Valve cam sensor error	[6C10]	(1) Foreign material around the purge drive system unit: Remove foreign material. (2) Cable connection: - Valve cam harness (CN700) Re-connect the cable.	- Purge drive system unit - Logic board ass'y

Before replacement of the logic board, check the ink absorber counter value, and register it to the replaced new logic board. (The value can be set in 10% increments.) In addition, according to the "*Guideline for Preventive Replacement of Ink Absorber*," replace the ink absorber. [See 3. ADJUSTMENT / SETTINGS, 3-3. Adjustment and Settings in Service Mode, for details.]

◀ <1. TROUBLESHOOTING> ▶ ▲

2. REPAIR

2-1. Major Replacement Parts and Adjustment

Service part	Recommended removal procedure*1 / Notes on replacement	Adjustment / settings / operation check
Logic board ass'y	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Logic board ass'y - Before replacement, check the ink absorber counter value (by service test print or EEPROM information print). - Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y.	**In the service mode:** 1. Set the ink absorber counter value. 2. Set the destination. 3. Print the integrated inspection pattern. 4. Perform LF / Eject correction (only when streaks or uneven printing occurs). 5. Set the sensitivity of the capacitive sensors. [See 3-3. Adjustment and Settings in Service Mode, (7) Capacitive sensor sensitivity setting, for details.] 6. Print the EEPROM information. [See 3-3. Adjustment and Settings in Service Mode, for details.] **In the user mode:** 7. Set the language displayed on the LCD. 8. Reset the LAN settings. 9. Perform print head alignment. 10. Print via USB connection. 11. Copy. 12. Perform direct printing from a digital camera (PictBridge).
Absorber kit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) Ink absorber - See 2-2. Part Replacement Procedures, (11) Ink absorber replacement, for details.	**In the service mode:** 1. Reset the ink absorber counter. [See 3-3. Adjustment and Settings in Service Mode, for details.] After the ink absorber counter is reset, the counter value is printed automatically.
Carriage unit	(1) Cassette unit (2) Left and right side covers	1. Apply grease to the sliding portions of the carriage rail.

	(3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Timing slit strap - Before removal of the carriage rail, put a mark of the carriage rail position. (8) Carriage rail (9) Carriage unit - Keep the timing slit strap (carriage encoder film) free from stain or damage. When returning the strap, make sure of its orientation (left and right, front and back). - See 2-2. Part Replacement Procedures, (6) Carriage unit removal, for details.	[See 3-4. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern. [See 3-3. Adjustment and Settings in Service Mode, for details.] **In the user mode:** 3. Perform automatic print head alignment.
Switch system unit Paper feed motor	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Part Replacement Procedures. - The screws securing the paper feed motor are allowed to be loosened only for paper feed motor replacement. (DO NOT loosen them in any other cases.) - See 2-2. Part Replacement Procedures, (8) Purge drive system unit (right plate) and switch system unit (left plate) removal, for details. - See 2-2. Part Replacement Procedures, (9) Engine unit reassembly, for details.	1. Adjust the paper feed motor. [See 3-5. Special Notes on Servicing, (2) Paper feed motor adjustment, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
Platen unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Part Replacement Procedures, from this step.	**In the service mode:** 1. Perform LF / Eject correction (only when uneven printing or streaks appear on printouts after replacement). [See 3-3. Adjustment and Settings in Service Mode, for details.] 2. Print the integrated inspection pattern.
Spur unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit	**In the service mode:** 1. Print the integrated inspection pattern. 2. Perform LF / Eject correction

	(5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Part Replacement Procedures. - DO NOT contact the spur edges.	(only when uneven printing or streaks appear on printouts after replacement). [See 3-3. Adjustment and Settings in Service Mode, for details.]
Purge drive system unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Part Replacement Procedures. - See 2-2. Part Replacement Procedures, (8) Purge drive system unit (right plate) and switch system unit (left plate) removal, for details. - See 2-2. Part Replacement Procedures, (9) Engine unit reassembly, for details.	**In the service mode:** 1. Print the integrated inspection pattern.
Carriage rail and main chassis Idler pulley parallel pin APP code wheel gear shaft	See 2-2. Part Replacement Procedures, and Parts Catalog.	1. Apply grease to the sliding portions. [See 3-4. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
Document pressure sheet Document pressure plate Scanner unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit	1. Confirm the document pressure plate sheet position. [See 3-5. Special Notes on Servicing, (4) Document pressure sheet replacement, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
Document pressure plate unit Document top cover unit	(1) Right side cover (2) Document pressure plate unit (3) Document top cover unit (4) LCD viewer - Be cautious not to scratch or damage the LCD cable. - To protect the external housing of the machine from scratches, spread a soft cloth and disassemble / reassemble the machine on it.	**In the service mode:** 1. Perform button and LCD test. [See 3-3. Adjustment and Settings in Service Mode, for details.] 2. Set the sensitivity of the capacitive sensors. [See 3-3. Adjustment and Settings in Service Mode, (7) Capacitive sensor sensitivity

LCD viewer unit		setting, for details.] 3. Print the integrated inspection pattern.
Timing slit strip film Timing slit disk feed film Timing slit disk eject film	See 2-2. Part Replacement Procedures, and Parts Catalog. - Upon contact with the film, wipe the film with ethanol. - Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film.	**In the user mode:** 1. Perform print head alignment. **In the service mode:** 2. Print the nozzle check pattern. 3. Perform LF / Eject correction (only when uneven printing or streaks appear on printouts after replacement). [See 3-3. Adjustment and Settings in Service Mode, for details.]
Print head		**In the user mode:** 1. Perform print head alignment. **In the service mode:** 2. Print the integrated inspection pattern.
Wireless LAN board ass'y	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) WLAN board	**In the user mode:** 1. Reset the LAN settings. **In the service mode:** 2. Print the integrated inspection pattern, and confirm that the WLAN MAC address is properly updated.
Front door unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Front door / bottom case	**In the service mode:** 1. Print the integrated inspection pattern.

*1: To reassemble the unit after replacement, follow the procedures in the reverse order.

General notes:

- Make sure that the flexible cables and wires in the harness are in the proper position and connected correctly. See 2-2. Part Replacement Procedures or the Parts Catalog for details.
- Do not drop the ferrite core, which may cause damage.
- Protect electrical parts from damage due to static electricity.
- Before removing a unit, after removing the power cord, allow the machine to sit for approx. 1 minute (for capacitor discharging to protect the logic board ass'y from damages).
- Do not touch the timing slit strip film, timing slit disk feed film, and timing slit disk eject film. No grease or abrasion is allowed.

- Protect the units from soiled with ink.
- Protect the housing from scratches.
- For automatic print head alignment, use Matte Photo Paper MP-101 to maintain the alignment accuracy.
- Exercise caution with the screws, as follows:
    i. The screws of the paper feed motor may be loosened only at replacement of the paper feed motor unit (DO NOT loosen them in other cases).
    ii. Before loosening the 3 screws that fix the carriage rail to the main chassis, mark the screw positions so that the carriage rail will be re-attached to the main chassis in its original position. [See 2-2. Part Replacement Procedures, (6) Carriage unit removal, for details.]

<2-1. Major Replacement Parts and Adjustment>

2-2. Part Replacement Procedures (Click on the image to enlarge it.)

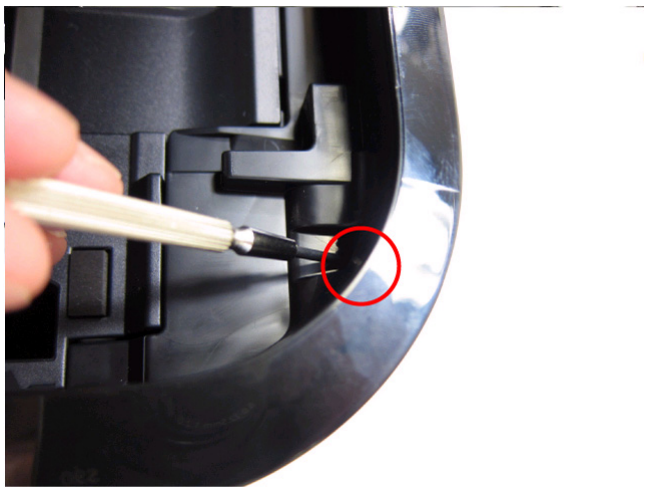
Be sure to protect the machine from static electricity in repair servicing, especially for the LCD, panel board, scanner unit, logic board, card board, IrDA board, PE sensor board, and WLAN board.

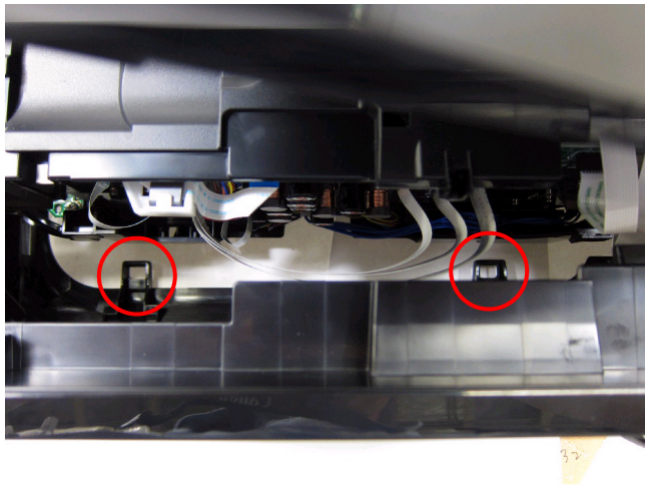
Some of the photos are of the MP630 and MP980 since their structures are same.

(1) External housing, scanner unit, and document cover removal

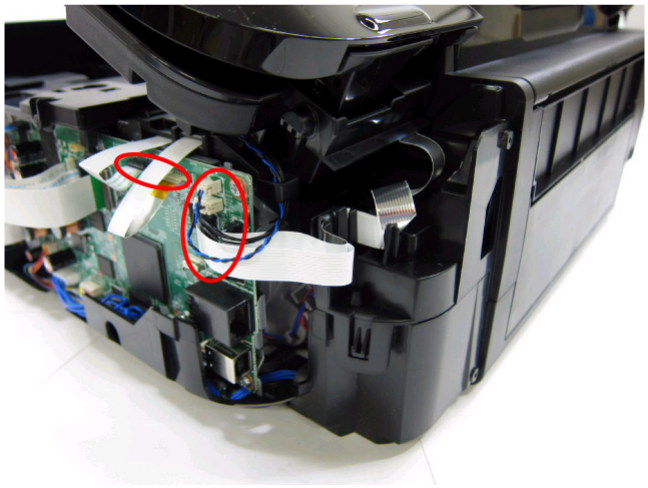
1) Remove the cassette.

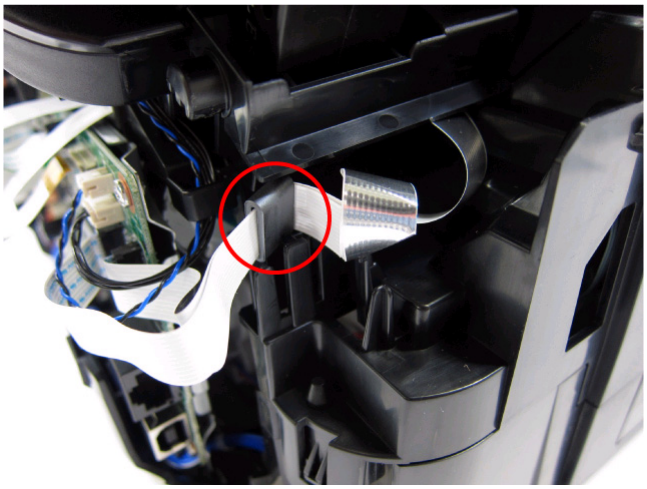
2) Open the front door and scanner unit, then remove the side cover R (3 screws).
<The scanner unit hinges are fitted in the right and left side covers.>



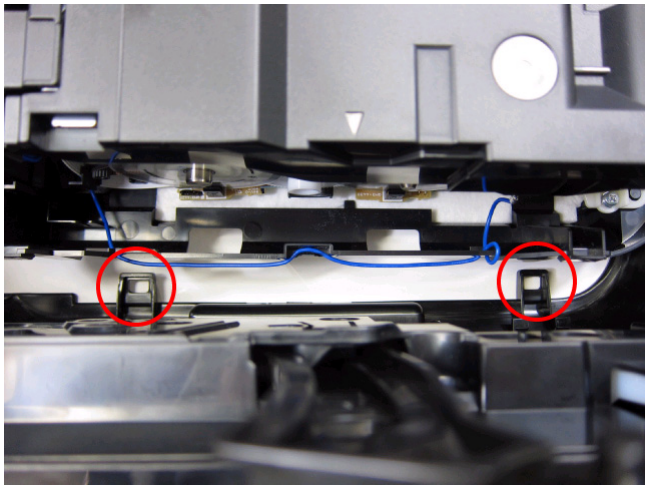


3) Remove the scanner cable, panel cable, and FB motor cable.
<Be cautious of the core location and wiring layout.>

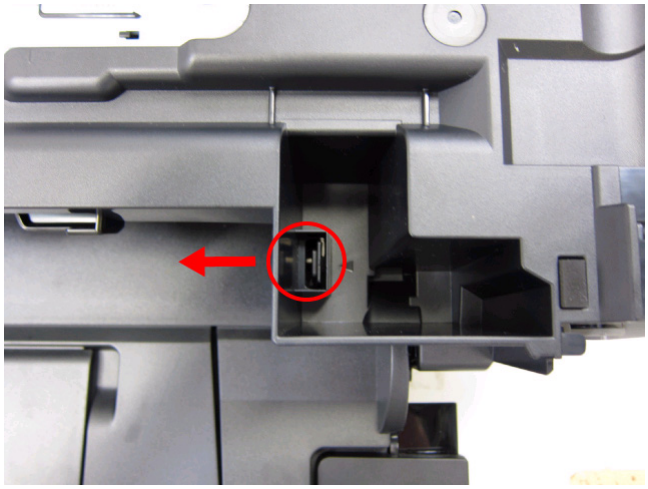


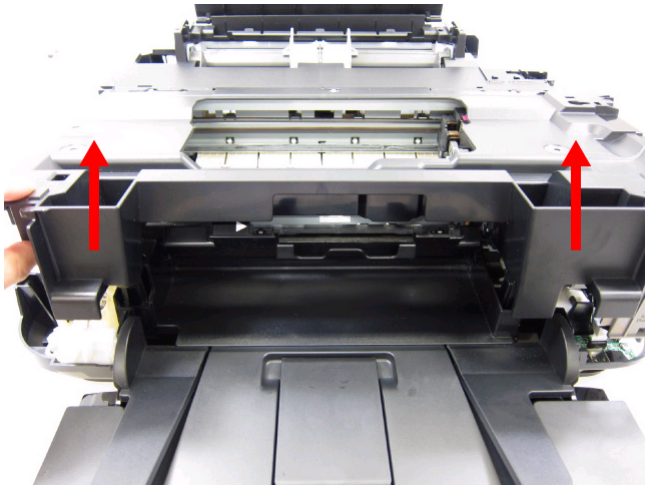


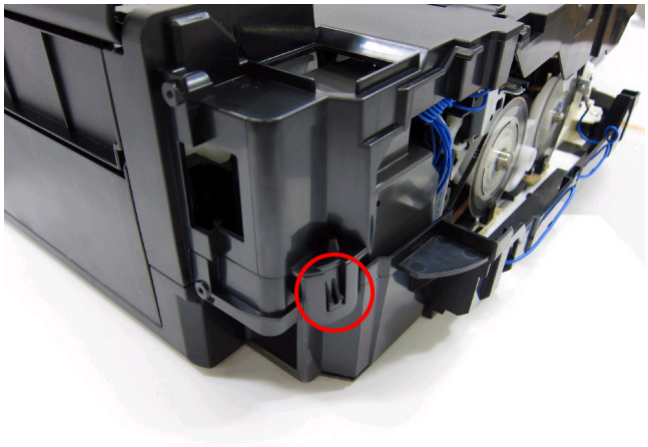
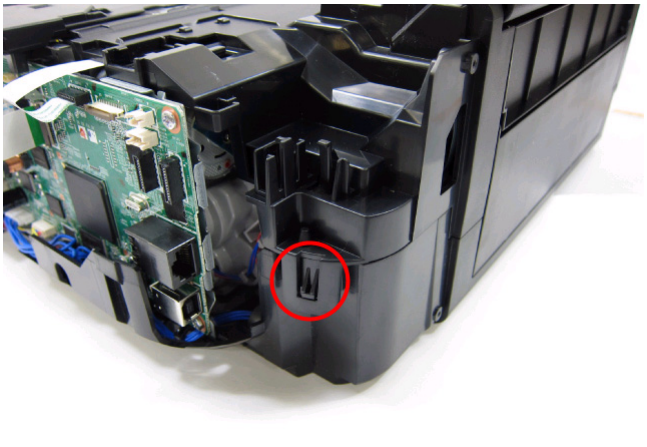
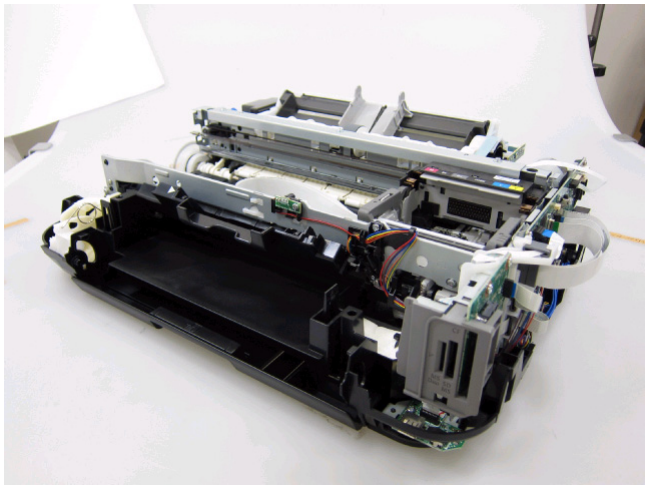
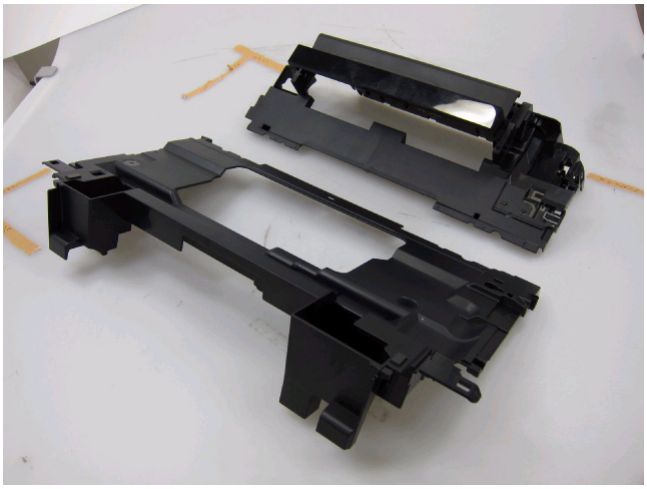
4) Remove the side cover L, scanner unit, then document pressure plate unit (3 screws).
<While holding the scanner unit, remove the side cover L, then disengage the scanner unit from the scanner support arm.>



5) Remove the main case (no screws).

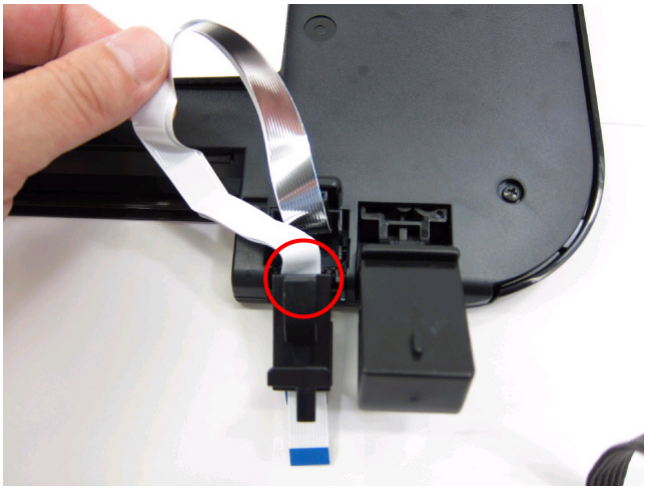




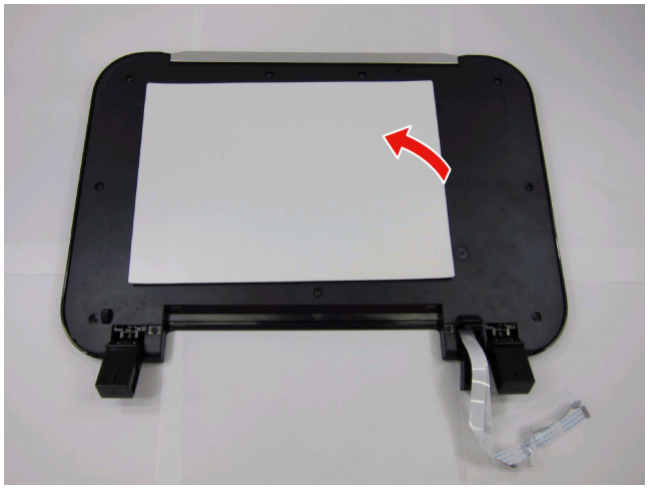





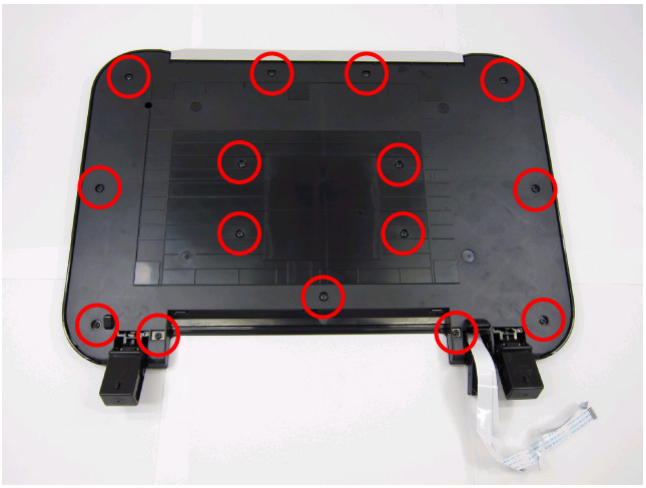
(2) Operation panel removal

1) Separate the document pressure plate from the scanner unit.
<While pushing the hinge edge inward, pull the plate upward to separate it from the scanner unit.>
<Through the slit of the scanner unit, remove the panel cable.>

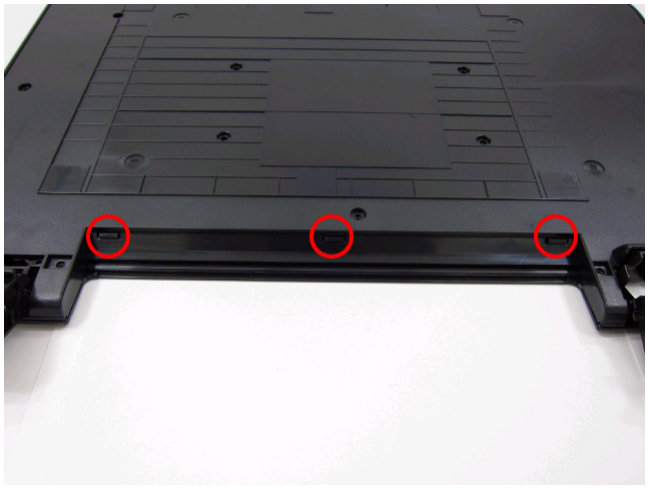


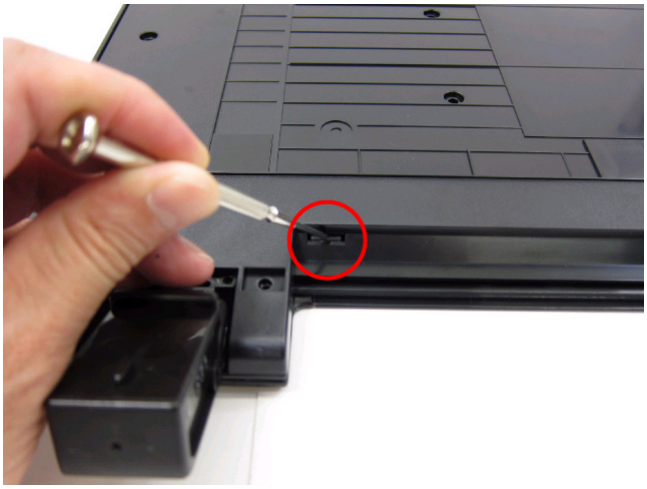
2) Remove the top cover from the base.
<Peel off the document pressure sheet (sponge sheet), and remove 15 screws. The sheet is attached to the plate with the double-sided adhesive tape. A new sheet must be attached when reassembling the unit.>





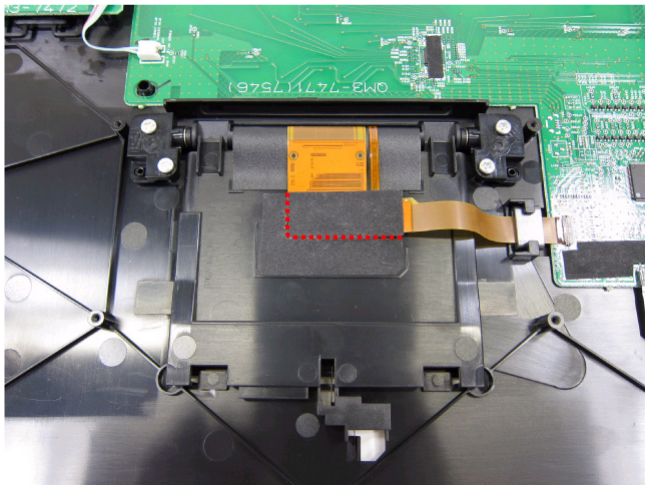
<Release 3 claws.>

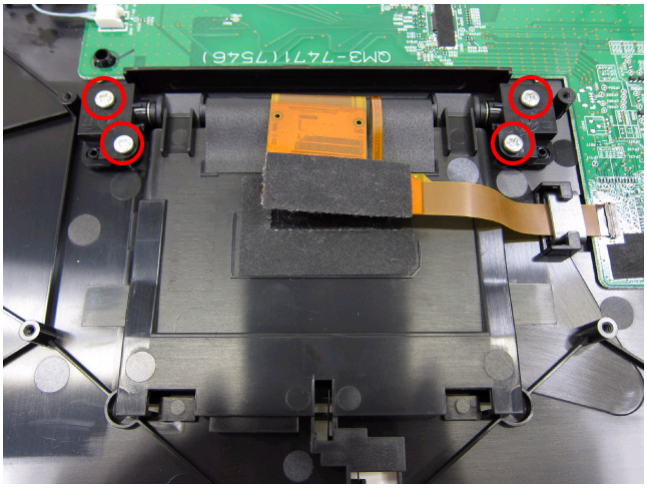




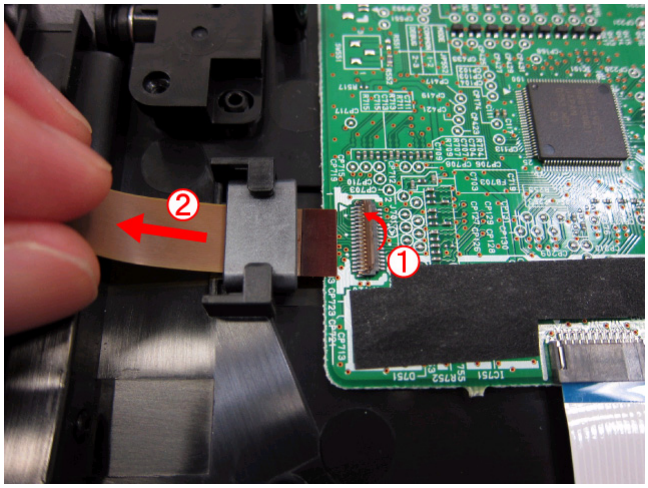
3) Separate the LCD unit and the power switch from the panel.

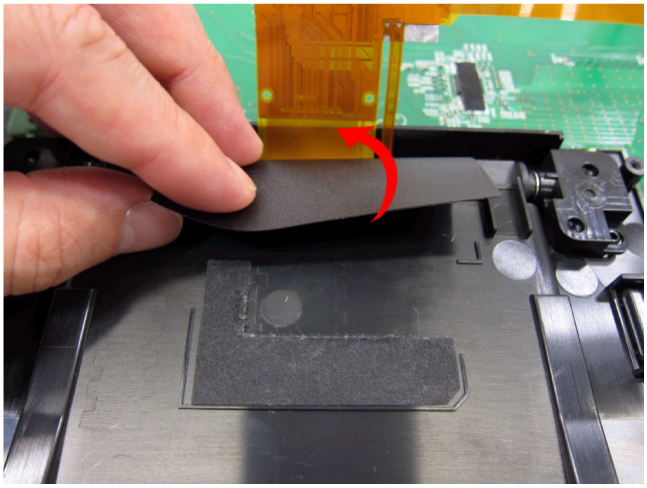
<Cut the electrostatic protection sheet along the perforation, and remove the protection sheet.>

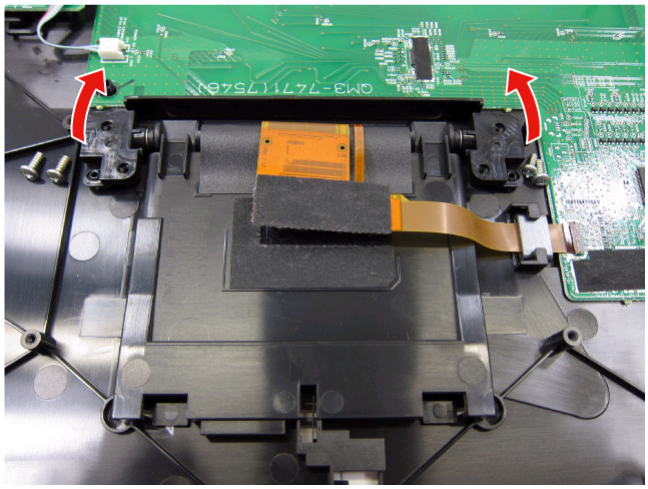


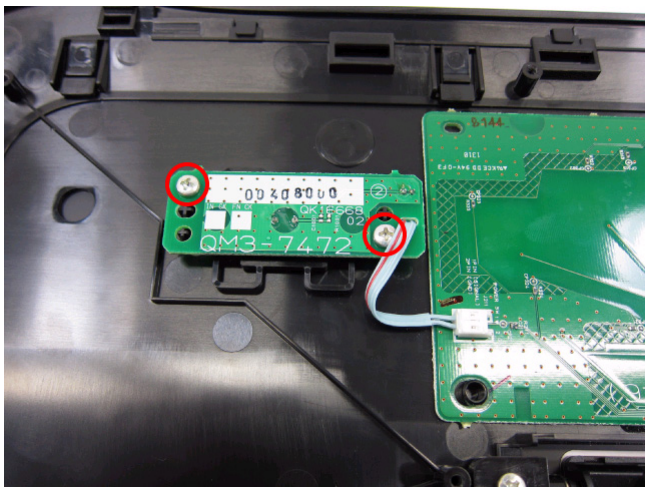


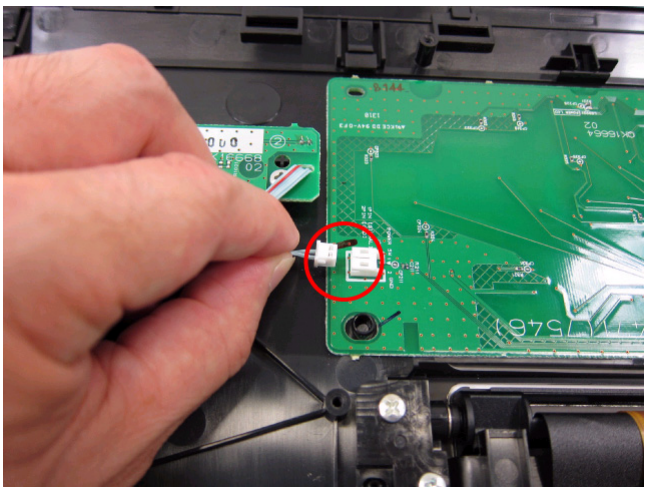
In reassembling, attach the new protection sheet as it is over the remaining portions of the sheet.









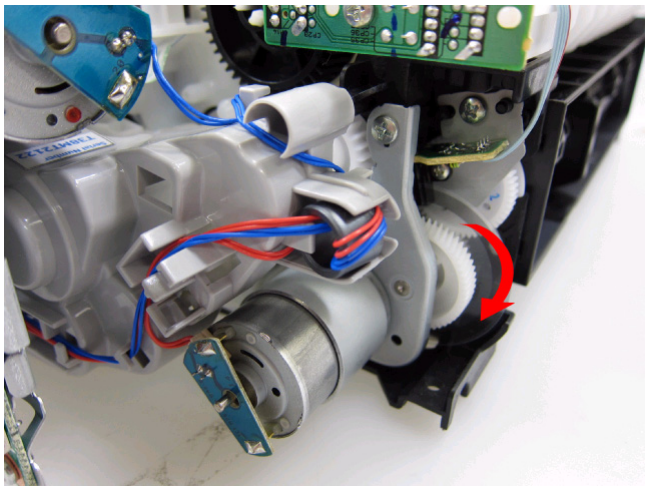


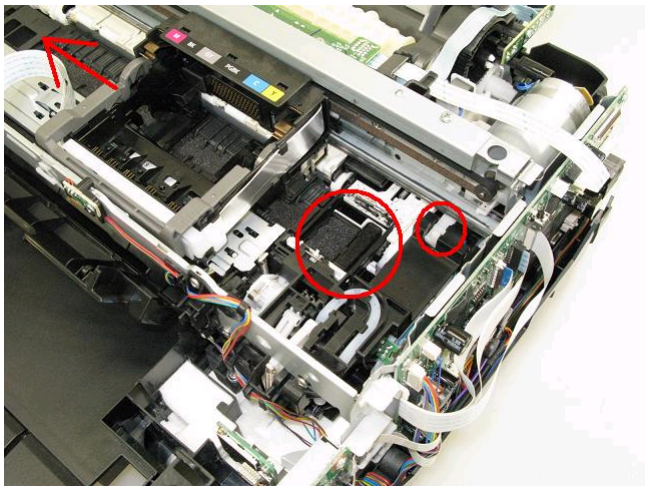
(3) Document window R removal

The window is fixed with the double-sided adhesive tape. Insert a precision screwdriver, etc. into the gap and slowly remove the window from the tape.

(4) Carriage unlocking

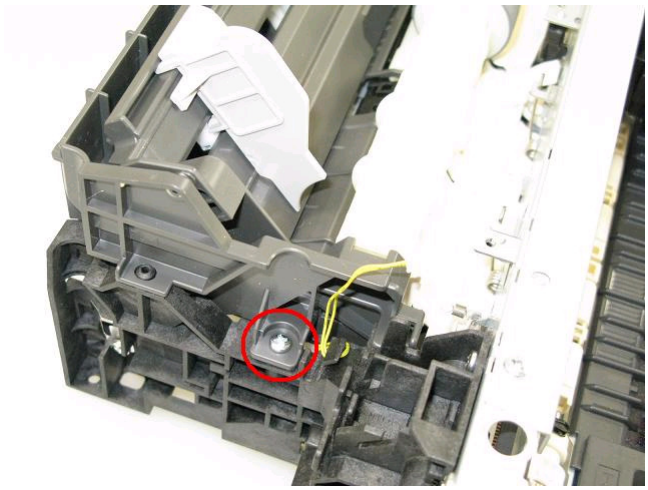
1) Rotate the APP motor drive gear in the red arrow direction in the left photo below to unlock the carriage.
Slide the carriage to the left (the opposite of the home position).

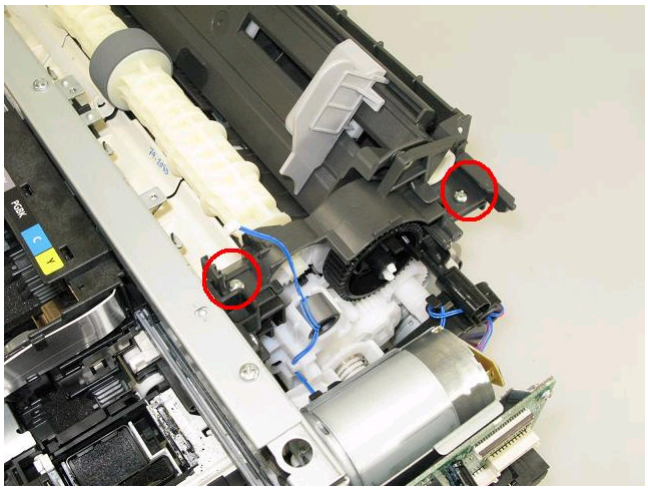


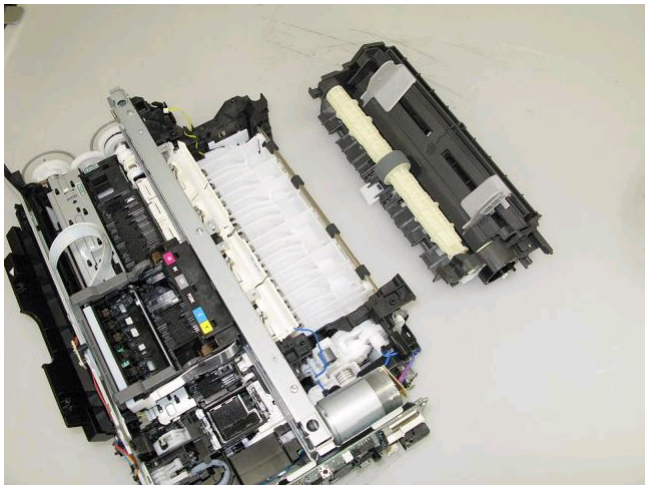


(5) ASF unit removal

1) Remove the PE sensor board first, then remove 1 screw from the left plate (the left side of the ASF unit), and 2 screws from the right plate (the right side of the ASF unit).



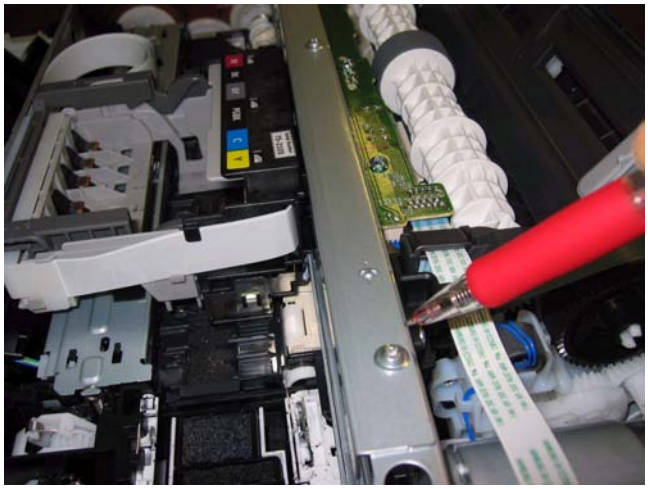


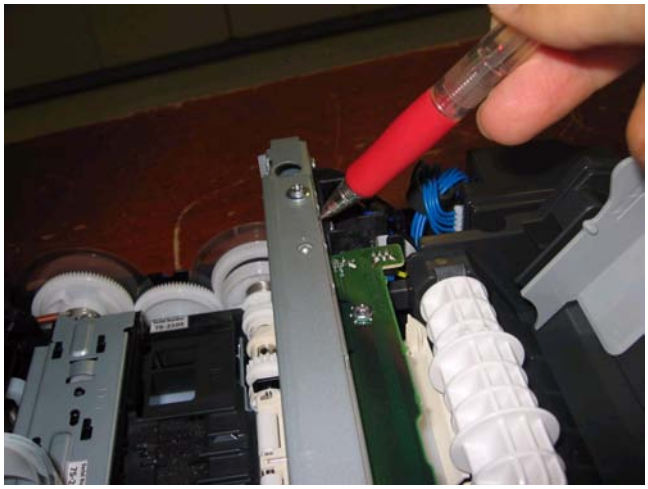


(6) Carriage unit removal

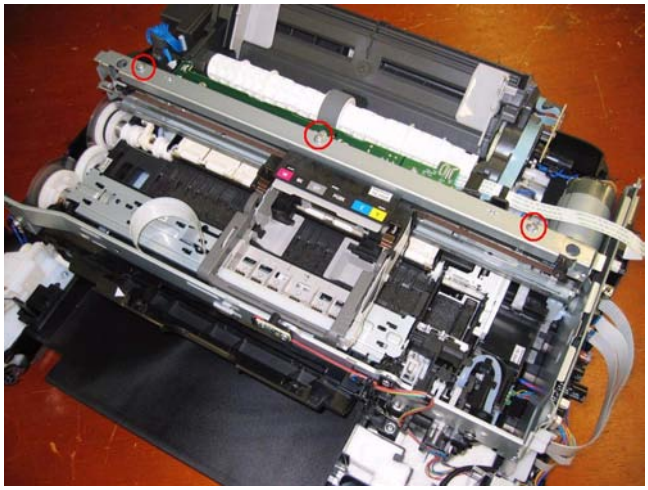
1) Unlock the carriage while following the procedures (4) Carriage unlocking.

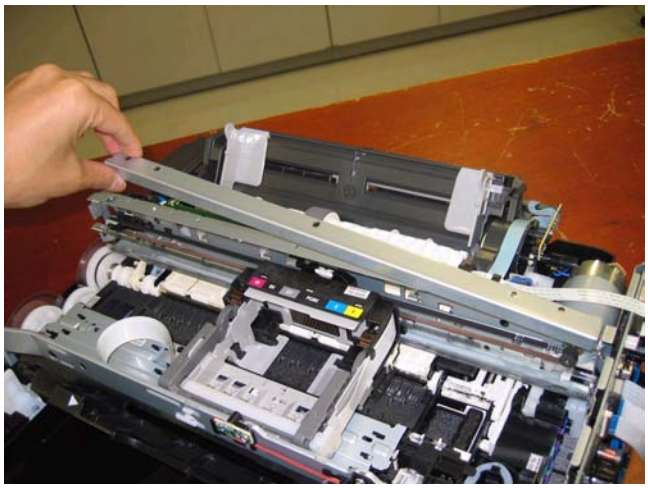
2) On the main chassis, mark the positions of the screws that fix the carriage upper rail to the main chassis (3 points for each screw: the left, right, and center).



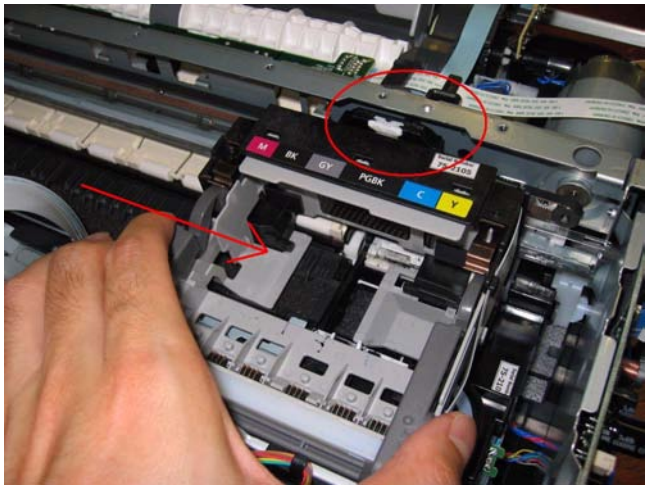


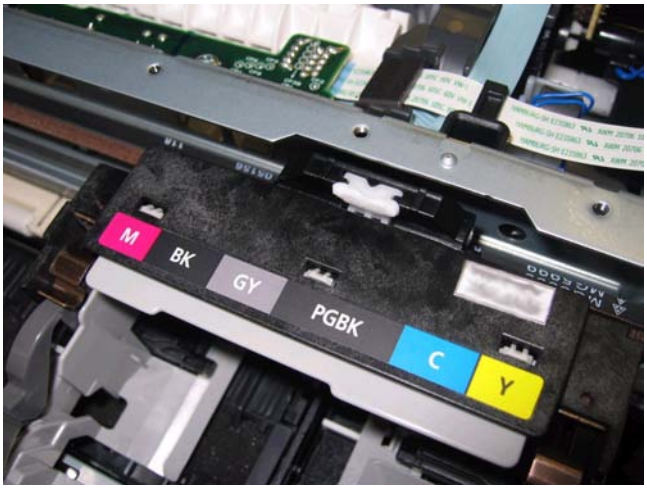
3) Remove 3 screws that fix the carriage upper rail to the main chassis, then remove the rail.



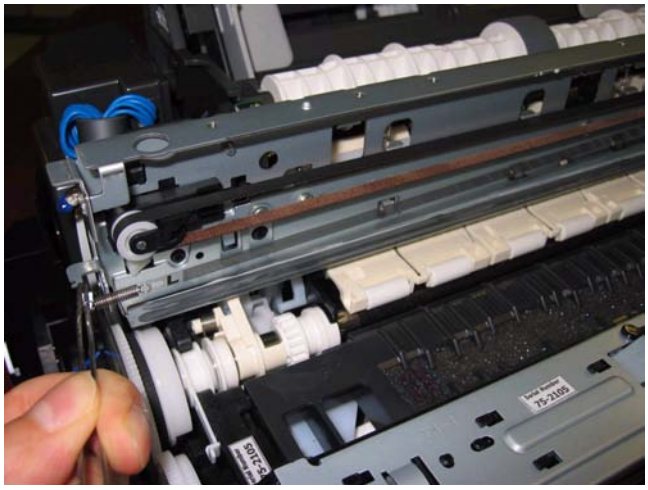


4) Slowly slide the carriage unit to where the main chassis is cut as shown in the photo below.

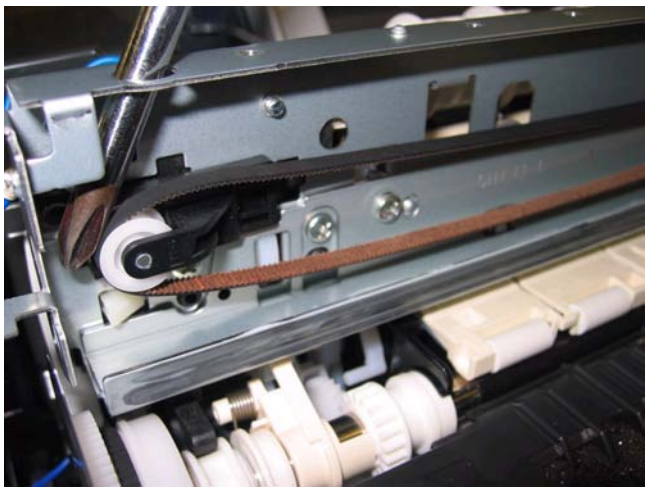


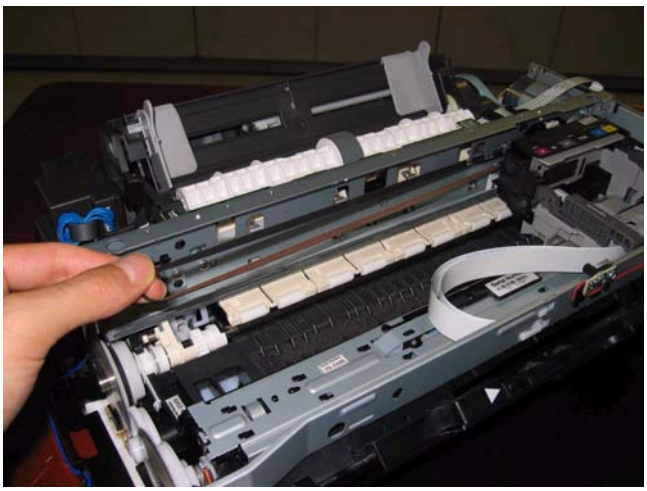


5) Remove the timing slit film. Be cautious to keep it free from any grease or damage.

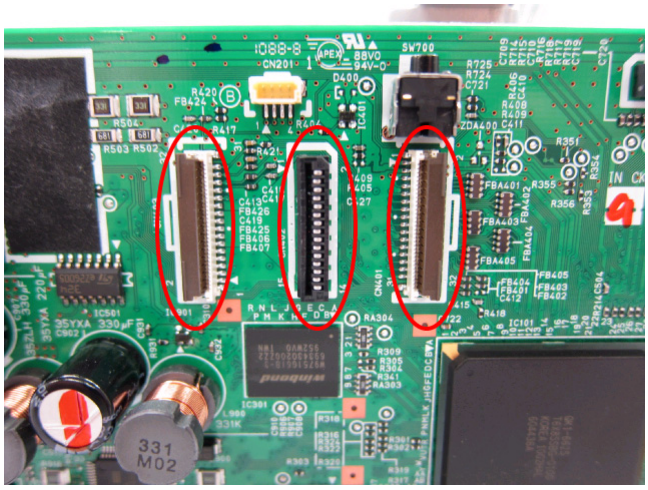
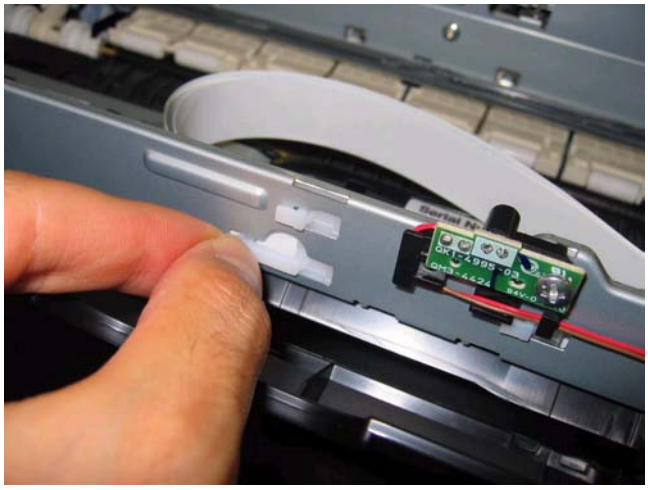


6) Pass the head of a flat-blade screwdriver through the hole of the main chassis, and press the carriage belt to release it from the pulley. Be cautious to keep it free from any grease.

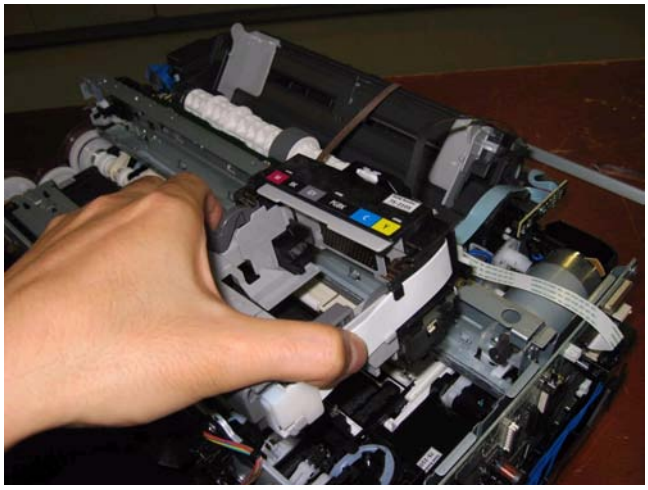
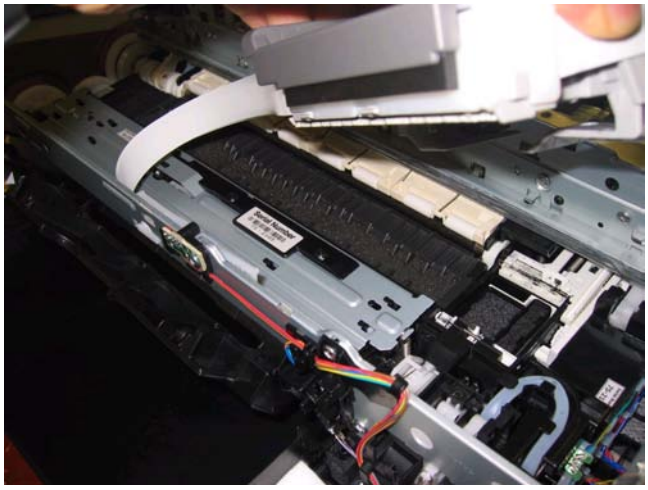
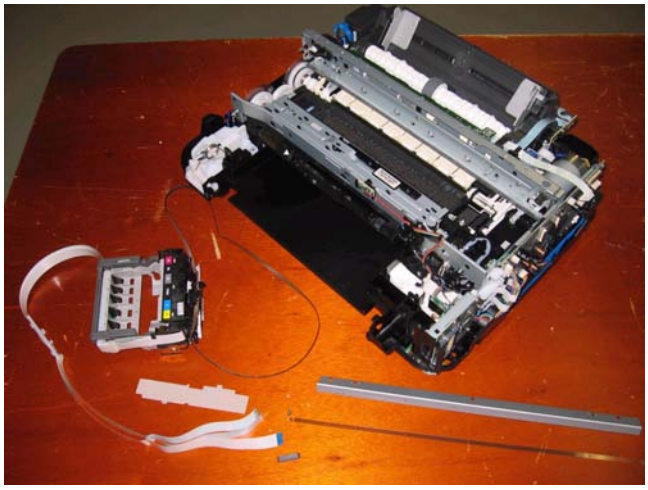
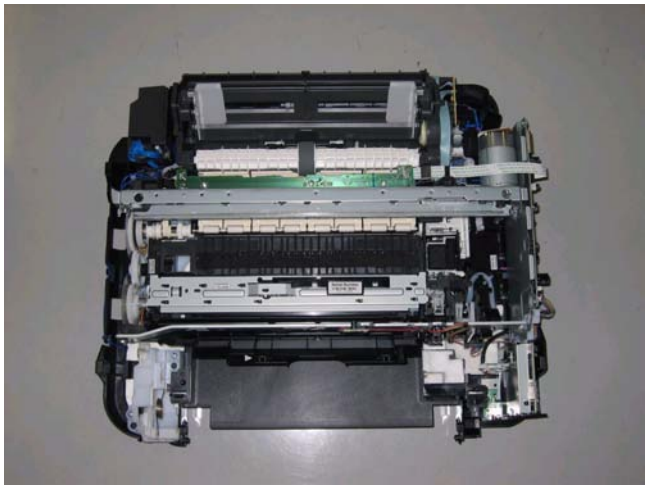




7) Disconnect the carriage FFC from the logic board connector, then remove the carriage cable cover, carriage cable holder, and FFC core.

8) While being cautious so that the carriage unit will not contact the main chassis, slowly lift the carriage unit to remove it from the main unit.

In assembling a new carriage unit, follow the procedures in the reverse order. For the carriage upper

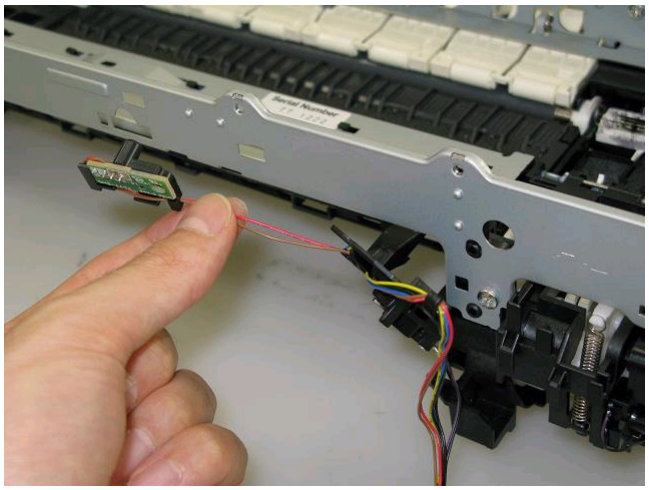
rail, align the rail to the marks that were put in the first step of disassembly, and securely fasten the screws.

Note

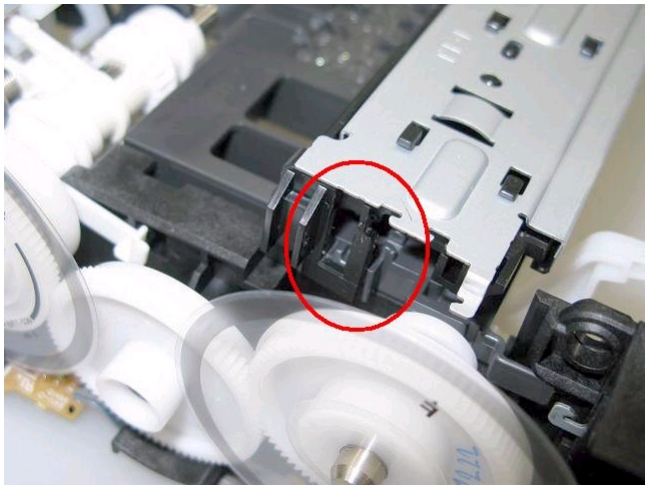
If the carriage unit is not necessary to be replaced, parts under the purge drive system unit, etc. can be replaced without removing the carriage rail. While holding a set of a) main chassis, b) upper and lower carriage rails, and c) carriage unit together, just remove the screws from the left and right plates. This way, you just have to reassemble the set of units (marking of the carriage rail position to the main chassis is not necessary).

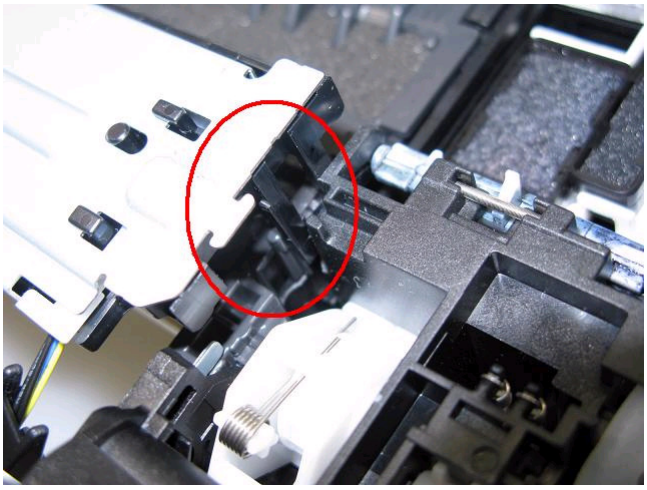
(7) Spur unit and platen unit removal

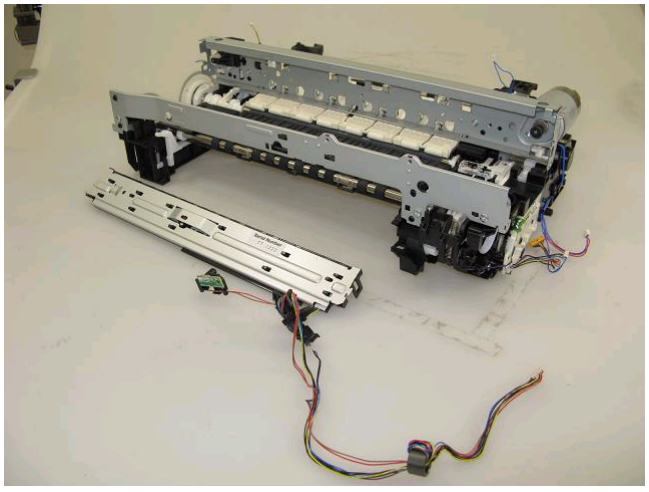
1) Remove the ink sensor and the inner cover sensor from the front chassis (1 screw each).



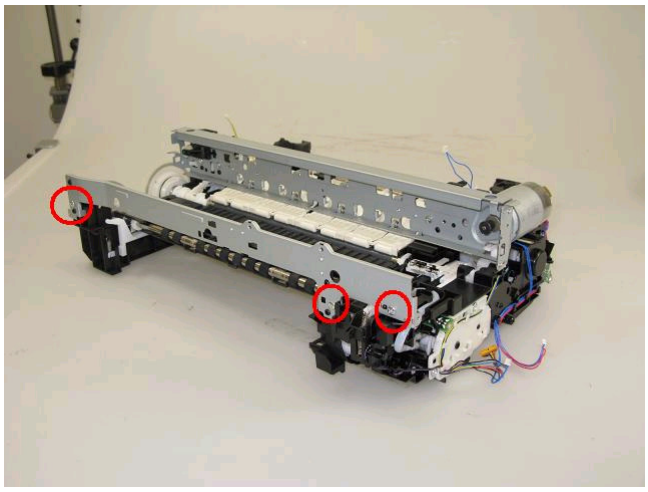
2) From the left and right sides of the spur unit, release the springs (2 on the left side, 1 on the right side). Then, slowly pull the spur unit upward to separate it from the platen unit.



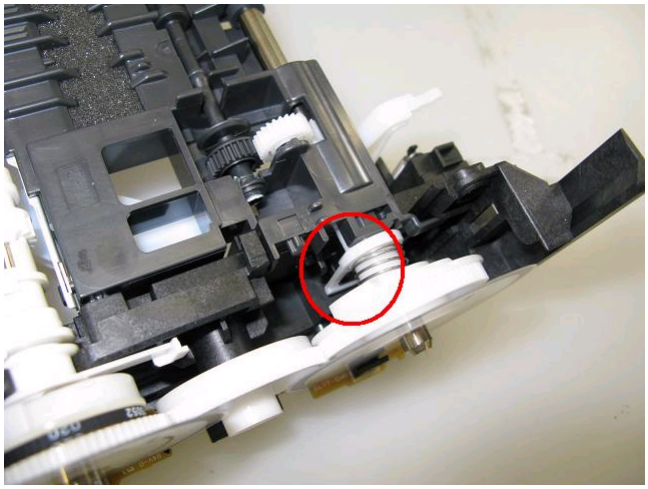


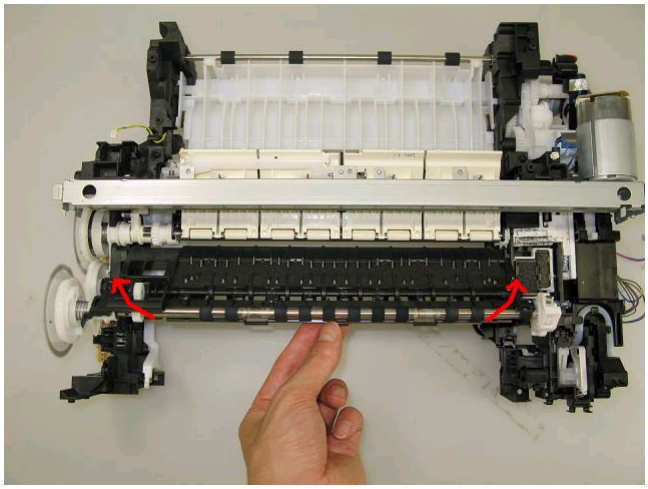


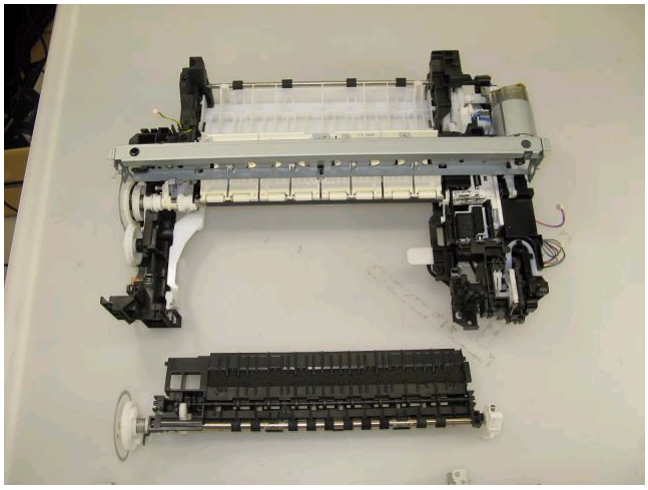
3) Remove the front chassis (3 screws).



4) Unlock the paper eject roller gear. While raising the front of the platen unit, remove the platen unit from the printer unit.

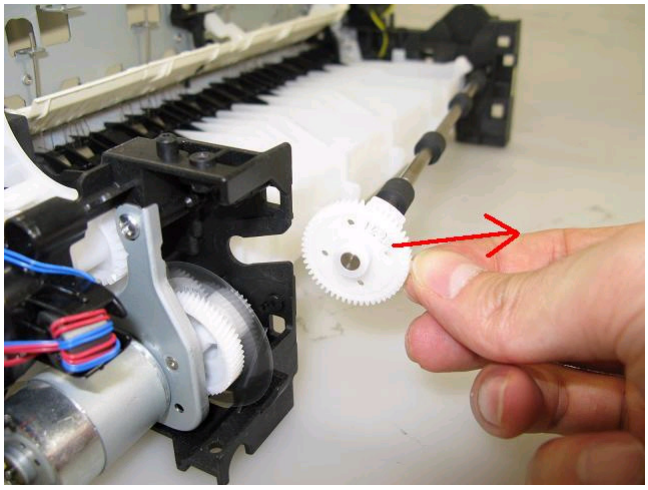
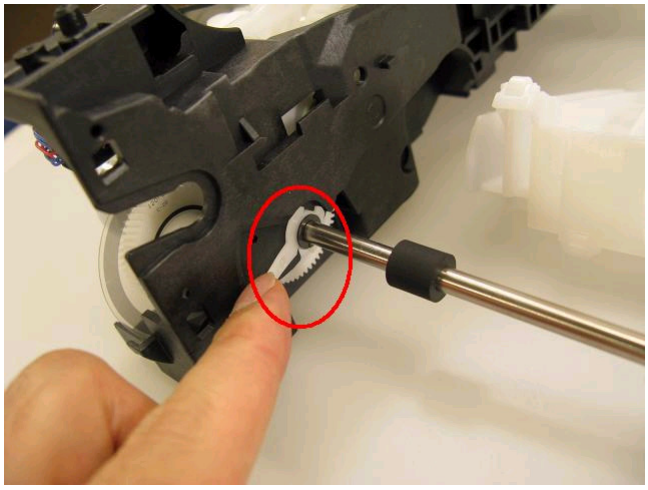
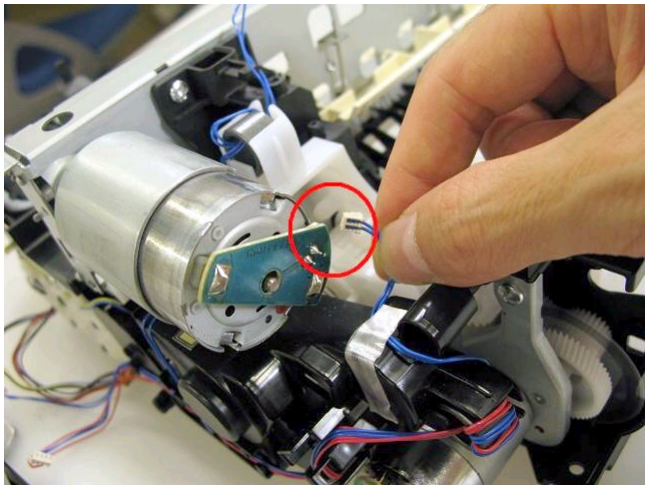
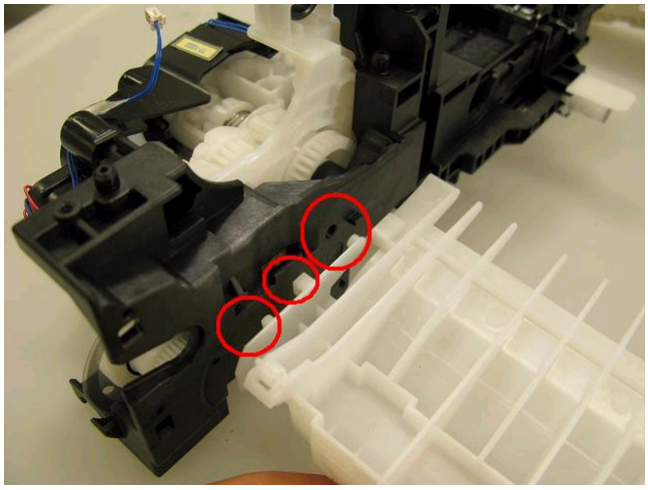
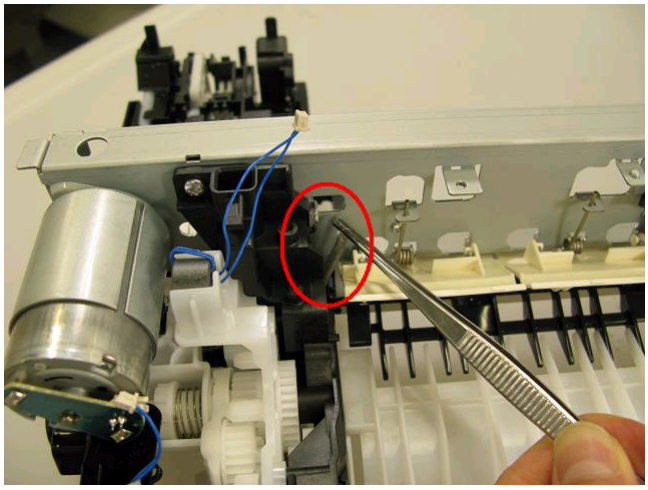






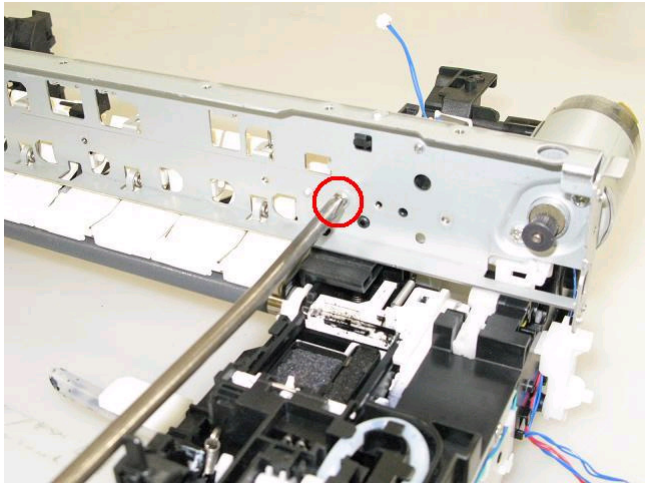
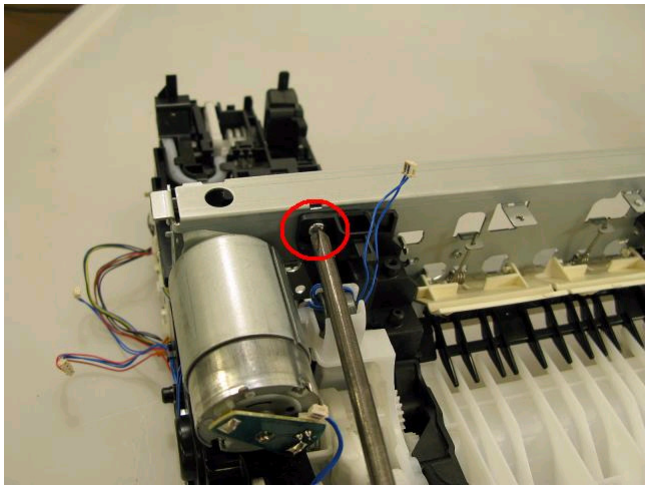
(8) Purge drive system unit (right plate) and switch system unit (left plate) removal

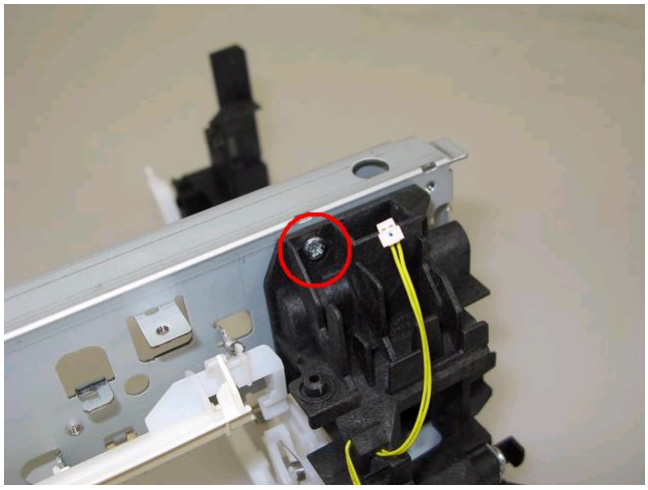
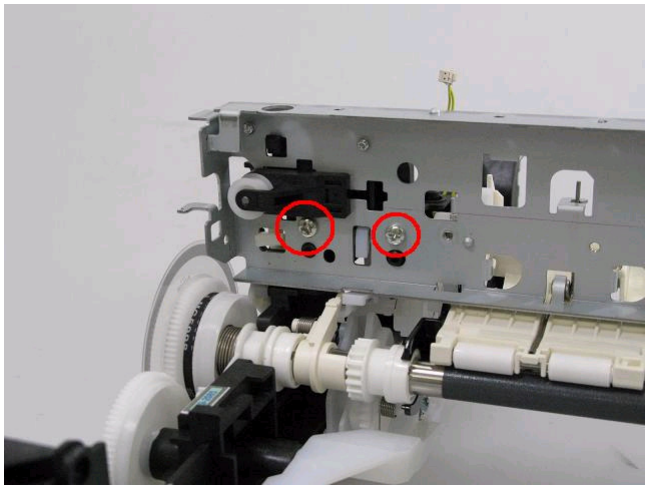
1) Release the springs of the carriage motor cable, duplex printing paper feed roller, cassette feed roller, cassette feed guide, and paper guide unit (both sides). (See the Parts Catalog for details.)

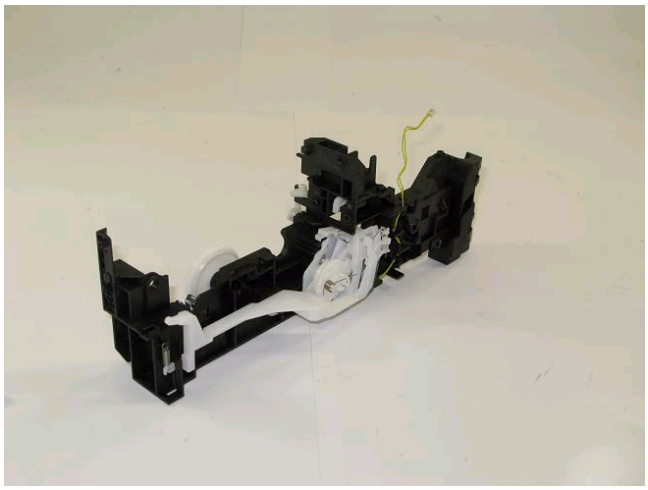
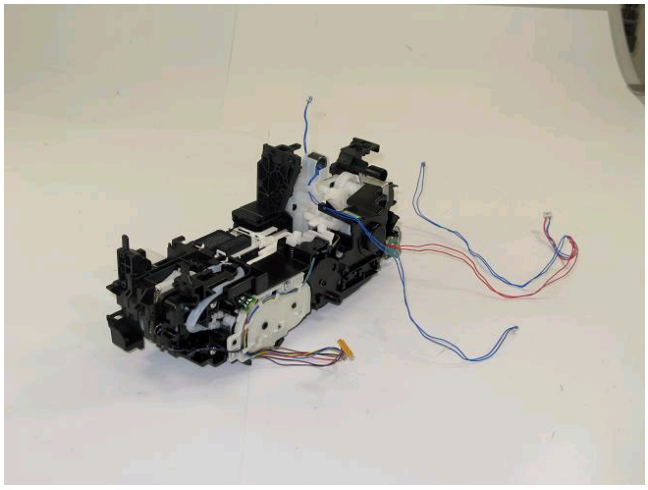
2) Remove the springs (left and right) from the pressure roller unit.

3) Remove the screws that fix the units to the main chassis (3 on the left, 2 on the right).

4) Separate the main chassis from the switch system unit and the purge drive system unit.

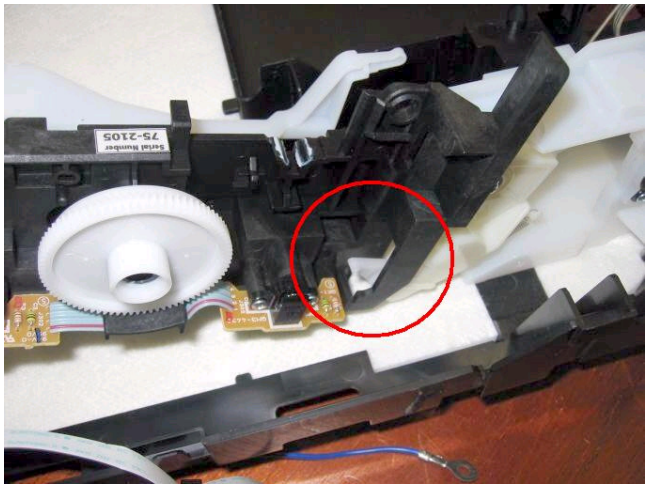
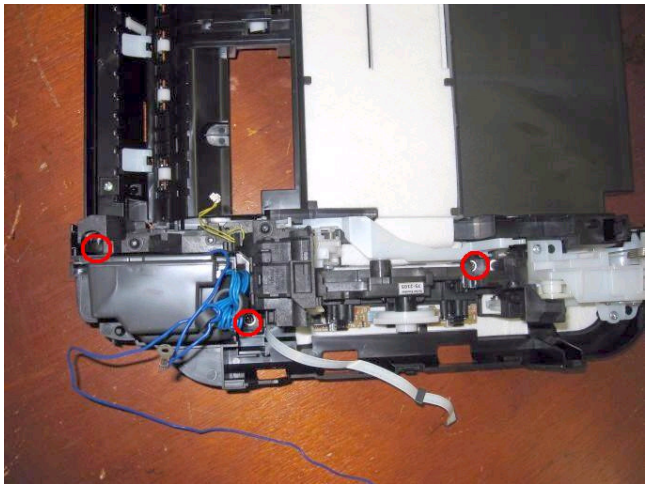



(9) Engine unit reassembly

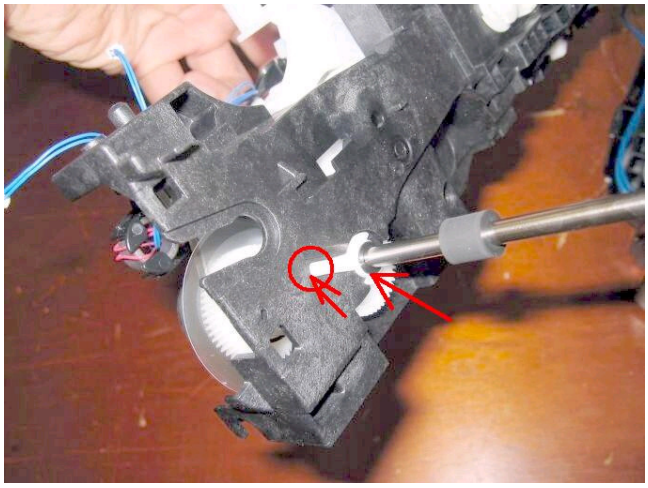
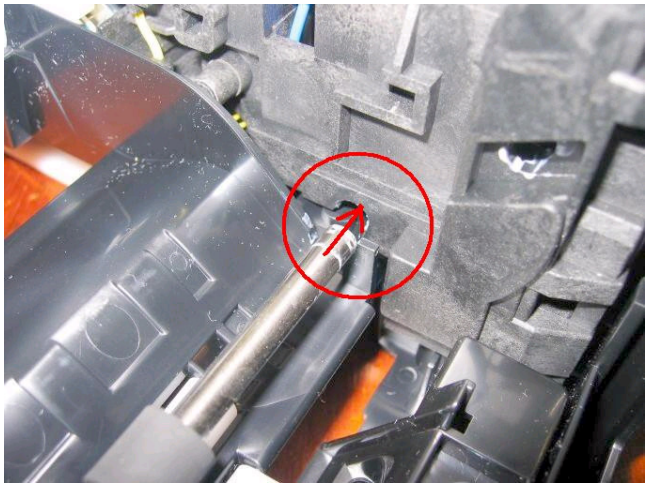
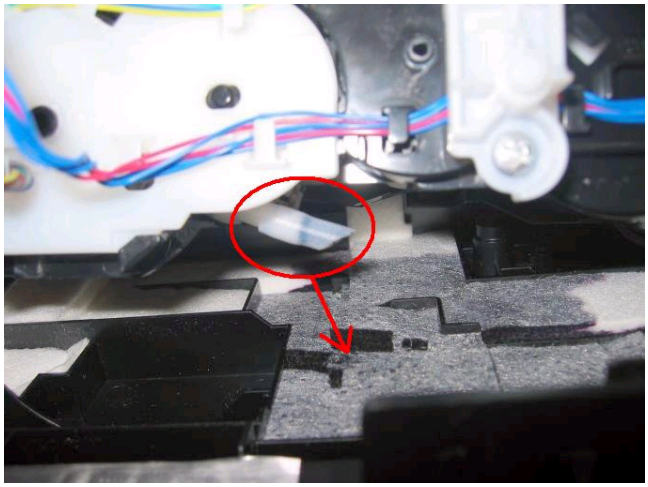
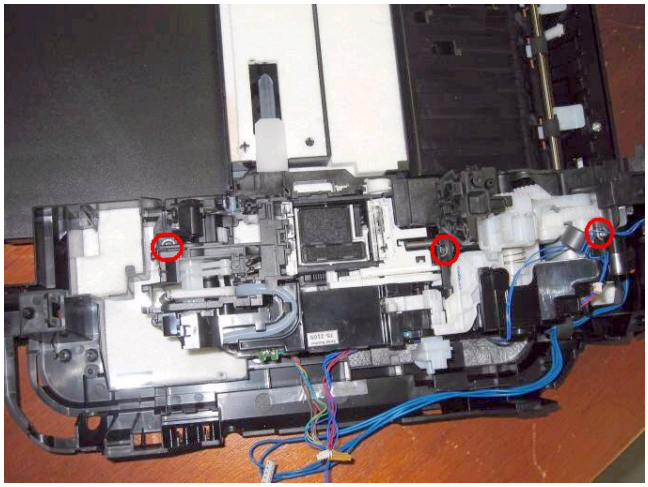
After repair, reassemble each unit of the printer engine on the bottom case in the procedures listed below.

Depending on the replaced unit, some steps can be omitted. For specific part names and locations, refer to the Parts Catalog.

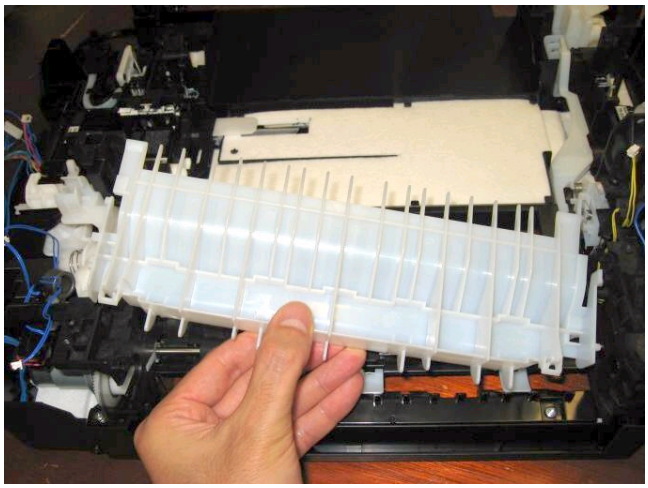
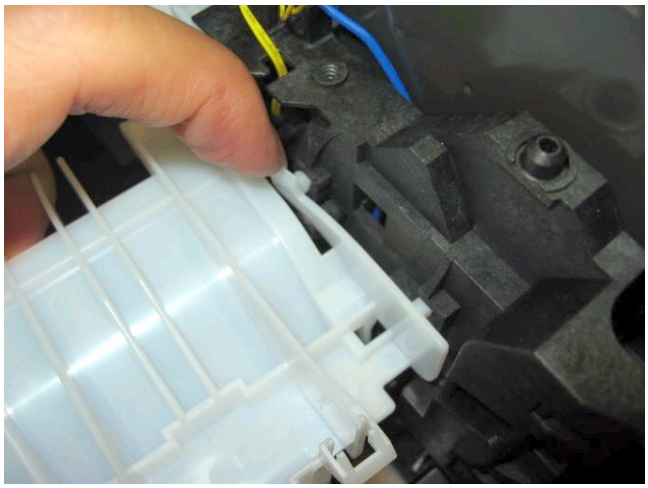
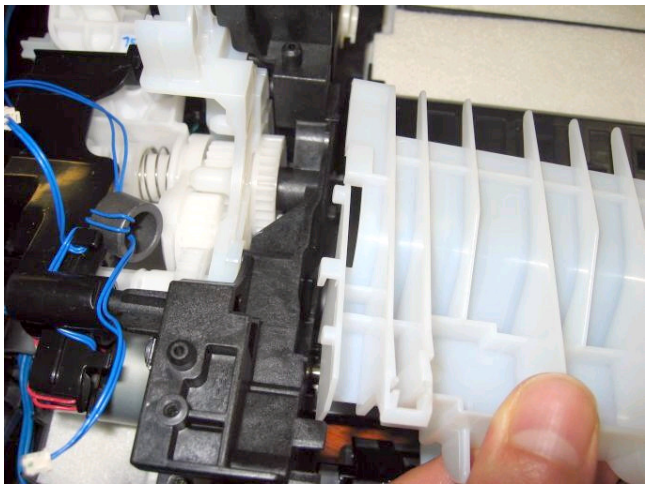
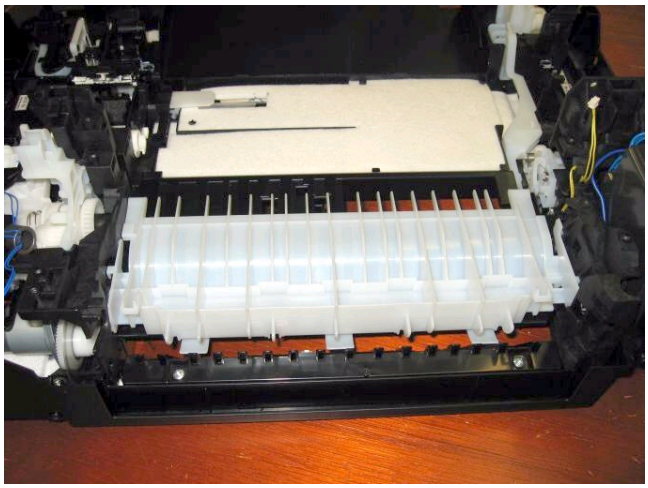
1) Install the switch system unit in the bottom case while fitting the joint to the FD link unit, then fasten the screws (3 screws).
Although the AC adapter is already attached in the photo below, it can be attached in the last step of reassembly if it is easier for you to reassemble the units.

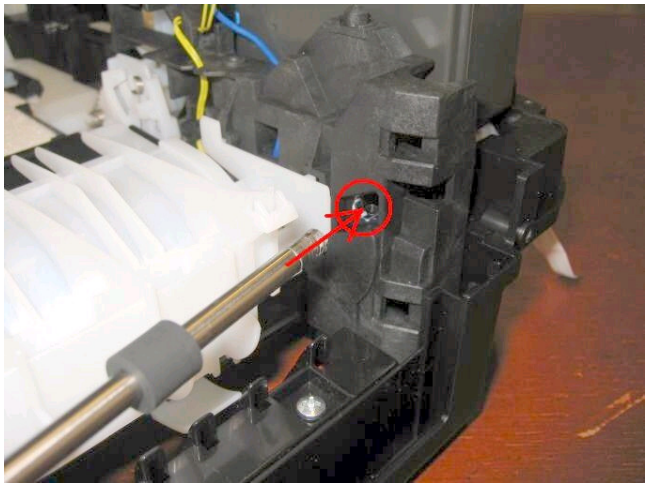
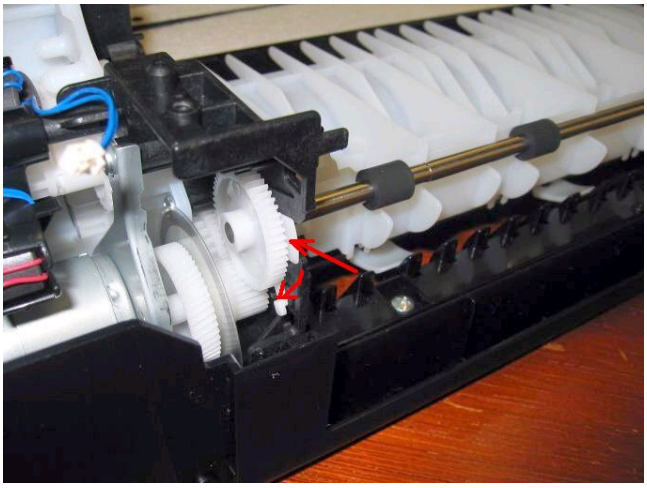
2) Attach the duplex print paper feed roller unit to the purge drive system unit, and fix them to the bottom case with the screws (3 screws).

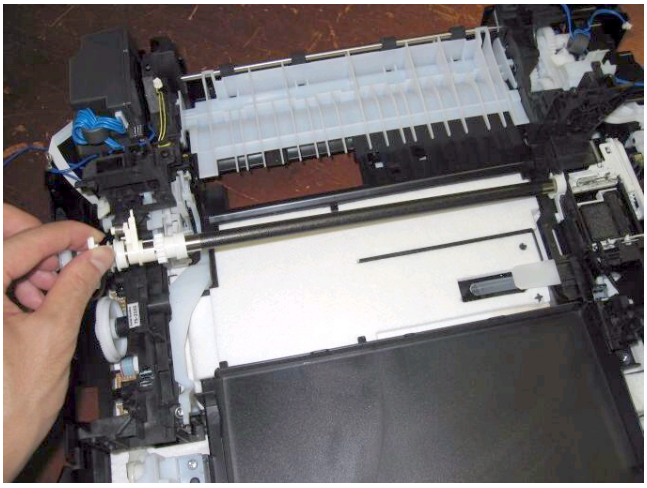
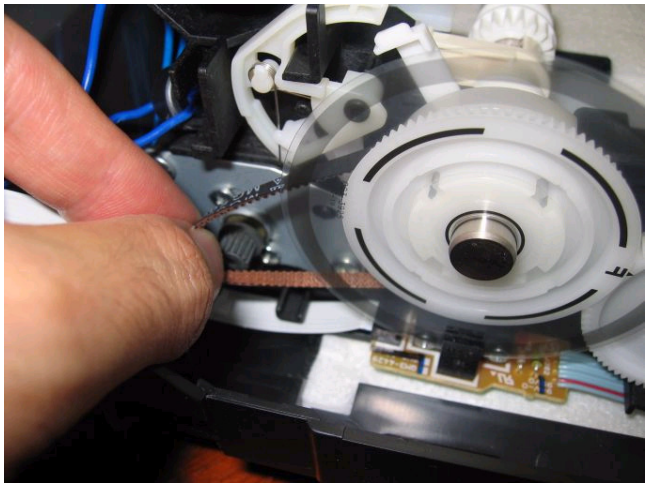
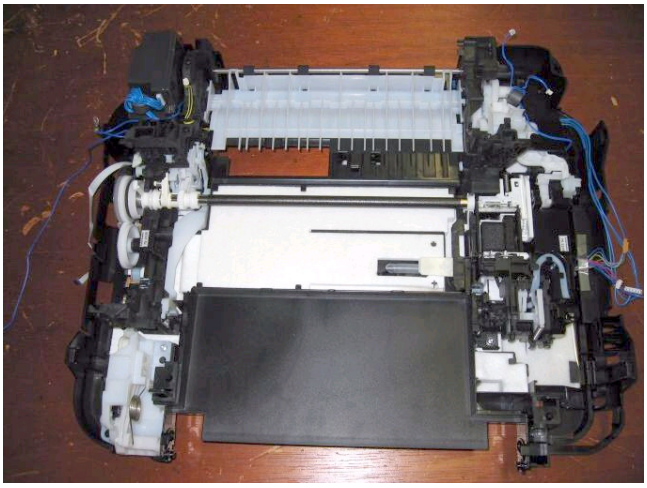
3) Attach the cassette feed guide.

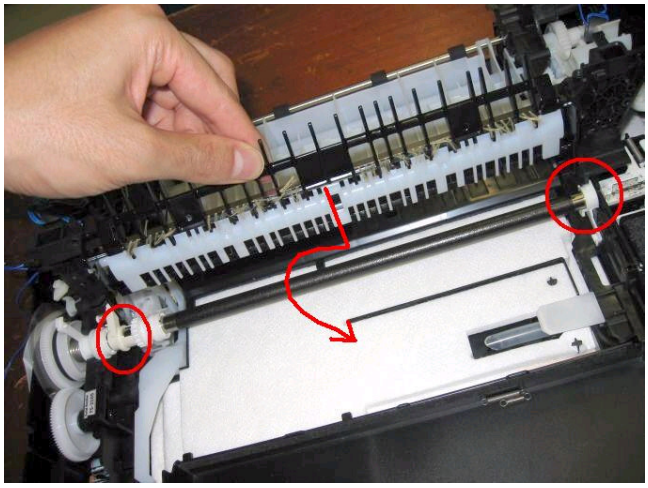
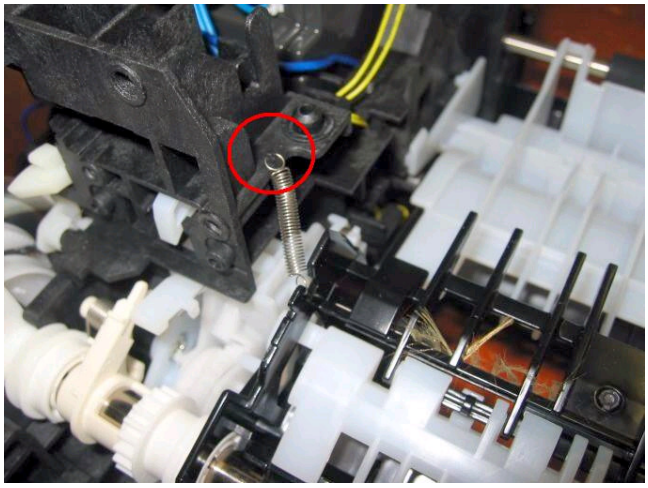
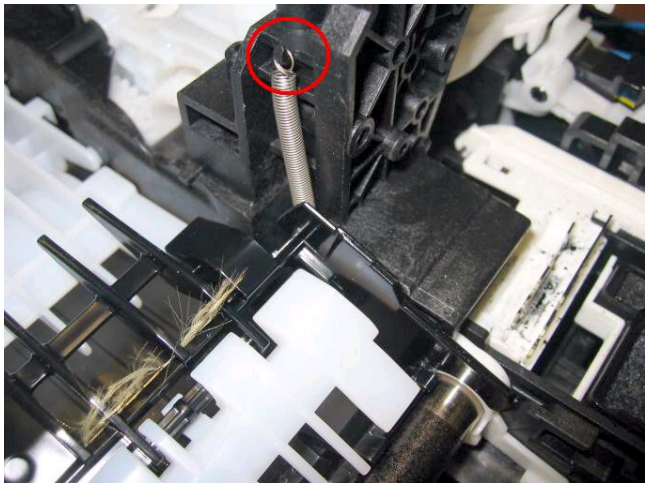
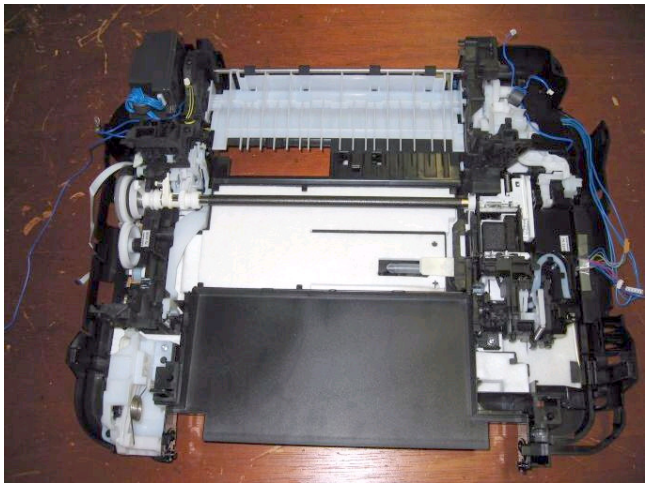
4) Install the cassette feed roller unit.

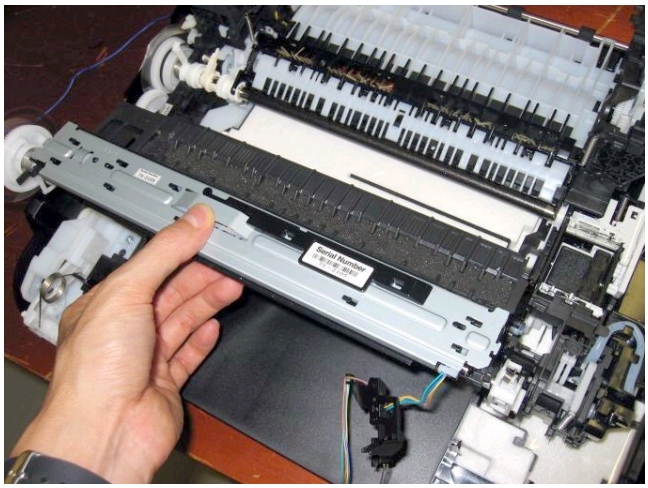
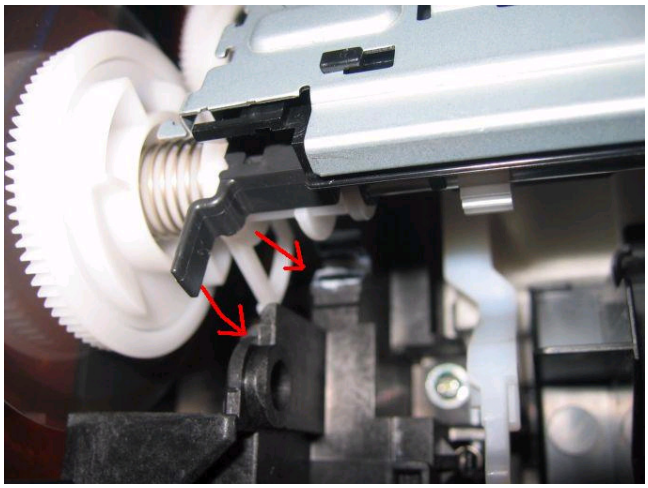
5) To the paper feed roller unit, attach the paper feed belt and bushing, then install them in the main unit.

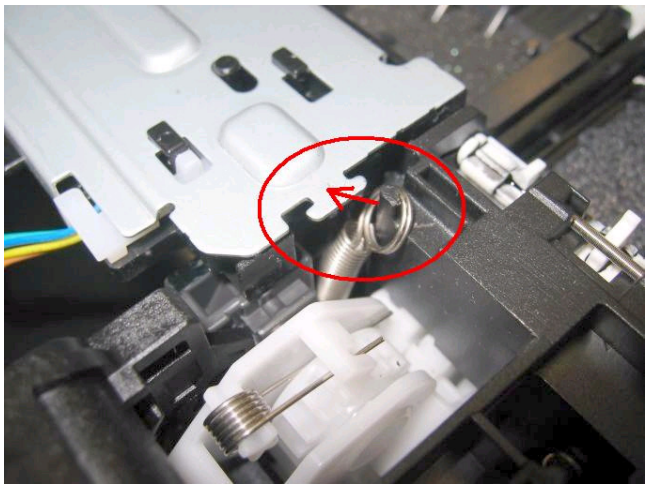
6) Attach the paper guide unit from above the paper feed roller along its bushing, then hook the end of each spring on the protrusion of the right and left plates respectively.

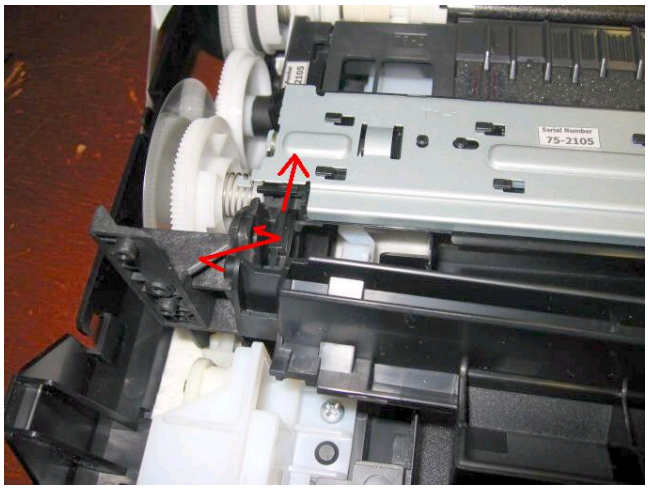
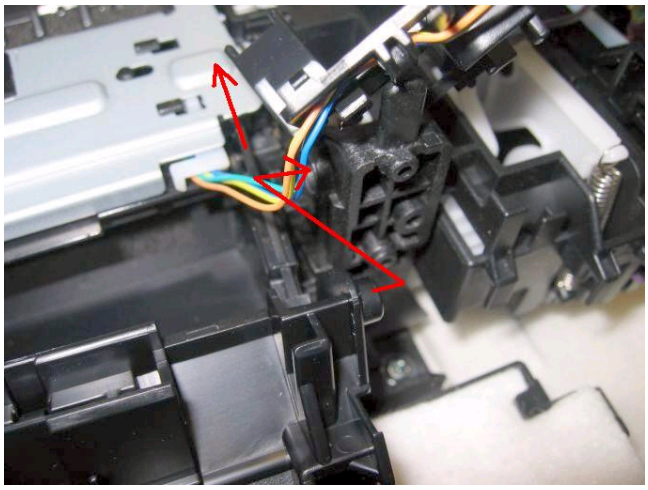
7) Install the platen unit and the spur unit.

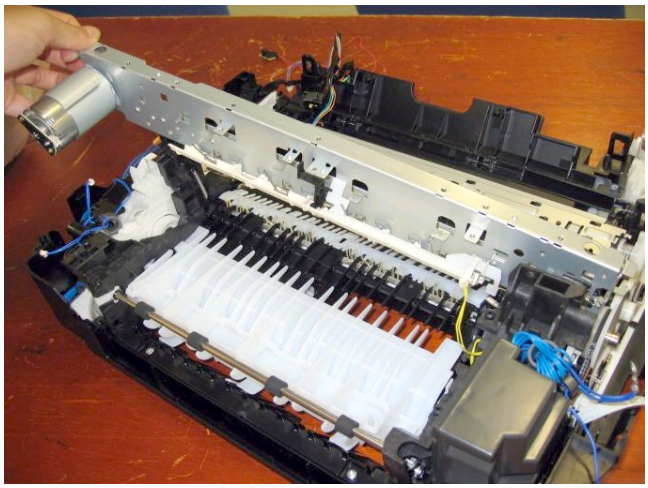
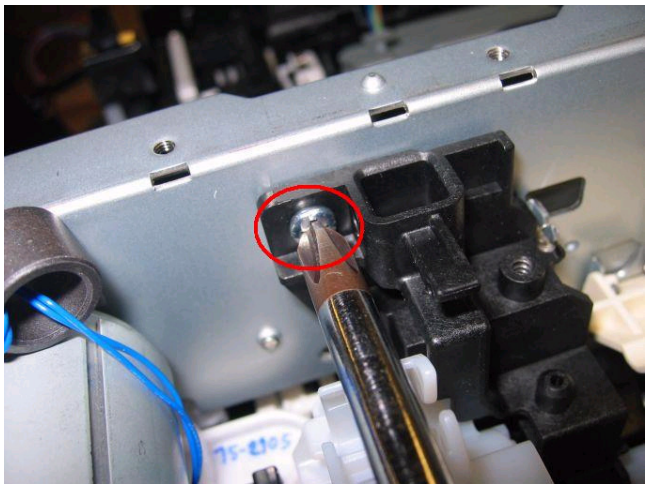
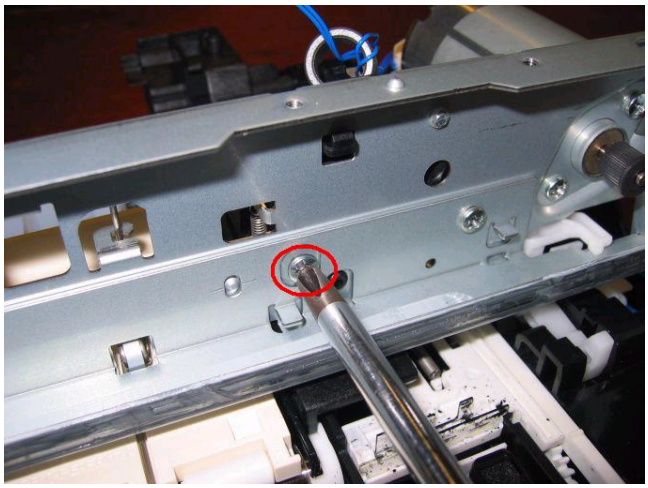
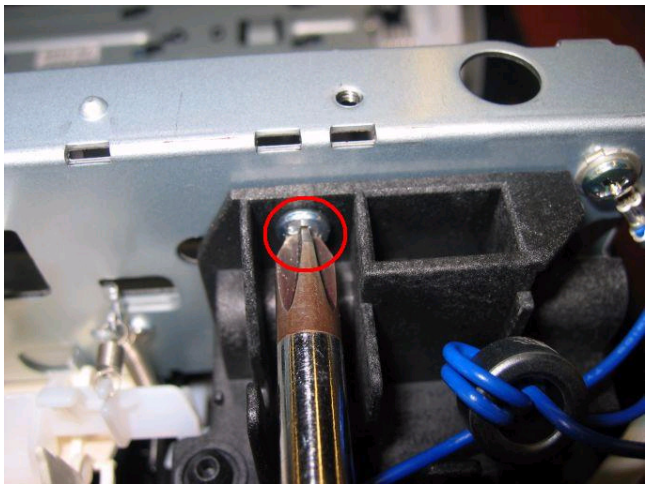
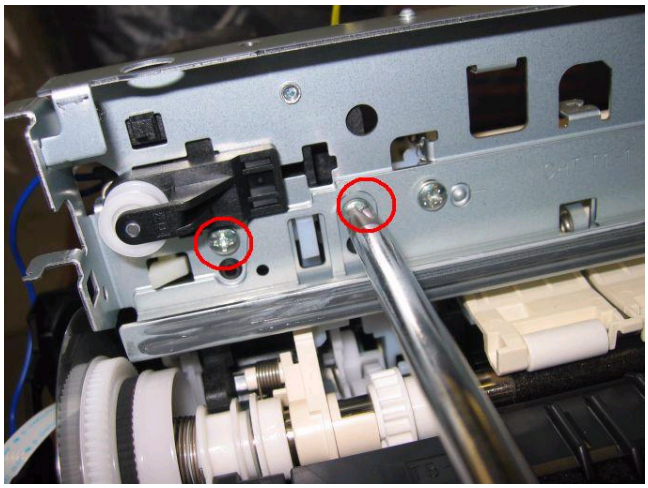
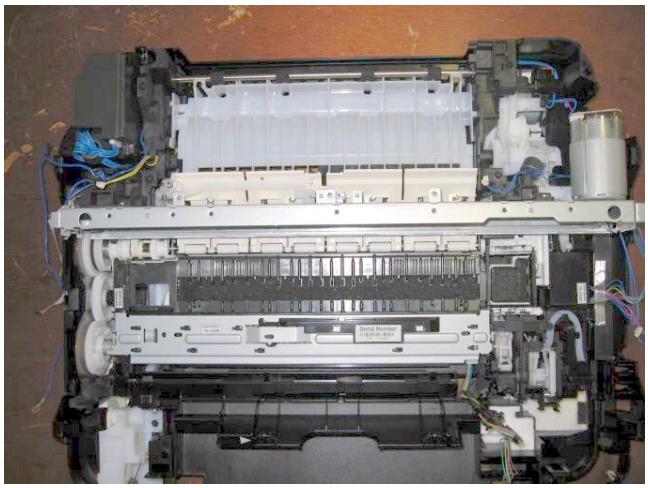
8) Connect the springs on each side of the spur holder to the switch system unit and the purge drive system unit respectively.



9) Attach the inner cover and the release arm (2 arms).

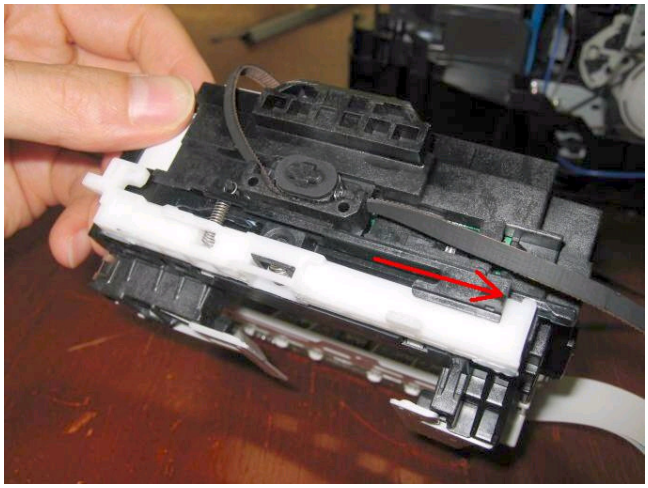
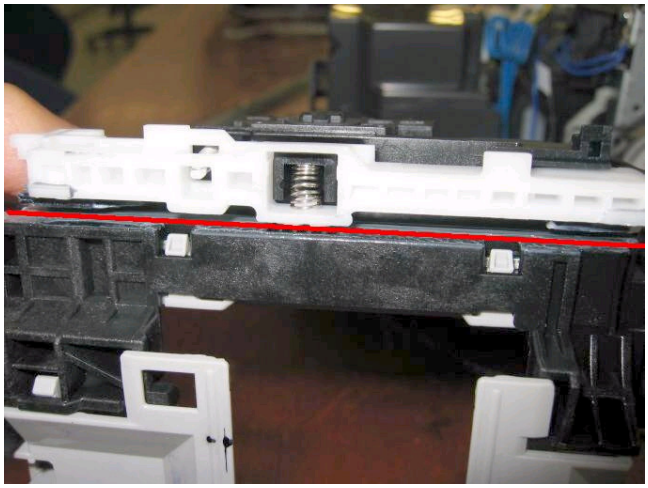
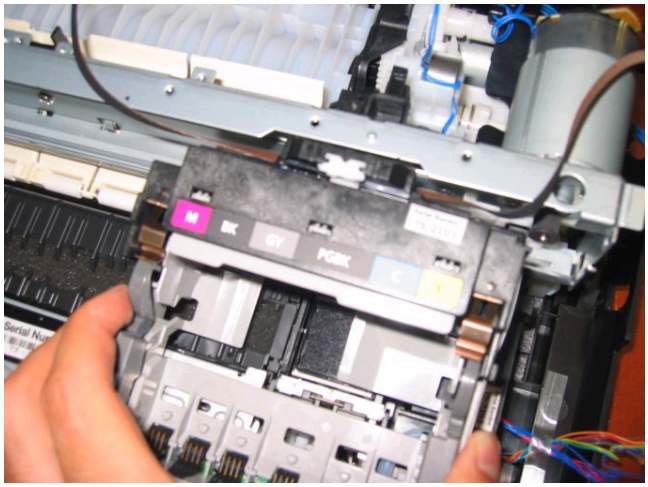
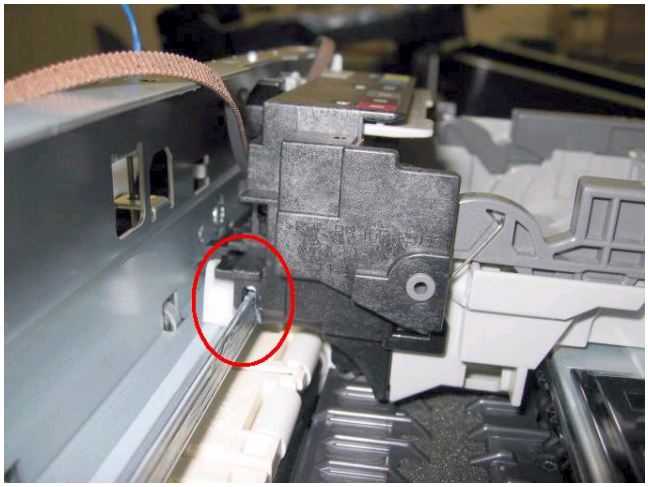
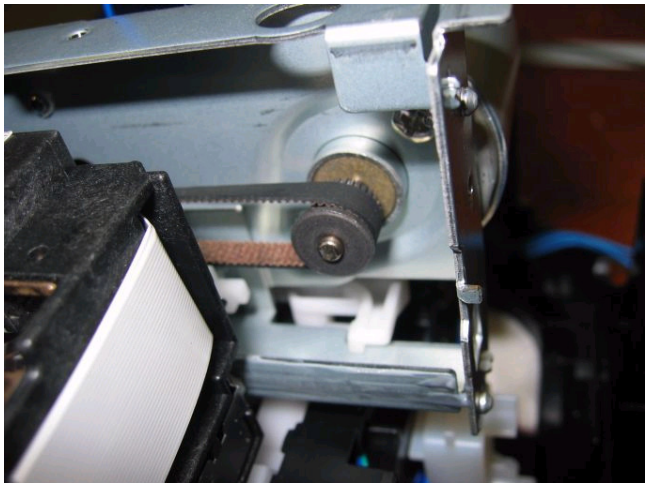
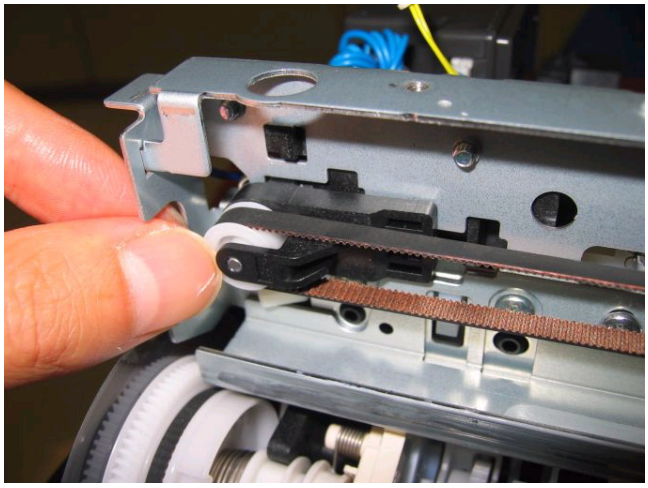
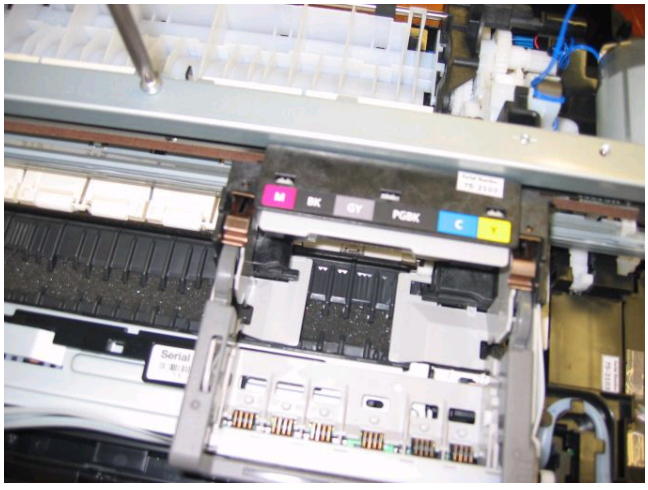
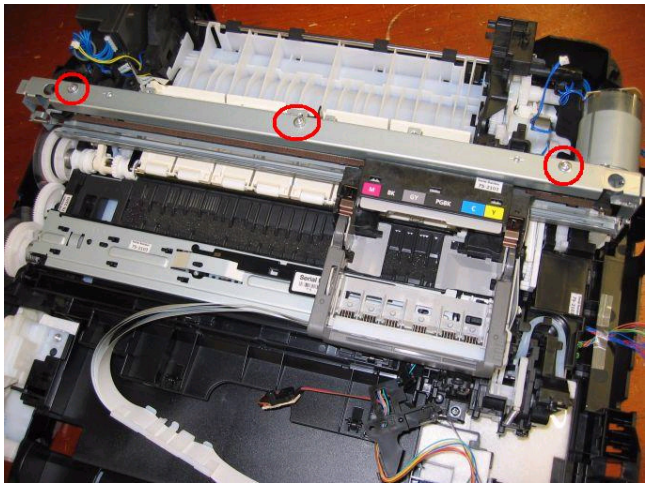
10) Fix the pressure roller unit to the main chassis (screw it to the right and left plates).

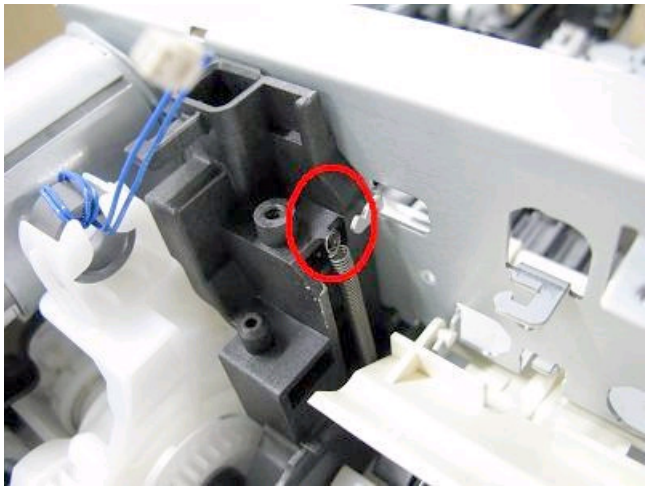
11) Attach the carriage unit to the carriage rail, then align the carriage upper rail with the marks on

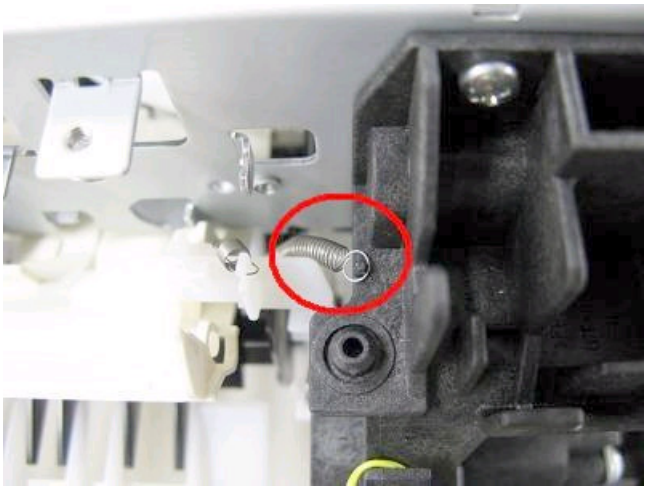
the main chassis and fasten it with screws.

The carriage unit will be easy to be attached to the carriage rail when the lever is slid in the red-arrowed direction in the photo below.

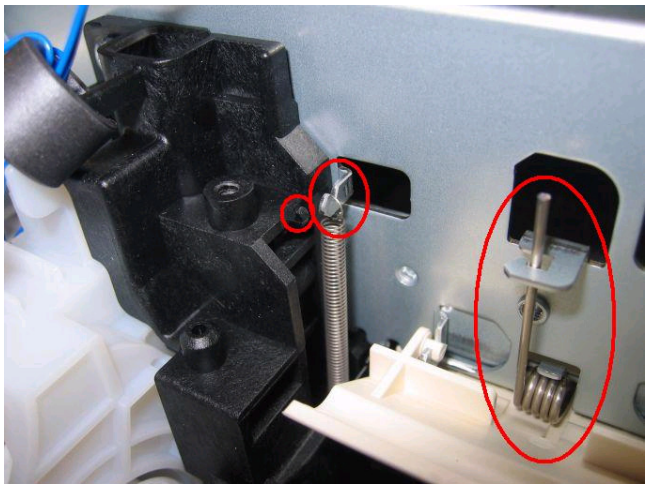









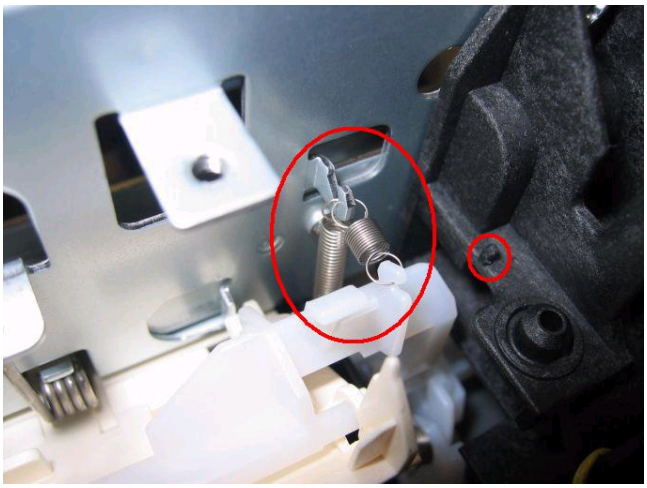
12) Hook the torsion springs of the pressure roller unit to the main chassis, then the springs kept at the right and left plates in step 6) to the main chassis.
<Springs in step 6)>





<Springs hooked>





13) While being cautious not to damage the carriage FFC, install the front chassis and the ground chassis.

14) Attach the ink sensor to the front chassis.

15) Install the ASF unit and attach the PE sensor board.

16) Install the main PCB chassis.

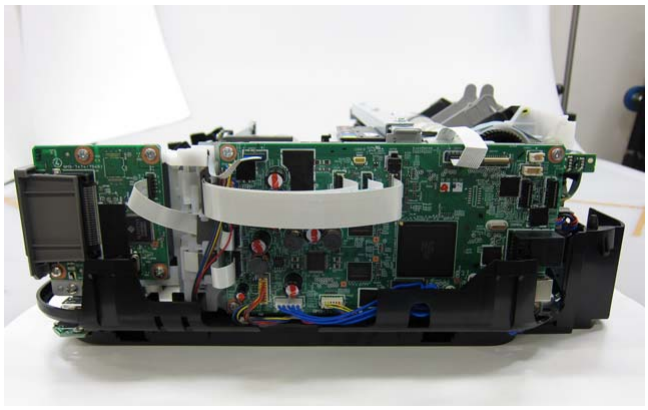
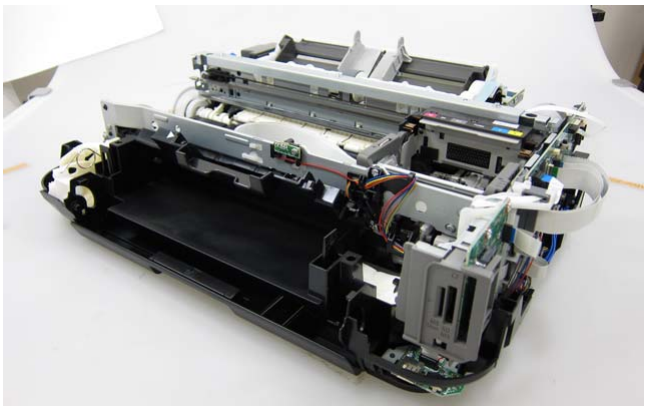
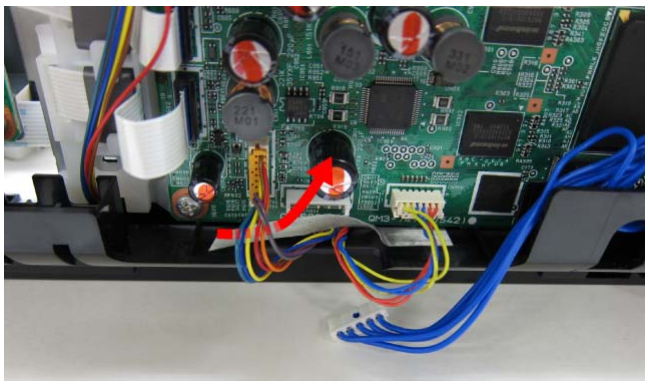
17) Arrange each harness.

18) Attach the carriage encoder film.

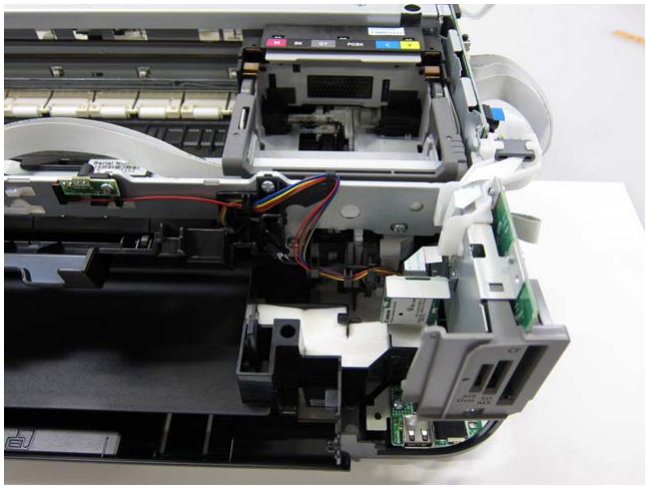
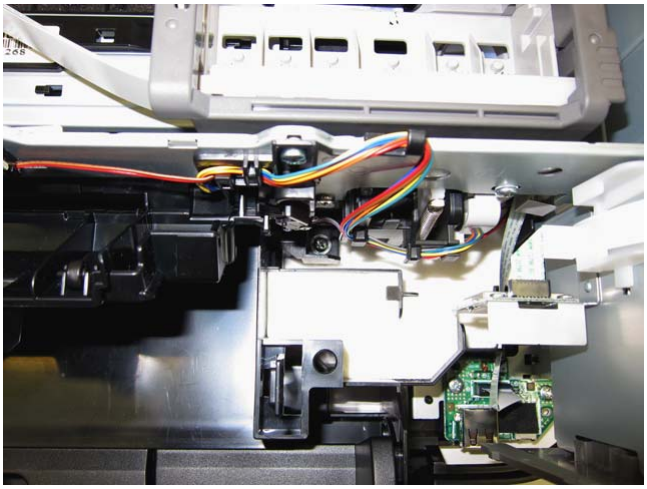
19) Install the logic board.

(10) Cable wiring and connection

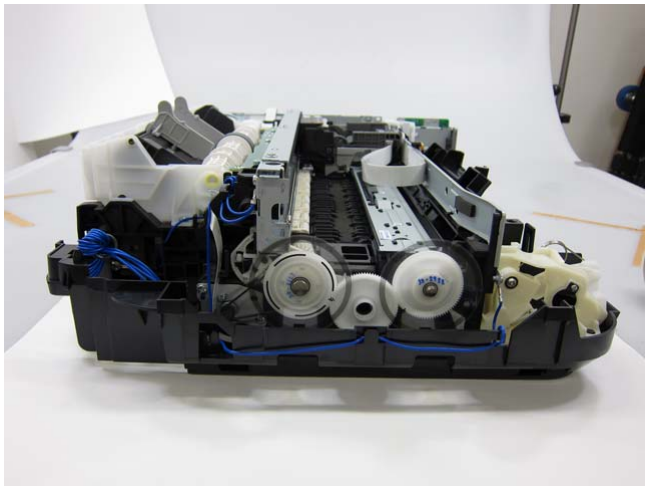
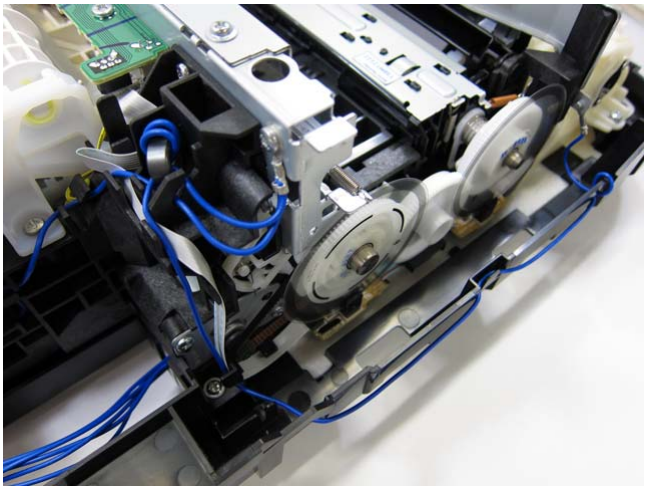
1) Wiring on the right side (on the logic board side)

2) Wiring of the ink sensor cable, inner cover open sensor cable, WLAN harness, and PictBridge FFC

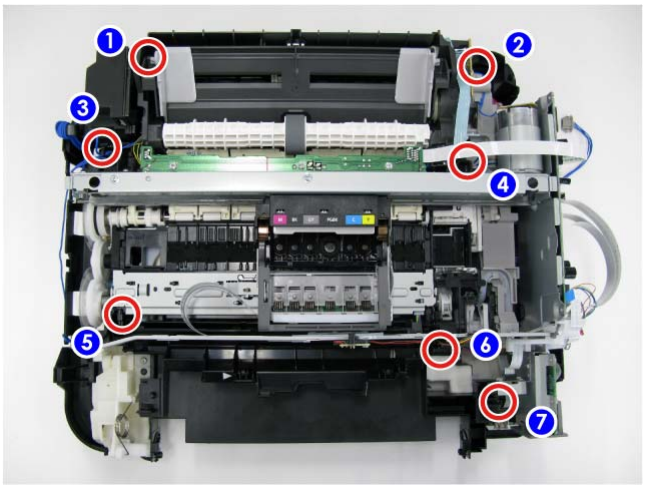
3) Wiring on the left side. Pass the ground cable through the hole to hook it on the side of the bottom case.

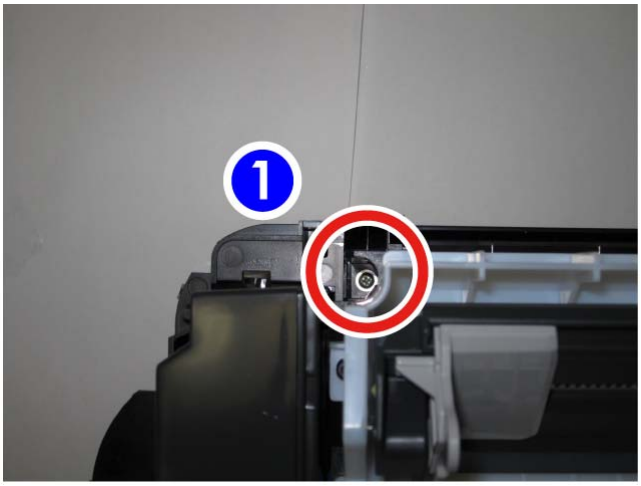
(11) Ink absorber replacement

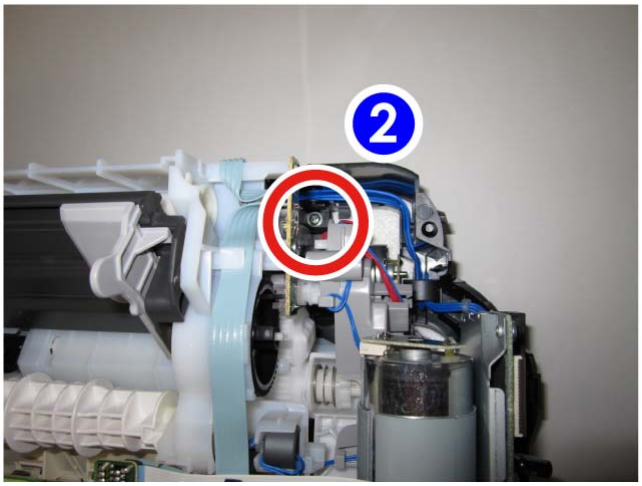
If the ink absorber alone needs to be replaced (because the ink absorber becomes full, etc.) and no other engine parts are replaced, the ink absorber can be replaced only by separating the print unit from the bottom case. It is not necessary to disassemble the whole engine unit.

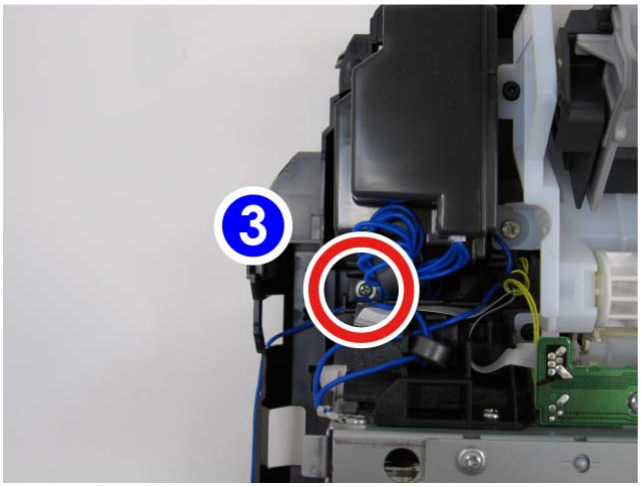
1) Disconnect the DC harness from the logic board (right side of the machine).
2) Disconnect the ground cable from the front chassis (left side of the machine).
3) Remove a total of 6 screws that fix the switch system unit to the bottom case, and the purge drive system unit to the bottom case.

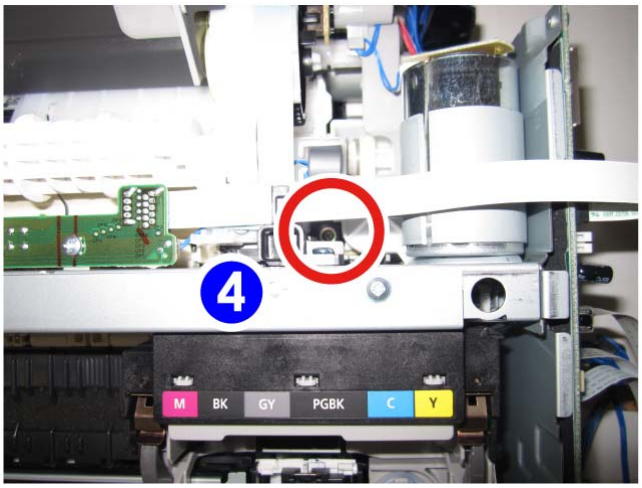


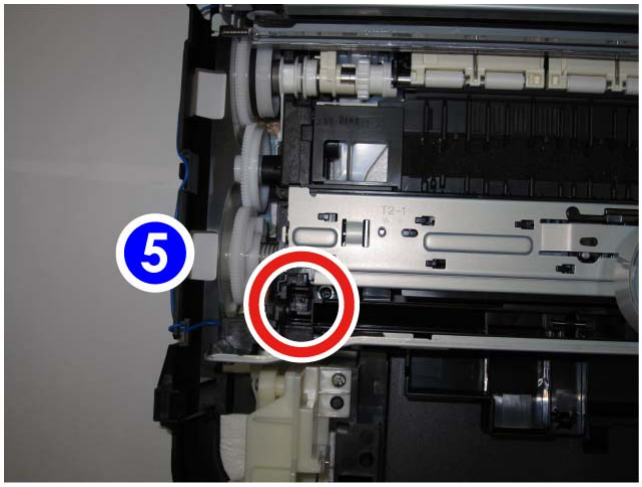
Specific screw location:

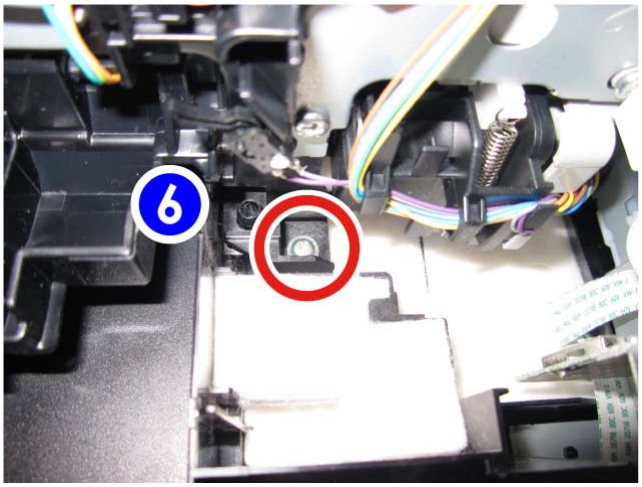


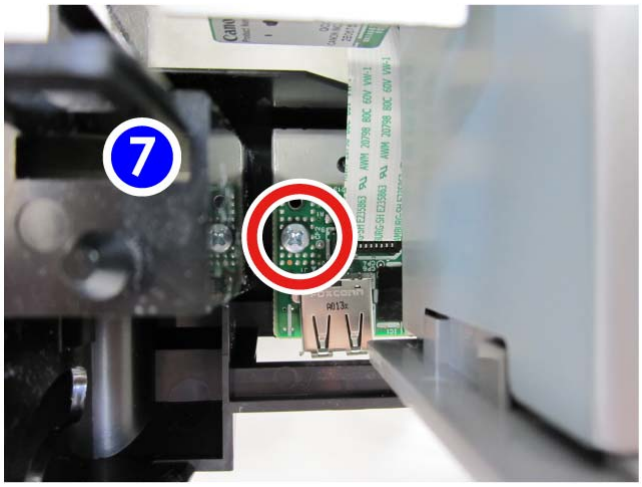




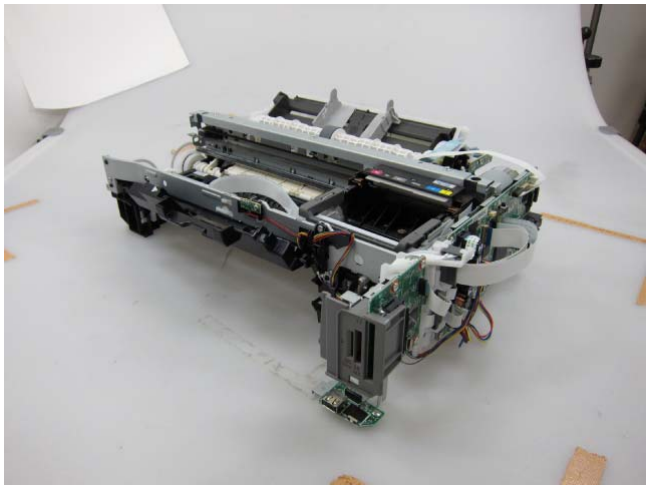


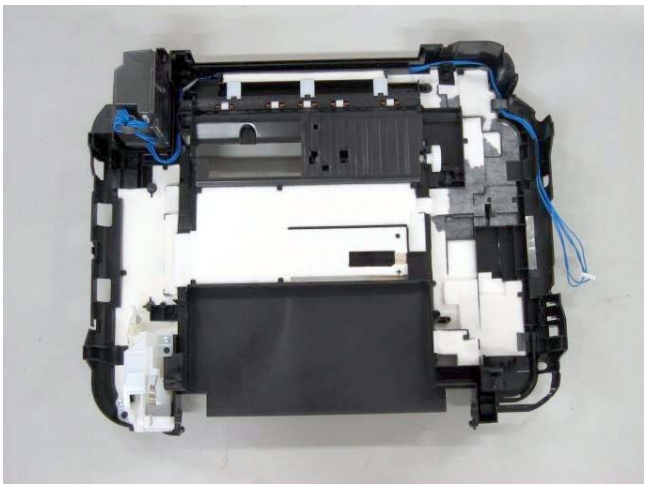




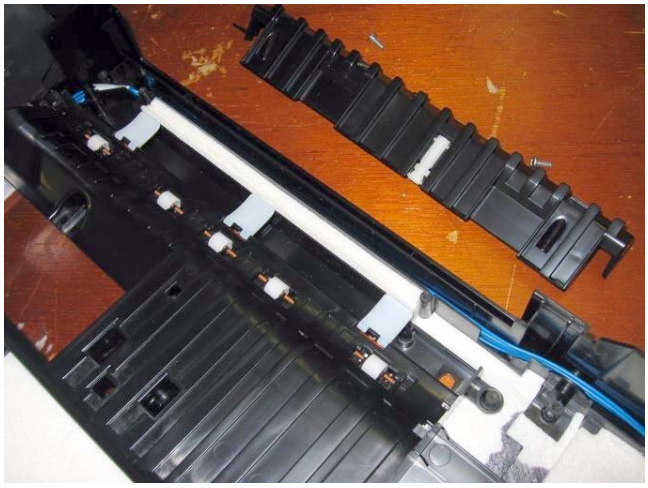


4) Slowly lift the print unit to separate it from the bottom case.

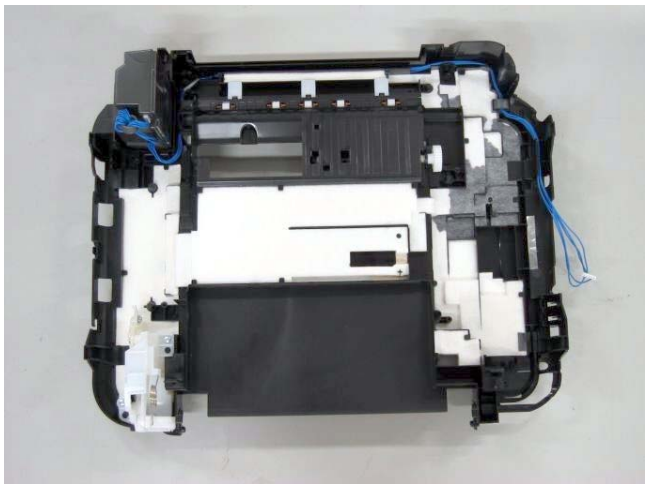
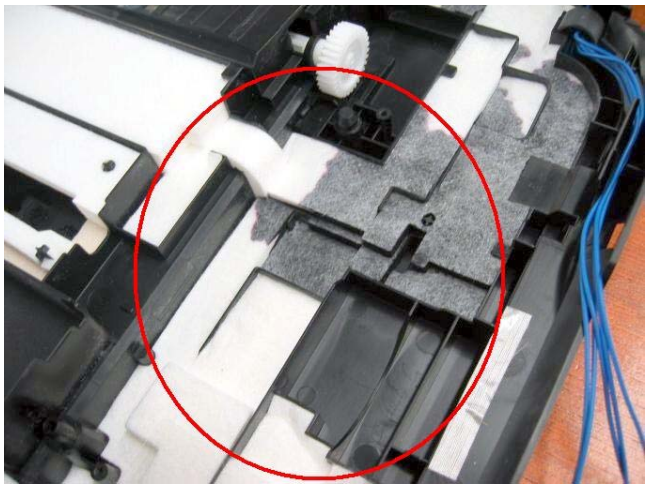




5) Remove the paper separation slope, since a portion of the ink absorber lies under it.



6) Replace the ink absorber.
Confirm that the replaced new ink absorber completely fits in place and is not lifted or dislocated, especially under the pump.

7) While being cautious of the ink tube and each harness location, return the print unit to the bottom case, and fasten the screws (6 screws removed in step 3).

8) Properly arrange and connect the harnesses, install the scanner unit, and attach the document pressure plate unit and external housing.

Note

After replacement of the ink absorber, reset the ink absorber counter (or set the appropriate counter value) in the service mode.
For details, see 3-3. Adjustment and Settings in Service Mode.

3. ADJUSTMENT / SETTINGS

3-1. Adjustment

	Adjustment	Purpose	Method	Approx. time
	EEPROM initialization	To initialize settings.	Service Tool[*2], **EEPROM Clear**	1 min.
	Destination settings (EEPROM settings)	To set the machine destination. - At logic board replacement	Service Tool[*2], **Set Destination** section	1 min.
	Ink absorber counter resetting (EEPROM settings)	To reset the ink absorber counter. - At ink absorber replacement	Service Tool[*2], **Main** in the **Clear Ink Counter** section	1 min.
	Ink absorber counter value setting (EEPROM settings)	To set the data of the actual ink amount absorbed in the ink absorber to the EEPROM. - At logic board replacement	Service Tool[*2], **Ink Absorber Counter** section	1 min.
	Paper feed motor position adjustment	To adjust the belt tension. (Position the paper feed motor so that the belt is stretched tight.) - At paper feed motor replacement	Fix the paper feed motor so that the belt is stretched tight. (See 3-5. Special Notes on Servicing, (2) Paper feed motor adjustment, for details.)	5 min.
	Automatic print head alignment	To secure the dot placement accuracy. - At print head replacement - At logic board replacement - When print quality is not satisfying	Perform automatic print head alignment in the user mode. Recommended for the MG6100 series.	6 min.
	Manual print head alignment	To secure the dot placement accuracy. - At print head replacement - At logic board replacement - When print quality is not satisfying even after automatic print head alignment is performed	Perform manual print head alignment in the user mode.	10 min.
	Grease application	To maintain sliding properties of the applicable portions. - At carriage unit replacement - At APP motor replacement	Using a brush, etc., apply FLOIL KG-107A.	1 min.
	Ink system function check	To maintain detection functionality for presence of the ink tanks and each ink tank position. - At logic board replacement - At spur unit replacement - At carriage unit replacement	Service Tool[*2], **Test Print** in the **Print** section	1 min.

	LCD language settings	To set the language to be displayed on the LCD. Not necessary when the machine is set to the default at shipment from the production site (On arrival at user's, the user is to set the language during setup.). - At logic board replacement	Set the language in the user mode.	1 min.
	Platen glass protection sheet (document pressure sheet) position adjustment	To maintain scanning accuracy, hold the sheet with the long side down, then fit its upper left corner to the platen glass reference mark (back left). - At protection sheet replacement - At FAU protection sheet replacement - At document pressure plate unit replacement - At scanner unit replacement		1 min.
	LF / Eject correction (manual)	To correct line feeding. - At paper feed roller replacement - At platen unit replacement - At logic board replacement - At LF / EJ slit film replacement - At timing slit film replacement	Service Tool[*2], (1) In the **Print** section, click **LF/EJECT**. (2) According to the printed pattern, set the correction value in the **LF / EJECT Correction** section.	5 min.
	Carriage rail position adjustment	To set the carriage rail to the original position prior to removal or replacement of the carriage unit, put a mark on the main chassis before removal of the carriage unit.	Put a mark using a sharp-pointed metallic stick, such as a wimble.	1 min.
	Disc label print position adjustment[*1]	To set the center of disc label printing. - At logic board replacement - When printing shifts from the correct position	Service Tool[*2], **CD-R Correction** section	Varies depending on the degree of print shift.
N	Capacitive sensor sensitivity setting	To correct variation in sensitivity of the capacitive sensors. - At logic board replacement - At document pressure plate unit replacement - When user complaints about the sensitivity of the operation panel arise	Service Tool[*2], **Panel Rank** section	5 min.

N: New adjustment item

*1: Only for disc label printing supported regions.

*2: Install the Service Tool to a pre-registered computer.

- The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit.
- For the automatic print head alignment, use Matte Photo Paper (MP-101), which is packed with the machine before shipment. If Matte Photo Paper (MP-101) is not available, perform manual print head alignment using plain paper.

3-2. Adjustment and Maintenance in User Mode

Function	Procedures	Remarks
Nozzle check pattern printing	Perform via the machine operation panel, or from the printer driver Maintenance tab.	Set a sheet of plain paper (A4 or Letter) in the cassette, or the rear tray if selected.
Print head manual cleaning	- Cleaning both Black and Color: Perform via the machine operation panel. - Cleaning Black or Color separately, or both Black and Color: Perform from the printer driver Maintenance tab.	Unclogging of the print head nozzles, and maintenance to keep the print head conditions good. If there is a missing portion or white streaks in the nozzle check pattern printout, perform this cleaning.
Print head deep cleaning	Perform via the machine operation panel, or from the printer driver Maintenance tab.	If print head manual cleaning is not effective, perform this cleaning. Since the deep cleaning consumes more ink than regular cleaning, it is recommended to perform deep cleaning only when necessary.
Automatic print head alignment	Perform via the machine operation panel, or from the printer driver Maintenance tab.	Set a sheet of Matte Photo Paper MP-101 (A4) in the rear tray. If the automatic print head alignment is not effective, perform manual print head alignment.
Manual print head alignment	Perform via the machine operation panel, or from the printer driver Maintenance tab.	Set 3 sheets of plain paper (A4 or Letter) in the cassette, or the rear tray if selected.
Print head alignment value printing	Perform via the machine operation panel, or from the printer driver Maintenance tab.	Confirmation of the current print head alignment values.
Paper feed roller cleaning	Perform via the machine operation panel, or from the printer driver Maintenance tab.	The paper feed rollers of the selected paper source (the rear tray or the cassette) rotate while being pushed to the paper lifting plate. Since the rollers will wear out in this cleaning, it is recommended that you perform this only when necessary.
Bottom plate cleaning	Perform via the machine operation panel, or from the printer driver Maintenance tab.	Cleaning of the platen ribs when the back side of paper gets smeared. Fold a sheet of plain paper (A4 or Letter) in half crosswise, then unfold and set it in the rear tray with the folded ridge facing down. (No paper feeding from

		the cassette)

3-3. Adjustment and Settings in Service Mode

(1) Service mode operation procedures

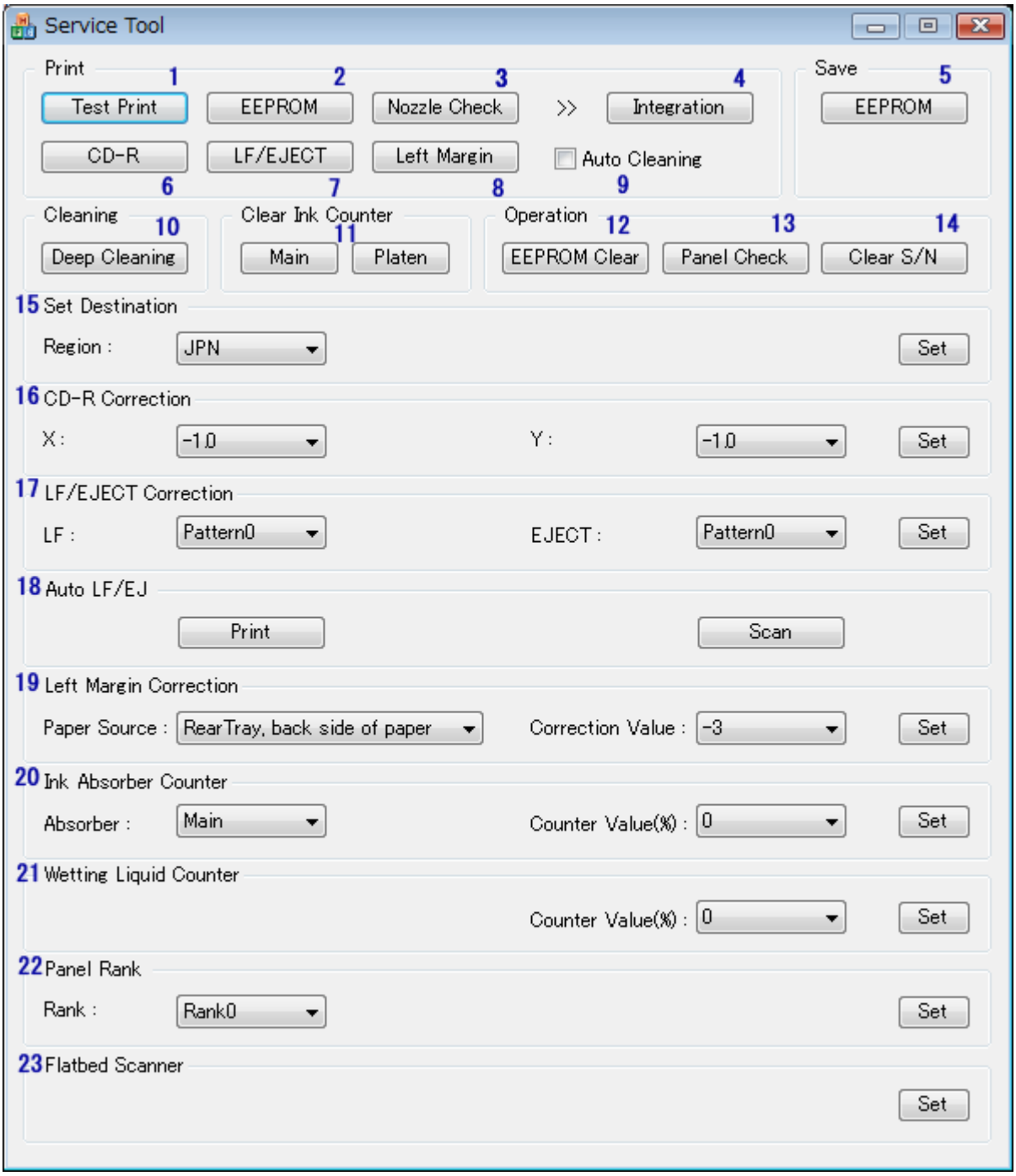
Use the Service Tool on the connected computer.

1) Start the machine in the service mode.
   i. With the machine power turned off, press and hold the ON button. (DO NOT release the button.)
   ii. When the Power LED lights, while holding the ON button, press the Stop button 5 times, and release the ON button. (Each time the Stop button is pressed, the Alarm and Power LEDs light alternately.)
   iii. When the Power LED lights, the machine is ready for the service mode operation.

2) Start the Service Tool on the connected computer.
   i. When a button is clicked in the Service Tool dialog box, that function is performed. During operation of the selected function, all the Service Tool buttons are dimmed and inactive.
   ii. When the operation is completed, "A function was finished." is displayed, and another function can be selected.
   iii. If a non-supported function is selected, "Error!" is displayed. Click **OK** in the error message dialog box to exit the error.

(2) Service Tool functions

Service Tool screen: Version 1.081



No.	Name	Function	Remarks
1	Test Print	Service test print	Paper will feed from the rear tray (2 sheets). Printed items: - Model name - ROM version - USB serial number - Process inspection information - Barcode (model name + destination + machine serial number) - Ink system function check result (printed on the second

			sheet) - CD / DVD sensor check result (printed on the second sheet)
2	EEPROM	EEPROM information print	The dialog box opens to select the paper source. Select **Rear tray** or **Cassette**, and click **OK**. Printed items: - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - Print information - Error information, etc.
3	Nozzle Check	Nozzle check pattern print	The dialog box opens to select the paper source. Select **Rear tray** or **Cassette**, and click **OK**. The same pattern as the one in the user mode is printed.
4	Integration	Integrated inspection pattern print	Paper will feed from the rear tray (if the cassette is selected, the error is displayed). Multiple inspection items are printed just in one page, it is recommended to use this function for the standard inspection. Printed items: - Model name - ROM version - USB serial number - Nozzle check pattern (same as the one in the user mode) - Process inspection information - Barcode (machine serial number) - Ink system function check result - CD / DVD sensor check result
5	EEPROM	EEPROM information saving	The EEPROM information is displayed on the computer or is saved to the computer as a text file. This function is not available in most cases of errors.
6	CD-R	CD-R check pattern print	For refurbishment use, and not used in servicing. The same calibration as the one performed at the production site is performed.
7	LF / EJECT	LF / Eject correction pattern print	Perform LF / Eject correction only when streaks or uneven printing occurs after the repair. See "(3) LF / Eject correction" below.
8	Left Margin	Left margin pattern print	Not used.
9	Auto Cleaning	Enabling / disabling of automatic print head cleaning	Automatic print head cleaning prior to printing (after replacement of an ink tank or the print head). Select this option to enable the cleaning.
10	Deep Cleaning	Print head deep cleaning	Cleaning of both Black and Color at the same time
11	Main	Main ink absorber counter	Set a sheet of A4 or Letter sized plain paper. After the ink

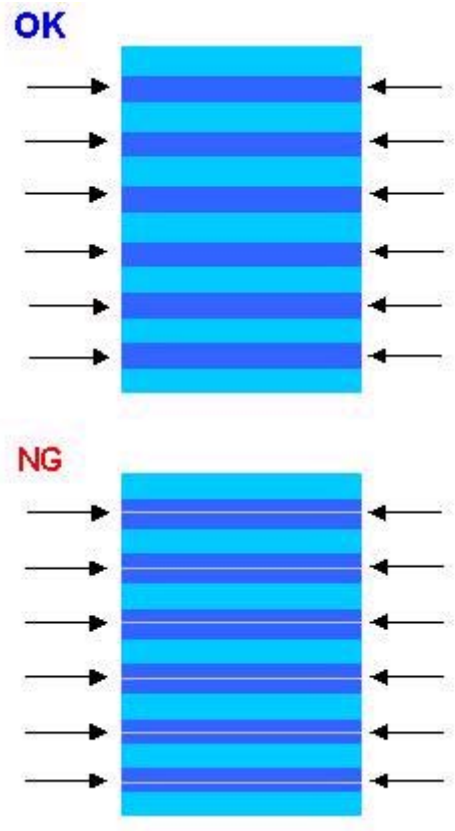
	(Clear Ink Counter)	resetting	absorber counter is reset, the counter value is printed automatically.
	Platen (Clear Ink Counter)	Platen ink absorber counter resetting	Not used.
12	EEPROM Clear	EEPROM initialization	The following items are NOT initialized, and the shipment arrival flag is not on: - USB serial number - Destination settings - Record of ink absorber counter resetting and setting - Disc label print position correction value - LF / Eject correction values - Left margin correction value - Endurance correction value and enabling of it - Record of disabling the function to detect the remaining ink amount - Ink absorber counter value (ink amount in the ink absorber)
13	Panel Check	Button and LCD test	See "(4) Button and LCD test" below.
14	Clear S/N	Serial number resetting (to zero)	The machine serial number is reset to "000000000." Not used in regular repair.
15	Set Destination	Destination settings	Select the destination, and click **Set**. ASA, AUS, BRA, CHN, CND, EMB, EUR, JPN, KOR, LTN, TWN, USA
16	CD-R Correction	Disc label print position correction (X and Y direction)	To be used with 6. CD-R check pattern print, mainly in refurbishment operation. The reference center in the X direction and in the Y direction can be adjusted respectively. (Adjustable range between -1.0 mm to +1.0 mm, in 0.1 mm increment)
17	LF / EJECT Correction	LF / Eject correction value setting	See "(3) LF / Eject correction" below. Set the correction value based on the printed pattern (7. LF / EJECT correction pattern print).
18	Auto LF / EJ	Automatic LF / Eject correction	Not used.
19	Left Margin Correction	Left margin correction value setting	Not used.
20	Ink Absorber Counter	Ink absorber counter setting	See "(5) Ink absorber counter setting" below.
21	Wetting Liquid Counter	Wetting liquid counter setting	Not used.
22	Panel Rank	Capacitive sensor sensitivity setting	Adjustment of the sensitivity of the capacitive sensors. Set the rank to "3" when the panel responds too well. See "(7) Capacitive sensor sensitivity setting" below.
23	Flatbed Scanner	Individual scanner adjustment	Not used.

(3) LF / Eject correction

After replacement of the feed roller, platen unit, LF / Eject encoder film, carriage encoder film, or logic board in repair servicing or in refurbishment operation, perform the adjustment to maintain the optimal print image quality.

If the print quality is considered unaffected by replacement of those parts, it is not necessary to perform LF / Eject correction.

1) Print the LF / Eject correction pattern.
   Click **LF/EJECT** of the Service Tool, select the paper source and the paper type, and print the pattern. 5 sheets of A4 paper will be used for the pattern printing.
   - Paper source: Select either **Rear tray** or **Cassette**.
   - Media type: Select one from **HR-101**, **GF-500/Office Planner**, **HP Bright White**, and **Canon Extra/STEINBEIS**.
2) When printing is finished, the machine returns to be ready for selection of another function ("A function was finished" is displayed on the screen).
3) In the printout, determine the Pattern No. in which streaks or lines are the least noticeable for the LF check pattern and the Eject check pattern respectively.
   (LF Pattern No. 0 to 4, Eject Pattern No. 0 to 4)



4) Select and set the correction values.
   In the **LF/EJECT Correction** section of the Service Tool, select the Pattern No. (from 0 to 4) determined in step 3) for **LF** and **EJECT** respectively, and click **Set**.
5) The selected LF and Eject correction values are written to the EEPROM, making the E-MIP correction value (which was set at shipment from the production site) invalid.

   Note: At the production site, the E-MIP correction, which is equivalent to the LF / Eject correction, is performed using the special tool, and the E-MIP correction value is written to the EEPROM as the valid data.
   When LF / Eject correction is performed, the LF / Eject correction values become valid

instead of the E-MIP correction value (thus, in the initial EEPROM information print, "LF = *" and "EJ = *" are printed, but the selected values are printed after the LF / Eject correction).

(4) Button and LCD test

Confirm the operation after replacement of the operation panel unit, panel board, or LCD.

1) Check to see if the LED turns off properly

1-1) Click **Panel Check** of the Service Tool. All the LED's on the machine turn on and the LCD turns blue, waiting for a button to be pressed.

1-2) Press the OK button multiple number of times, and confirm that the LED turns off in the following order from No. 1 to No. 20 each time the OK button is pressed:

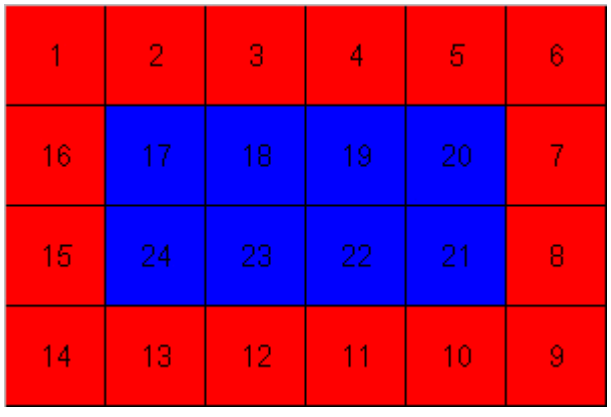
No.		No.	
1.	left function button	11.	up cursor
2.	center function button	12.	right cursor
3.	right function button	13.	down cursor
4.	"Start" text	14.	left cursor
5.	"Stop" text	15.	Back button
6.	Stop button	16.	HOME button
7.	Color button	17.	Power lamp
8.	Black button	18.	Alarm lamp
9.	+ - buttons	19.	Wi-Fi lamp
10.	Scroll Wheel	20.	OK button

1-3) Press the OK button. The machine becomes ready for the next operation.

2) Button check

2-1) Press each button of the operation panel, to see if every button functions properly.

2-2) The LCD is divided into 24 segments, representing each button. The color of a segment corresponding to the pressed button changes to red. If 2 or more buttons are pressed at the same time, only one of them is considered to be pressed, and the other buttons are ignored.

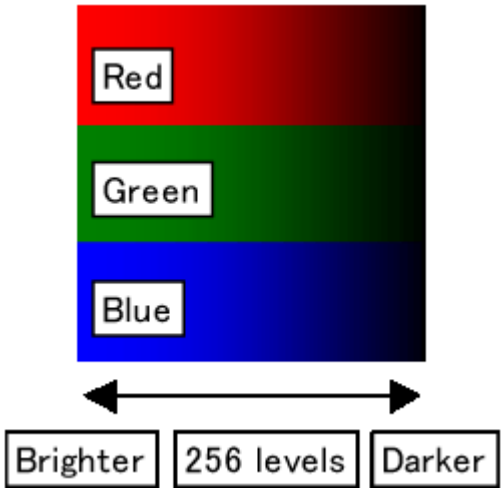


1.	ON button	9.	Color button
2.	Back button	10.	Stop button
3.	OK button	11.	HOME button
4.	up cursor button	12.	left function button
5.	down cursor button	13.	center function button
6.	left cursor button	14.	right function button
7.	right cursor button	15.	+
8.	Black button	16.	-

2-3) Press the OK button. The machine becomes ready for the next operation.

3) LCD data line short / open check

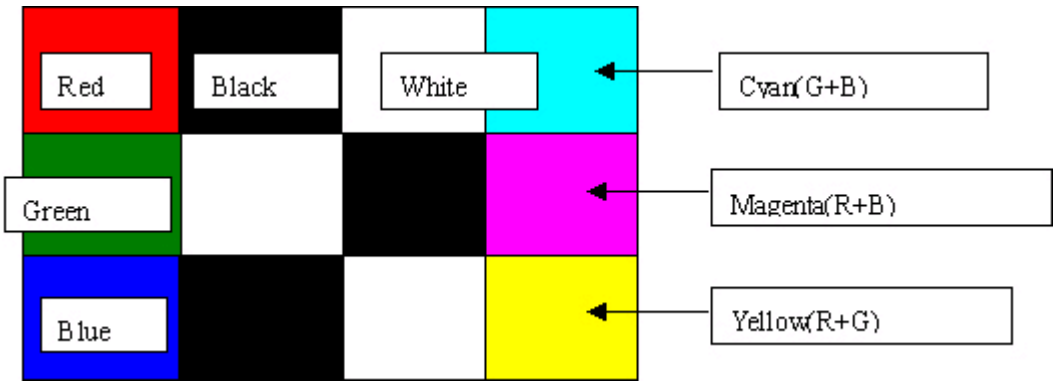
3-1) The RGB gradation pattern is displayed on the LCD. Visually confirm that the patterns are displayed properly.



3-2) Press the OK button. The machine becomes ready for the next operation.

4) Color pattern check

4-1) The color pattern is displayed on the LCD. Visually confirm that the patterns are displayed properly.



4-2) Press the ON button. The machine becomes ready for the next operation. Press the ON button again to turn off the machine.

(5) Ink absorber counter setting

Set the ink absorber counter value to a new EEPROM after the logic board is replaced in servicing.

1) Before replacement of the logic board, check the ink absorber counter value in EEPROM information print.
2) After replacement of the logic board, the ink absorber counter value should be set in the service mode using the Service Tool.
   In the **Ink Absorber Counter** section of the Service Tool, select **Main** from the **Absorber** pull-down menu. From the **Counter Value(%)** pull-down menu, select the value (in 10% increments) which is the closest to the actual counter value confirmed before replacement of the logic board, and click **Set**.
3) Print EEPROM information to confirm that the value is properly set to the EEPROM.

(6) Disc label print position correction

Set the disc label print position value to a new EEPROM after the logic board is replaced in servicing.

This function can be also used in solving user complaints in the field, however, use of the application software is recommended for solution of user complaints.

1) Before replacement of the logic board, check the disc label print position value in EEPROM information print.
2) After replacement of the logic board, set the disc label print position value in the service mode using the Service Tool, **CD-R Correction** section.

3) If the disc label print position value from the original logic board is not available due to the logic board failure, etc., print the CD-R check pattern and confirm that the intersection of the X axis and Y axis is at the center of a printable disc.

(7) Capacitive sensor sensitivity setting

Adjust the level of sensitivity of the capacitive sensors used for the operation panel.

To examine sensitivity, perform (4) Button and LCD test.

1) In the **Panel Rank** section of the Service Tool, select the rank and click **Set**.
   - When the sensitivity is low (the panel is slow to respond), select "0" (zero).
   - When the sensitivity is high (the panel is quick to respond), select "3."

For reference:

- Measure the sensitivity as follows:

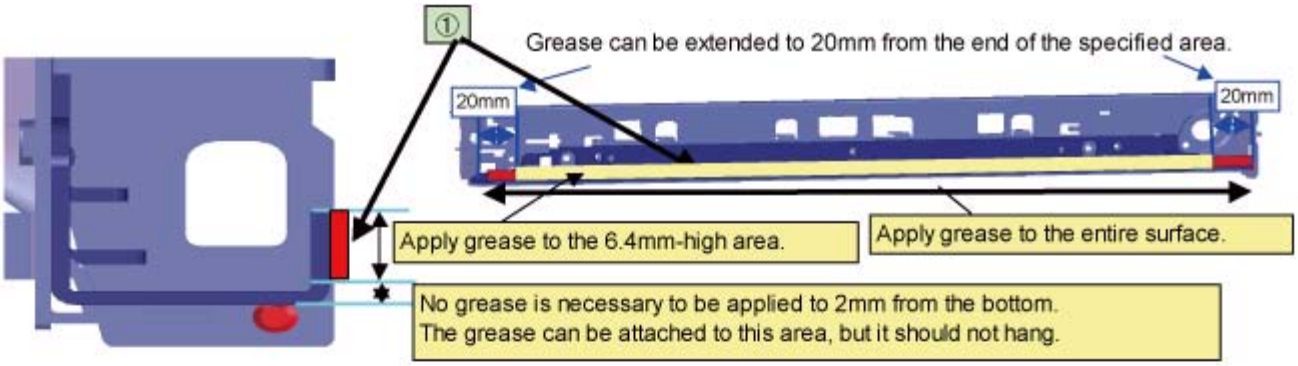
  Put your finger 2 mm above the panel. If the panel responds, no change to the rank is necessary.
  If the panel responds when your finger is 3 mm or more above the panel, set the rank to "3."
  If the panel does not respond even if you touch the panel, set the rank to "0."
- In the service part logic board, the rank is set to "0."
- The ranks 0 to 2 use the same correction table, thus there will be no difference in sensitivity from "0" to "2."

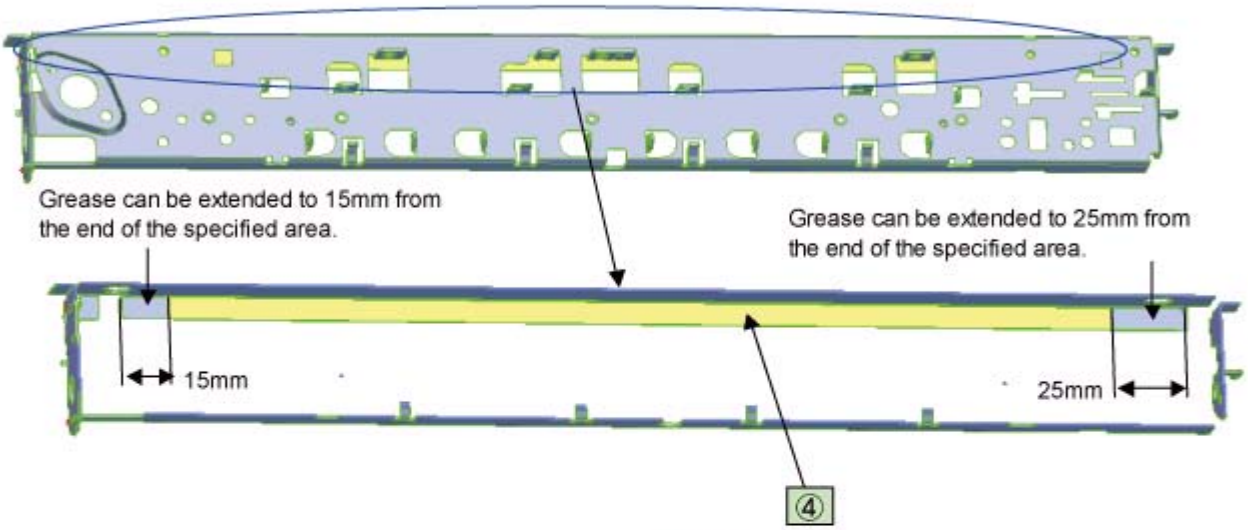
<3-1. Adjustment>
<3-2. Adjustment and Maintenance in Service Mode>
<3-3. Adjustment and Settings in Service Mode>

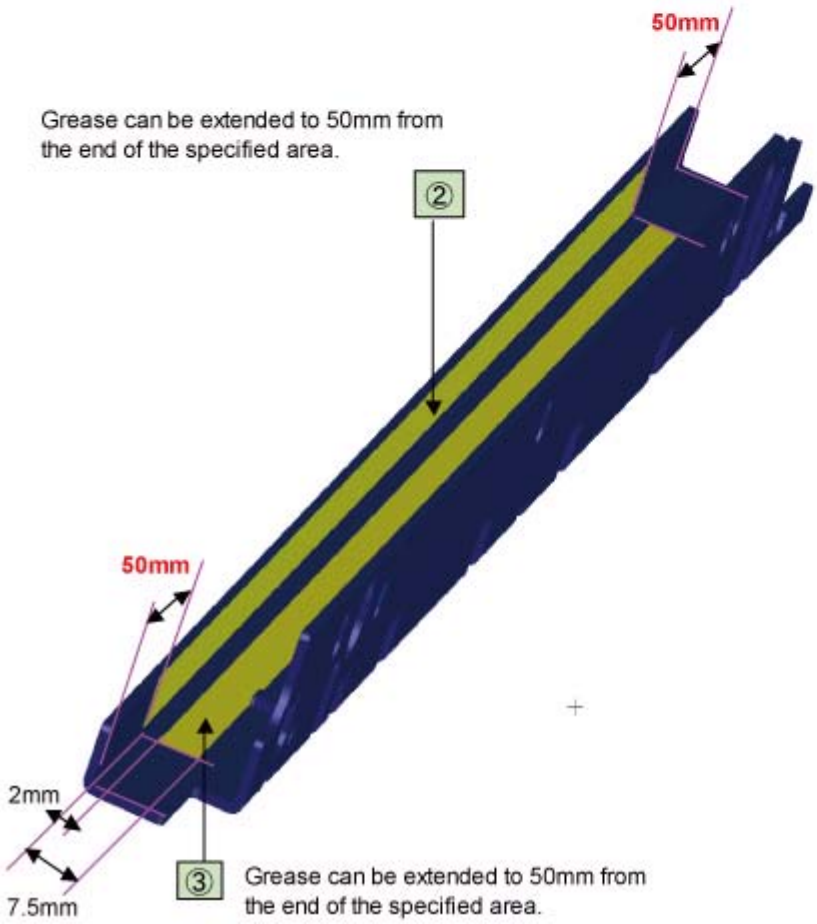
3-4. Grease Application

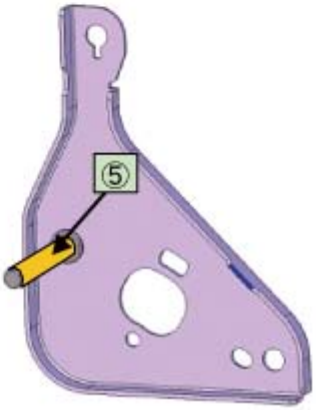
No	Part name	Where to apply grease / oil	Drawing No.	Grease	Grease amount (mg)	Number of drops x Location
1	Carriage rail	The surface where the carriage unit slides	(1)	Floil KG107A	230 to 290	---
2	Carriage rail	The surface where the carriage unit slides	(2)	Floil KG107A	180 to 220	---
3	Carriage rail	The surface where the carriage unit slides	(3)	Floil KG107A	180 to 220	---
4	Carriage upper rail	The surface where the carriage slider moves	(4)	Floil KG107A	230 to 290	---
5	APP code wheel gear shaft	APP code wheel gear sliding portion (the entire surface)	(5)	Floil KG107A	9 to 18	1 x 1

1 drop = 9 to 18 mg


①
Grease can be extended to 20mm from the end of the specified area.
20mm
20mm
Apply grease to the 6.4mm-high area.
Apply grease to the entire surface.
No grease is necessary to be applied to 2mm from the bottom.
The grease can be attached to this area, but it should not hang.


Grease can be extended to 15mm from the end of the specified area.
Grease can be extended to 25mm from the end of the specified area.
15mm
25mm
④


50mm
Grease can be extended to 50mm from the end of the specified area.
②
50mm
2mm
7.5mm
③
Grease can be extended to 50mm from the end of the specified area.


⑤

3-5. Special Notes on Servicing

(1) For smeared printing, uneven printing, or non-ejection of ink

When smeared printing, uneven printing, or non-ejection of ink occurs, print the nozzle check pattern to determine whether the print head is faulty or not.

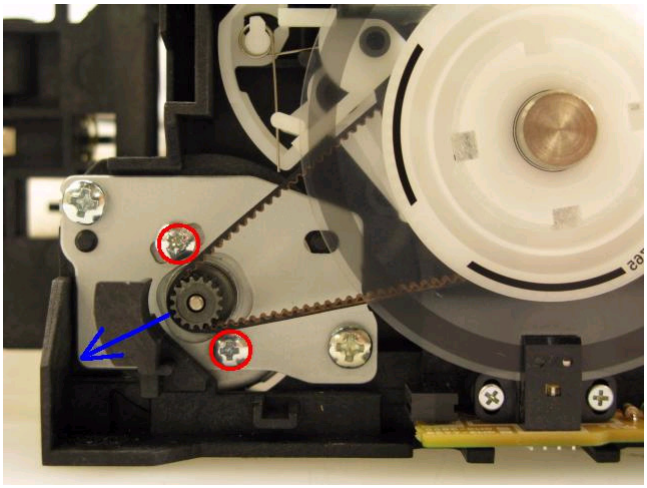
< Procedures >

1) Examine the ink tank conditions.
   - Is the outer film completely removed to open the air-through?
   - Re-install the ink tanks.
   - Is the ink tank Canon-genuine or not?
   - Is the ink tank refilled one or not?
2) Remove and clean any foreign material from the caps of the purge unit.
3) Perform print head cleaning or deep cleaning.
4) Perform print head alignment.
5) Print the nozzle check pattern. If the nozzle check pattern is not printed properly, the print head may be faulty. Perform troubleshooting while referring to the Print Head Workshop Manual or the Print Head Service Manual, 1-4. Troubleshooting.

Manual name	No.	Form	Price (JPY)
Print Head Workshop Manual	QY8-9120-D0C	CD-ROM	50,000
Print Head Service Manual	QY8-9121-D0C	CD-ROM	30,000

(2) Paper feed motor adjustment

1) When attaching the motor, fasten the screws so that the belt is properly stretched (in the direction indicated by the blue arrow in the photo below).
2) After replacement, be sure to perform printing, and confirm that no strange noise or faulty print operation (due to dislocation of the belt or gear, or out-of-phase motor, etc.) occurs.



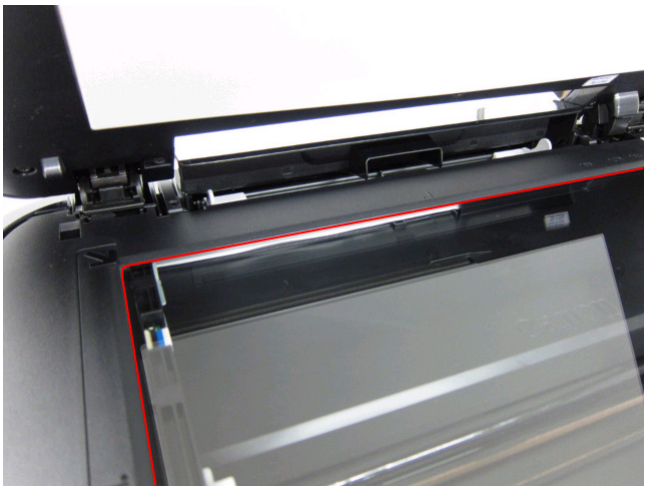
CAUTION

The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(3) Carriage unit replacement

In the MG6100 series, the carriage unit can be replaced by removing only the carriage upper rail from the main chassis (see 2-2. Part Replacement Procedures, (6) Carriage unit removal, for details).
If the lower carriage rail needs to be removed, before removing the screws, put a mark on the main chassis to indicate the carriage rail position.
After replacing the carriage, return the carriage rail to the original position while aligning the rail to the mark on the chassis.

(4) Document pressure sheet (sponge sheet) replacement



1) Peel off the cover sheet from the double-sided adhesive tape on the back of the document pressure sheet. With the long-side down, position the upper-left corner of the document pressure sheet at the scanning reference point on the platen glass (back left where the red lines cross in the photo above).
2) Slowly close the document pressure plate, while maintaining the hinge position. The document pressure sheet will attach to the plate frame.
3) Open the plate to confirm the following:
   - No extension of the sponge edges over the mold part of the upper scanner cover.
   - No gap between the platen glass reference edges and the corresponding sponge edges.
   - No shades or streaks in monochrome test printing without a document on the platen glass.

(5) Ink absorber counter setting

Before replacement of the logic board, check the ink absorber counter value, and register it to the replaced new logic board. (The value can be set in 10% increments.)
In addition, according to the "*Guideline for Preventive Replacement of Ink Absorber*," replace the ink absorber.
When the ink absorber is replaced, reset the applicable ink absorber counter (to 0%). See 3-3. Adjustment and Settings in Service Mode.

(6) Preventive replacement of ink absorber

Replace the ink absorber in accordance with the *"Guideline for Preventive Replacement of Ink Absorber"* even when the ink absorber is not full. (Related Service Information #Q-12E/J-0188)

< Guideline for preventive replacement of ink absorber >

Replace the ink absorber when it falls in either Criteria 1 or Criteria 2.

Criteria	Purpose	How to know the criteria values
Criteria 1: The ink absorber life* is 2 years or less.	To avoid re-repair for ink absorber replacement in a short period of time after repair for other reasons.	For 2009 2H or earlier products: EEPROM information print and the quick reference table (Service Information #Q-12E/J-0188) For 2010 1H and later products: EEPROM information print
Criteria 2: The ink absorber counter value is 80% or more.	To prevent ink leakage during return of the repaired printer to users.	EEPROM information print

* The estimated number of months until the ink absorber will become full

< How to judge >

Print the EEPROM information, and check the "D" (ink absorber counter) and "DF" (ink absorber life) values.

Step 1: Is "D" 80% or more?

Yes (80% or more) -> Replace the ink absorber.

No (less than 80%) -> Proceed to Step 2.

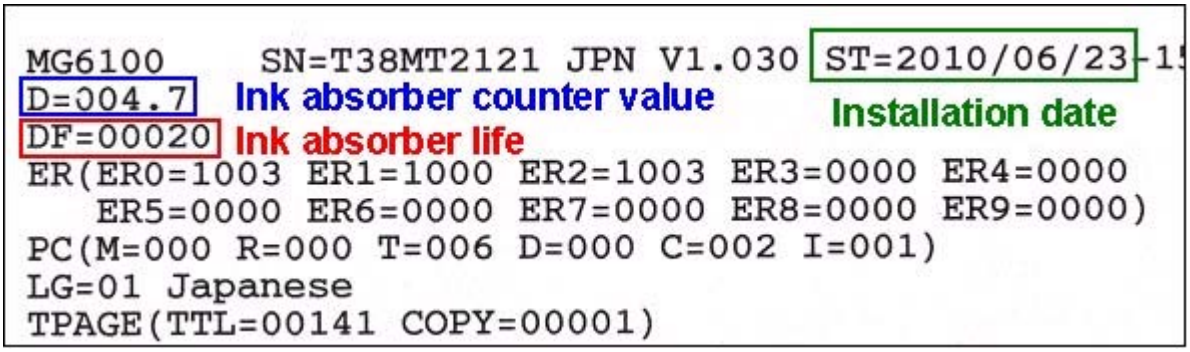
Step 2: Is "DF" 24 or more?

No (less than 24 months) -> Replace the ink absorber.

Yes (24 months or more) -> No need to replace the ink absorber.

Note: - If the "ST" (installation date) value is 2010/07/31 or earlier, the "DF" (ink absorber life) value may not be correct. Skip Step 2.
- The ink absorber life is an estimated value calculated based on the user's machine usage.

< How to read the EEPROM information print >



4. VERIFICATION AFTER REPAIR

4-1. Standard Inspection Flow

In each step below, confirm that printing is performed properly and the machine operates properly without any strange noise.

EEPROM information print

<Check point>
- The information must be printed properly.

<Additional verification to be made> See 2-1. Major Replacement Parts and Adjustment.
- At logic board ass'y replacement
- At absorber kit replacement
- At platen unit or spur unit replacement
- At document pressure plate unit or LCD viewer unit replacement
- At wireless LAN board replacement

Integrated inspection pattern print

<Check point>
- The pattern must be printed properly.

Copy function

<Check point>
- Copying must be performed properly.

<Additional verification to be made> See 2-1. Major Replacement Parts and Adjustment.
- At document pressure sheet or scanner unit replacement

Communication with a connected computer

<Check point>
- Via USB connection to the computer, printing from the computer must be performed properly (paper feeding from the rear tray and from the cassette respectively).

<Additional verification to be made>
- For repair of a specific problem, confirm the applicable specific function in the user mode.
  PictBridge, IrDA communication, wired / wireless LAN, Bluetooth communication, Scan-to-Memory function, Direct printing

PictBridge, IrDA | Wired / Wireless LAN | Bluetooth | Scan-to-Memory | Card Direct

Power-off in the service mode

<Check point>
- The paper lifting plate must be in the raised position.

External and internal appearance

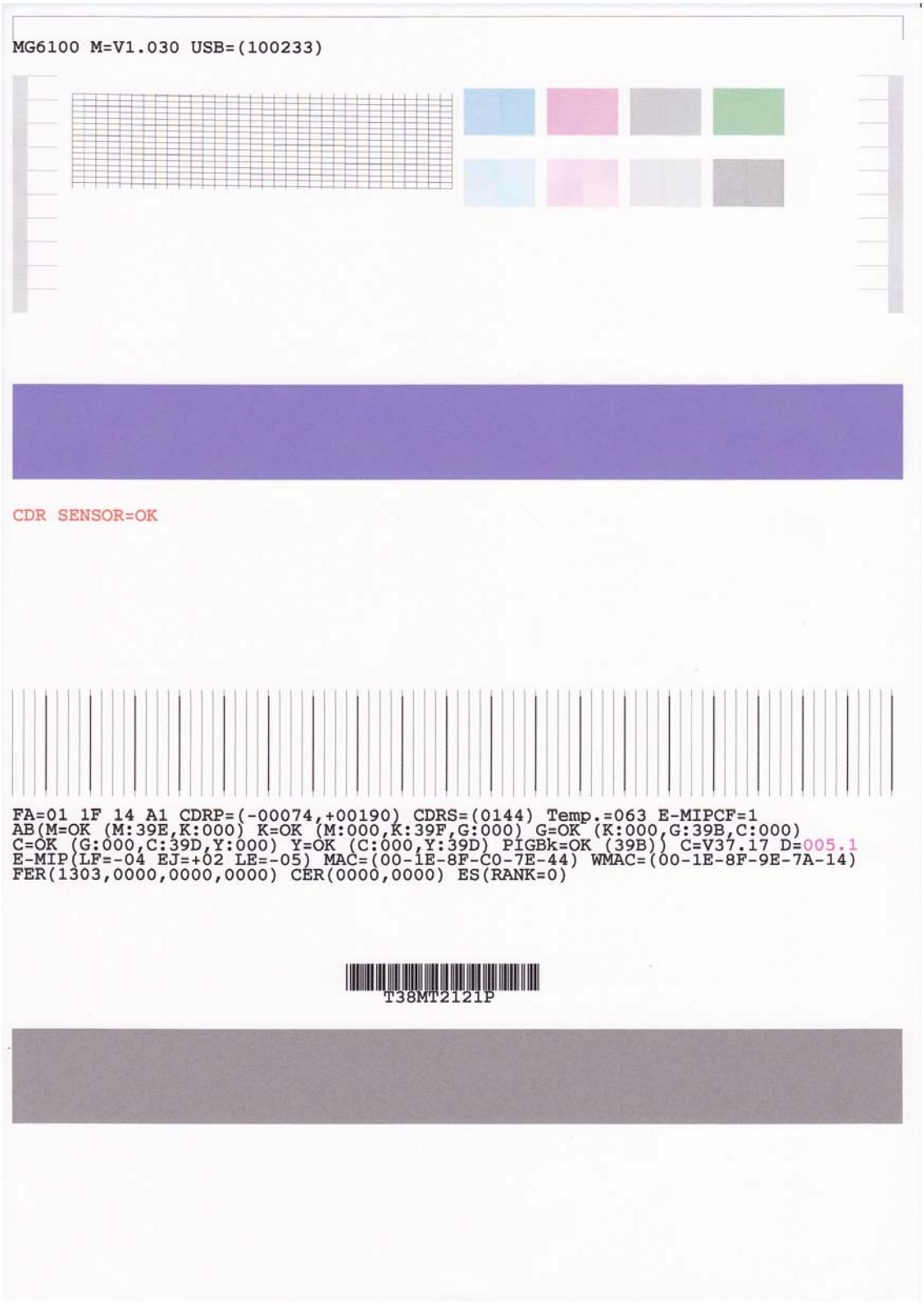
<Check point>
- No grease, oil, or smearing on the timing slit strip film.
- No lifting of the platen ink absorber.
- No foreign material or dislocation of any part inside the printer.
- No damage or scratches that will affect the functionality.

Packaging

<Check point> See 6. MACHINE TRANSPORTATION.
- The carriage must be locked in the home position.

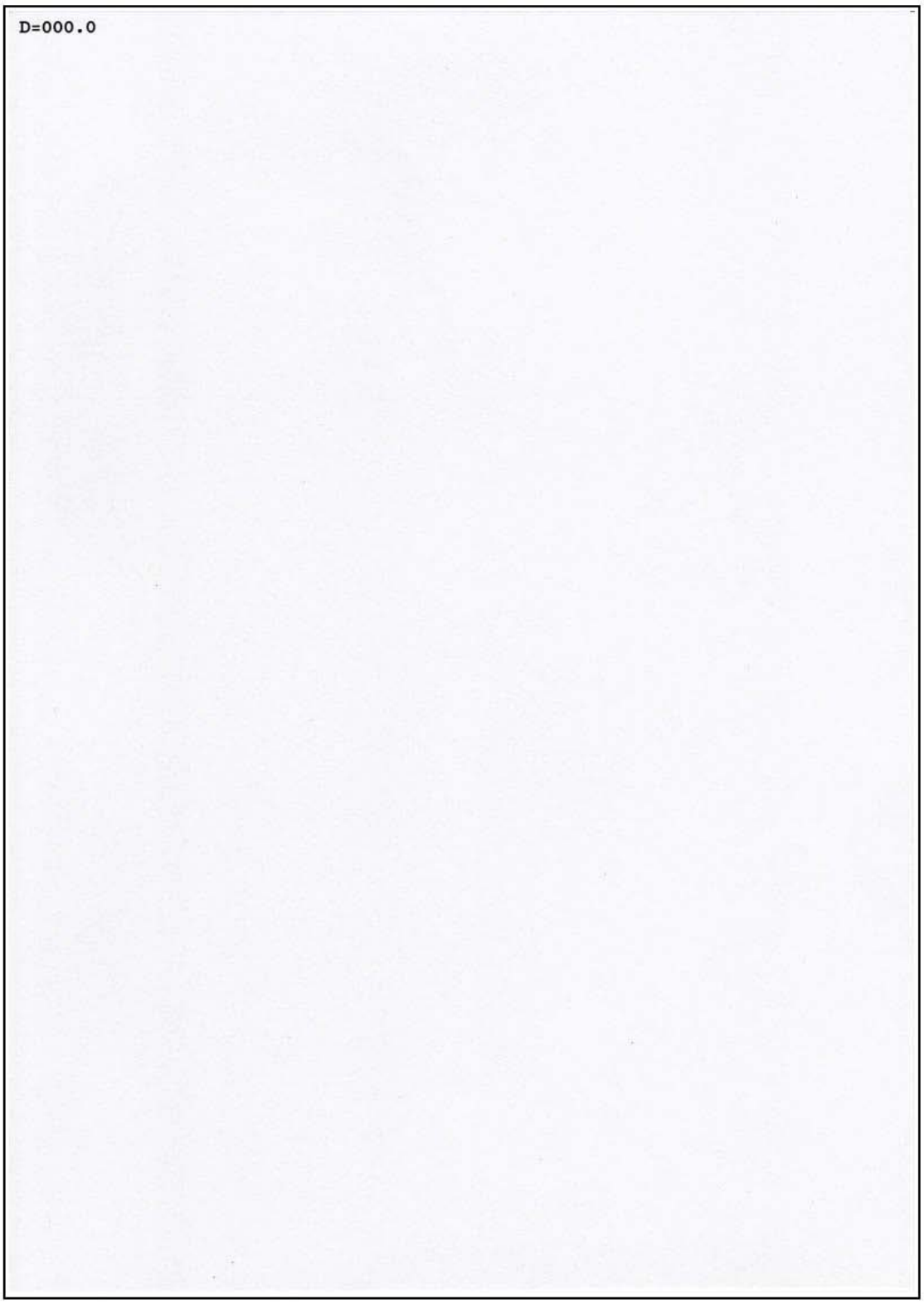
4-2. Integrated Inspection Pattern Print

< Print sample >



4-3. Ink Absorber Counter Value Print

<Print sample>



<4. VERIFICATION AFTER REPAIR>

5. APPENDIX

5-1. Customer Maintenance

Adjustment	Timing	Purpose	Tool	Approx. time
Automatic print head alignment	- At print head replacement - When print quality is not satisfying (uneven printing, etc.)	To ensure accurate dot placement.	- 1 sheet of MP-101 - Computer (printer driver)	5 min.
Manual print head alignment	- At print head replacement - When print quality is not satisfying (uneven printing, etc.) even after automatic print head alignment - When MP-101 is not available	To ensure accurate dot placement.	- 3 sheets of A4 plain paper - Computer (printer driver)	10 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Computer (printer driver)	1 min.
Print head deep cleaning	When print quality is not satisfying, and not improved by print head cleaning.	To improve nozzle conditions.	- Computer (printer driver)	2 min.
Ink tank replacement	When an ink tank becomes empty. ("No ink error" displayed on the monitor or on the machine LCD, or short flashing of an ink tank LED)	To replace the empty ink tank.	---	1 min.
Paper feed roller cleaning	- When paper does not feed properly. - When the front side of the paper is smeared.	To clean the paper feed rollers of the selected paper source (rear tray or cassette).	- 3 sheets of A4 plain paper - Computer (printer driver)	2 min.
Bottom plate cleaning	When the back side of the paper is smeared.	To clean the platen ribs. (Feed the paper from the rear tray.)	- 1 sheet of A4 plain paper - Computer (printer driver)	1 min.
Exterior cleaning	When necessary	To clean the machine exterior, or to wipe off dusts.	Soft, dry, and clean lint-free cloth.	1 min.

5-2. Special Tools

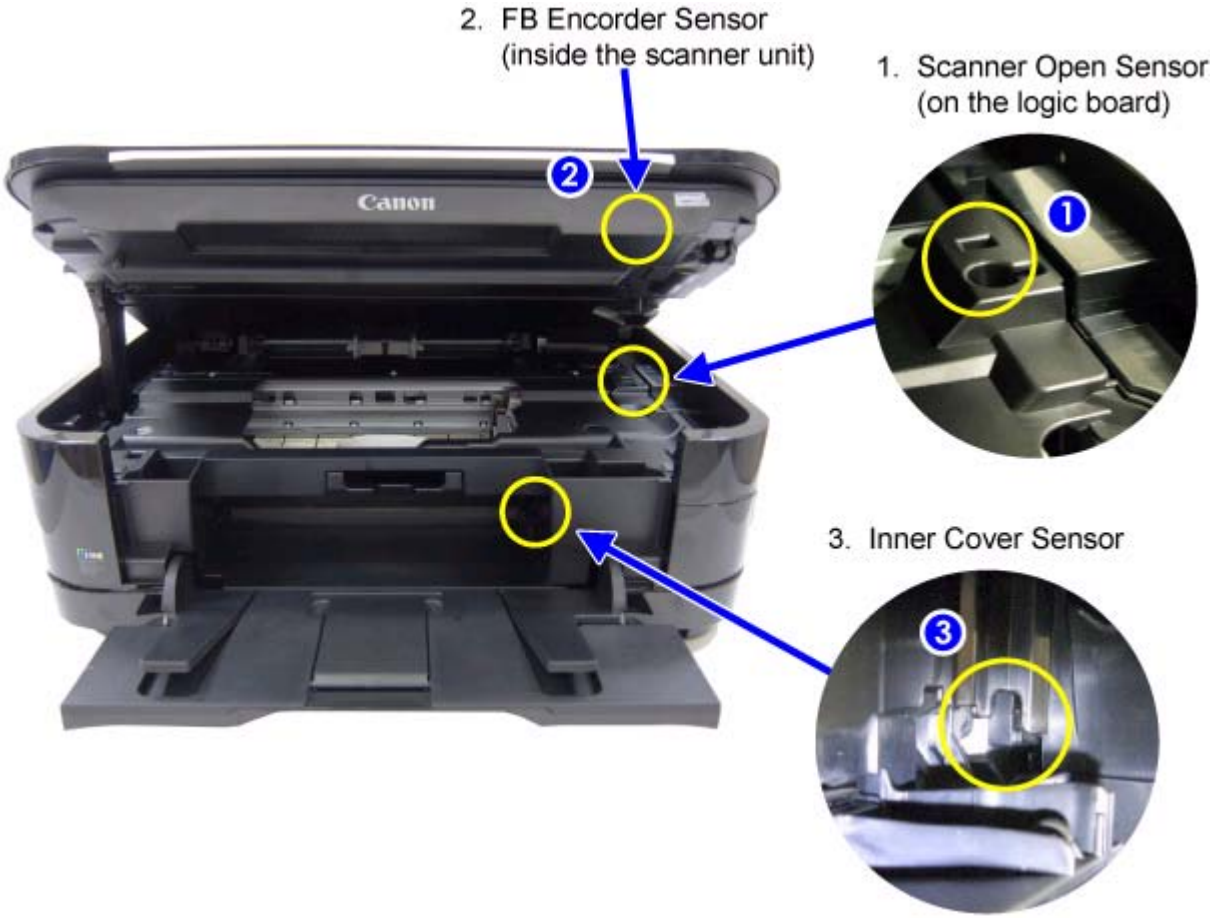
Name	Tool No.	Application	Remarks
FLOIL KG-107A	QY9-0057-000	To the carriage rail sliding portions.	In common with other products on the market

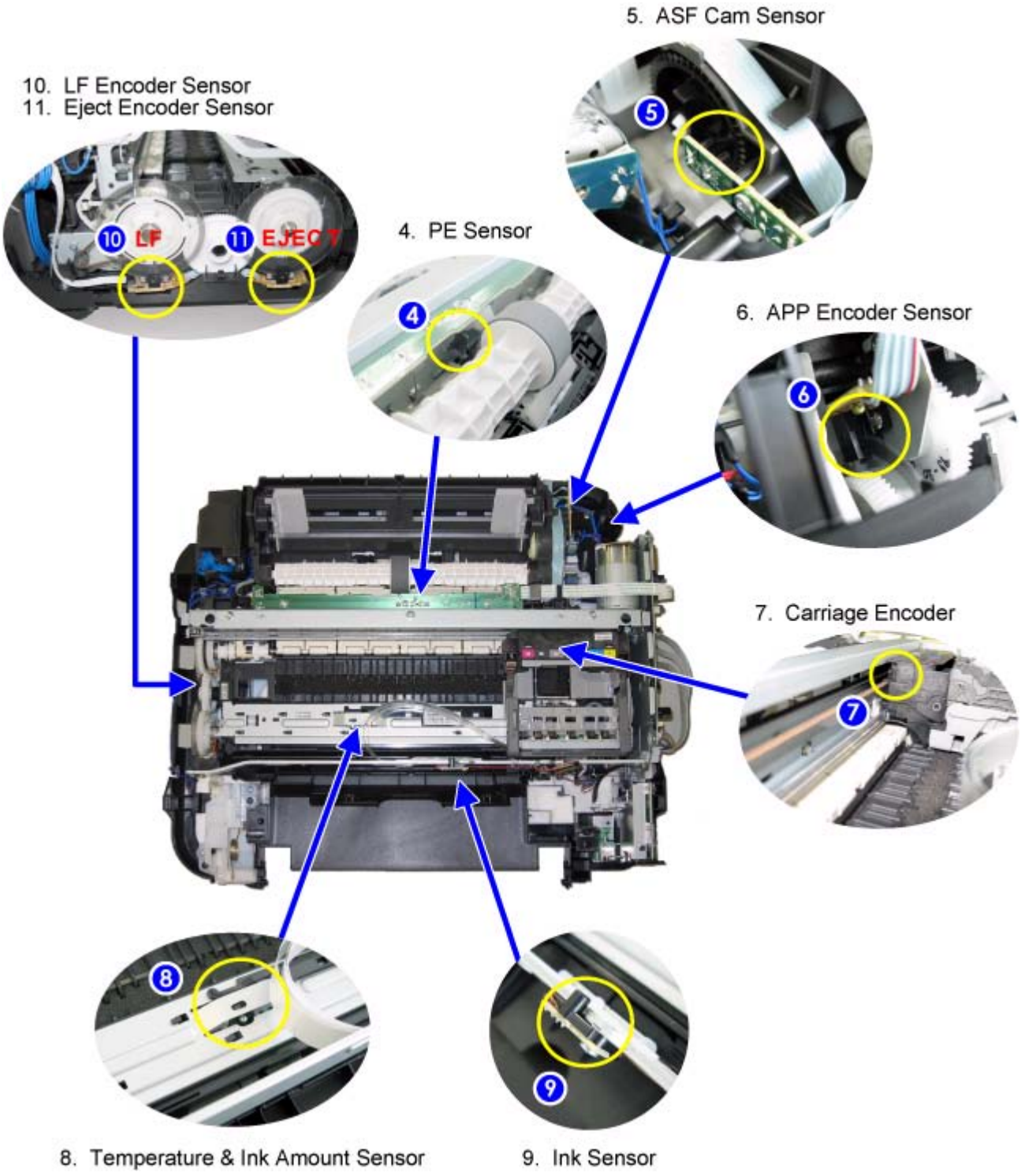
5-3. Sensors

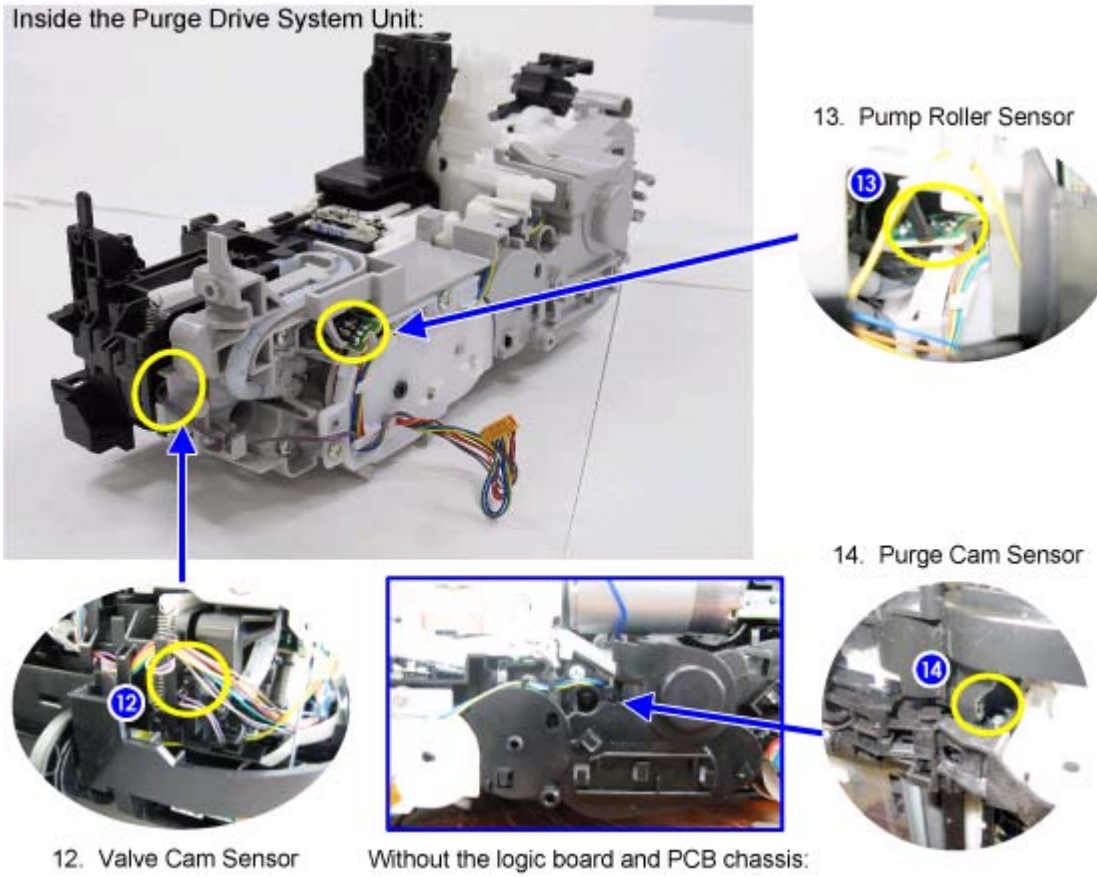
No.	Sensor	Function	Detectable problems
1	Scanner open sensor	Detects opening and closing of the scanning unit (cover).	- The carriage does not move to the center even when the scanning unit is opened.
2	FB encoder sensor	Detects rotation of the scanner motor, and controls scanning operation.	- Faulty scanner - FB motor error - Faulty scanned or copied images
3	Inner cover sensor	Detects opening and closing of the inner cover.	- The inner cover is open when it should be closed. - The inner cover is closed when it should be opened.
4	PE sensor	Detects the leading and trailing edges of paper.	- No paper - Paper jam
5	ASF cam sensor	Detects the position of the ASF cam (for paper feeding from the rear tray).	- ASF cam sensor error - Paper feeding problem
6	APP encoder sensor	Detects rotation of the APP encoder, and controls paper feeding (from the rear tray and from the cassette) and purging operation.	- APP sensor error - APP position error
7	Carriage encoder sensor	Detects the position of the carriage.	- Carriage position error - Printing shifts from the correct position. - Uneven printing - Strange noise
8	Temperature & Ink amount sensor	Detects the temperature of the inside of the machine and the remaining ink amount.	- Internal temperature error - Low-ink or out-of-ink warning
9	Ink sensor	Detects the position of an ink tank.	- Wrong position of an ink tank - Installation of multiple ink tanks of the same color - No recognition of an ink tank
10	LF encoder sensor	Detects rotation of the LF encoder, and controls paper feeding.	- LF position error - Uneven printing
11	Eject encoder sensor	Detects rotation of the eject encoder, and controls paper feeding.	- LF position error - Uneven printing
12	Valve cam sensor	Detects the position of the purge valve cam, and controls purging operation.	- Valve cam sensor error

13	Pump roller sensor	Detects the position of the pump roller, and controls purging operation.	- Pump roller sensor error
14	Purge cam sensor	Detects the position of the purge main cam, and controls purging operation.	- PG cam sensor error

Click on the image to enlarge it.



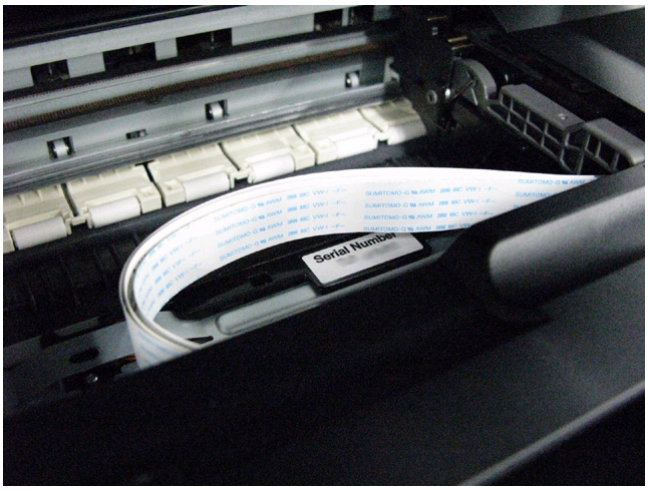

5. ASF Cam Sensor
10. LF Encoder Sensor
11. Eject Encoder Sensor
10 LF
11 EJECT
4. PE Sensor
6. APP Encoder Sensor
7. Carriage Encoder
8. Temperature & Ink Amount Sensor
9. Ink Sensor



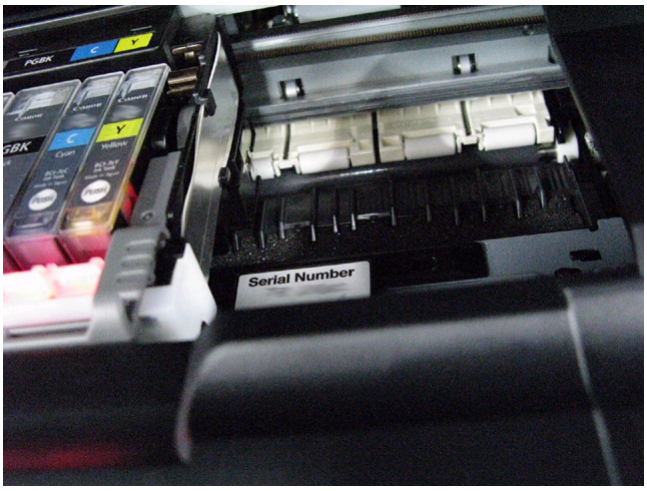
5-4. Serial Number Location

On the inner guide over the upper portion of the spur holder (visible when the scanning unit (cover) is opened).

The photos are for the MP990 as examples.



When the machine power is OFF.



When the machine power is ON.

<5. APPENDIX>

6. MACHINE TRANSPORTATION

This section describes the procedures for transporting the machine for returning after repair, etc.

1) In the service mode, press the ON button to finish the mode, and confirm that the paper lifting plate of the rear tray is raised.
2) Keep the print head and ink tanks installed in the carriage.

   See Caution 1 below.

3) Turn off the machine to securely lock the carriage in the home position. (When the machine is turned off, the carriage is automatically locked in place. DO NOT disconnect the power cord until the machine completely turns off.)

   See Caution 2 below.

(1) If the print head is removed from the machine and left alone by itself, ink (the pigment-based black ink in particular) is likely to dry. For this reason, keep the print head installed in the machine even during transportation.
(2) Securely lock the carriage in the home position, to prevent the carriage from moving and applying stress to the carriage flexible cable, or causing ink leakage, during transportation. Make sure that the carriage is locked in place at power-off.

- If the print head must be removed from the machine and transported alone, attach the protective cap (used when the packing was opened) to the print head (to protect the print head face from damage due to shocks).

<6. MACHINE TRANSPORTATION>