PIXMA MG5220

SERVICE MANUAL

Canon

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. |

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| Repair | When a part needs to be replaced, see this section. |

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| Adjustment & Settings | After repair, perform the necessary adjustment and settings. |

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| 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 |

REF.

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

	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 - DC harness ass'y
	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 - Purge drive system unit
	The LCD does not display properly. A portion of the LCD is not displayed. The display flickers.	(1) Confirm cable connection: - LCD cable ass'y - Panel cable ass'y => No incomplete connection, cable breakage, or cable caught in units (2) Replace the following item(s): - LCD unit - LCD cable ass'y - Panel cable ass'y - Operation panel 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 cable
		  - CIS FFC
		 => No incomplete connection, cable breakage, or cable caught in units
		(3) Replace the following item(s):
		  - Scanner unit
		  - Logic board ass'y

	Machine not recognized by a USB-connected computer.	(1) Confirm the USB cable connection.
		(2) Connect the machine to another computer via the USB cable, and check if the machine is recognized.
		(3) Replace the following item(s):
		  - USB cable
		  - Logic board ass'y

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)
		  - Whether the ink tank is Canon-genuine one or not
		  - Whether the ink tank is refilled one or not
		  - Re-setting of an ink tank
		(2) Remove foreign material from the purge unit caps, if any.
		(3) Confirm the conditions of the carriage head contact pins.
		(4) Perform cleaning or deep cleaning of the print head.

		(5) Perform print head alignment.
		(6) Replace the following item(s):
		- Print head[*1], and ink tanks
		- Logic board ass'y
		- Purge drive system unit
		- Carriage 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 ass'y (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 strip 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
		- Timing slit disk eject film
		- Timing sensor unit
		- Platen unit
		- Logic board ass'y
		- Scanner unit (for copying)
Faulty scanning	No scanning.	(1) Confirm cable connection.
		(2) Replace the following item(s):

	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.

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 paper in the cassette.	[1003]	---	Cassette. There is no paper. Load paper and press [OK].	Confirm that the cassette is selected as the paper source. Set the paper in the cassette, and press the OK button. Note that the cassette is	- Pick-up arm unit - Pressure roller ass'y - Cassette unit

				for plain paper only.	
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 ass'y - 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 is not cleared, 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], [1846]	---	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

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 double-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 double-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	- Duplex paper feed roller unit - PE sensor board ass'y

				(not printed).	
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.) If the alignment pattern was not printed properly (faint printing, etc.), perform print head cleaning, then perform the print head alignment again.	- Carriage unit - Print head - 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	Replace the empty ink tank(s), and close the scanning unit (cover). Printing with an empty	- Ink tank - Spur unit

			icon)	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.	
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 scanner device.	[2700]	---	Timeout error has occurred. Press [OK].	The buffer became full in the 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.	Non-genuine ink tanks are installed. Install the supported (Canon-genuine) ink tanks.	- Ink tank

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 perf
   orm 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 (J500, J501, J502, etc.)
			      Re-connect the cables.
			 (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.
				- Timing slit strip film
				 - Carriage unit
				 - Logic board ass'y
				 - Carriage motor

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 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
			      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 slit disk feed film
				 - Timing slit disk eject film
				 - 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: - LF encoder cable - PE sensor cable - Paper feed relay harness ass'y - Paper feed motor harness ass'y 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, etc. Re-connect the cable.	- ASF unit - PE sensor board ass'y - Logic board ass'y
6 times	Internal temperature error	[5400]	(1) Cable connection: - Between the spur unit and the logic board, J703 connector, etc. Re-connect the cable.	- 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.	- Absorber kit
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. (3) Cable connection: - CR FFC (J500, J501, J502) Re-connect the cable. If any damage or breakage of the cable is found, replace the carriage unit.	- Print head - Carriage unit
9 times	EEPROM error	[6800] [6801]	(1) Part replacement: Replace the logic board ass'y.	- 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.)	- Print head and logic board ass'y (replace them at the same time) - AC adapter - Carriage unit

			(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 (J502, J501, J500) Re-connect the cable. If any damage or breakage of the cable is found, replace the 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 of the purge drive system unit: 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. (5) Cable connection: - J702, 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. (6) APP slit film condition: Clean the APP slit film using lint-free paper. (7) APP code wheel gear condition: If the gear wears, replace the gear.	- Purge drive system unit - Logic board ass'y
	APP position error during initial purging	[6A81]		
14 times	APP sensor error	[6A90]		
	Paper feed cam sensor error	[6B10]	(1) Ink absorber counter value: If the value exceeds 60%, replace the ink absorber. Follow the "*Guideline*	- Pick-up arm unit - Duplex paper feed roller unit

			for Preventive Replacement of the Ink Absorber." (2) Jammed paper in the under guide: Remove the jammed paper.	
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 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.
			(4) Scratches on the LF / EJ slit film:
			    Replace the timing slit disk feed film or the timing slit disk eject film.
				- Timing slit disk feed film
				- 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 tanks are installed in the correct slots.
			(2) Re-set or replacement of ink tanks:
			    If the error persists, replace the ink tanks.
			(3) Cable connection
			    Re-connect the cable.
				- Spur unit
				- Logic board ass'y

20 times	Other errors	[6500]	(1) Cable connection:
			  - Wireless LAN cable
			    Re-connect the cable.
				- Logic board 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:
			  - J900, J1002, J704
			    Re-connect the cable.
			(2) Damper condition inside the scanner:
			    If the damper winds around the CIS, replace the scanner unit.
			(3) Scanner belt pulley:
			    If the pulley is dislocated, replace the
				- Scanner unit
				- Document pressure sheet
				- Logic board ass'y

			scanner unit.
			(4) Document pressure sheet conditions:
			    Re-attach the document pressure
			    sheet, or replace it.	

	FB motor error	[5012]	(1) Cable connection: - J900, J1002, J704 Re-connect the cable.	- Scanner unit

23 times	Valve cam
	sensor error
		[6C10]	(1) Foreign material around the purge drive
			    system unit:
			    Remove foreign material.
			(2) Cable connection:
			 - J702 connector
			    Re-connect the cable.
				- Purge drive
				  system unit
				- Logic board ass'y

(Note) 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.]

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) Operation panel cover (2) Side cover R (3) 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. Print the EEPROM information. [See 3-3. Adjustment and Settings in Service Mode, for details.] **In the user mode:** 6. Set the language displayed on the LCD. 7. Reset the LAN settings. 8. Perform print head alignment. 9. Print via USB connection. 10. Copy. 11. Perform direct printing from a digital camera (PictBridge).
Absorber kit	(1) Operation panel cover (2) Side cover R (3) Logic board ass'y (4) Operation panel unit (together with the LCD unit) (5) Operation rear top cover (6) Side cover L (7) Scanner stay (8) Scanner unit (together with the document cover unit) (9) Main case (10) Sub case unit and ASF cover unit (11) Printer unit from the bottom case	**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) to (10) Same as for the absorber kit procedures. (11) Logic board ass'y (12) Right chassis (together with the card board ass'y and PictBridge board unit) (13) Timing slit strip film (14) Carriage rail (15) Carriage unit - Keep the timing slit strap (carriage encoder film) free	1. Apply grease to the sliding portions of the carriage rail. [See 3-4. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern. [See 3-3. Adjustment and Settings

	from stain or damage. When returning the strap, make sure of its orientation (left and right, front and back). - See 2-2. Disassembly & Reassembly Procedures, (7) Carriage unit removal, for details.	in Service Mode, for details.] **In the user mode:** 3. Perform automatic print head alignment.
Switch system unit Paper feed motor	(1) to (10) Same as for the absorber kit procedures. (11) PE sensor board ass'y (12) ASF unit (13) Logic board ass'y (14) Right chassis (15) Front chassis (16) Main chassis (together with the carriage unit and pressure roller ass'y) (17) Spur unit (18) Platen unit (19) Cassette feed roller unit (20) Duplex paper feed roller unit (21) Cassette feed guide (22) Paper guide unit (23) Paper feed roller unit (24) Switch system unit or paper feed motor - 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.)	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) to (10) Same as for the absorber kit procedures. (11) PE sensor board ass'y (12) ASF unit (13) Logic board ass'y (14) Right chassis (15) Front chassis (16) Main chassis (together with the carriage unit) (17) Spur unit (18) Platen unit	**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) to (10) Same as for the absorber kit procedures. (11) PE sensor board ass'y (12) ASF unit (13) Logic board ass'y (14) Right chassis (15) Front chassis (16) Main chassis (together with the carriage unit) (17) Spur unit	**In the service mode:** 1. Print the integrated inspection pattern. 2. 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.]
Purge drive system unit	(1) to (10) Same as for the absorber kit procedures. (11) PE sensor board ass'y (12) ASF unit (13) Logic board ass'y	**In the service mode:** 1. Print the integrated inspection pattern.

	(14) Right chassis (15) Front chassis (16) Main chassis (together with the carriage unit and pressure roller ass'y) (17) Spur unit (18) Platen unit (19) Cassette feed roller unit (20) Duplex paper feed roller unit (21) Cassette feed guide (22) Paper guide unit (23) Paper feed roller unit (24) Purge drive system unit	
Pulley holder unit	(1) to (10) Same as for the absorber kit procedures. (11) PE sensor board ass'y (12) ASF unit (13) Logic board ass'y (14) Right chassis (15) Front chassis (16) Main chassis (together with the carriage unit) (17) Pulley holder unit	1. Apply grease to the idler pulley parallel pin (since the grease is not applied to the service part). [See 3-4. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
APP code wheel gear	(1) to (11) Same as for the absorber kit procedures. (12) Purge motor unit (13) APP code wheel gear	1. Apply grease to the APP code wheel gear shaft (since the grease is not applied to the service part). **In the service mode:** 2. Print the integrated inspection pattern.
Document pressure sheet Scanner unit	(1) Document cover unit (2) Operation panel cover (3) Side cover R (4) Logic board ass'y (5) Operation panel unit (together with the LCD unit) (6) Operation rear top cover (7) Side cover L (8) Scanner stay (9) Scanner unit	1. Confirm the document pressure 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.
LCD unit	(1) Operation panel cover (2) Side cover R (3) Operation panel unit (together with the LCD unit) (4) LCD unit - 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. Print the integrated inspection pattern.
Timing slit strip film	(1) to (10) Same as for the absorber kit procedures. (11) Logic board ass'y	**In the user mode:** 1. Perform print head alignment.

	(12) Right chassis (together with the card board ass'y and PictBridge board unit) (13) Timing slit strip film - 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 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.]
Timing slit disk feed film	(1) to (11) Same as for the absorber kit procedures. (12) Timing slit disk feed film - 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.	
Print head	(1) 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) Operation panel cover (2) Side cover R (3) Logic board ass'y (4) Operation panel unit (together with the LCD unit) (5) Operation rear top cover (6) Side cover L (7) Scanner stay (8) Scanner unit (together with the document cover unit) (9) Main case (10) Wireless LAN board ass'y (together with the chassis)	**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.

*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. Disassembly & Reassembly 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.

- 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.

<2-1. Major Replacement Parts and Adjustment>

2-2. Disassembly & Reassembly Procedures

Be sure to protect the machine from static electricity in repair servicing, especially for the logic board.
Some of the photos are of other models as a sample.

(1) External housing removal

1) Remove the cassette.
2) Remove the document cover unit.
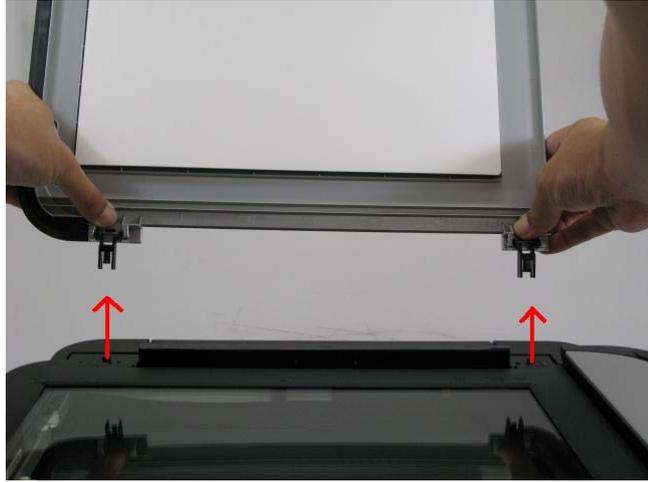
Pull the document cover upward.

3) Remove the operation panel cover.
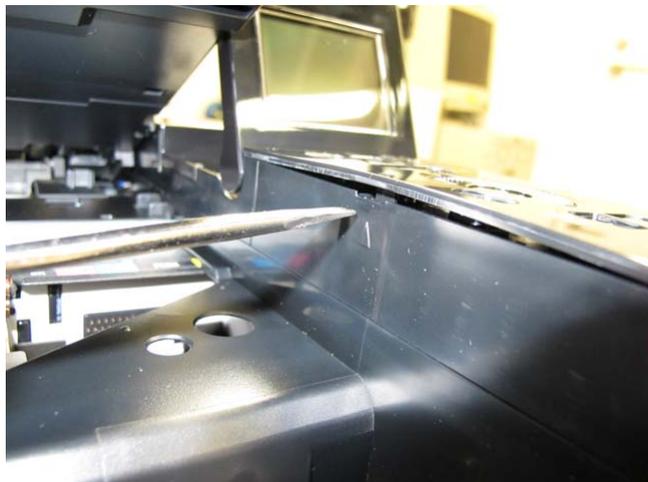
Open the scanning unit (cover).

At the triangle mark on the inner right side, push the right guide upward release the claw.

Release all the other claws, and lift the operation panel cover.

4) Remove the side cover R.

Remove 2 screws from the back side of the machine.

Release the claw on the front by pulling the side cover R outward at the triangle mark.

5) Remove the side cover L.

Remove 2 screws from the back side of the machine.

Pass the flat-blade screwdriver through the hole to press and release the claw.
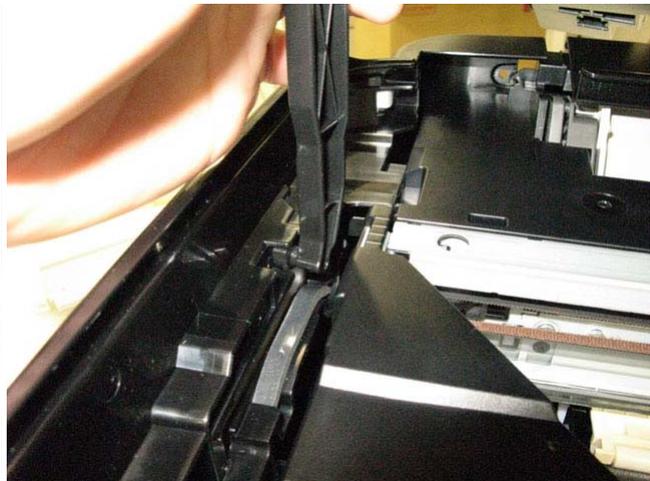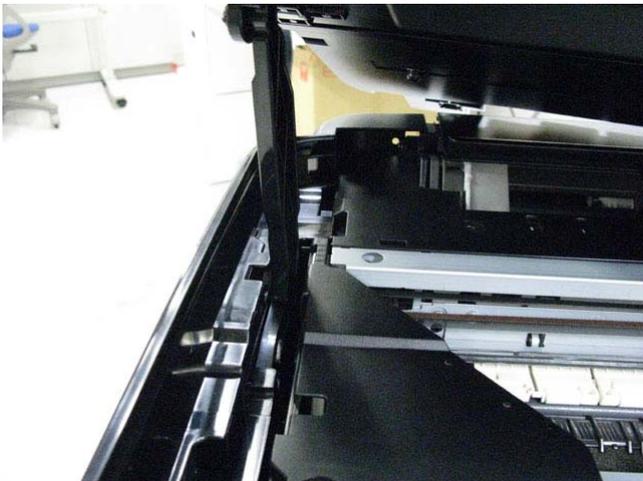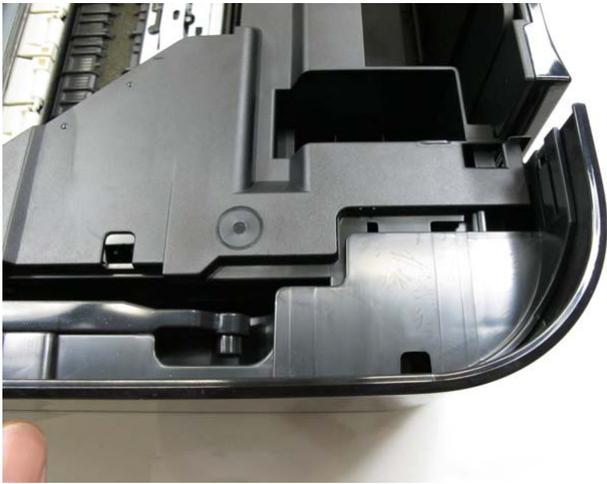
Disengage the scanner stay.

6) Remove the operation panel unit.

Release the claw on the back side of the operation rear top cover.

Lift the cover to remove it from the unit.

Remove 5 screws and the panel cable.

7) Remove the LCD unit.
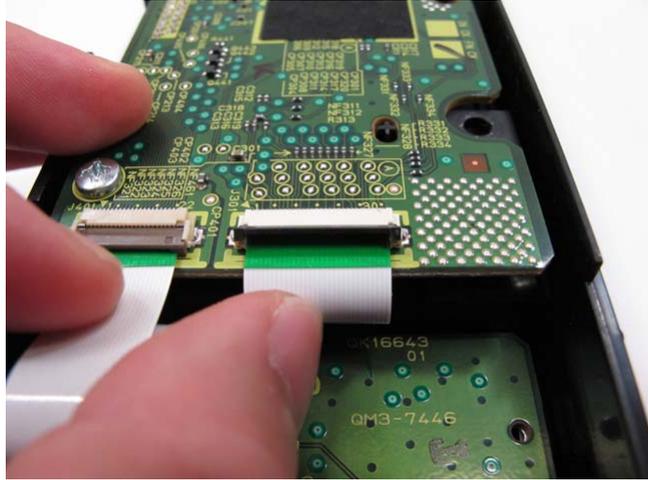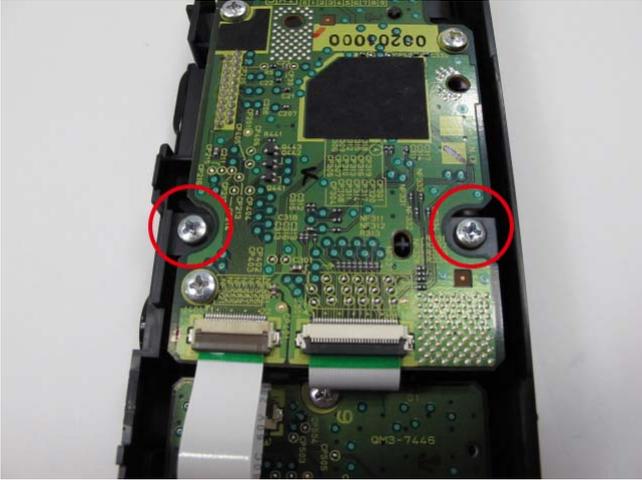
Remove 2 screws from the back side of the unit.   Disconnect the LCD cable ass'y.
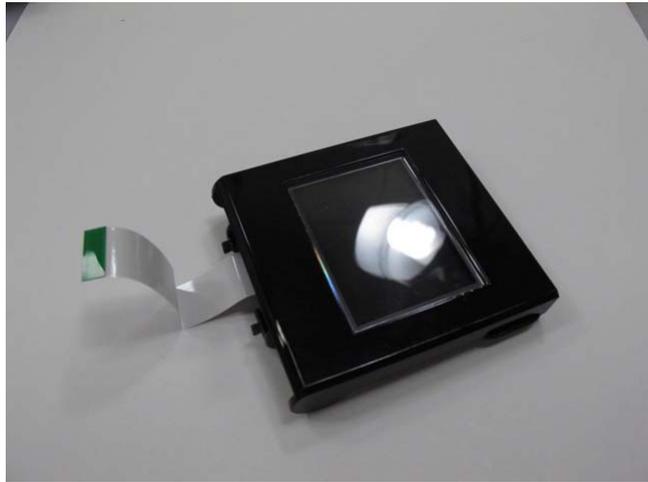
Separate a set of the LCD hinge and LCD from the unit.

8) Remove the scanner unit.
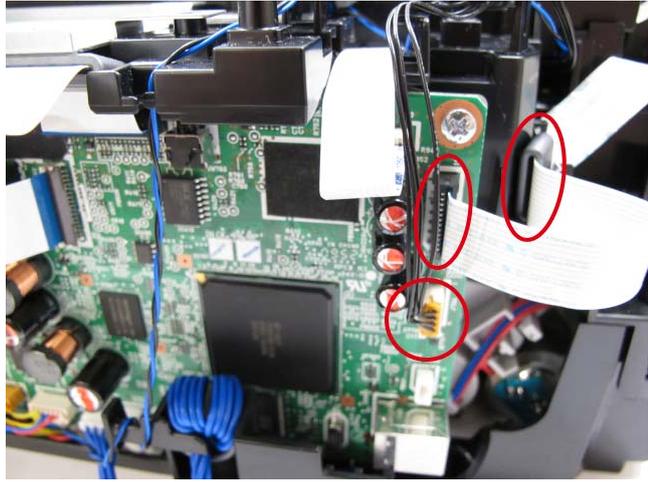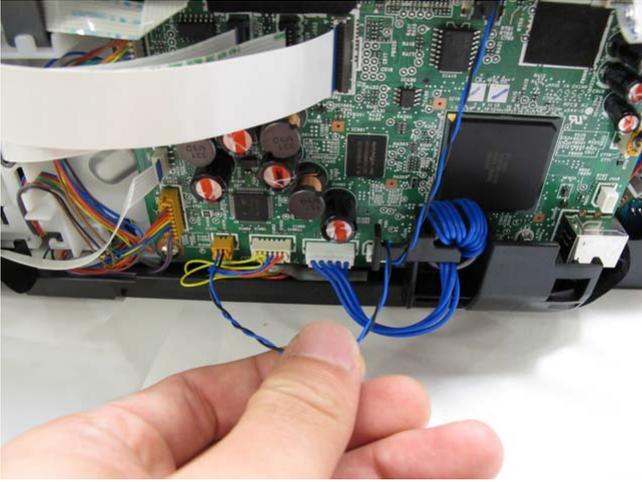
Disconnect two harnesses and one FFC.

Remove one core.
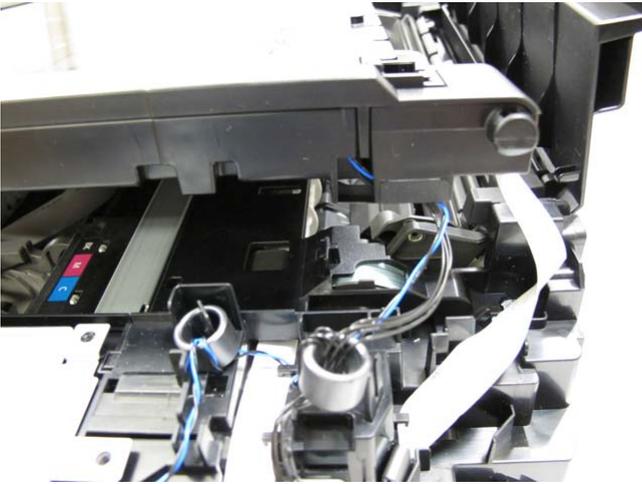
9) Remove the main case.

Remove 2 screws.
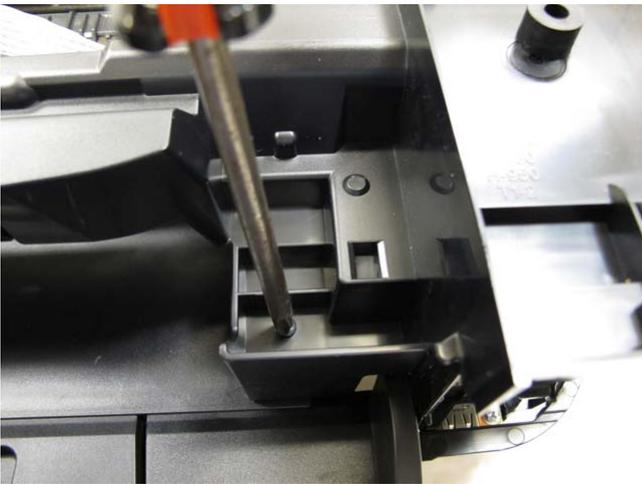
Remove 1 screw on the right side.

Release the claw on the left side.
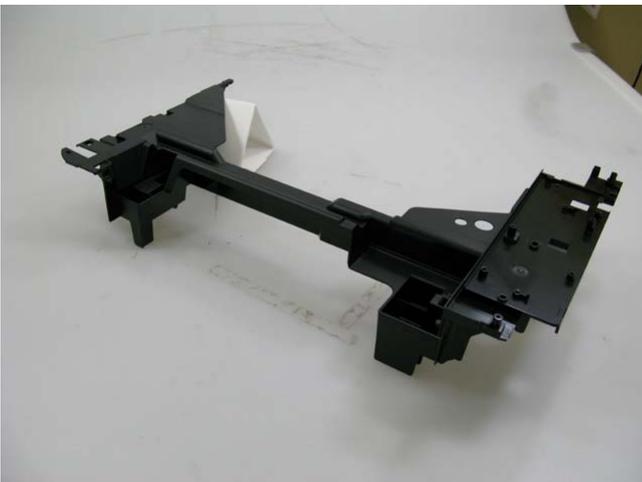
(10) Remove the sub-case unit and the ASF cover unit.
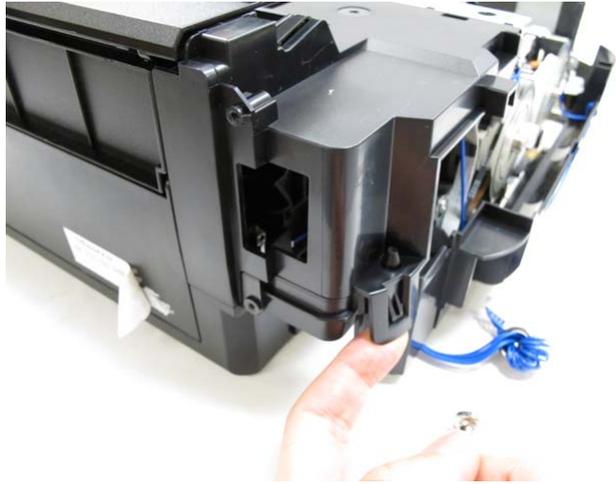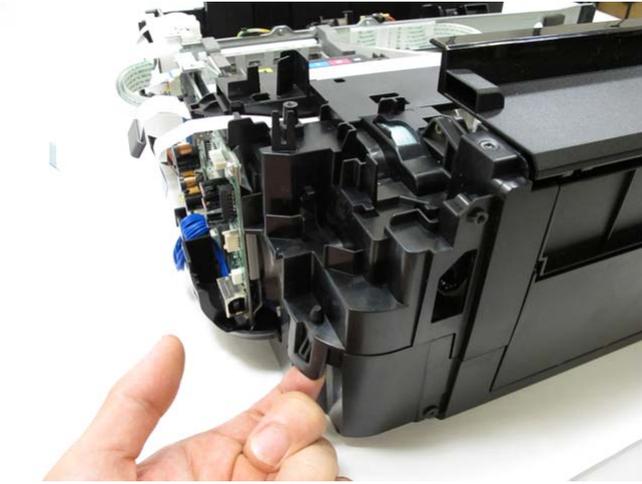
Release the claw on the back right.

Release the claw on the back left.
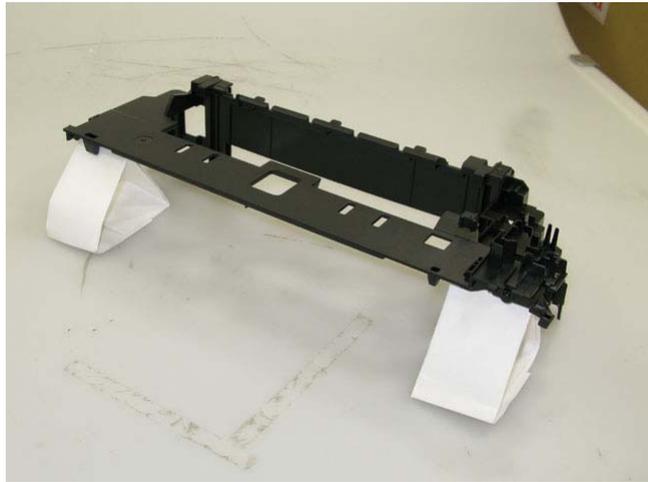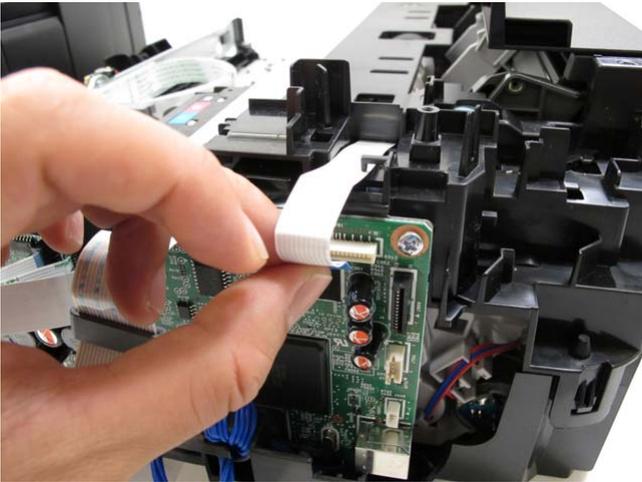
Disconnect the PE sensor cable.

(2) Cable wiring and connection

1) Wiring on the right side

with the bottom case

without the bottom case

2) Wiring on the left side
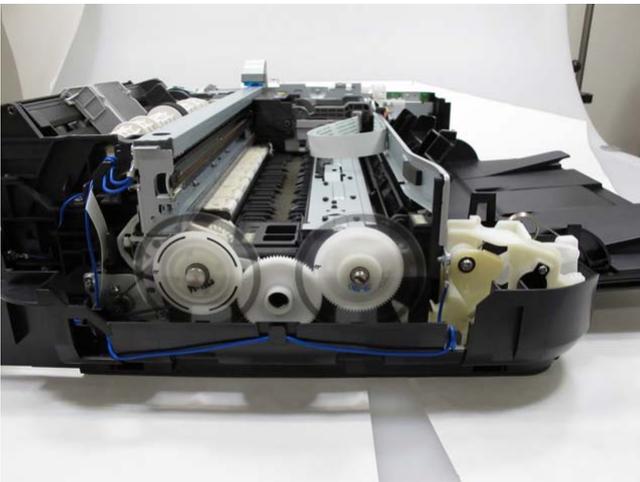
with the bottom case


without the bottom case
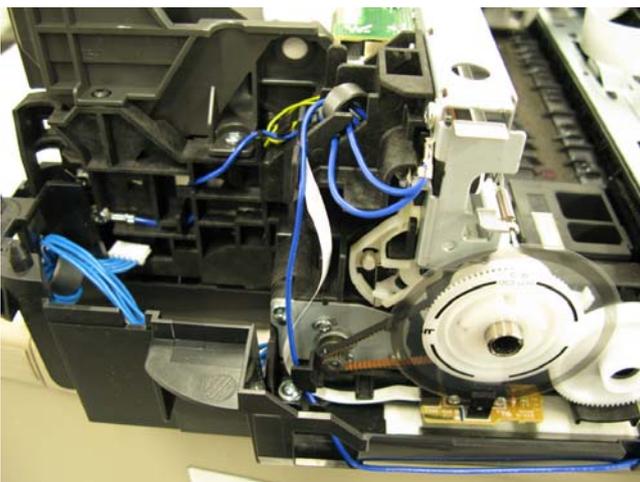
(3) Emblem removal

Push the emblem bottom to remove from the double-sided adhesive tape.

(4) Carriage unlocking
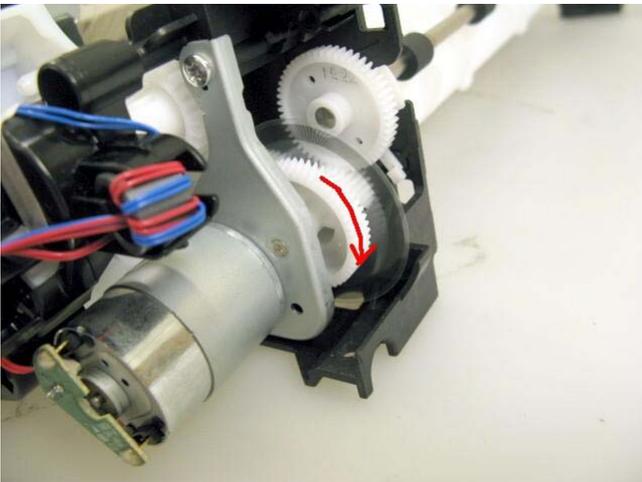
Rotate the drive unit gear toward the back of the machine to unlock the carriage.
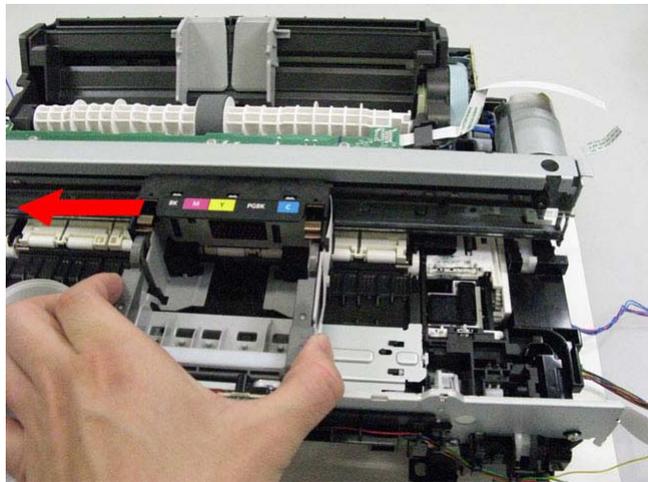
Slide the carriage to the left (the opposite of the home position).

(5) ASF unit removal
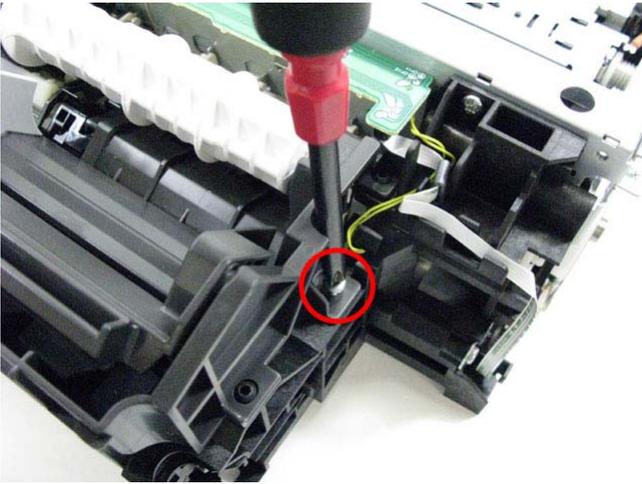
Remove 2 screws from the right plate.
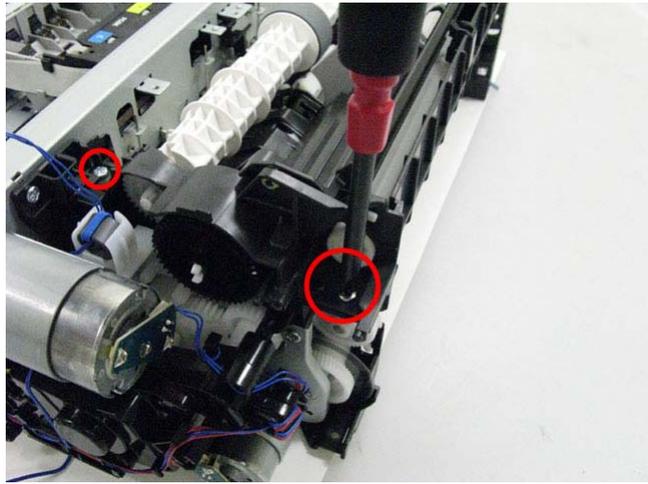
Remove 1 screw from the left plate.
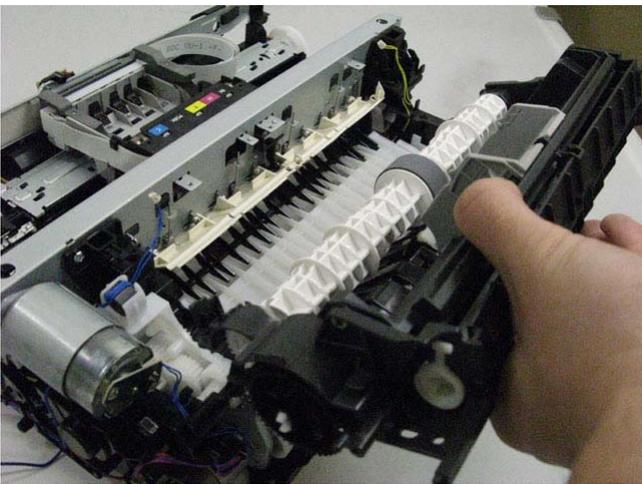
(6) Right chassis removal
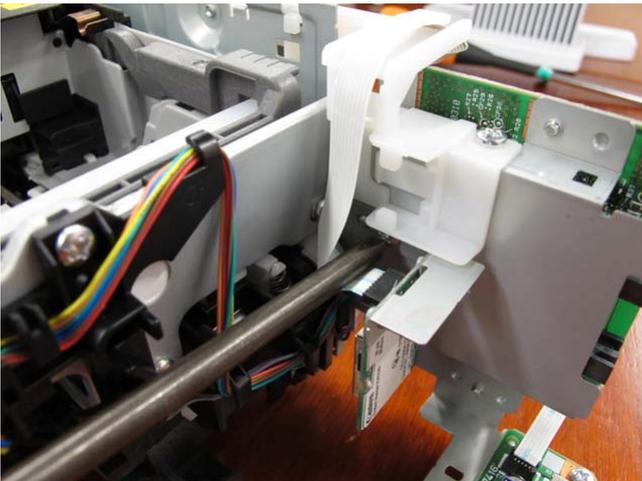
Remove a set of the wireless LAN board ass'y and the chassis without separating them.
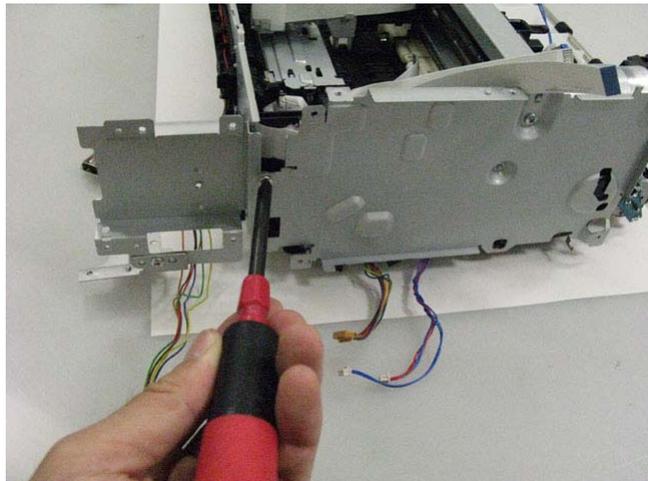

Remove 2 screws.

(7) Carriage unit removal

1) On the main chassis, mark the positions of the screws that fix the carriage rail to the main chassis (3 points for each screw: the left, right, and center).
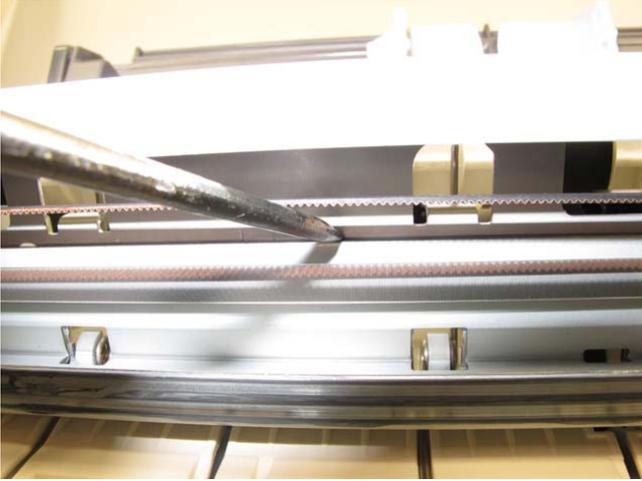
2) Remove the timing slit strip film.
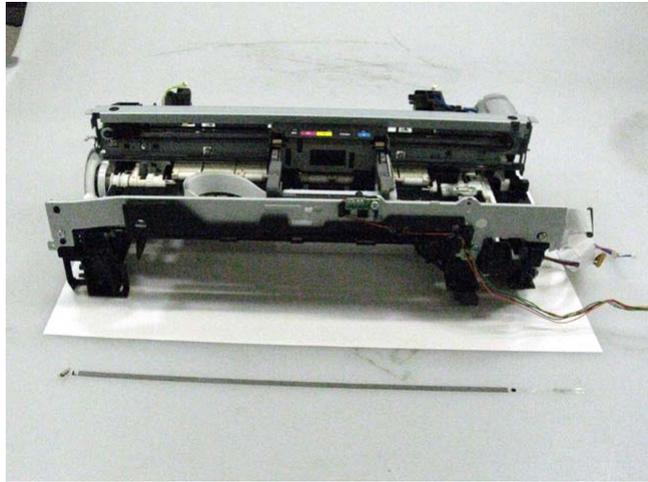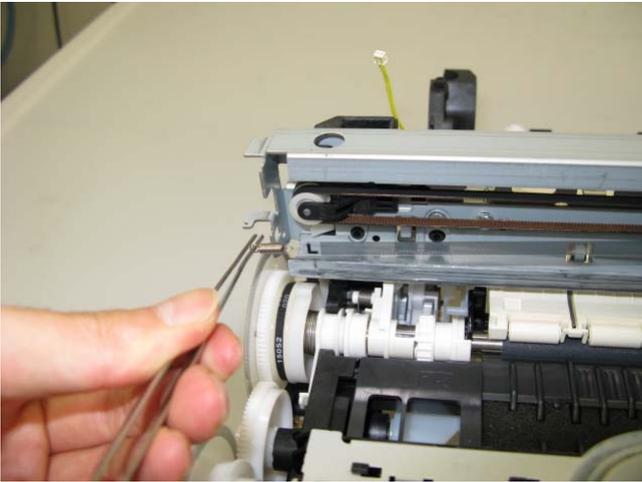
Remove from the spring side.

Be cautious to keep it free from any grease or damage.

3) Remove the carriage belt.
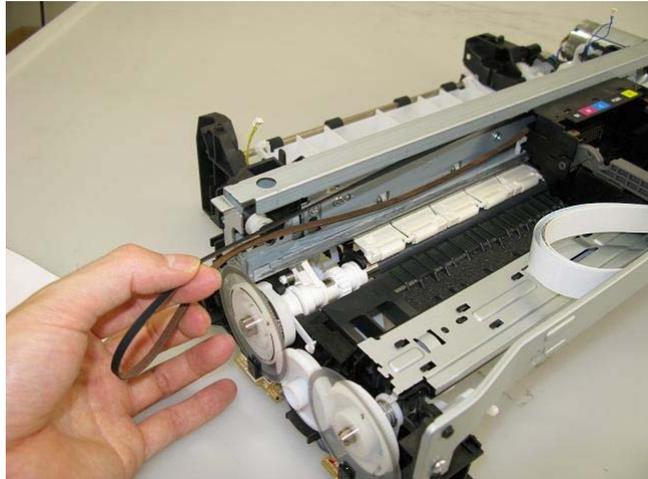
Pass the head of a flat-blade screwdriver through the hole of the main chassis, and press the carriage belt to release it from the pulley.

Be cautious to keep it free from any grease.

4) Remove screws from the carriage rail.
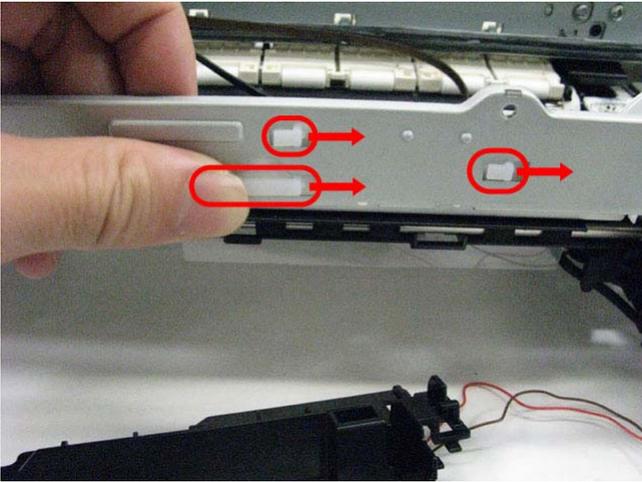
Remove the carriage cable holder from the front chassis.

Remove 3 screws that fix the carriage rail to the main chassis
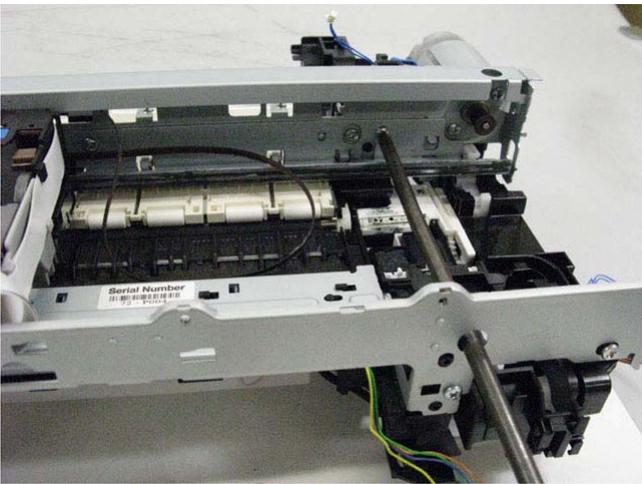
5) Remove the carriage unit.
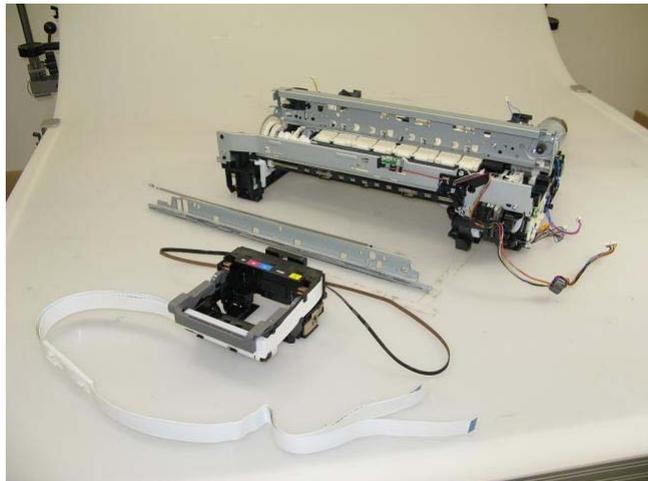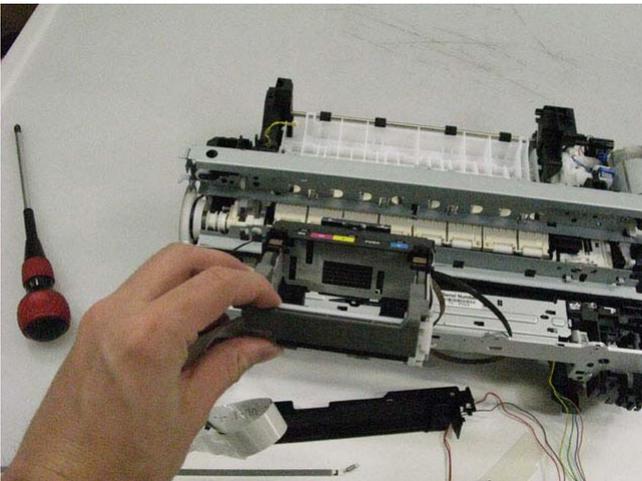
Slowly put down the carriage rail.

Be cautious that the grease will not attach to any parts.

(8) Spur unit and platen unit removal
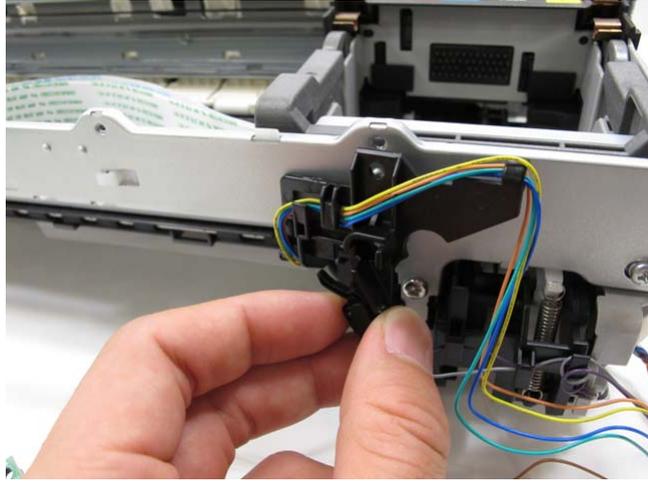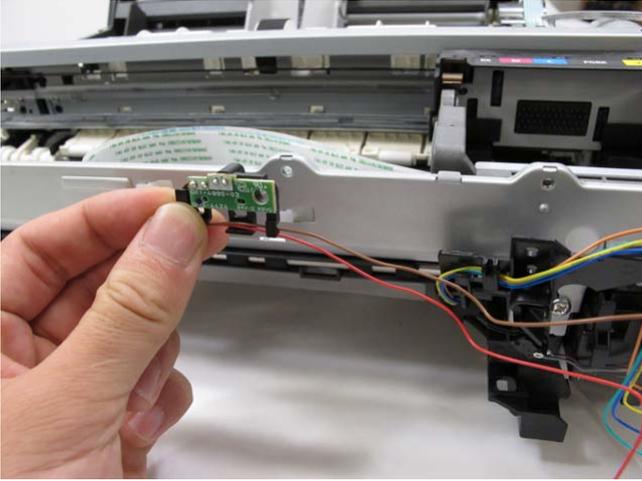
Remove the ink sensor and the inner cover sensor from the front chassis (1 screw each).
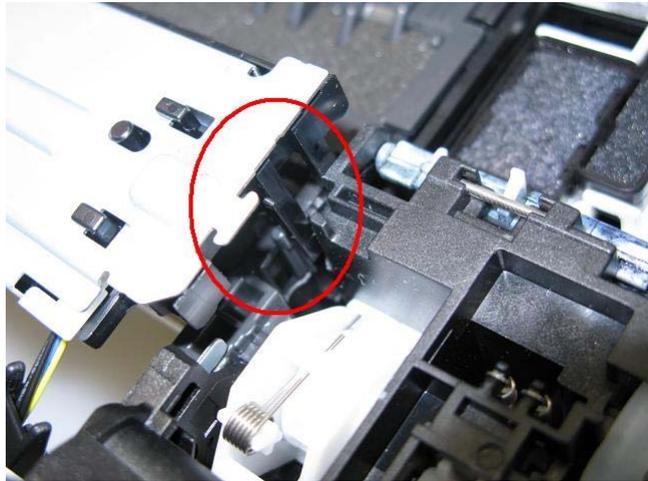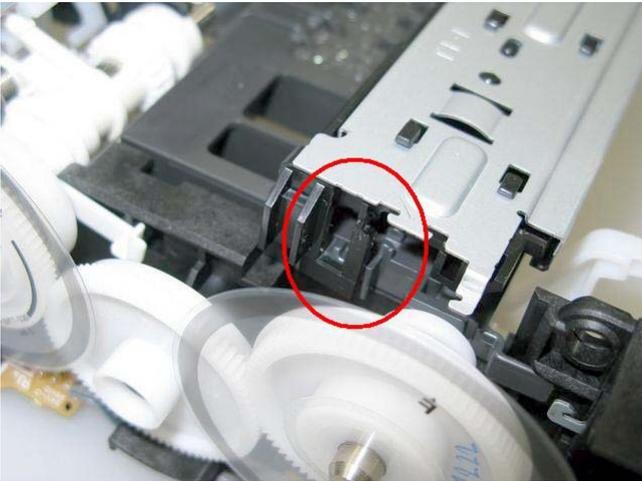
From the left and right sides of the spur unit, release the springs (2 on the left side, 1 on the right side).

Then, slowly pull the spur unit upward to remove it from the platen unit.
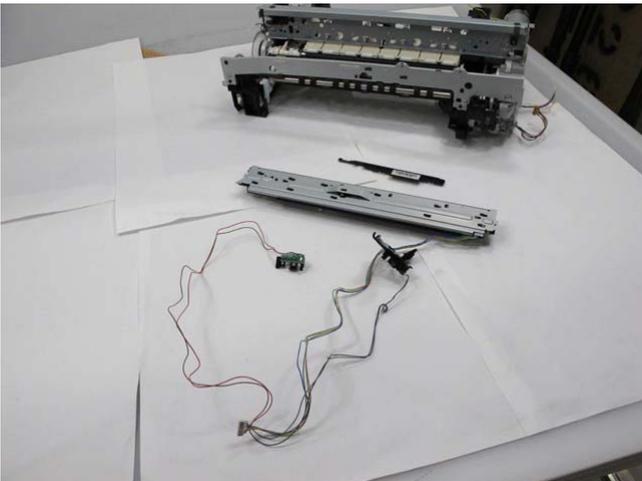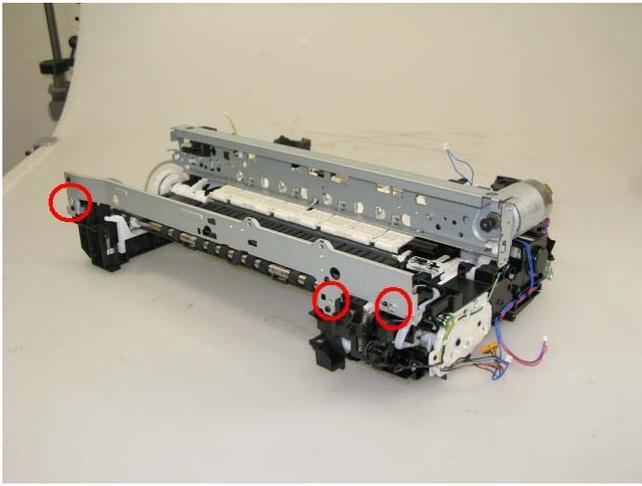
Remove the front chassis (3 screws).
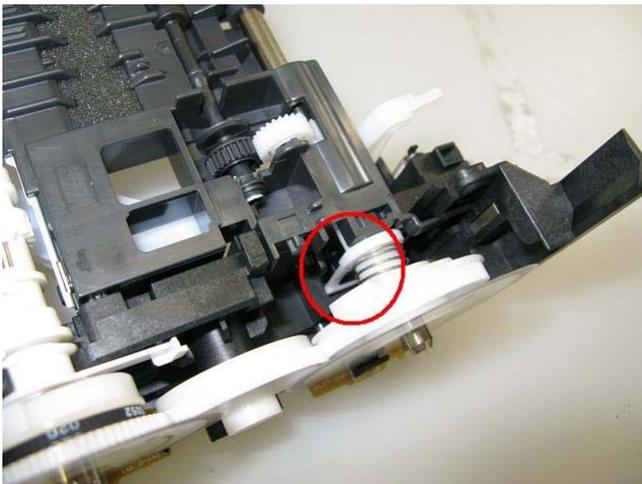
Unlock the paper eject roller gear.
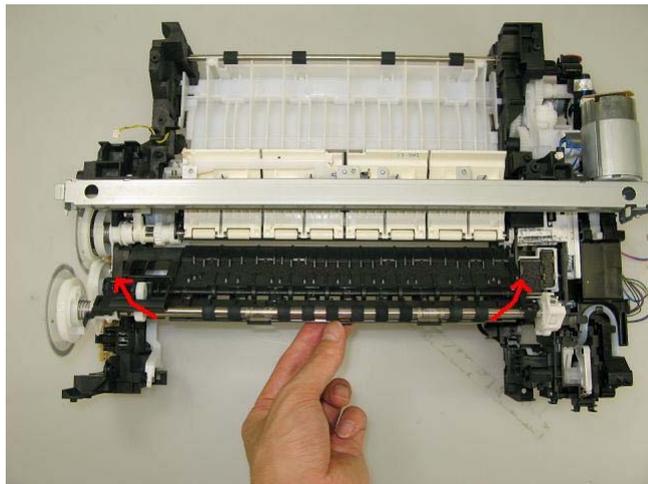
While raising the front of the platen unit, remove the platen unit from the printer unit.
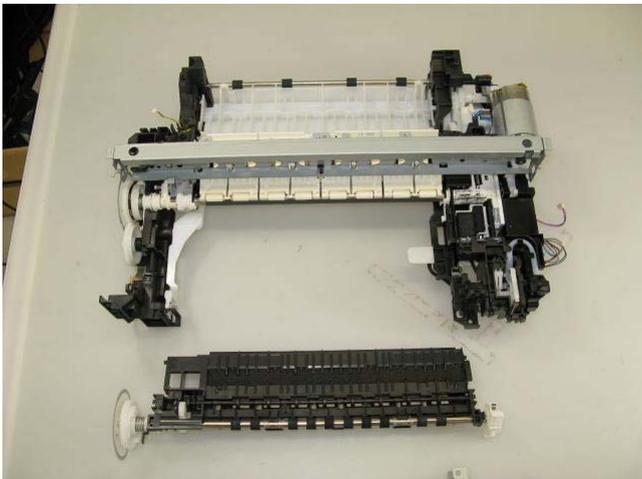
(9) Purge drive system unit (right plate) and switch system unit (left plate) removal
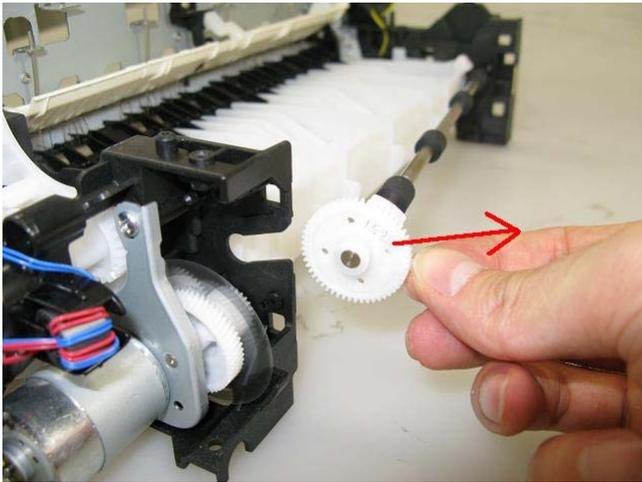
Remove the cassette feed roller unit.
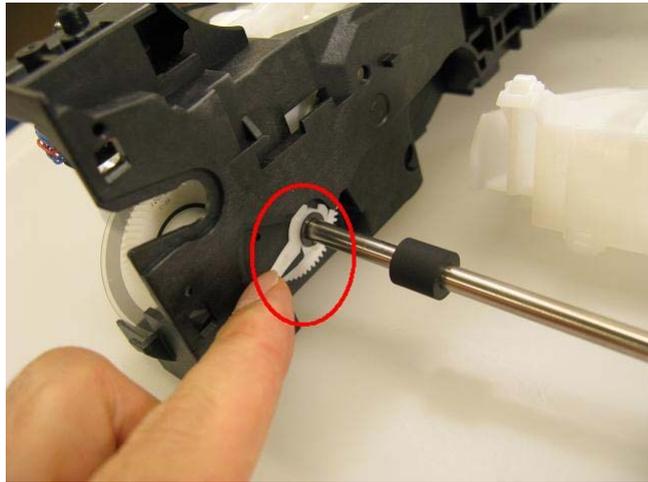
Remove the duplex paper feed roller unit.
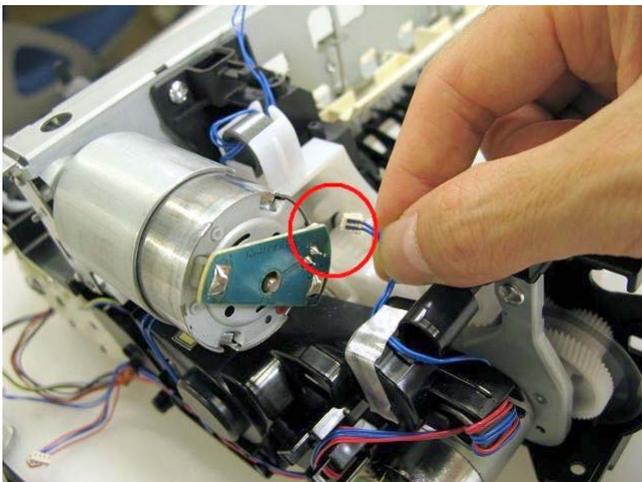
Disconnect the carriage motor cable.
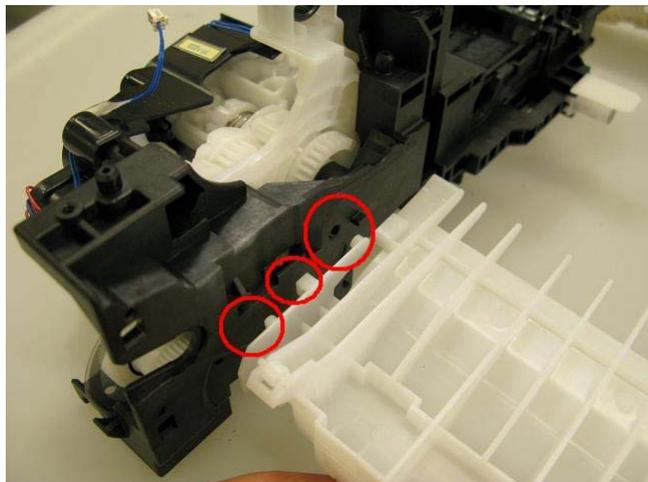
Release the red-circled claws to remove the cassette feed guide.
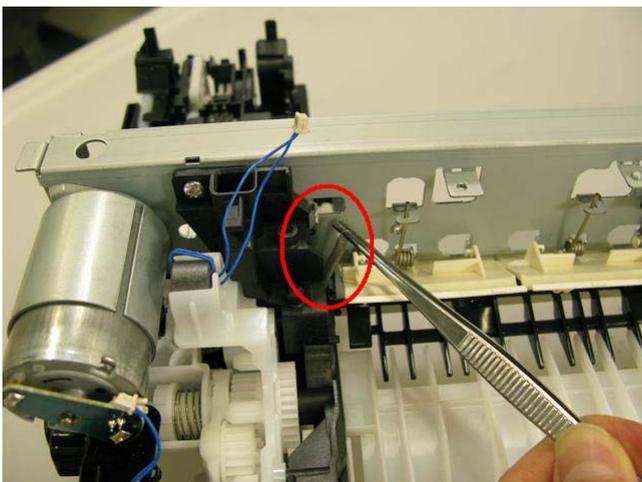
Release the springs on the left and right sides of the paper guide unit. (See Parts Catalog for details.)

Remove 4 springs between the pressure roller ass'y and the main chassis.
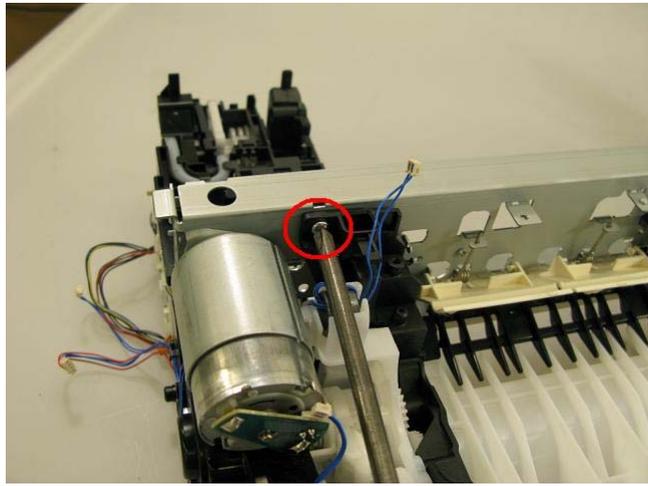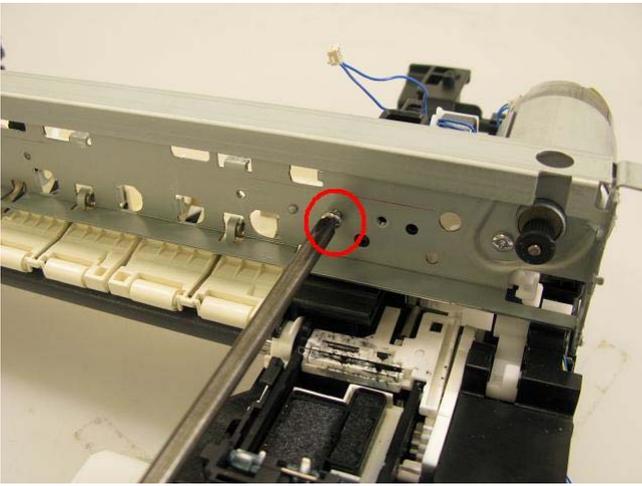
Remove the screws that fix the units to the main chassis (2 on the right).
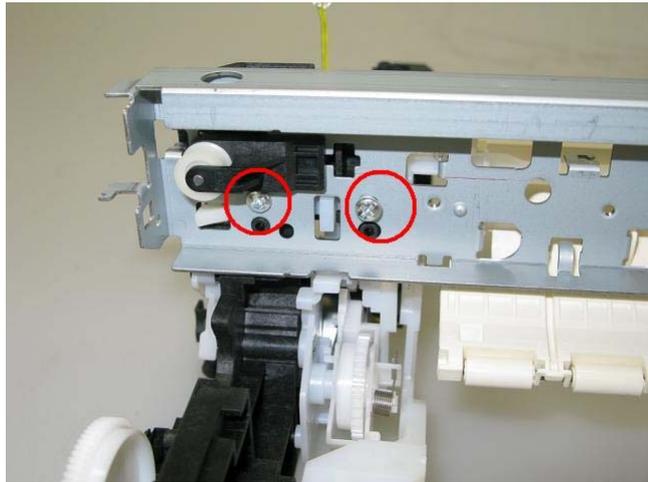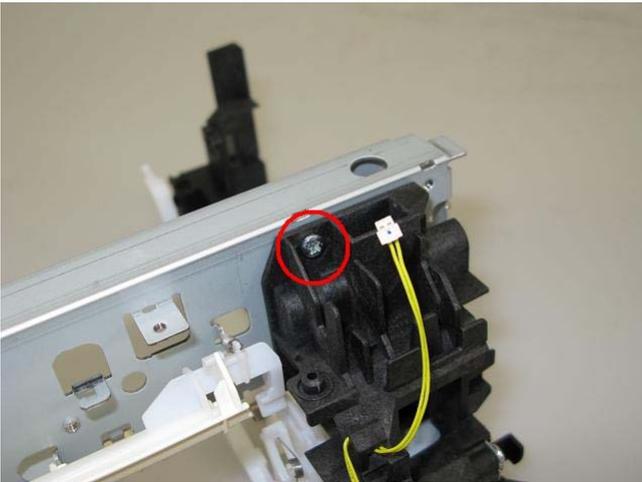
Remove the screws that fix the units to the main chassis (3 on the left).

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

Switch system unit   Purge drive system unit

(10) 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, and fasten the screws.
2) Attach the duplex paper feed roller unit to the purge drive system unit, and fix them to the bottom case with the screws.
3) Attach the cassette feed guide.
4) Install the cassette feed roller unit.
5) Install the paper feed roller unit and attach the paper feed belt.
6) Attach the paper guide unit to the paper feed roller, and attach the springs to each side of the guide unit. (Hook the other 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) Fix the pressure roller ass'y to the main chassis (screw it to the right and left plates).
10) Attach the carriage unit and the carriage rail to align with the marks on the main chassis.
11) Hook the torsion springs of the pressure roller ass'y to the main chassis, then the springs kept at the right and left plates in step 6) to the main chassis.
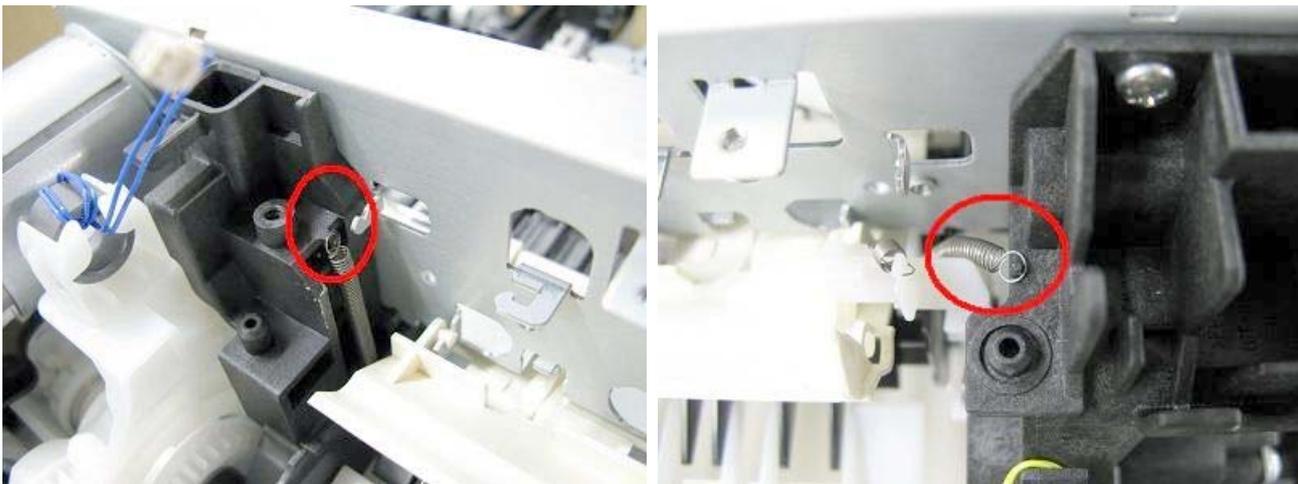
12) While being cautious not to damage the carriage FFC, install the front chassis and the ground chassis.
13) Attach the ink sensor and the inner cover sensor to the front chassis.
14) Install the ASF unit and attach the PE sensor board ass'y.
15) Install the main PCB chassis.
16) Arrange each harness.
17) Attach the timing slit strip film.
18) Install the logic board ass'y.

(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 ass'y from the logic board connectors.

2) Remove a total of 8 screws:
- 3 screws fixing the switch system unit to the bottom case
- 3 screws fixing the purge drive system unit to the bottom case
- 1 screw fixing the PictBridge chassis to the bottom case
- 1 screw fixing the ground harness ass'y to the front chassis
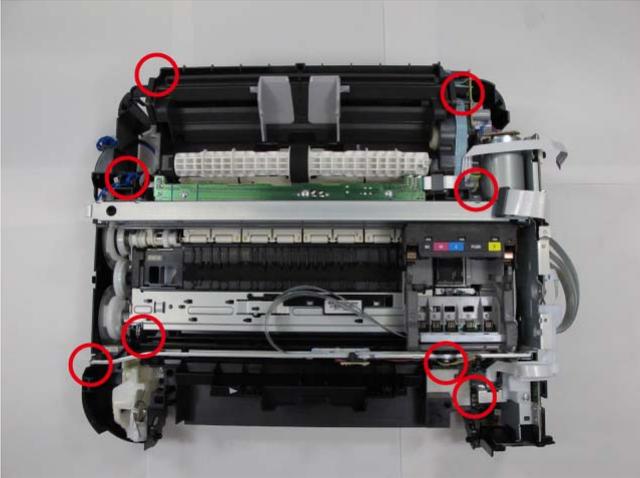
Specific screw location:
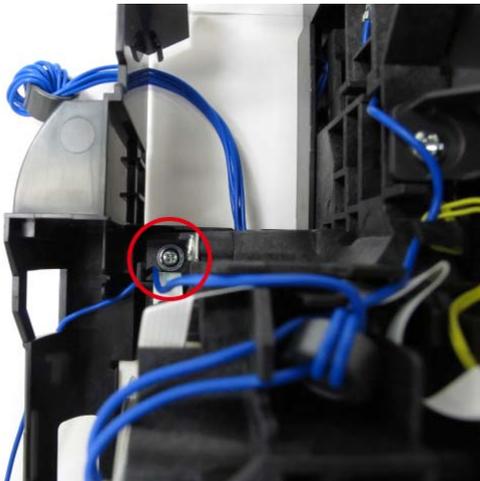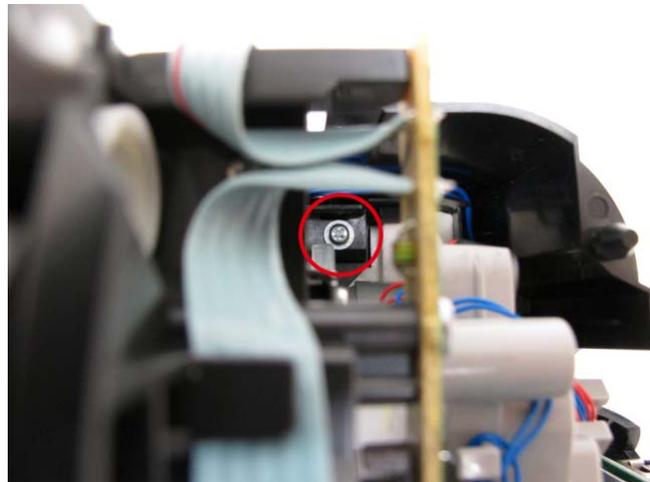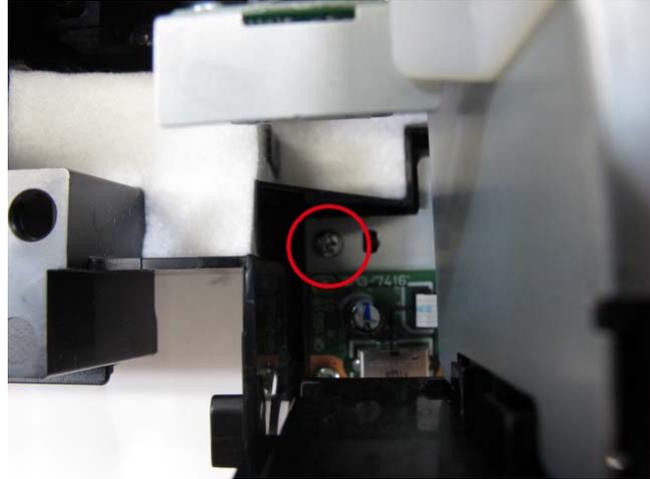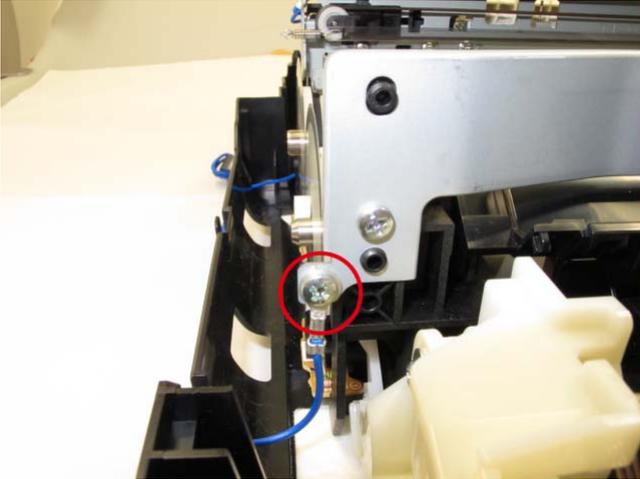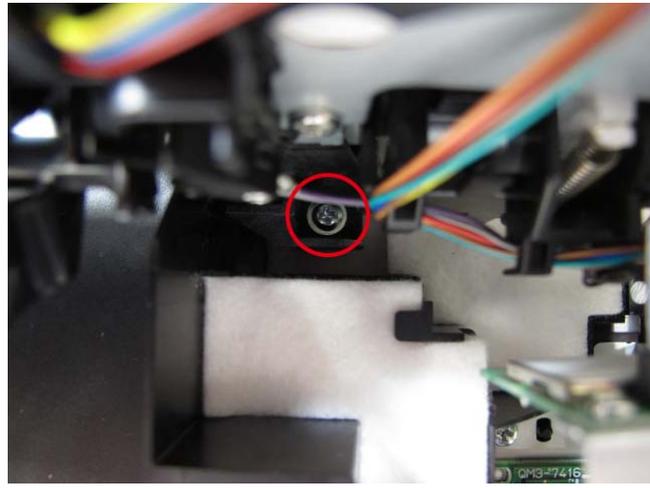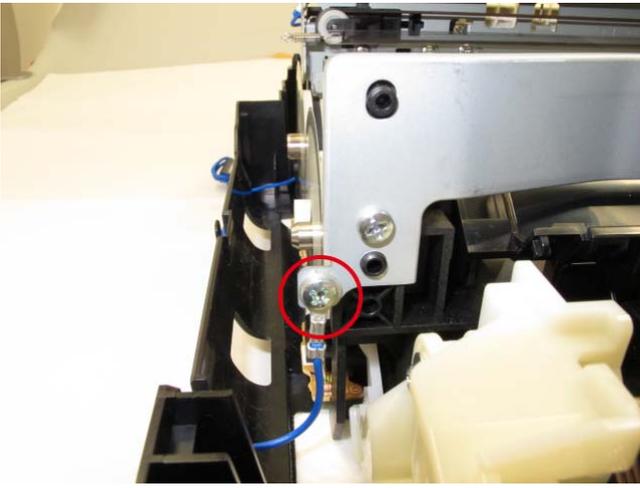
3) Release the ground harness ass'y from the bottom case, and slowly lift the print unit to separate it from the bottom case. Be cautious of the PictBridge chassis.
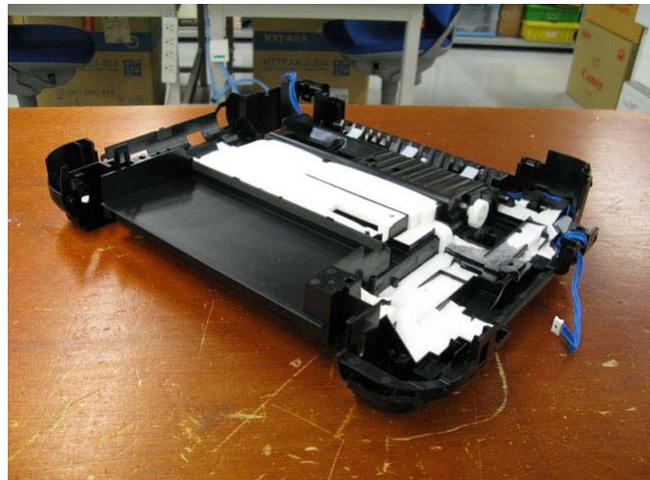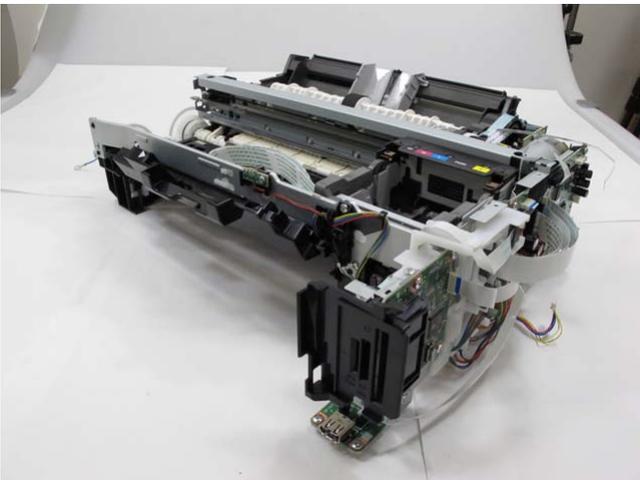
4) Replace the ink absorber.
   Confirm that the replaced new ink absorber completely fits in place and is not lifted or dislocated.

5) While being cautious of the ink tube and each harness location, return the print unit to the bottom case, and fasten the 8 screws (removed in step 2).

6) Properly arrange and connect the harnesses, and attach the 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[*1], **EEPROM Clear**	1 min.
Destination settings (EEPROM settings)	To set the machine destination. - At logic board replacement	Service Tool[*1], **Set Destination** section	1 min.
Ink absorber counter resetting (EEPROM settings)	To reset the ink absorber counter. - At ink absorber replacement	Service Tool[*1], **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[*1], **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	Fasten the screw using a screwdriver that will fit to the 2.6mm-diameter screw. (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 MG5200 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. (See 3-4. Grease Application, for details.)	1 min.
Ink system	To maintain detection functionality for	Service Tool[*1],	1 min.

function check	presence of the ink tanks and each ink tank position. - At logic board replacement - At spur unit replacement - At carriage unit replacement	**Test Print** in the **Print** section	
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	In the user mode: (1) Without any document on the platen glass, perform copying. (2) Confirm that no black streaks are on the printout.	1 min.
LF / Eject correction	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[1], (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. (LF and EJ corrections are performed in set.)
Carriage rail position adjustment	To set the carriage rail to the original position prior to removal or replacement of the carriage unit and maintain the head-to-paper distance, 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.

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

⚠ **CAUTION**
- 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.
- For the automatic LF / Eject correction, be sure to use Matte Photo Paper (MP-101).

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, or from the printer driver Maintenance tab. - 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 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)
LAN resetting	Perform via the machine operation panel, or using IJ Network Tool.	Resetting of the LAN settings to default via the operation panel (**Setup** -> **Device settings** -> **LAN settings** -> **Reset LAN settings**), or using IJ Network Tool.

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, while pressing the Stop button, press and hold the ON button. (DO NOT release the buttons.)

   ii. When the Power LED lights in green, while holding the ON button, release the Stop button. (DO NOT release the ON button.)

   iii. 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, Alarm in orange and Power in green.)

   iv. When the Power LED lights in green, the machine is ready for the service mode operation (nothing is displayed on the LCD).

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). Service test print: - Model name - ROM version - USB serial number - Process inspection information - Barcode (model name + destination + machine serial number) - Ink system function check result

2	EEPROM	EEPROM information print	The dialog box opens to select the paper source. Select **Rear tray** or **Cassette**, and click **OK**. EEPROM information print: - 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, thus 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
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	N/A		
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 (Clear Ink Counter)	Main ink absorber counter resetting	Set a sheet of A4 or Letter sized plain paper. After the ink absorber counter is reset, the counter value is printed automatically.
	Platen	Platen ink absorber	Not used.

	(Clear Ink Counter)	counter resetting	
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 - Production site E-MIP correction value and enabling of it - 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	N/A		
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	Not used.
23	Flatbed Scanner	Individual scanner adjustment	Not used.

(3) LF / Eject correction

After replacement of the feed roller, platen unit, LF / Eject encoder, 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)
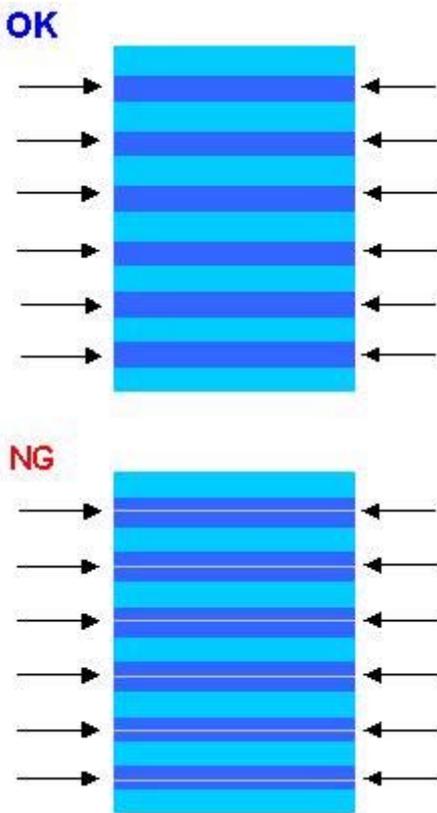
4) Select and set the correction values.
   In the **LF/EJECT Correction** section of the Service Tool, select the Pattern No. (from 0 to 4) determined in step 3) for **LF** and **EJECT** respectively, and click **Set**.

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 panel board or LCD.

1) Button check

    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 each button of the operation panel, to see if every button functions properly.

    1-3) 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.	-

    1-4) Press the OK button. The machine becomes ready for the next operation.

2) Scroll Wheel check

    2-1) Rotate the Scroll Wheel clockwise step by step. The LCD is divided into 6 segments, representing each step. The color of a segment corresponding to the step changes from red to green. If the wheel is rotated counterclockwise before clockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated counterclockwise returns to red. If the wheel keeps rotated clockwise over 1 round (6 steps), the color of segment(s) corresponding to the extra number of steps returns to red, starting with the "Start" segment in the figure below.
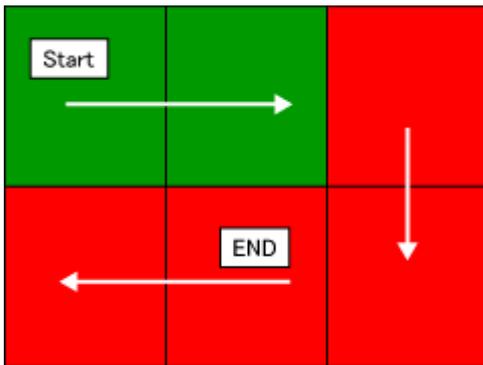
    2-2) When the Scroll Wheel is rotated clockwise 1 round (6 steps), press the OK button.

    2-3) Rotate the Scroll Wheel counterclockwise step by step. The LCD is divided into 6 segments, representing each step. The color of a segment corresponding to the step changes from green to blue. If the wheel is rotated clockwise before counterclockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated clockwise returns to green. If the wheel keeps rotated counterclockwise over 1 round (6 steps), the color of segment(s) corresponding to the extra number of steps returns to green, starting with the "Start" segment in the figure below.
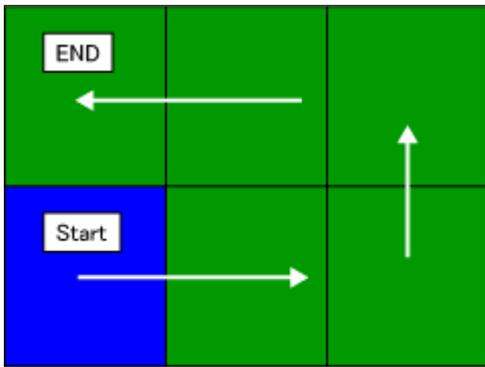
2-4) When the Scroll Wheel is rotated counterclockwise 1 round (6 steps, and all the segments are in blue), press the OK button. The color pattern is displayed on the LCD. If there is any segment that is not in blue when the OK button is pressed, the display remains unchanged.
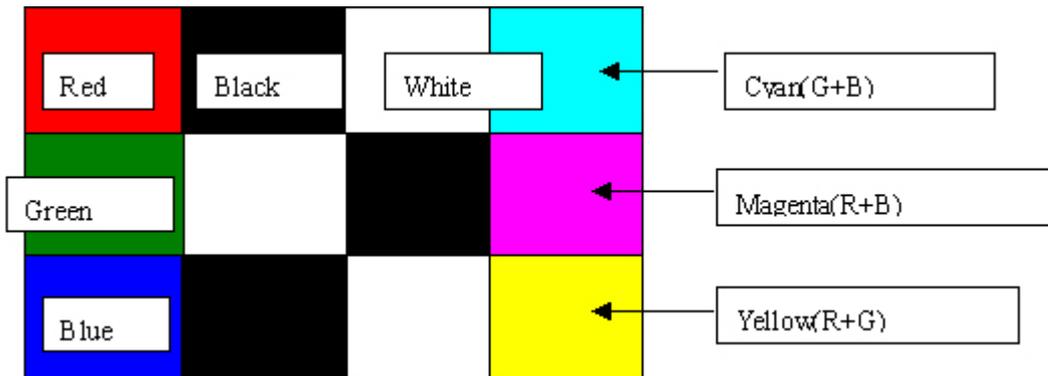
2-5) Press the ON button to turn off the machine.

(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.

<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	Main chassis	The surface where the carriage unit slides	(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.

After the head-to-paper distance is adjusted, spread grease over the entire surface, using a brush.

No grease is necessary to be applied to 1mm from the bottom.
The grease can be attached to this area, but it should not hang.
Wipe off the extra grease using a brush, and spread it over the upper area.

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

⑤

50mm

2mm

7.5mm

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

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.
6) 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 the service test print, 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.
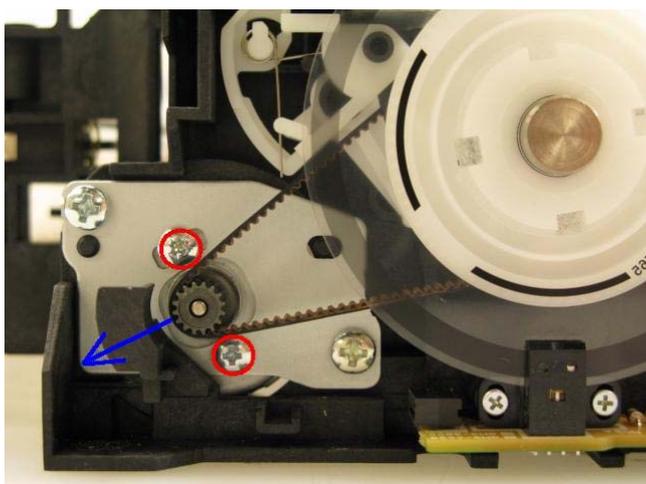
⚠ CAUTION

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 MG5100 series, the carriage rail needs to be removed from the main chassis.
Before removing the screws from the carriage rail, 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

(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
    2010/06/30 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 >

```
MG5200      SN=000000000 JPN V0.350 ST=2010/07/07-10:14 LPT=1970/01/(
D=010.6  Ink absorber counter value    Installation date
DF=00894  Ink absorber life
ER(ER0=1001 ER1=1688 ER2=5012 ER3=0000 ER4=0000
    ER5=0000 ER6=0000 ER7=0000 ER8=0000 ER9=0000)
PC(M=000 R=000 T=001 D=000 C=001 I=001)
LG=01 Japanese
```

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 replacement
                              - At absorber kit replacement
                              - At platen unit or spur unit replacement
                              - At operation panel unit or LCD unit replacement
                              - At wireless LAN board ass'y 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, Card Direct printing

| PictBridge, IrDA | Wired / Wireless LAN | Bluetooh | 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 >

MG5200 M=V0.350 USB=(100089)
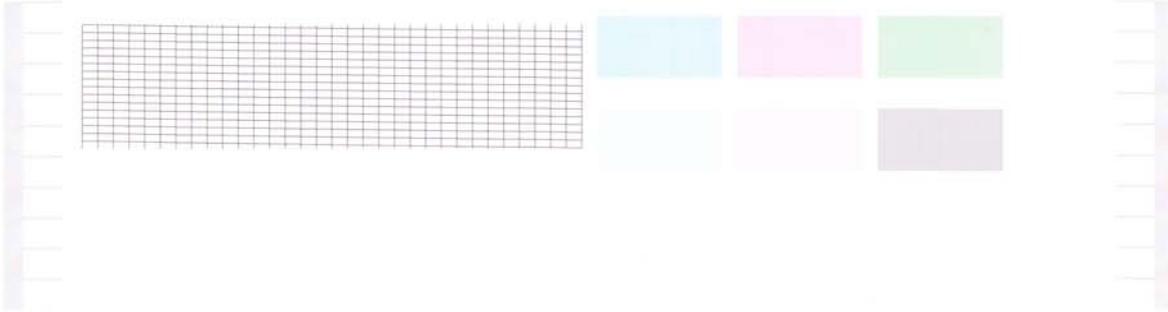
CDR SENSOR=OK
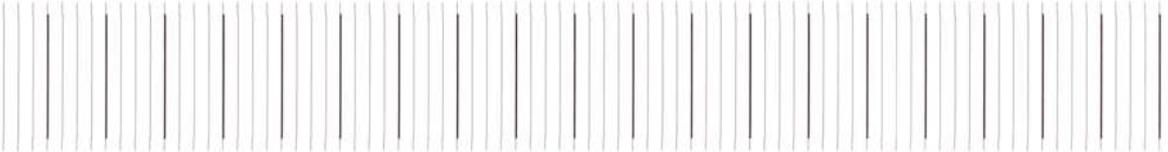
FA=01 1F 00 80 CDRP=(-00510,+00257) CDRS=(0089) Temp.=056 E-MIPCF=0
AB(K=OK (K:393,M:000) M=OK (K:000,M:391,C:000) C=OK (M:000,C:391,Y:000)
Y=OK (C:000,Y:38F) PIGBk=OK (391)) D=010.6
LEDTIME=0000 0000 0000 SELF(H=000 000 000 L=000 000 000) C=V37.16
E-MIP(LF=+10 EJ=+10 LE=+01) WMAC=(00-1E-8F-9E-6C-55)
FER(0000,0000,0000,0000) CER(0000,0000)

000000000P

4-3. Ink Absorber Counter Value Print

<Print sample>

```
D=000.0
```

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.) - When automatic print head alignment is not effective - 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	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.
3	ASF cam sensor	Detects the position of the ASF cam (for paper feeding from the rear tray).	- ASF cam sensor error - Paper feeding problem
4	PE sensor	Detects the leading and trailing edges of paper.	- No paper - Paper jam
5	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
6	Carriage encoder sensor	Detects the position of the carriage.	- Carriage position error - Printing shifts from the correct position. - Uneven printing - Strange noise
7	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
8	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
9	LF encoder sensor	Detects rotation of the LF encoder, and controls paper feeding.	- LF position error - Uneven printing
10	Eject encoder sensor	Detects rotation of the eject encoder, and controls paper feeding.	- LF position error - Uneven printing
11	Valve cam sensor	Detects the position of the purge valve cam, and controls purging operation.	- Valve cam sensor error
12	Pump roller sensor	Detects the position of the pump roller, and controls purging operation.	- Pump roller sensor error
13	Purge cam sensor	Detects the position of the purge main cam, and controls purging operation.	- Purge cam sensor error

1. Scanner unit open sensor

4. PE sensor
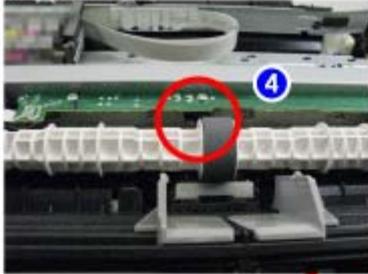
5. APP encoder sensor
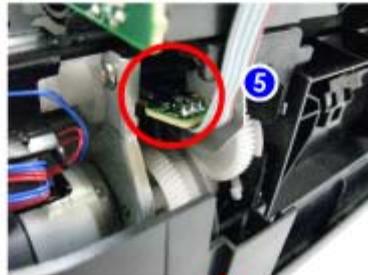
3. ASF cam sensor
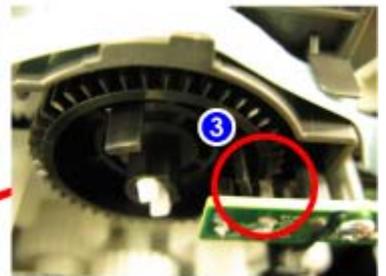
9. LF encoder sensor
10. Eject encoder sensor
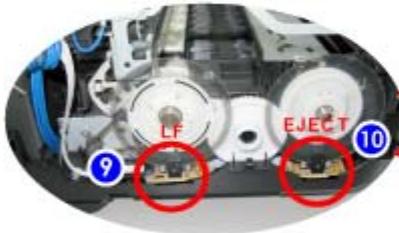
6. Carriage encoder sensor
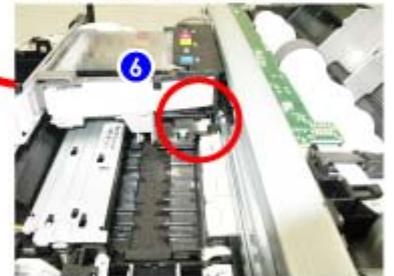
7. Temperature & Ink amount sensor
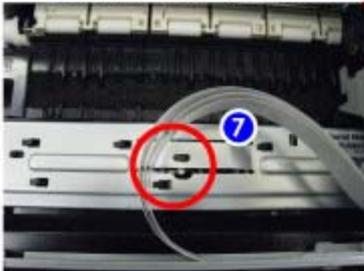
8. Ink sensor
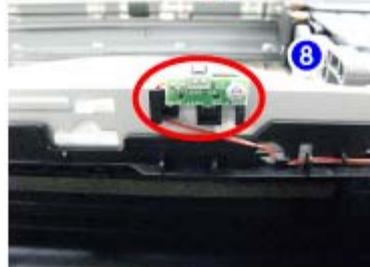
2. Inner cover sensor
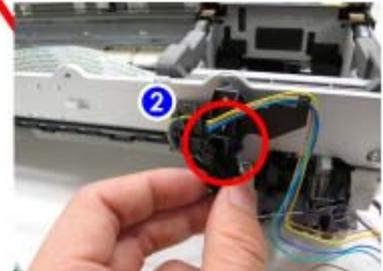
12. Pump roller sensor
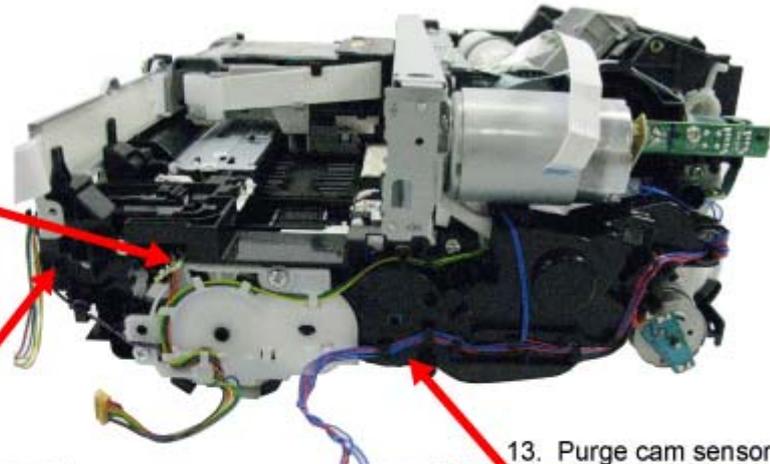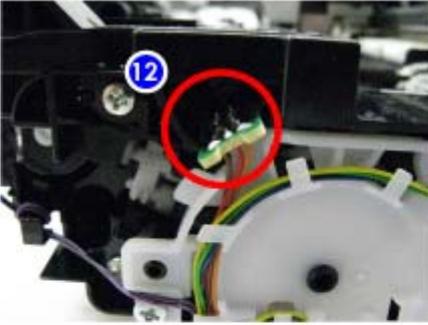
11. Valve cam sensor
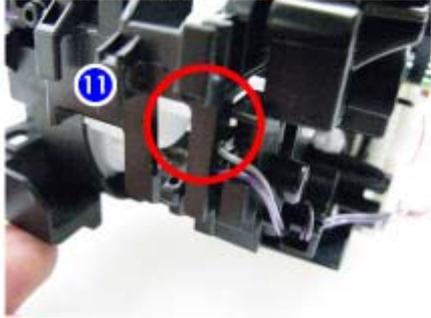
13. Purge cam sensor
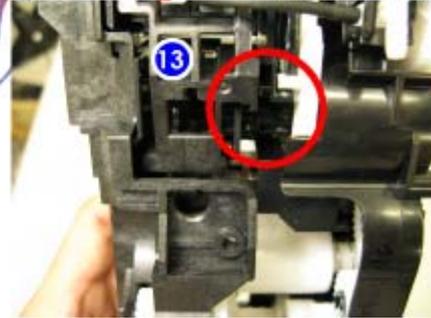
5-4. Serial Number Location

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

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.)

   See Caution 2 below.

⚠ **CAUTION**

(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.

📝 Memo

- 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> ▲