MX880 series

Service Manual

(MX882 / MX883 / MX884 / MX885 / MX886 / MX888)

Revision 0

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Scope

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

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

Revision

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

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INTRODUCTION

[How to use this Service Manual]

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

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

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

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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: - PCI DC 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 - PCI 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 => No incomplete connection, cable breakage, or cable caught in units (2) Replace the following item(s): - LCD ass'y - LCD cable - Panel board ass'y - 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

		- Document feed unit - 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 (2) Confirm the internal conditions under the platen glass (no damper displaced or 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 3-6. 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): - Scanner unit - Logic board ass'y
	Streaks or smears on the scanned image.	(1) Clean the platen glass and the document pressure sheet. (2) Confirm the position of the document pressure sheet. (3) Replace the following item(s): - Scanner unit - Document pressure sheet - Logic board ass'y
Network connection problem	No printing.	(1) Examine if printing is performed properly via USB connection. (2) Confirm the network connection. (3) Replace the following item(s): - Logic board ass'y - Wireless LAN board ass'y
FAX problem	No FAX sending or reception.	(1) Confirm the FAX settings. (2) Replace the following item(s): - NCU board ass'y - Logic 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 PC 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 for plain paper only.	- Pick-up arm unit - Pressure roller ass'y - Cassette unit
Paper jam.	[1300]	---	The paper is jammed. Clear the paper and press [OK].	Remove the jammed paper and press the OK button. For paper jam in the rear guide, confirm that the rear guide is not dislocated.	- Pick-up arm unit - ASF unit - Pressure roller 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	- Spur unit

				run out during printing.	
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]				
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.	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	[2001]	---	Incompatible device detected. Remove the device.	Remove the cable between the camera and the machine.	

support Camera Direct Printing.					
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 (not printed).	- Duplex paper feed roller unit - PE sensor board ass'y
Failed in automatic print head alignment.	[2500]	---	Auto head align has failed. Press [OK] and repeat operation. <See manual>	Press the OK button to clear the error, then perform the automatic print head alignment again. (Use Matte Photo Paper MP-101.) 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	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.	An incompatible ink tank is installed (the ink tank LED is turned off). Install	- Ink tank

			(Applicable ink tank icon)	the supported ink tanks.	
Ink tank not recognized.	[1750]	U141	Appropriate ink tank is not installed. Install the appropriate ink tank.	A non-supported ink tank is installed (the ink tank LED is turned off). Install the supported ink tanks.	- Ink tank
Ink tank not recognized.	[1682]	U150	The following ink tank cannot be recognized. (Applicable ink tank icon)	A hardware error occurred in an ink tank (the ink tank LED is turned off). Replace the ink tank(s).	- Ink tank
No ink (no raw ink).	[1688]	U163	The ink has run out. Replace the ink tank. (Applicable ink tank icon)	Replace the empty ink tank (s), and close the scanning unit (cover). Printing with an empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the machine that the function to detect the remaining ink amount was disabled.	- Ink tank - Spur unit
Non-supported hub.	[2002]	---	An unsupported USB hub is connected. Remove the hub.	Remove the applicable USB hub from the PictBridge (USB) connector.	
Document feeder cover not closed.	[2800]	---	The feeder cover is open. Close cover and press [OK].	Close the document feeder cover, and press the OK button.	- DF unit - DF switch unit
Paper jam in the ADF.	[2801]	---	Document in ADF. Check document in ADF, then press [OK] and redo operation.	Remove the paper from the ADF, and press the OK button.	- DF unit
No paper in the ADF.	[2802]	---	No document in ADF. Press [OK], then load document and redo operation.	Press the OK button to clear the error.	- DF unit
Paper in the	[2803]	---	Document size is too	Remove the paper from the	- DF unit

ADF is too long.			long. Check document in ADF, then press [OK] and redo operation..	ADF, and press the OK button.	
Double-sided printing not available with the paper in the ADF.	[2804]	---	Document size not suitable for duplex scanning. Press [OK] to cancel operation and eject document.	Remove the paper from the ADF, and press the OK button.	- DF unit
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 perform the solution if it applies.
2) When no solution in "Check points & Solution" is effective, then replace the part listed under "Parts to that are likely to be faulty" 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 that are likely to be faulty (listed in the order of likeliness to be faulty)
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.)	- Timing slit strip film - Carriage unit - Logic board ass'y - Carriage motor

			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.	
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 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.) (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.	- Print head and logic board ass'y (replace them at the same time) - AC adapter - Carriage unit
11 times	Carriage lift mechanism error	[5110]	(1) Foreign material that obstructs the carriage movement: Remove foreign material.	- Switch system unit - Carriage unit
12 times	APP position error	[6A80]	(1) Cap absorber and wiper blade of the purge drive system unit: If the cap absorber contacts the	- Purge drive system unit - Logic board ass'y

	APP position error during initial purging	[6A81]	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.	
14 times	APP sensor error	[6A90]	(5) Cable connection: - PE sensor cable - Motor multi harness ass'y Re-connect the cables. If any damage or breakage of the cable is found, replace the cable. (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.	
	Paper feed cam sensor error	[6B10]	(1) Ink absorber counter value: If the value exceeds 60%, replace the ink absorber. Follow the "*Guideline for Preventive Replacement of the Ink Absorber*." (2) Jammed paper in the under guide: Remove the jammed paper.	- Pick-up arm unit - Duplex paper feed roller unit
15 times	USB host Vbus overcurrent	[9000]	(1) Part replacement: Replace the logic board ass'y.	
16 times	Pump roller sensor error	[5C20]	(1) Cable connection 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, J1103, 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. (4) Document pressure sheet conditions: Re-attach the document pressure sheet, or replace it.	- Scanner unit - Document pressure sheet - Logic board ass'y
	FB motor error	[5012]	(1) Cable connection: - J900, J1103, 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

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

1-4. FAX Error Troubleshooting

For errors other than those listed below, please refer to the "*G3 / G4 Facsimile Error Code List (Rev. 2.*" (HY8-23A0-020 in English, HY8-22A6-020 in Japanese).

(1) User error codes

Error code	TX / RX	Meaning	Solution (Parts that are likely to be faulty)
#001	TX	Document jam	- DF unit
#003	TX / RX	Document is too long, or page time-over	- DF unit
#005	TX / RX	Initial identification (T0 / T1) time-over	- Check the telephone line type settings (rotary pulse / touch tone).
#009	RX	Recording paper jam, or no recording paper	- ASF unit - Pick-up arm unit - Cassette unit - Pressure roller unit
#012	TX	No recording paper at the receiving machine	
#017	TX	Redial time-over, but no DT detected	
#018	TX	Auto dialing transmission error, or redial time-over	- Check the telephone line type settings (rotary pulse / touch tone).
#022	TX	Call failed (no dial registration)	- Register a dial number.
#037	RX	Memory overflow at reception of an image	- Delete unnecessary image data from the memory.
#085	TX	No color fax function supported in the receiving machine	- Send a fax in the B&W mode.
#099	TX / RX	Transmission terminated mid-way by pressing the Stop button	
#995	TX / RX	During TX (sending): Memory transmission reservation cancelled During RX (receiving): Image data received in the memory cleared	

(2) Service error codes

Error code	TX / RX	Meaning	Solution (Parts that are likely to be faulty)
##100	TX	Re-transmission of the procedure signal has been attempted the specified number of times, but failed.	- Try a higher transmission level.
##101	TX / RX	Sender's modem speed does not match the receiving machine.	
##102	TX	Fallback is not available.	- Try a higher transmission level.
##103	RX	EOL has not been detected for 5 seconds (or 15	- Increase the transmission level of the

		seconds in CBT).	sending machine.
##104	TX	RTN or PIN has been received.	- Try a higher transmission level.
##106	RX	The procedure signal has been expected for 6 seconds, but not received.	- Increase the transmission level of the sending machine.
##107	RX	Fallback is not available at the sending machine.	- Increase the transmission level of the sending machine.
##109	TX	After DCS transmission, a signal other than DIS, DTC, FTT, CFR, or CRP has been received, and re-transmission of the procedure signal has been attempted the specified number of times but failed.	
##111	TX / RX	Memory error	- Eliminate all the data, and register them again.
##114	RX	RTN has been received.	- Increase the transmission level of the sending machine.
##200	RX	A carrier has not been detected for 5 seconds during image reception.	- Increase the transmission level of the sending machine.
##201	TX / RX	DCN has been received in a method other than the binary procedure.	- Set the other machine ready for reception.
##204	TX	DTC has been received even when there is no sending data.	
##220	TX / RX	System error (main program hang-up)	- Turn the machine off, and turn it on again - Modular board - Logic board
##224	TX / RX	An error has occurred in the procedure signal in G3 transmission.	
##226	TX / RX	The stack pointer has shifted from the RAM area.	- Turn the machine off, and turn it on again.
##229	RX	The recording area has been locked for 1 minute.	- After the area is unlocked, print the recorded image.
##232	TX	The encoder control unit has malfunctioned.	- Modular board - Logic board
##237	RX	The decoder control unit has malfunctioned.	- Modular board - Logic board
##238	RX	The print control unit has malfunctioned.	- Modular board - Logic board
##261	TX / RX	A system error has occurred between the modem and the system control board.	- Modular board - Logic board
##280	TX	Re-transmission of the procedure signal has been attempted the specified number of times, but	- Try a higher transmission level.

		failed.	
##281	TX	Re-transmission of the procedure signal has been attempted the specified number of times, but failed.	- Try a higher transmission level.
##282	TX	Re-transmission of the procedure signal has been attempted the specified number of times, but failed.	- Try a higher transmission level.
##283	TX	Re-transmission of the procedure signal has been attempted the specified number of times, but failed.	- Try a higher transmission level.
##284	TX	After TCF transmission, DCN has been received.	- Set the receiving machine ready for reception.
##285	TX	After EOP transmission, DCN has been received.	- Re-send the fax.
##286	TX	After EOM transmission, DCN has been received.	- Re-send the fax.
##287	TX	After MPS transmission, DCN has been received.	- Re-send the fax.
##288	TX	After EOP transmission, a signal other than PIN, PIP, MCF, RTP, RTN has been received.	
##289	TX	After EOM transmission, a signal other than PIN, PIP, MCF, RTP, RTN has been received.	
##290	TX	After MPS transmission, a signal other than PIN, PIP, MCF, RTP, RTN has been received.	
##670	TX	In V.8 late start, the DIS V.8 ability from the receiving machine was detected, and CI was sent in response; however, the procedure failed, causing T1 time-over.	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##671	RX	In V.8 call reception, the procedure fails to proceed to phase 2 after CM detection, causing T1 time-over.	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##672	TX	In V.34 transmission, the procedure fails to proceed from phase 2 to phase 3 or later, causing T1 time-over	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##673	RX	In V.34 reception, the procedure fails to proceed from phase 2 to phase 3 or later, causing T1 time-over	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##674	TX	In V.34 transmission, the procedure fails to proceed from phase 3 or 4 to the control channel or later, causing T1 time-over	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##675	RX	In V.34 reception, the procedure fails to proceed from phase 3 or 4 to the control channel or further, causing T1 time-over	- In bit 0 of the service data #1 SSSW SW28, prohibit the V.8 / V.34 procedure of the sending machine.
##750	TX	After transmitting PPS-NULL in ECM	- Try a higher transmission level.

		transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	
##752	TX	After transmitting PPS-NULL in ECM transmission, DCN has been received.	- Try a higher transmission level.
##753	TX	After transmitting PPS-NULL in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##754	TX	After transmitting PPS-NULL in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level.
##755	TX	After transmitting PPS-MPS in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level.
##757	TX	After transmitting PPS-MPS in ECM transmission, DCN has been received.	- Try a higher transmission level.
##758	TX	After transmitting PPS-MPS in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##759	TX	After transmitting PPS-MPS in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level.
##760	TX	After transmitting PPS-EOM in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level.
##762	TX	After transmitting PPS-EOM in ECM transmission, DCN has been received.	- Try a higher transmission level.
##763	TX	After transmitting PPS-EOM in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##764	TX	After transmitting PPS-EOM in ECM	- Try a higher transmission level.

		transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Increase the transmission level of the receiving machine.
##765	TX	After transmitting PPS-EOP in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level. - Increase the transmission level of the receiving machine.
##767	TX	After transmitting PPS-EOP in ECM transmission, DCN has been received.	- Try a higher transmission level.
##768	TX	After transmitting PPS-EOP in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##769	TX	After transmitting PPS-EOP in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level. - Increase the transmission level of the receiving machine.
##770	TX	After transmitting EOR-NULL in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level. - Increase the transmission level of the receiving machine.
##772	TX	After transmitting EOR-NULL in ECM transmission, DCN has been received.	- Try a higher transmission level.
##773	TX	After transmitting EOR-NULL in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##774	TX	After transmitting EOR-NULL in ECM transmission, ERR has been received.	- Try a higher transmission level.
##775	TX	After transmitting EOR-MPS in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level.
##777	TX	After transmitting EOR-MPS in ECM transmission, DCN has been received.	- Try a higher transmission level.
##778	TX	After transmitting EOR-MPS in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60	- Increase the period of time of the T5 time-over.

		sec.) has occurred.	
##779	TX	After transmitting EOR-MPS in ECM transmission, ERR has been received.	- Try a higher transmission level.
##780	TX	After transmitting EOR-EOM in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Increase the transmission level of the receiving machine.
##782	TX	After transmitting EOR-EOM in ECM transmission, DCN has been received.	- Increase the transmission level of the receiving machine.
##783	TX	After transmitting EOR-EOM in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##784	TX	After transmitting EOR-EOM in ECM transmission, ERR has been received.	- Try a higher transmission level.
##785	TX	After transmitting EOR-EOP in ECM transmission, no significant signal has been received, and re-transmission of the procedure signal has been attempted the number of specified times but failed.	- Try a higher transmission level. - Increase the transmission level of the receiving machine.
##787	TX	After transmitting EOR-EOP in ECM transmission, DCN has been received.	- Try a higher transmission level.
##788	TX	After transmitting EOR-EOP in ECM transmission, re-transmission of the procedure signal has been attempted the number of specified times but failed, or T5 time-over (60 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##789	TX	After transmitting EOR-EOP in ECM transmission, ERR has been received.	- Try a higher transmission level.
##790	RX	After receiving EOR-EOP in ECM reception, ERR has been transmitted.	- Increase the transmission level of the sending machine.
##791	TX / RX	During the ECM mode procedure, a signal other than a significant one has been received.	
##792	RX	In ECM reception, PPS-NULL between partial pages has not been detected.	- Increase the transmission level of the sending machine.
##793	RX	During high-speed signal reception in ECM, no effective frame has been detected, and a time-over has occurred.	- Try a higher transmission level. - Increase the transmission level of the sending machine.

2. REPAIR

2-1. Major Replacement Parts and Adjustment

Service part	Recommended removal procedure*1 / Notes on replacement	Adjustment / settings / operation check
Logic board ass'y	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Logic board ass'y - Before replacement, check the ink absorber counter value (by service test print or EEPROM information print). - Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y.	**In the service mode:** 1. Set the ink absorber counter value. 2. Set the destination. 3. Print the integrated inspection pattern. 4. Perform LF / Eject correction (only when streaks or uneven printing occurs). 5. 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) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) Ink absorber - See 2-2. Disassembly & Reassembly Procedures, (3) Printer unit removal & Ink absorber replacement, for details.	**In the service mode:** 1. Reset the ink absorber counter. After the ink absorber counter is reset, the counter value is printed automatically [See 3-3. Adjustment and Settings in Service Mode, for details.].
Carriage unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Timing slit strap - Before removal of the carriage rail, put a mark of the carriage rail position. (8) Carriage rail (9) Carriage unit	1. Apply grease to the sliding portions of the carriage rail. [See 3-5. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern. [See 3-3. Adjustment and Settings in Service Mode, for details.] **In the user mode:** 3. Perform automatic print head alignment.

	- Keep the timing slit strip film (carriage encoder film) free from stain or damage. When returning the film, make sure of its orientation (left and right, front and back). - See 2-2. Disassembly & Reassembly Procedures, (7) Carriage unit removal, for details.	
Switch system unit Paper feed motor	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Disassembly & Reassembly Procedures. - See 2-2. Disassembly & Reassembly Procedures, (9) Purge drive system unit (right plate) and switch system unit (left plate) removal, for details. - See 2-2. Disassembly & Reassembly Procedures, (10) Engine unit reassembly, for details. - 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 3-6. Special Notes on Servicing, (2) Paper feed motor adjustment, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
Platen unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Disassembly & Reassembly Procedures, from this step.	**In the service mode:** 1. Perform LF / Eject correction (only when uneven printing or streaks appear on printouts after replacement). [See 3-3. Adjustment and Settings in Service Mode, for details.] 2. Print the integrated inspection pattern.
Spur unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Disassembly & Reassembly Procedures.	**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.]

	- DO NOT contact the spur edges.	
Purge drive system unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit (5) Main case (6) Rear cover (7) Print unit (8) See 2-2. Disassembly & Reassembly Procedures. - See 2-2. Disassembly & Reassembly Procedures, (9) Purge drive system unit (right plate) and switch system unit (left plate) removal, for details. - See 2-2. Disassembly & Reassembly Procedures, (10) Engine unit reassembly, for details.	**In the service mode:** 1. Print the integrated inspection pattern.
Carriage rail and main chassis Idler pulley parallel pin APP code wheel gear shaft	See 2-2. Disassembly & Reassembly Procedures, and Parts Catalog.	1. Apply grease to the sliding portions. [See 3-5. Grease Application, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
Document pressure sheet Document pressure plate Scanner unit	(1) Cassette unit (2) Left and right side covers (3) Document pressure plate unit (4) Scanner unit	1. Confirm the document pressure plate sheet position. [See 3-6. Special Notes on Servicing, (4) Document pressure sheet replacement, for details.] **In the service mode:** 2. Print the integrated inspection pattern.
LCD ass'y	(1) Panel cover (2) Operation panel (3) LCD ass'y - Be cautious not to scratch or damage the LCD cable.	**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	See 2-2. Disassembly & Reassembly	**In the user mode:**

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

*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. [See 2-2. Disassembly & Reassembly Procedures, (7) Carriage unit removal, for details.]

<2-1. Major Replacement Parts and Adjustment>

2-2. Disassembly & Reassembly Procedures (Click on the image to enlarge it.)

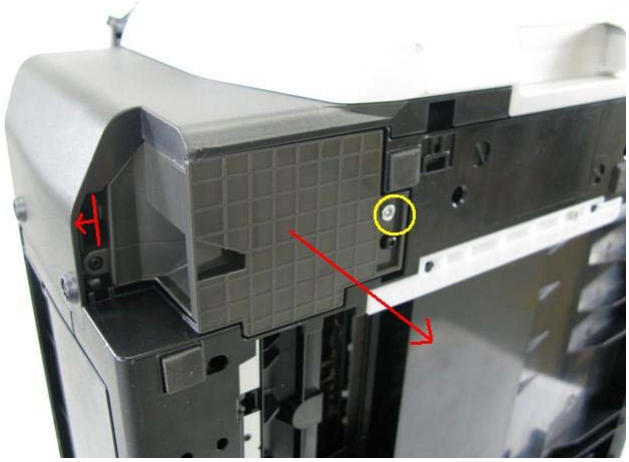
Be sure to protect the machine from static electricity in repair servicing, especially for the LCD, operation panel board, scanner unit, logic board, card board, WLAN board, NCU board, and PE sensor board.

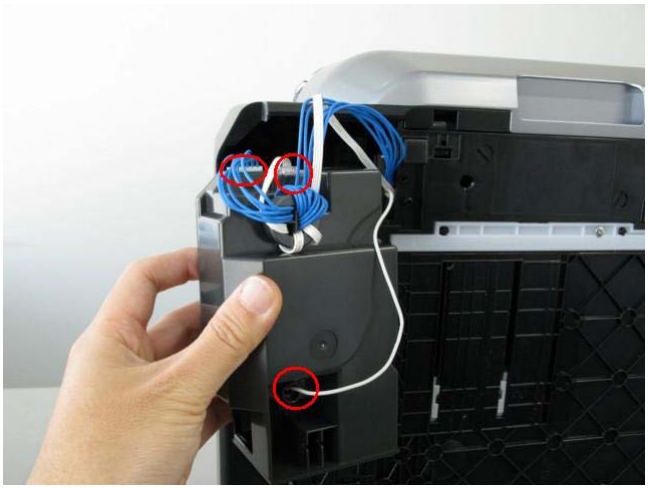
Some of the photos below are for the MX860 and MX870, since their structure is similar to that of the MX880 series.

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

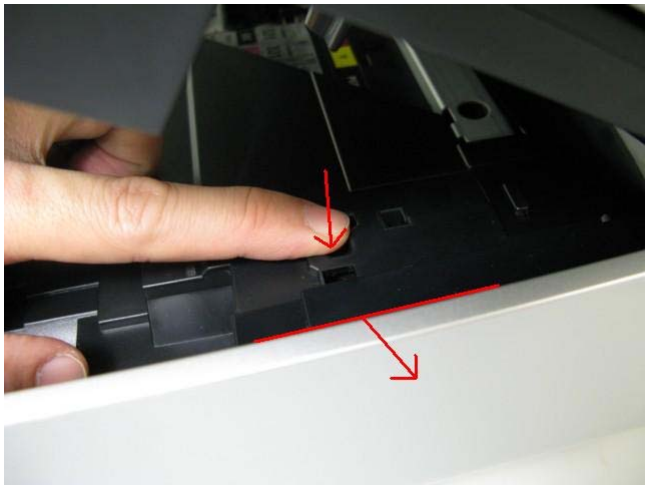
1) Remove the cassette and the rear guide unit. (no screws)

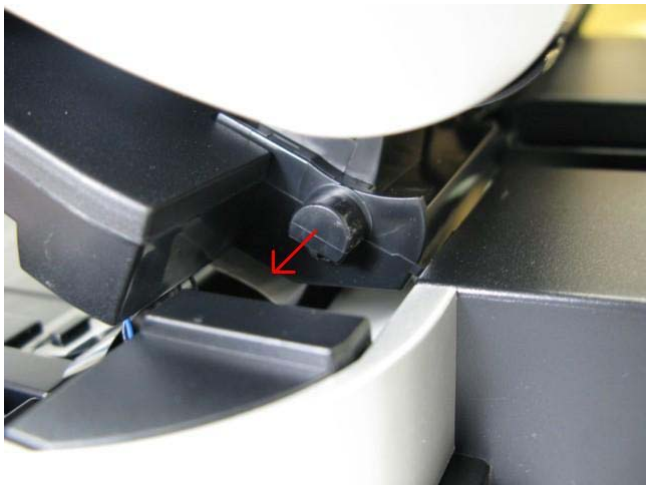
2) Remove the AC adapter. (1 screw)
<Pull out the AC adapter from the bottom of the bottom case.>
<The core fits to the AC adapter rib.>
See "3-6. Special Notes on Servicing, (7) Power supply unit and modular board replacement."

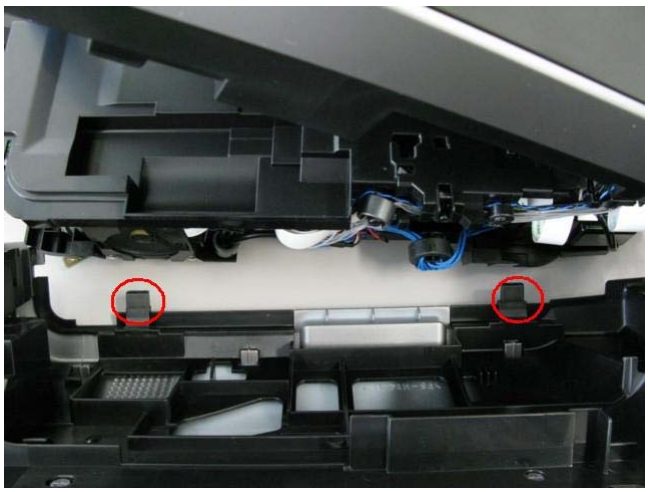




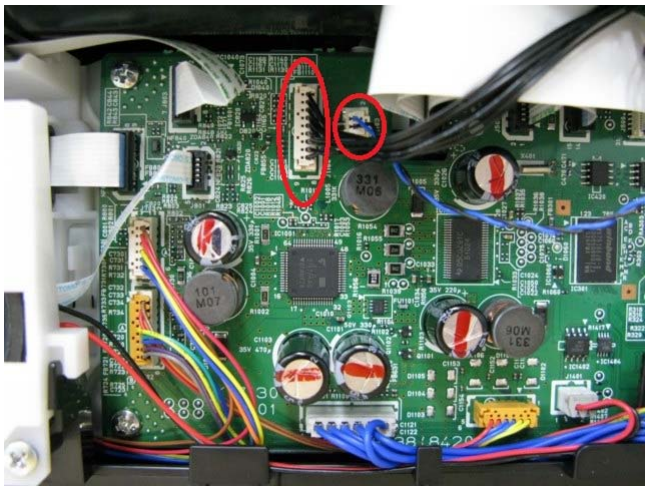
3) Remove the side cover R. (2 screws)
<The scanner unit hinges are fitted in the right and left side covers.>

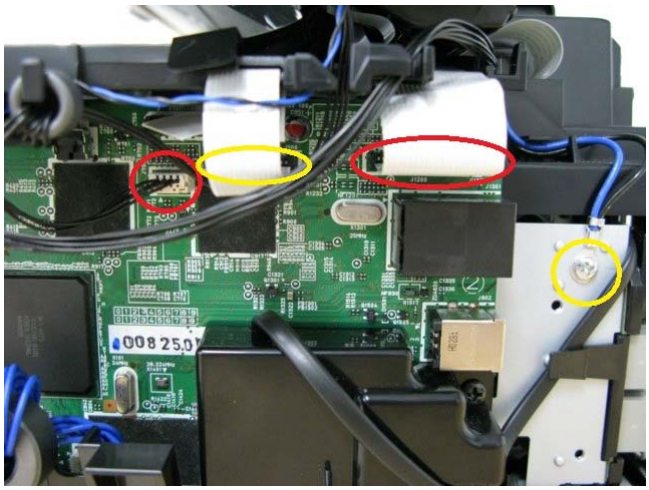






4) Remove the scanner cable, LCD cable, document feeder harness, panel ground harness, and core. (1 screw)
<The core fits to the main case rib.>

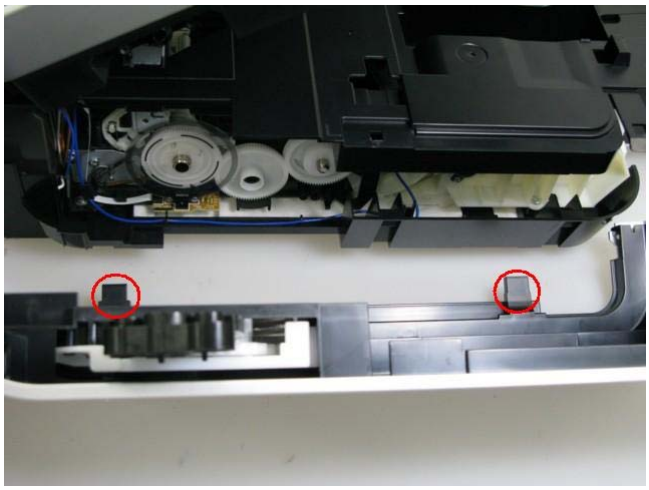
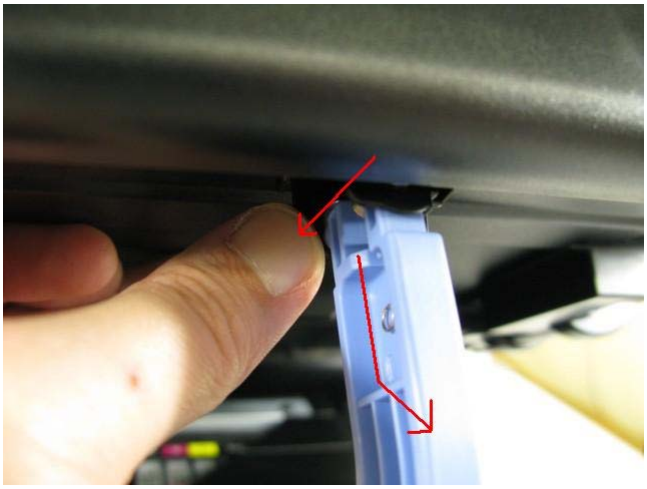




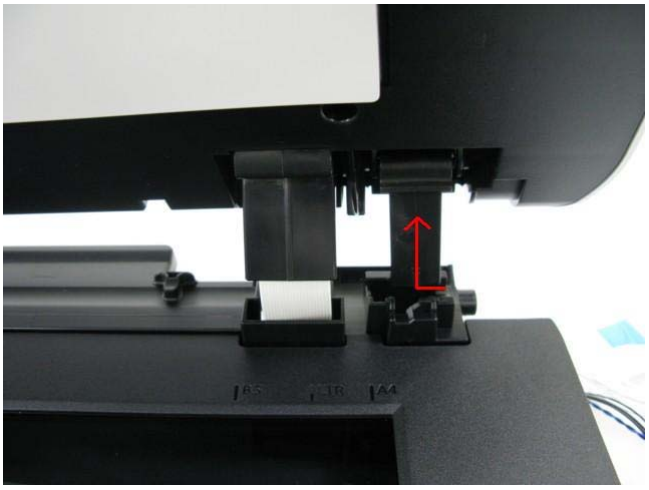
5) Remove the side cover L, disengage the scanner support, then separate the scanner from the printer. (4 screws)





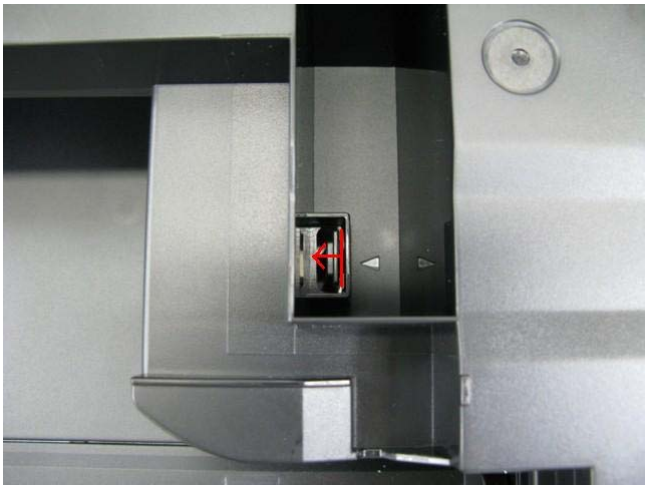
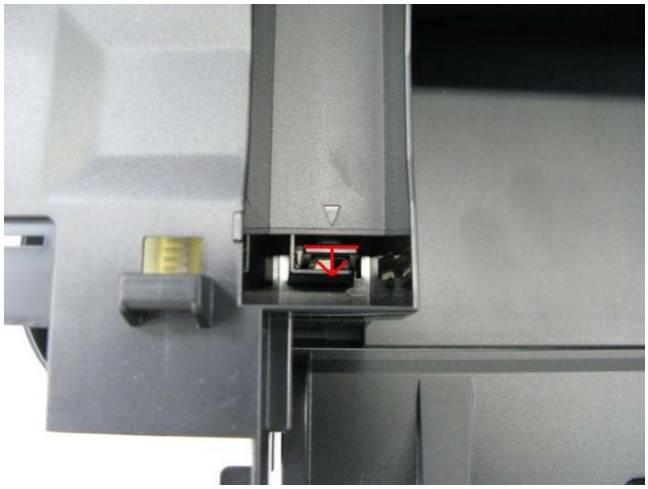





6) Separate the scanner from the document feeder. (no screws)

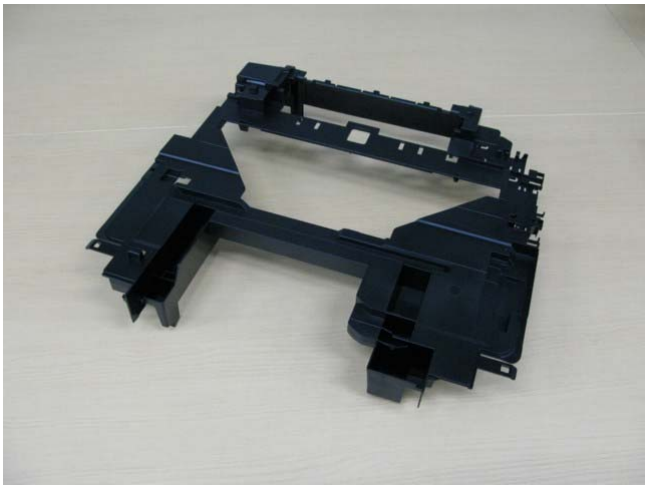



7) Remove the document feed cover where the emblem is attached. (no screws)

8) Remove the main case. (no screws)

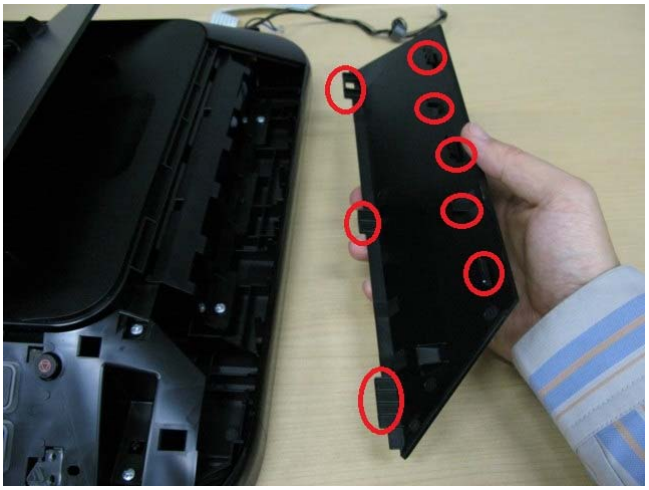




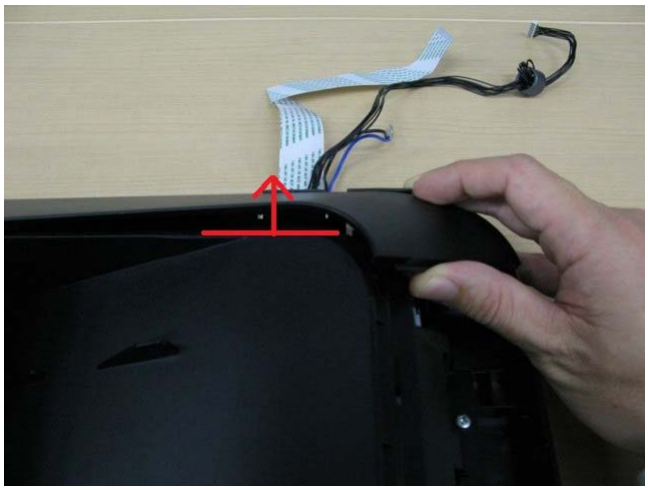


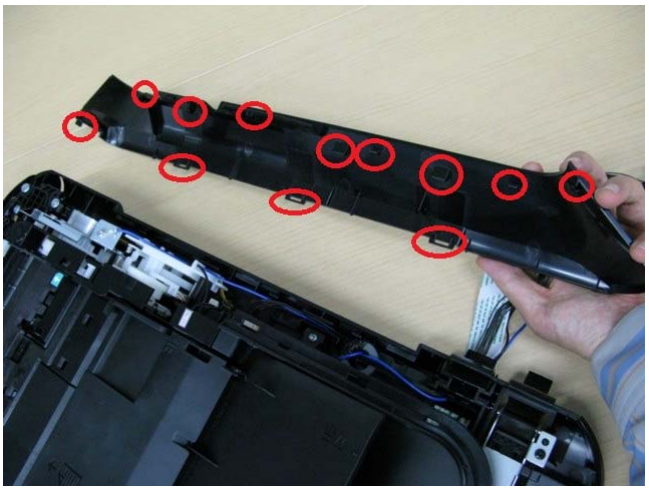



(2) Operation panel and document feed unit removal

1) Remove the panel cover, right cover, and rear cover. (no screws)
<Be cautious not to damage the tabs and hooks.>

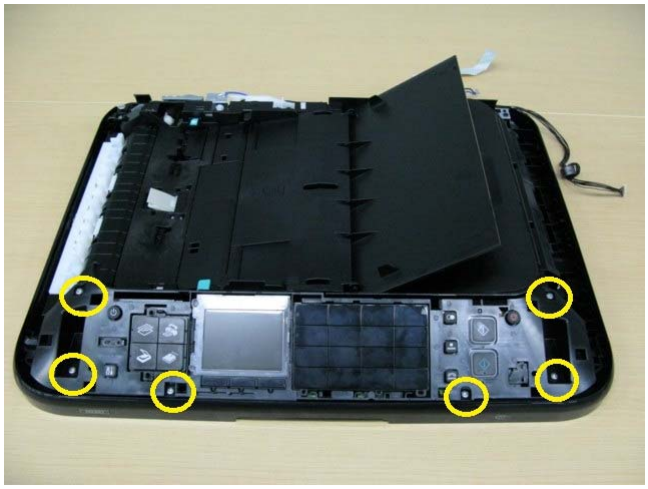


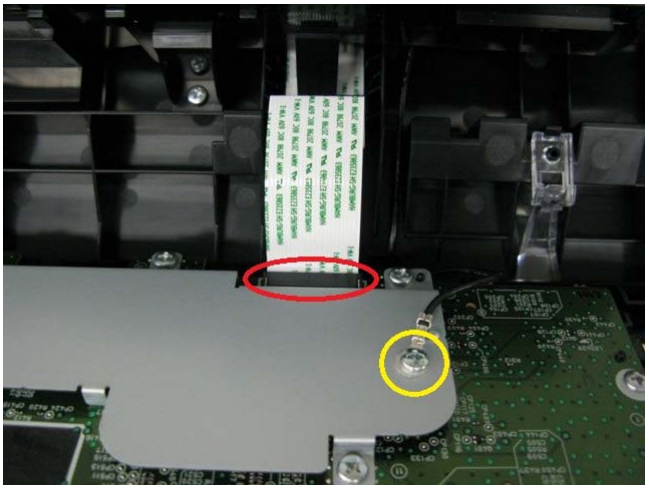


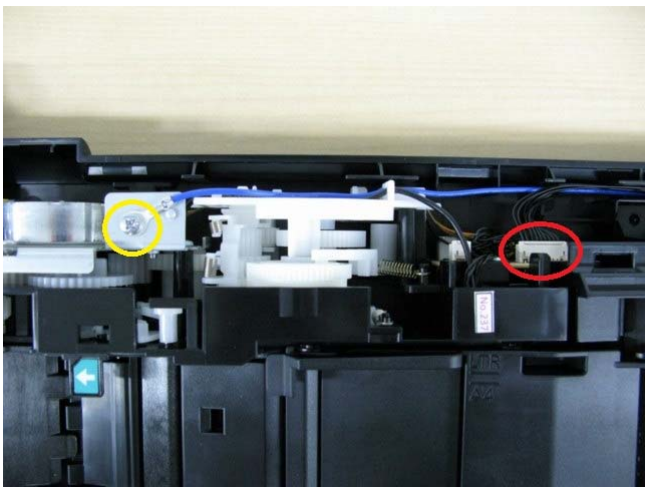


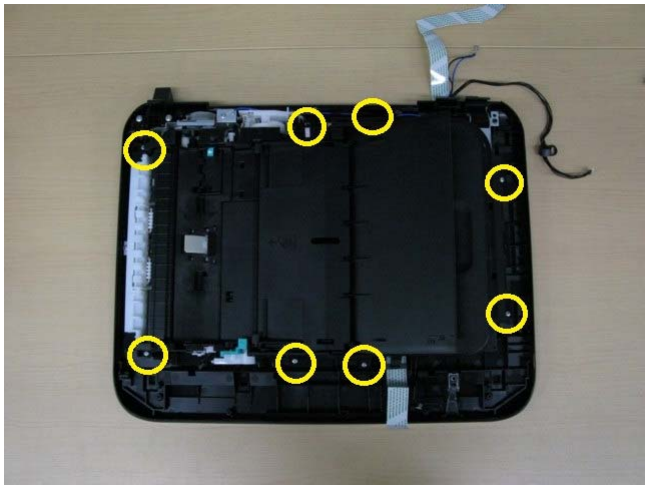
2) Remove the document feed cover.

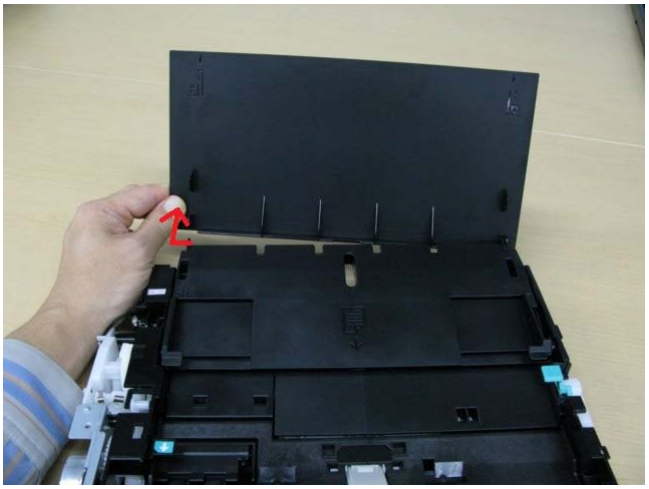
3) Remove the operation panel, document feed tray, eject tray, and document feed unit. (16 screws)
<The core fits to the document feed base rib.>



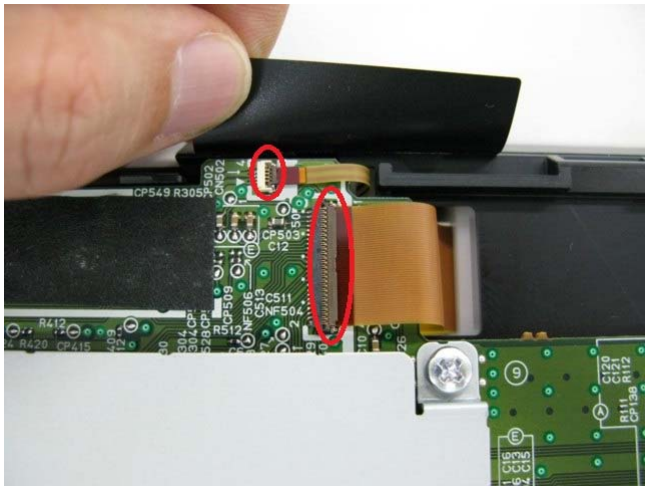


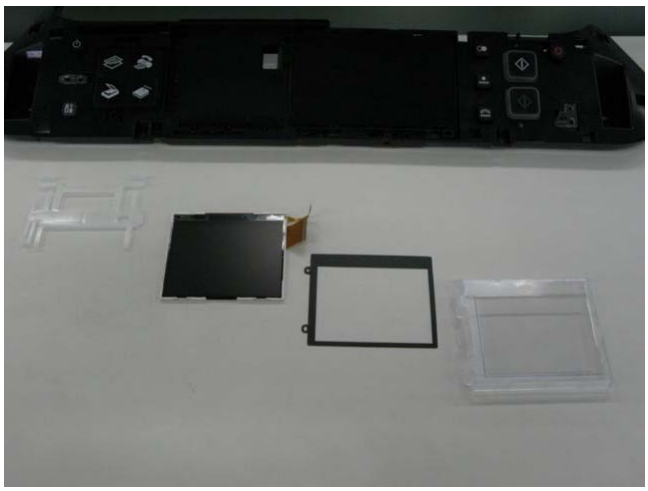




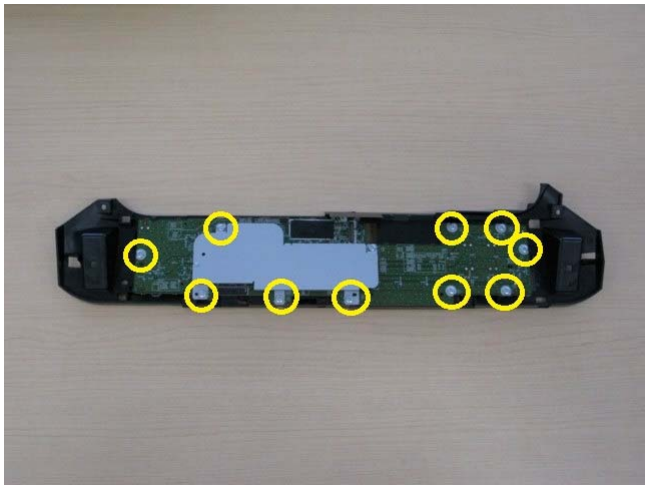


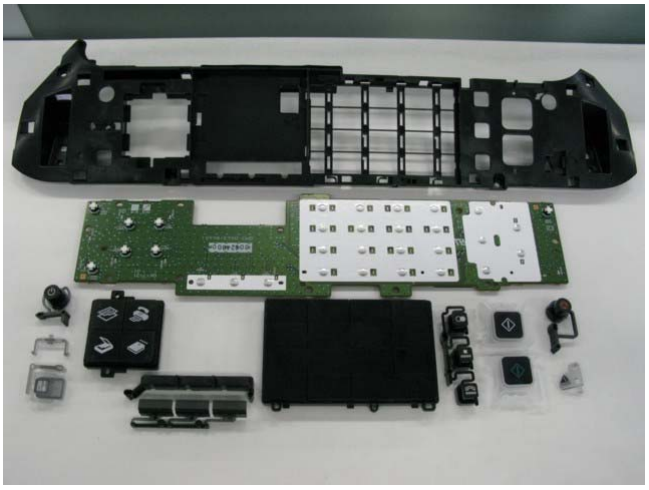
4) Remove the LCD ass'y. (no screws)





5) Remove the panel board (10 screws).

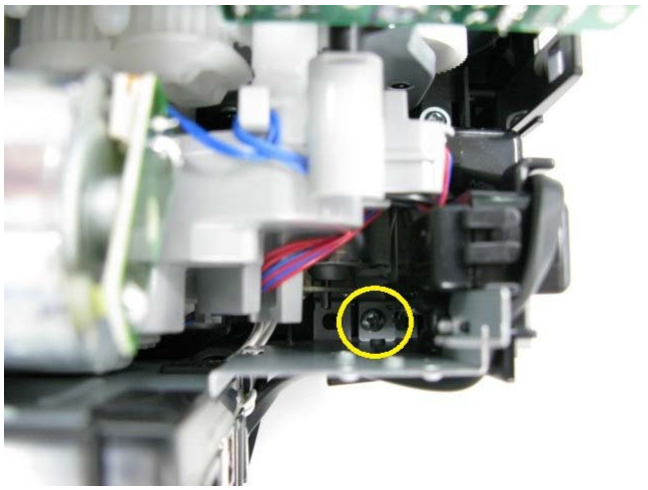




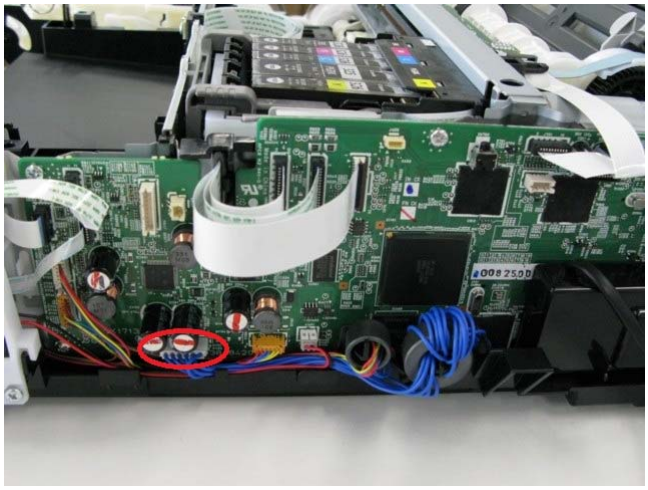
(3) Printer unit removal, and ink absorber replacement

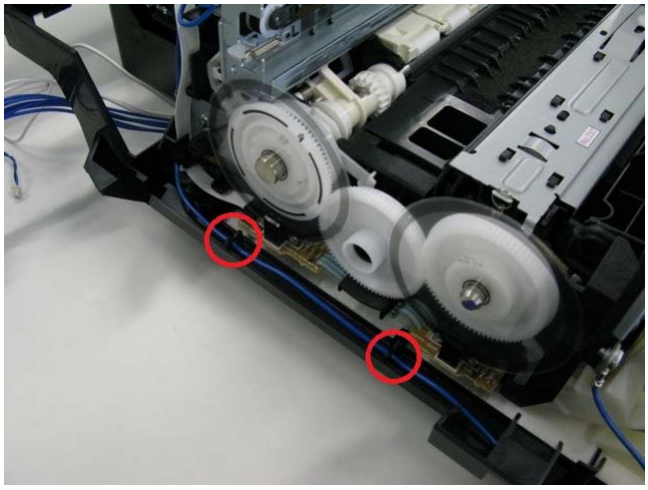
1) Separate the PictBridge chassis from the main PCB chassis. (1 screw)

2) Separate the main PCB chassis from the bottom case. (1 screw)

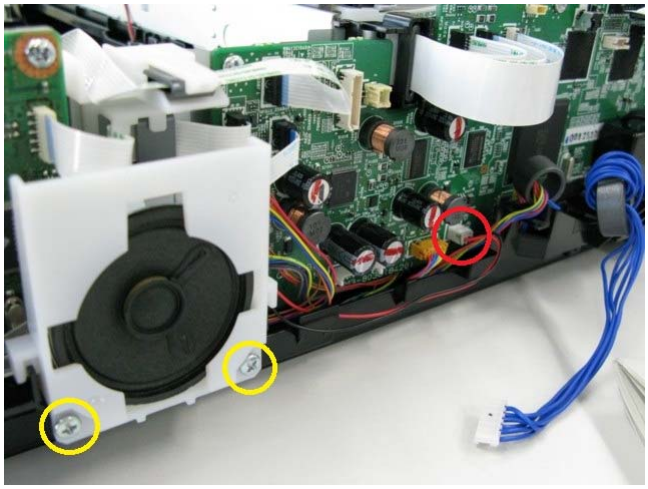


3) Separate the PCI DC and GND harnesses from the printer unit. (1 screw)
<The GND harness fits to the bottom case rib.>
See "3-6. Special Notes on Servicing, (7) Power supply unit and modular board replacement."

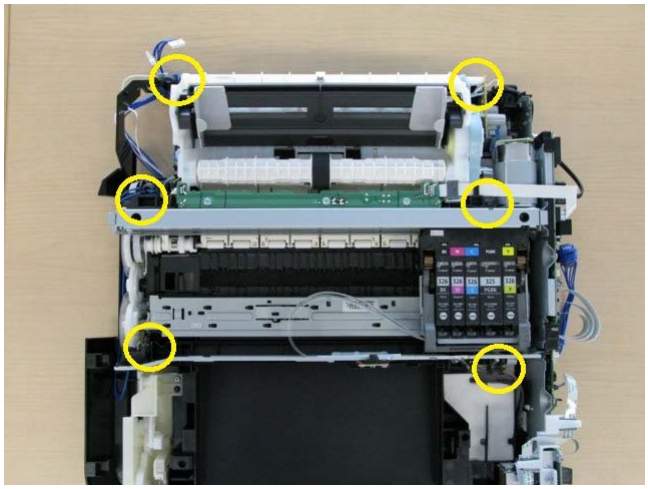


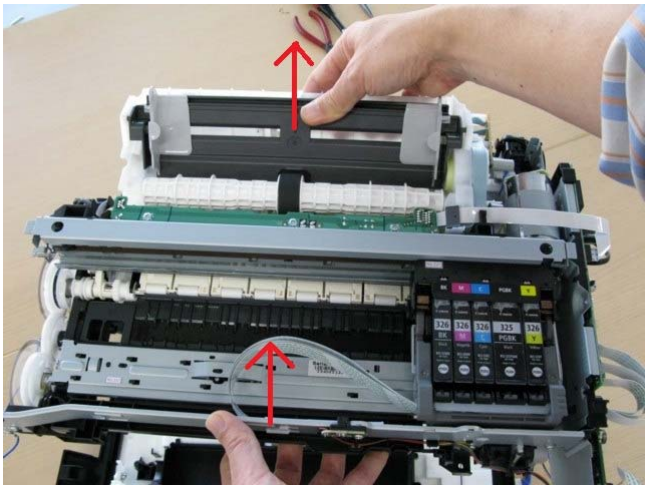


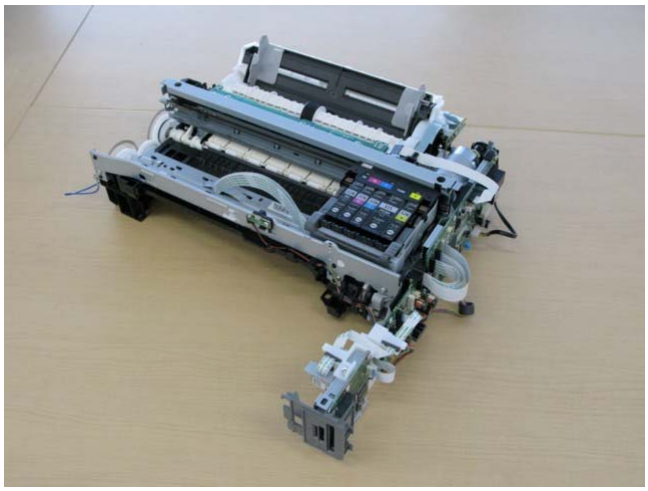
4) Remove the speaker. (2 screws)

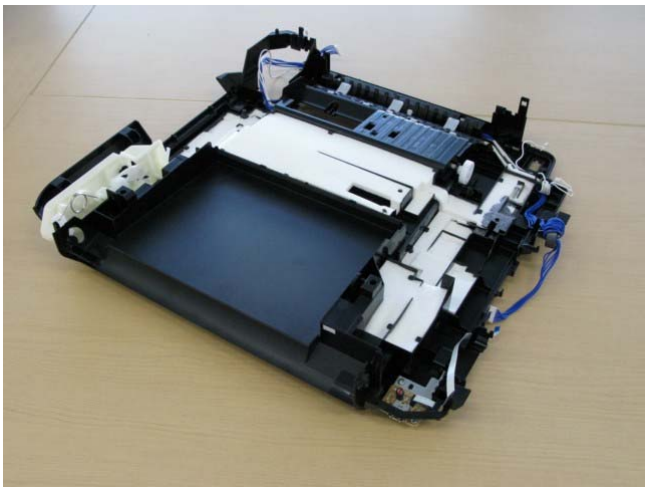


5) Remove the printer unit. (6 screws)
<While being cautious not to damage the arm that connects to the front door, lift the printer unit.>

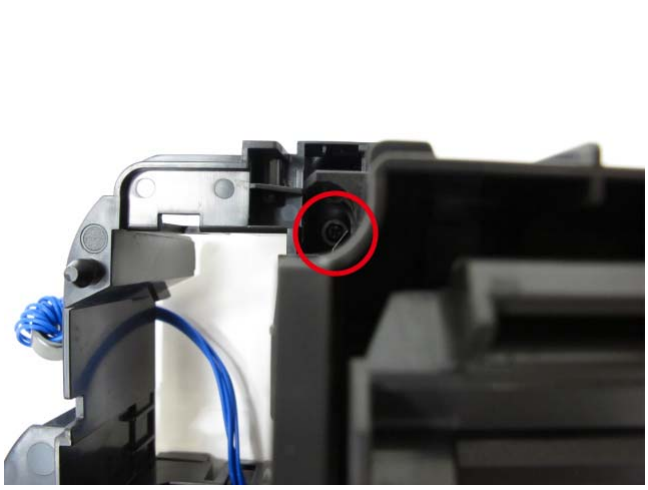
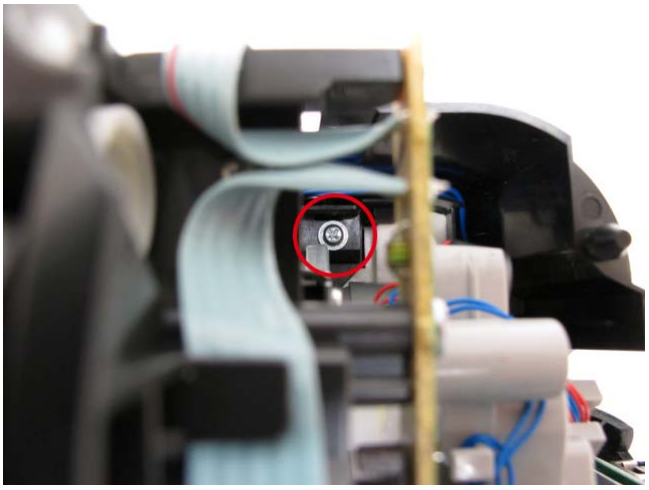
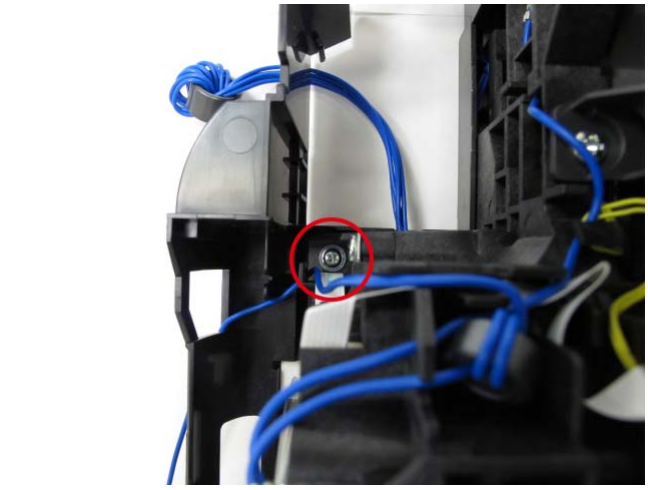


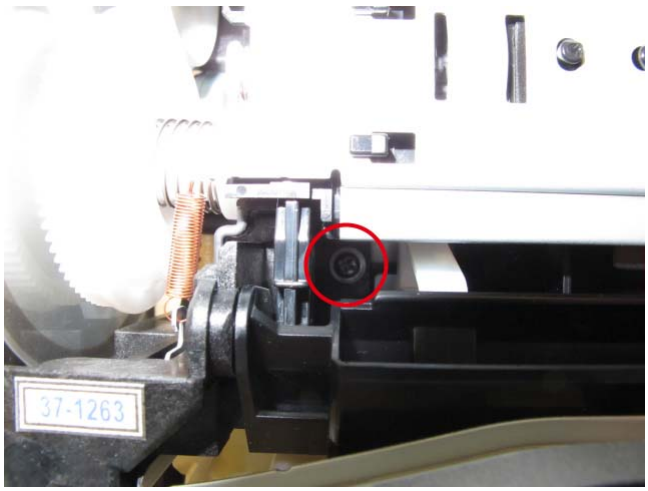


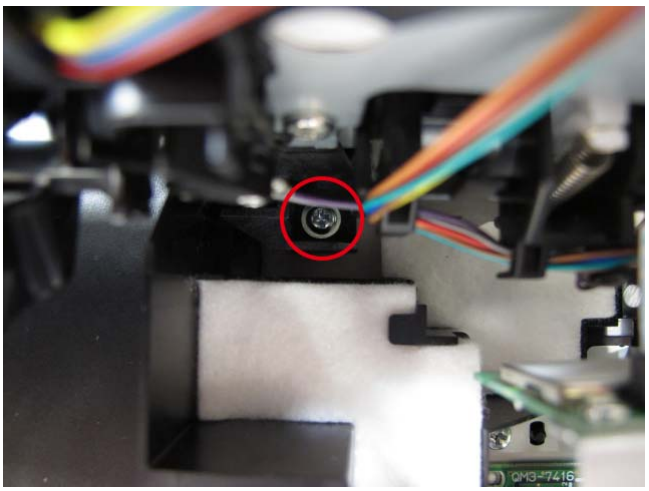




Specific screw location (photos are from the MG5200 series):





When the paper separation slope is removed as well as the printer unit from the bottom case, ink absorbers can be replaced. Some of the ink absorbers are under the paper separation slope.

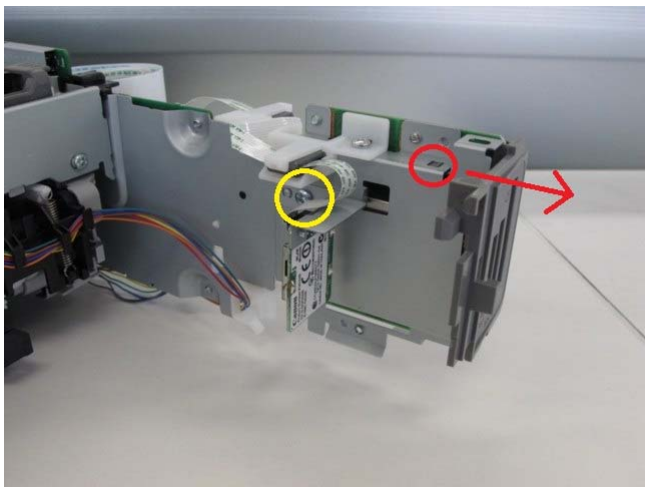
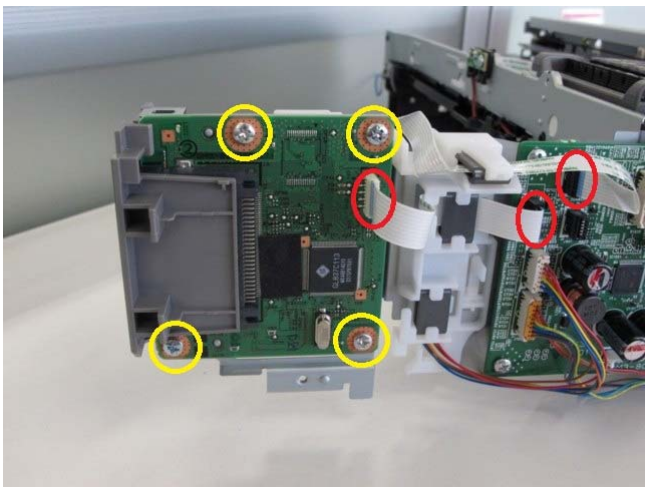
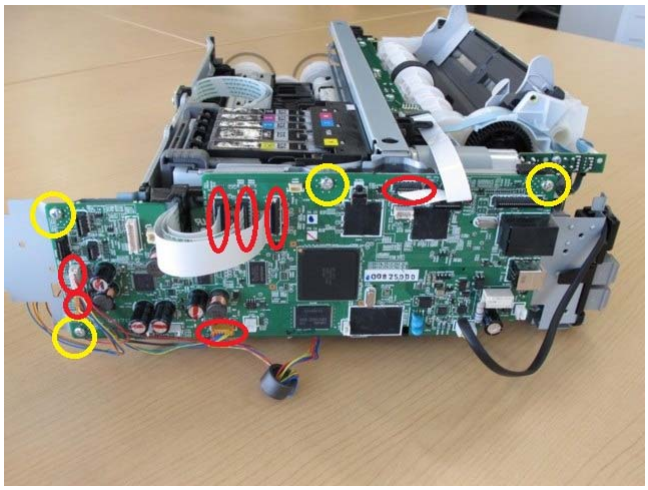
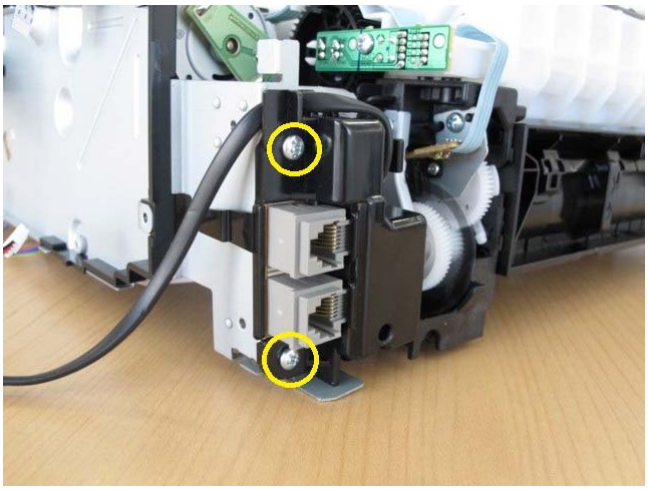
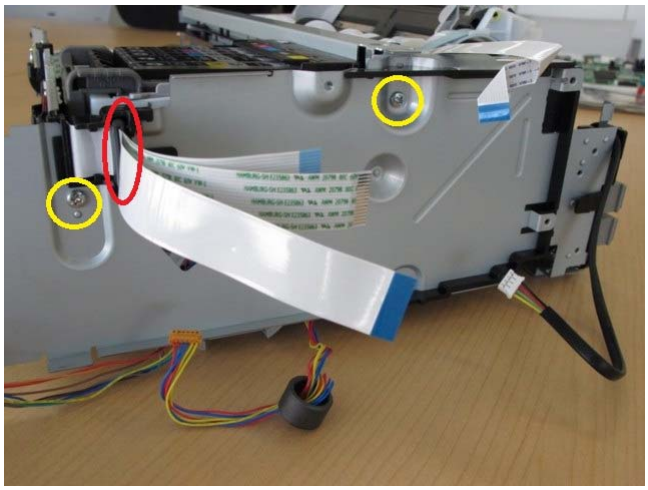
Note

When the ink absorbers are replaced, confirm that the replaced new absorbers fit in place securely, and they do not lift.

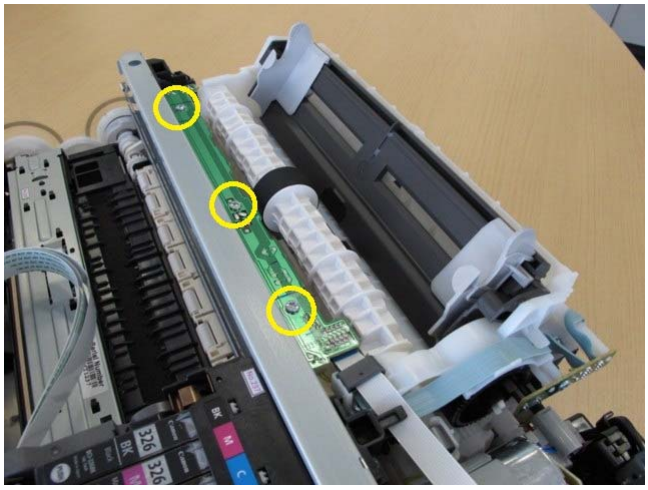
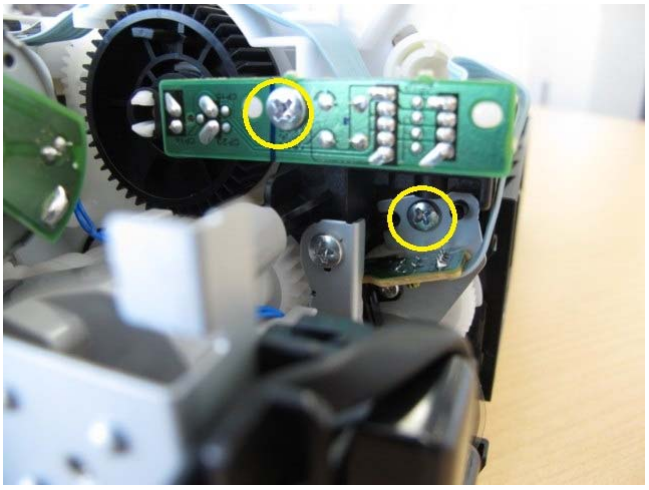
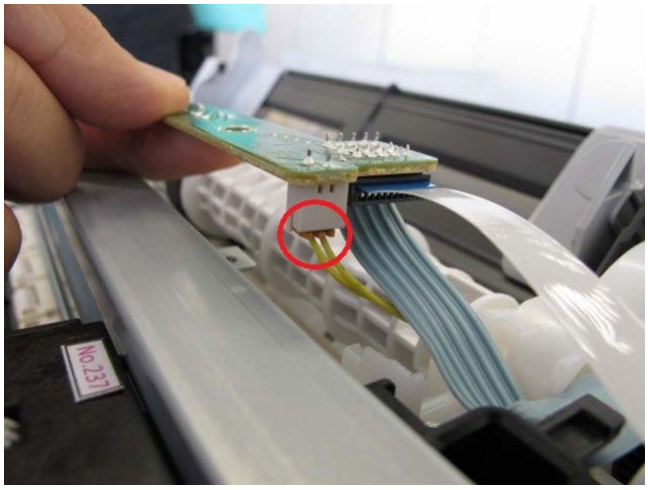
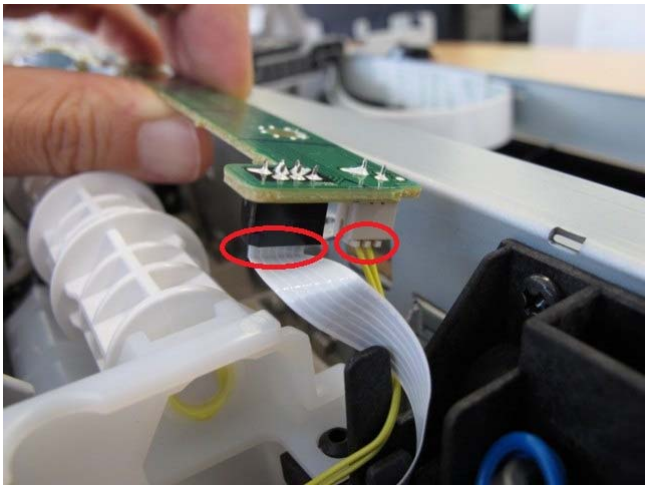
After replacement of the ink absorbers, reset the ink absorber counter value to zero in the service mode. [See 3-3. Adjustment and Settings in Service Mode, for details.]

(4) Board removal

1) Remove the WLAN board, card board, main PCB, modular board, and main PCB chassis. (13 screws)
<The core fits to the rib of the harness guide.>

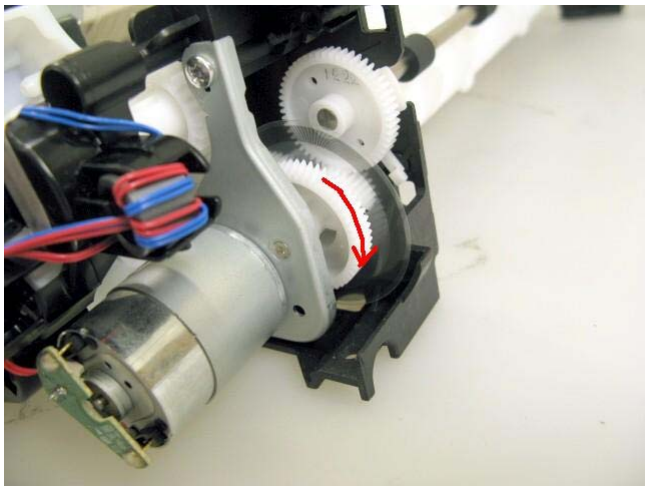
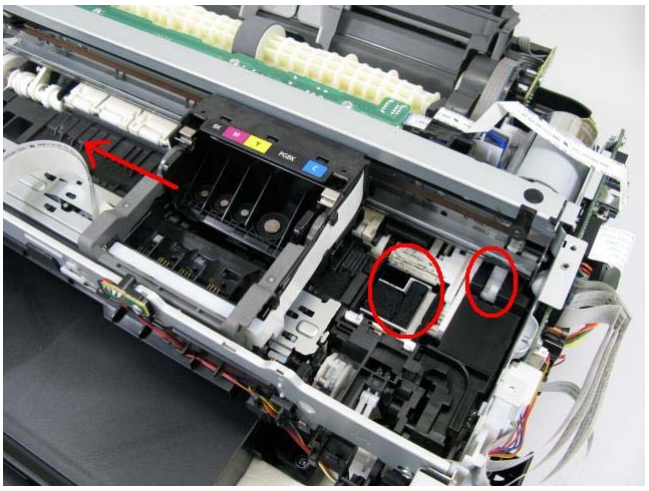






2) Remove the PE sensor board. (5 screws)

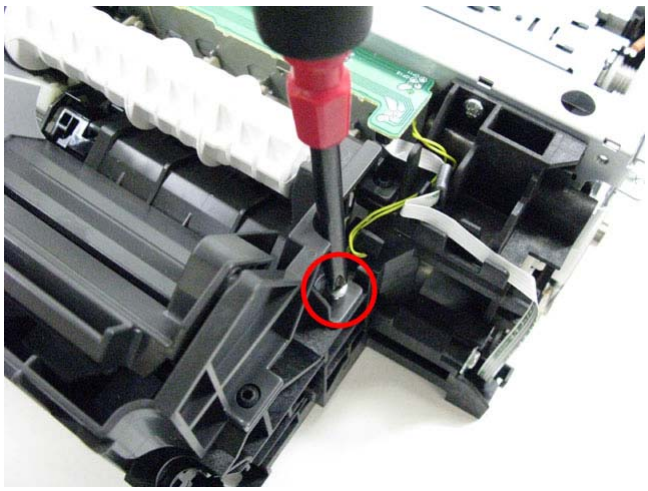
(5) Carriage unlocking

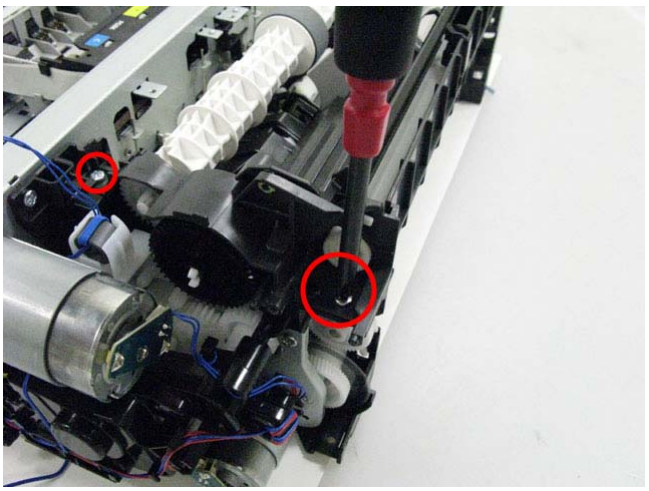
1) Rotate the drive unit gear toward the back of the machine to unlock the carriage.
Slide the carriage to the left (the opposite of the home position).

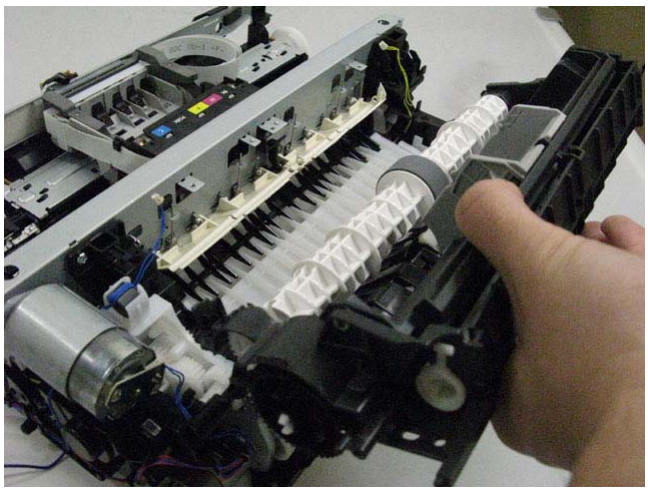



(6) ASF unit removal

1) Remove 1 screw from the left plate, and 2 screws from the right plate.

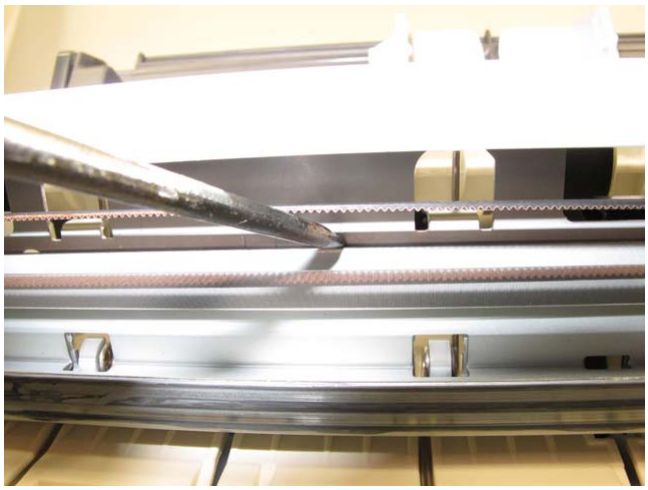




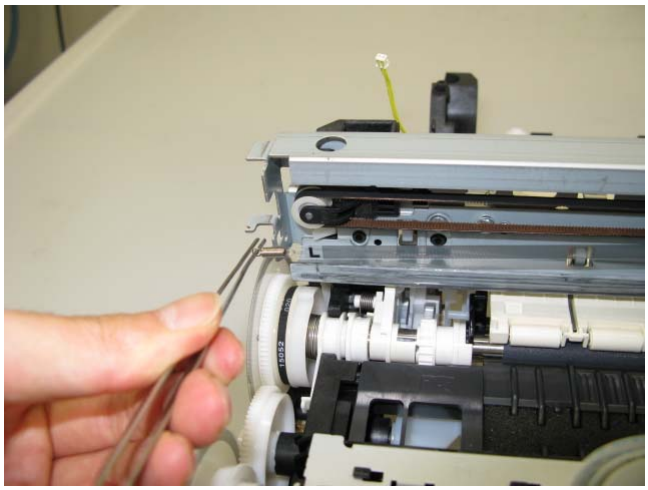
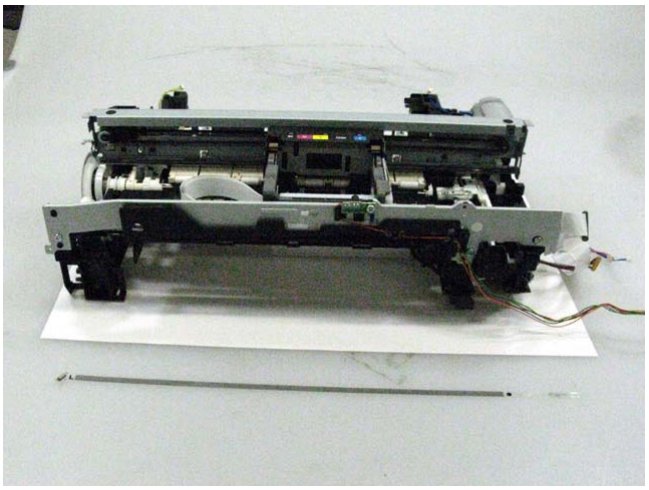


(7) Carriage unit removal

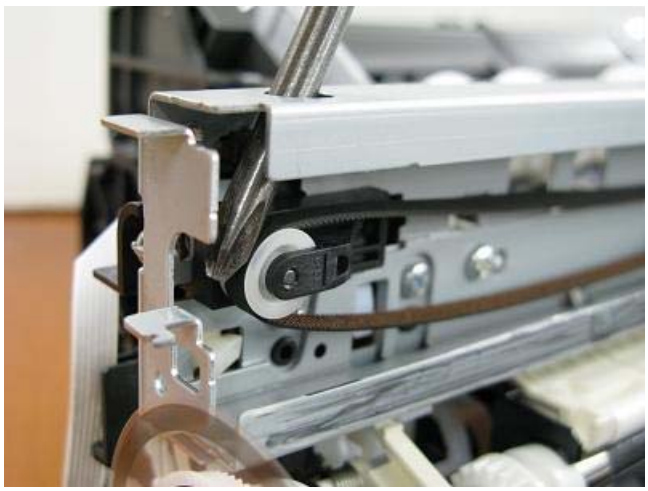
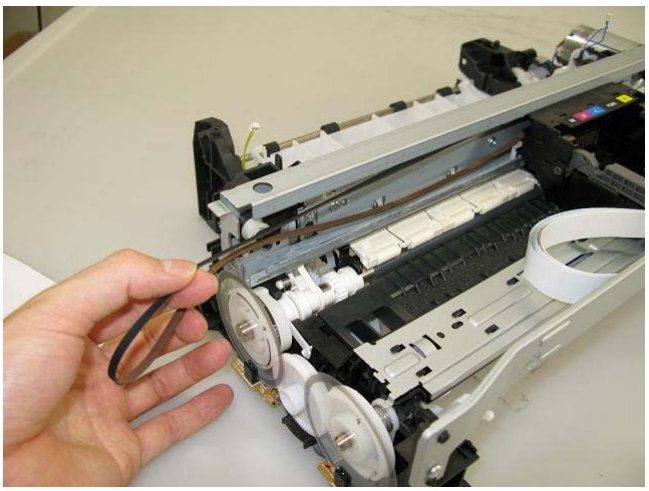
1) On the main chassis, mark the positions of the screws that fix the carriage rail to the main chassis (3 points for each screw: the left, right, and center).



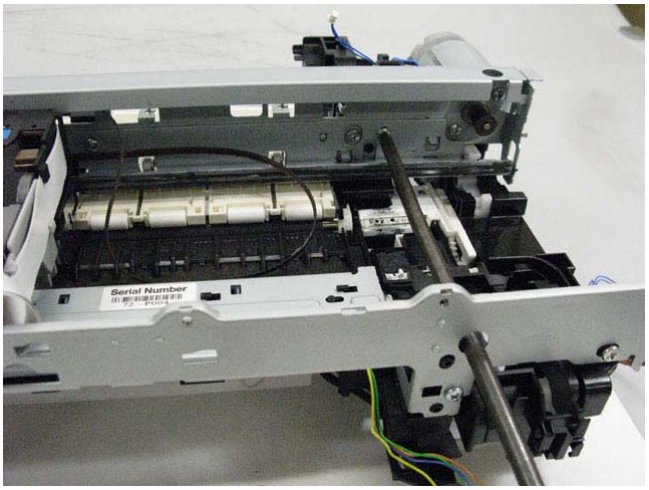

2) Remove the timing slit film. Be cautious to keep it free from any grease or damage.

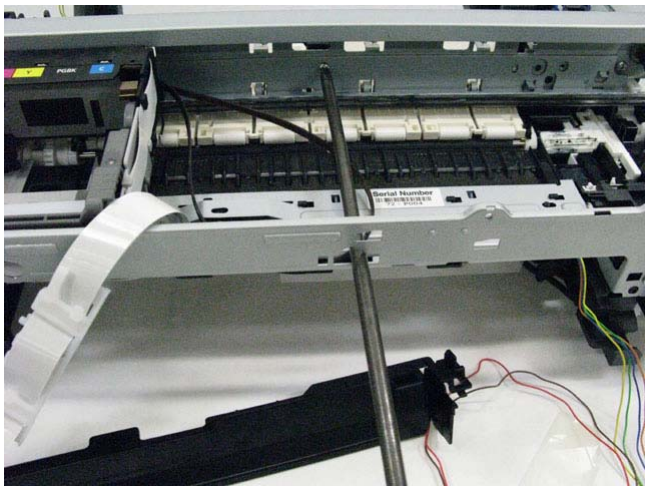



3) Using a pair of pliers, etc., release the left end of the pulley holder spring, then remove the carriage belt. Be cautious to keep it free from any grease.

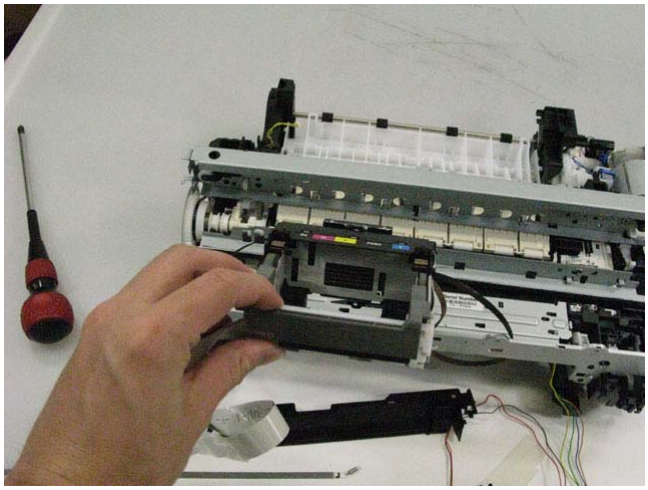



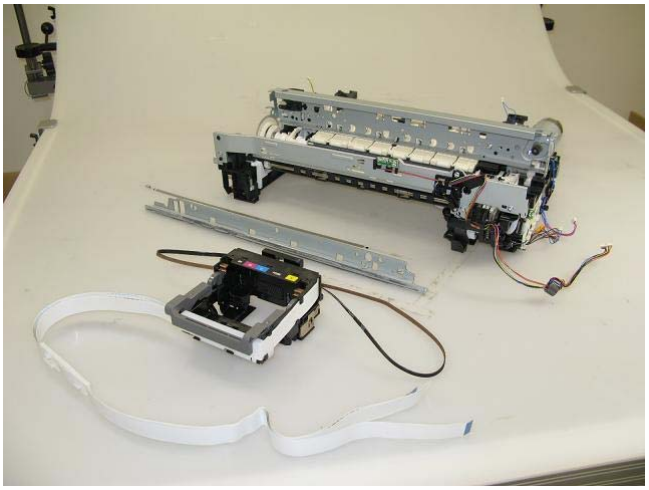
4) Remove 3 screws that fix the carriage rail to the main chassis. Before removing the center screw, remove the carriage cable holder from the front chassis. After the 3 screws are removed, slowly put down the carriage rail.





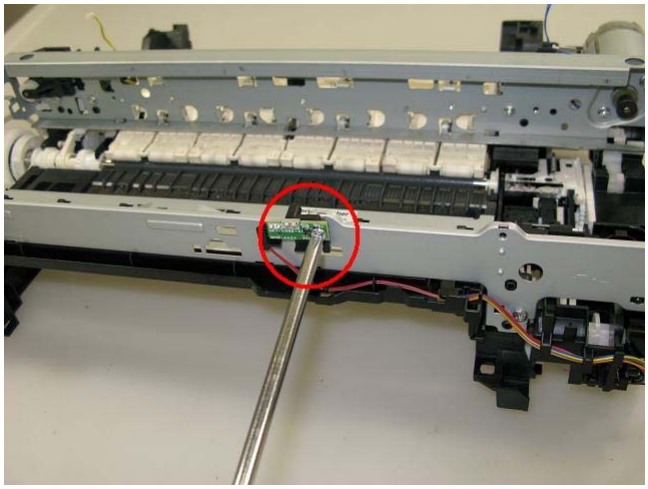
5) Remove the carriage unit. Be cautious that the grease will not attach to any parts.

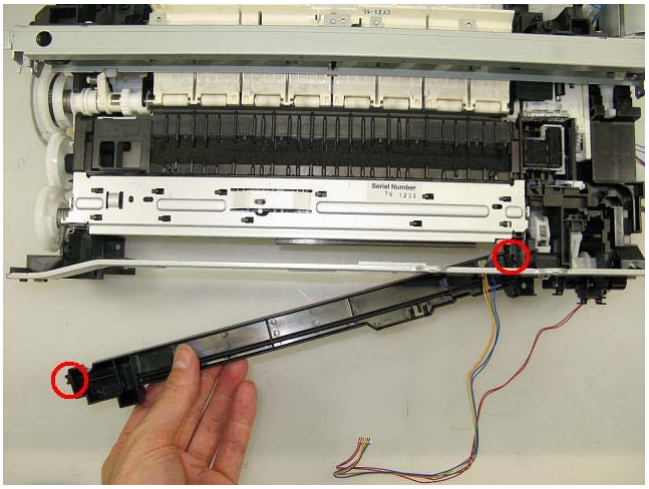




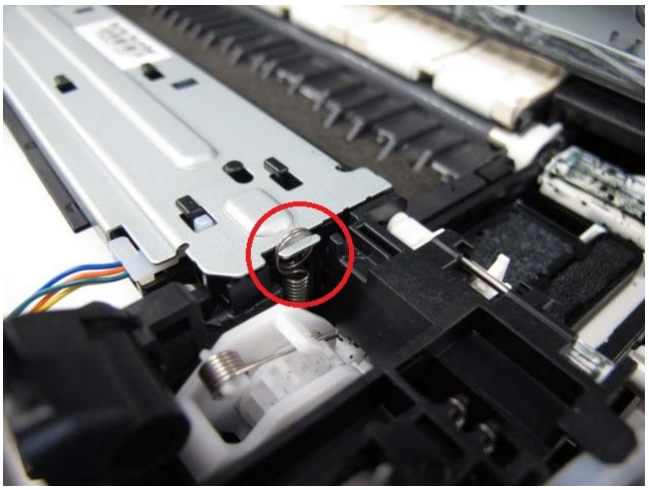
(8) Spur unit and platen unit removal

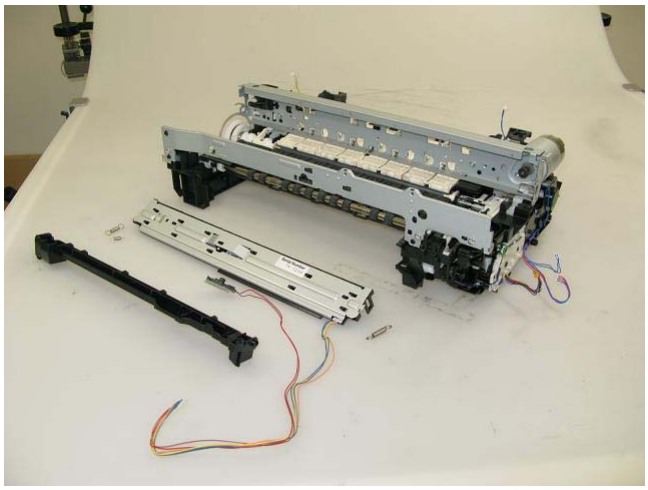
1) Remove the ink sensor and the middle front cover from the front chassis (1 screw each).



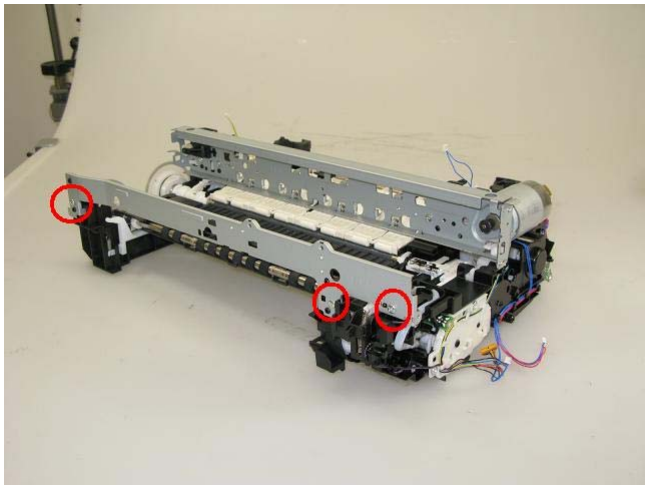


2) From the left and right sides of the spur unit, release the springs (2 on the left side, 1 on the right side). Then, slowly pull the spur unit upward to remove it from the platen unit.

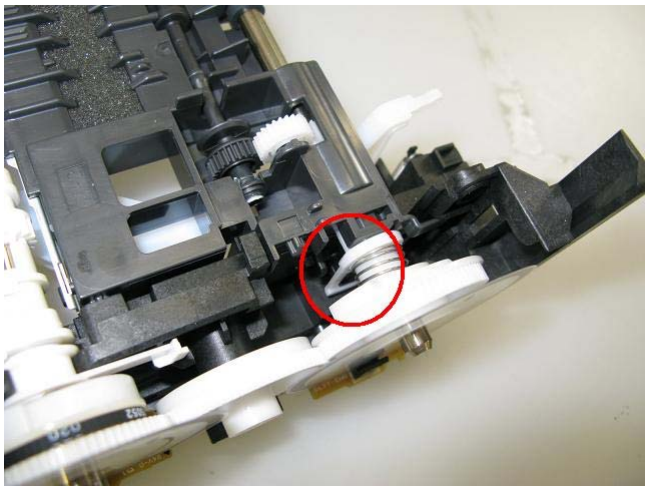


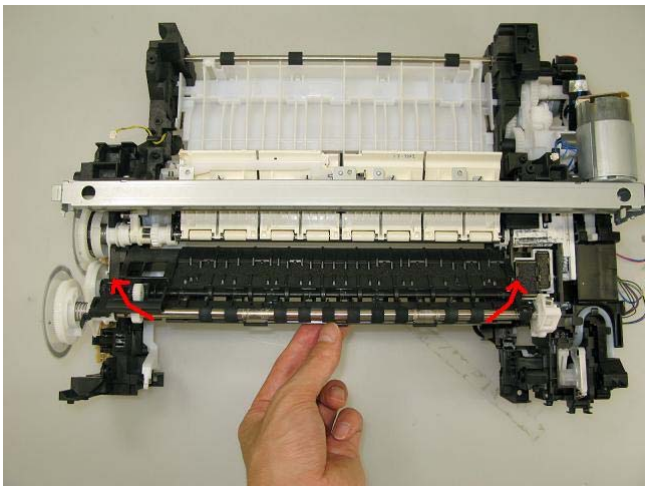


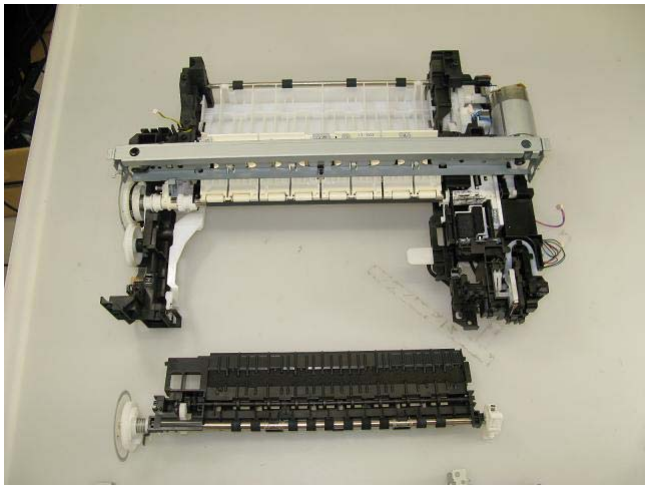
3) Remove the front chassis (3 screws).



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

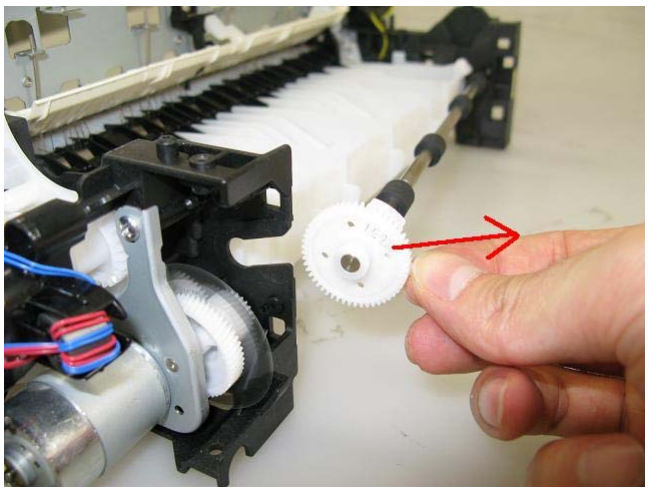
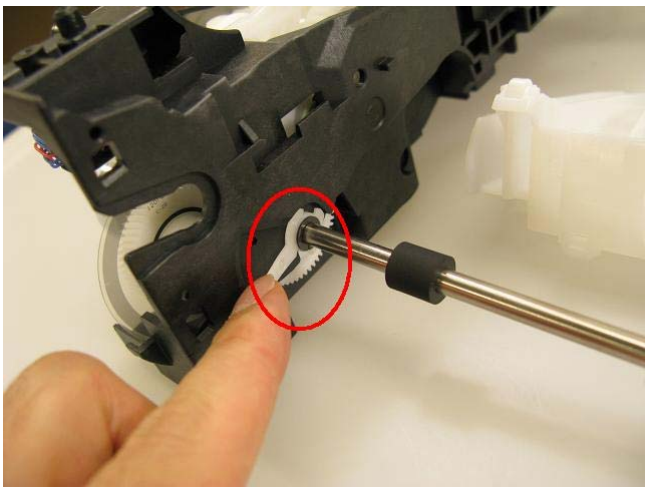
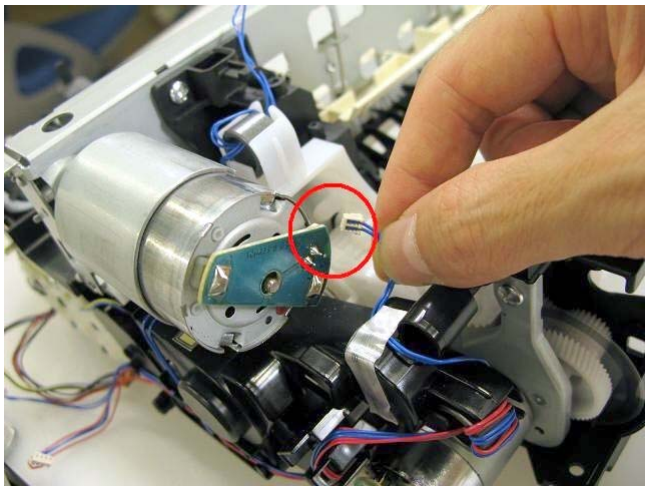
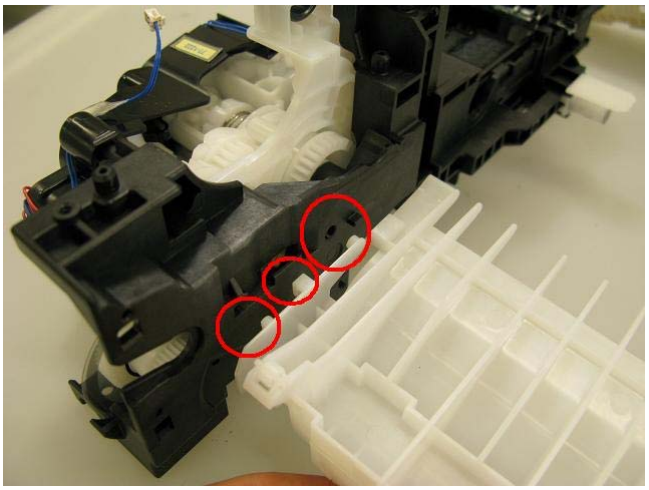




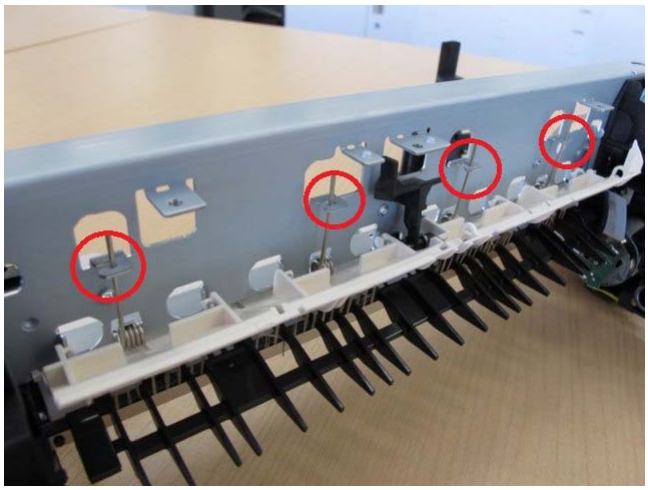


(9) Purge drive system unit (right plate) and switch system unit (left plate) removal

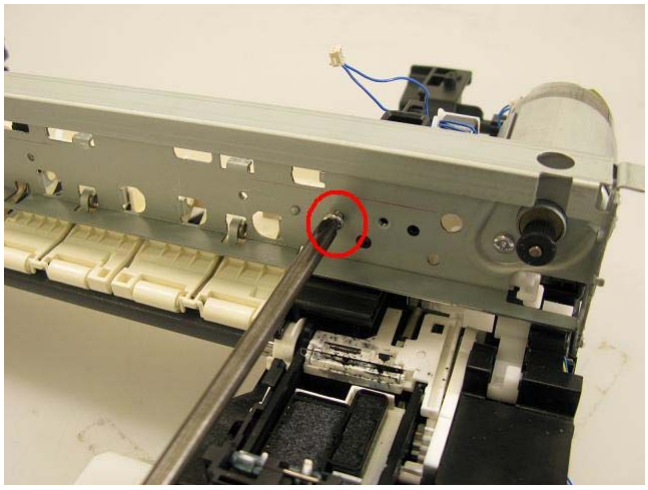
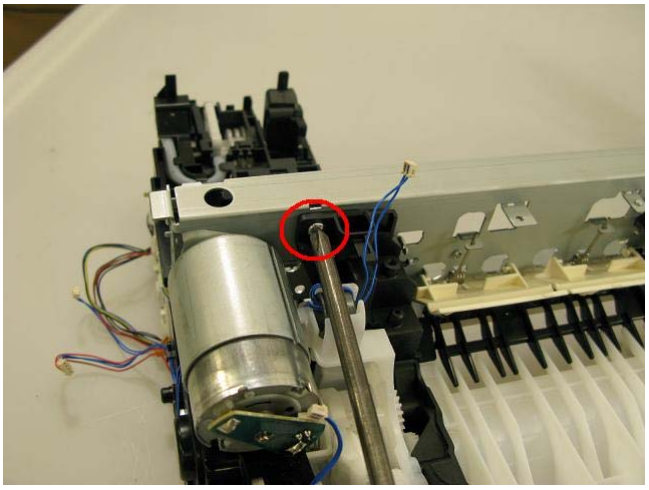
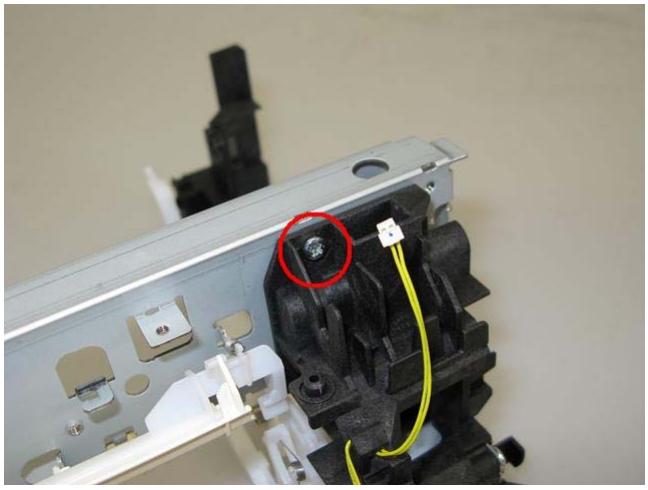
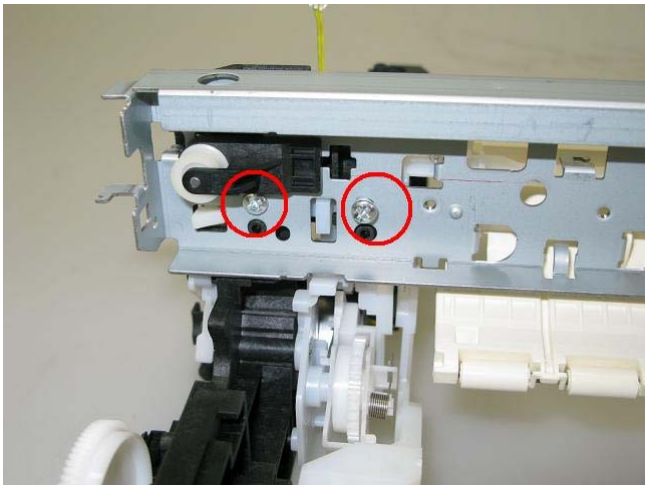
1) Remove the carriage motor cable, duplex printing paper feed roller, cassette feed roller, cassette feed guide, paper guide unit, and springs of the paper guide unit (both sides). (See the Parts Catalog for details.)

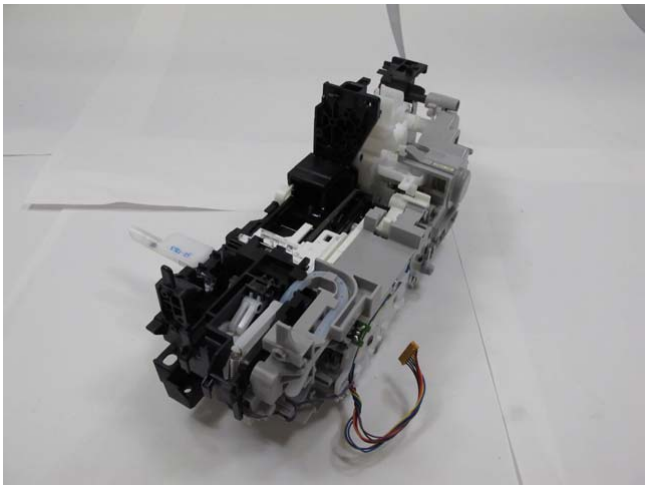
2) Remove the pressure roller springs (4 springs).



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

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

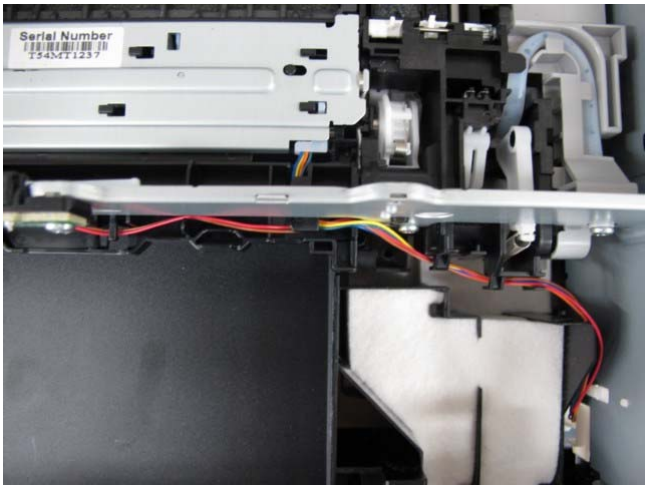
1) Install the switch system unit in the bottom case, and fasten the screws.
2) Attach the duplex print paper feed roller unit to the purge drive system unit, and fix them to the bottom case with the screws.
3) Attach the cassette feed guide.
4) Install the cassette feed roller unit.
5) Install the paper 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 unit 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 unit to the main chassis, then the springs kept at the right and left plates in step 6) to the main chassis.

    Springs hooked at the right and left plates in step 6):

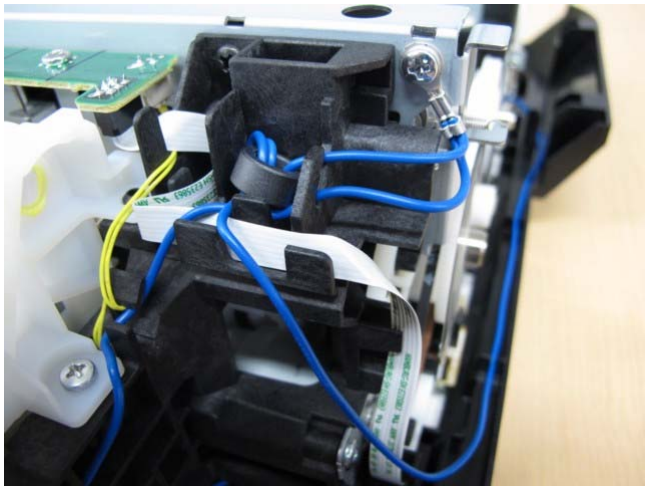
12) While being cautious not to damage the carriage FFC, install the front chassis and the ground chassis.
13) Attach the ink sensor board to the front chassis.
14) Install the ASF unit and attach the PE sensor board.
15) Install the main PCB chassis.
16) Arrange each harness.
17) Attach the carriage encoder.
18) Install the logic board.

(11) Cable wiring and connection

1) Main PCB and spur unit:



2) Switch system unit and PE sensor board:



<2-2. Disassembly & Reassembly Procedures>

3. ADJUSTMENT / SETTINGS

3-1. Adjustment

	Adjustment	Purpose	Method	Approx. time
	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	Fix the paper feed motor so that the belt is stretched tight. (See 3-6. 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 MX880 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 3-5. Grease Application, for details.)	1 min.
	Ink system function check	To maintain detection functionality for presence of the ink tanks and each ink tank position. - At logic board replacement - At spur unit replacement - At carriage unit replacement	Service Tool[*1], **Test Print** in the **Print** section	1 min.

	LCD language settings	To set the language to be displayed on the LCD. Not necessary when the machine is set to the default at shipment from the production site (On arrival at user's, the user is to set the language during setup.). - At logic board replacement	Set the language in the user mode.	1 min.
	Platen glass protection sheet (document pressure sheet) position adjustment	To maintain scanning accuracy, hold the sheet with the long side down, then fit its upper left corner to the platen glass reference mark (back left). - At protection sheet replacement - At 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 when necessary. - 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 **LF/EJECT Correction** section, click **Print** to print the LF/EJ correction pattern. (2) According to the printed pattern, set the correction value in the **LF/EJECT Correction** section.	5 min.
	Carriage rail position adjustment	To set the carriage rail to the original position prior to removal or replacement of the carriage unit 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.
	FAX user data settings	To confirm the FAX user data settings. - At logic board replacement - At NCU board replacement	Perform settings in the user mode.	2 min.

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

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

3-2. Adjustment and Maintenance in User Mode

Function	Procedures	Remarks
Nozzle check pattern printing	Perform from the printer driver Maintenance tab, or via the machine operation panel.	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: 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)

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.)

- Without the scanner (connect the operation panel unit);

While holding the ON button, press the Stop button 6 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.

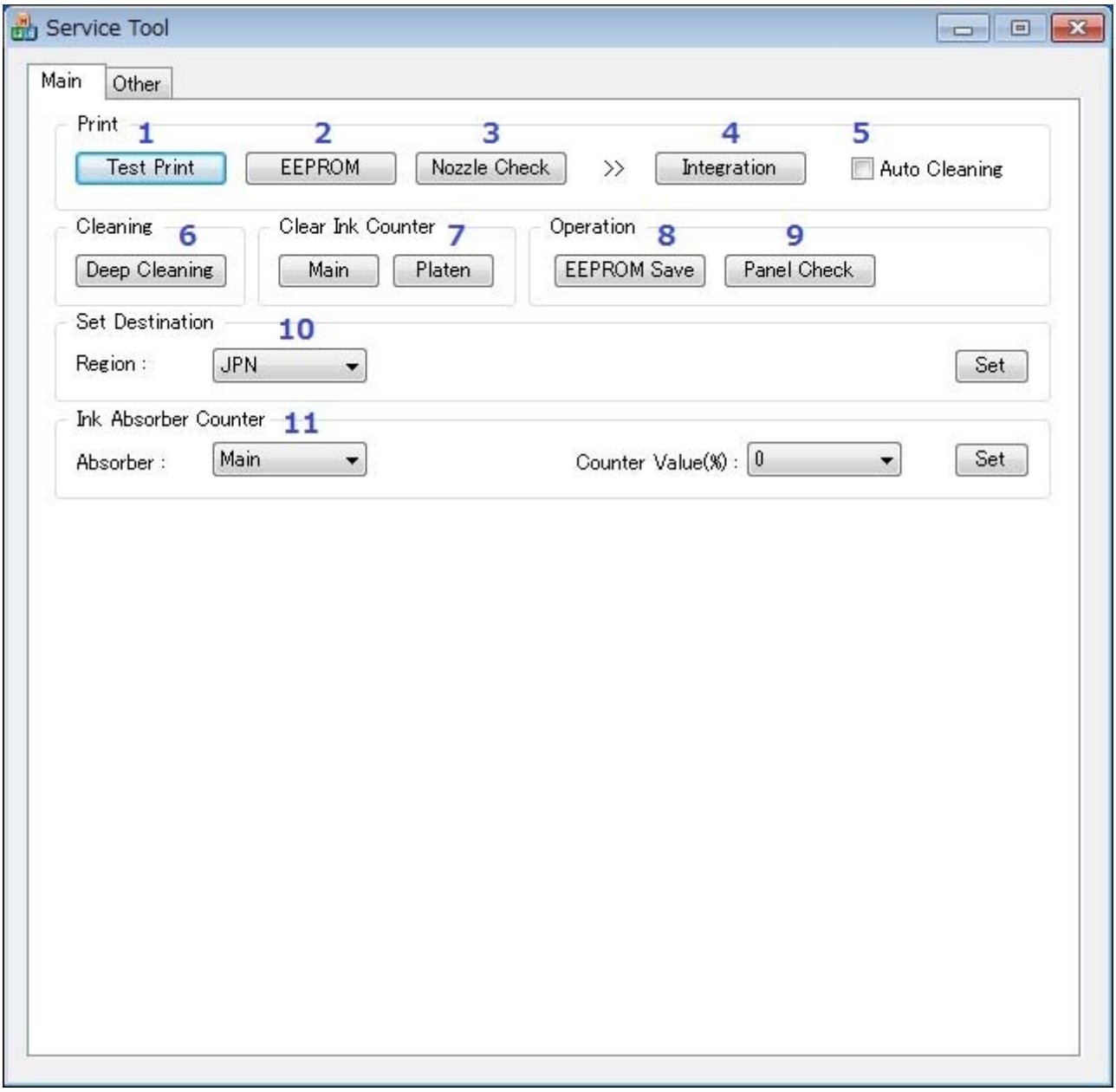
i. When a button is clicked in the Service Tool dialog box, that function is performed. During operation of the selected function, all the Service Tool buttons are dimmed and inactive.

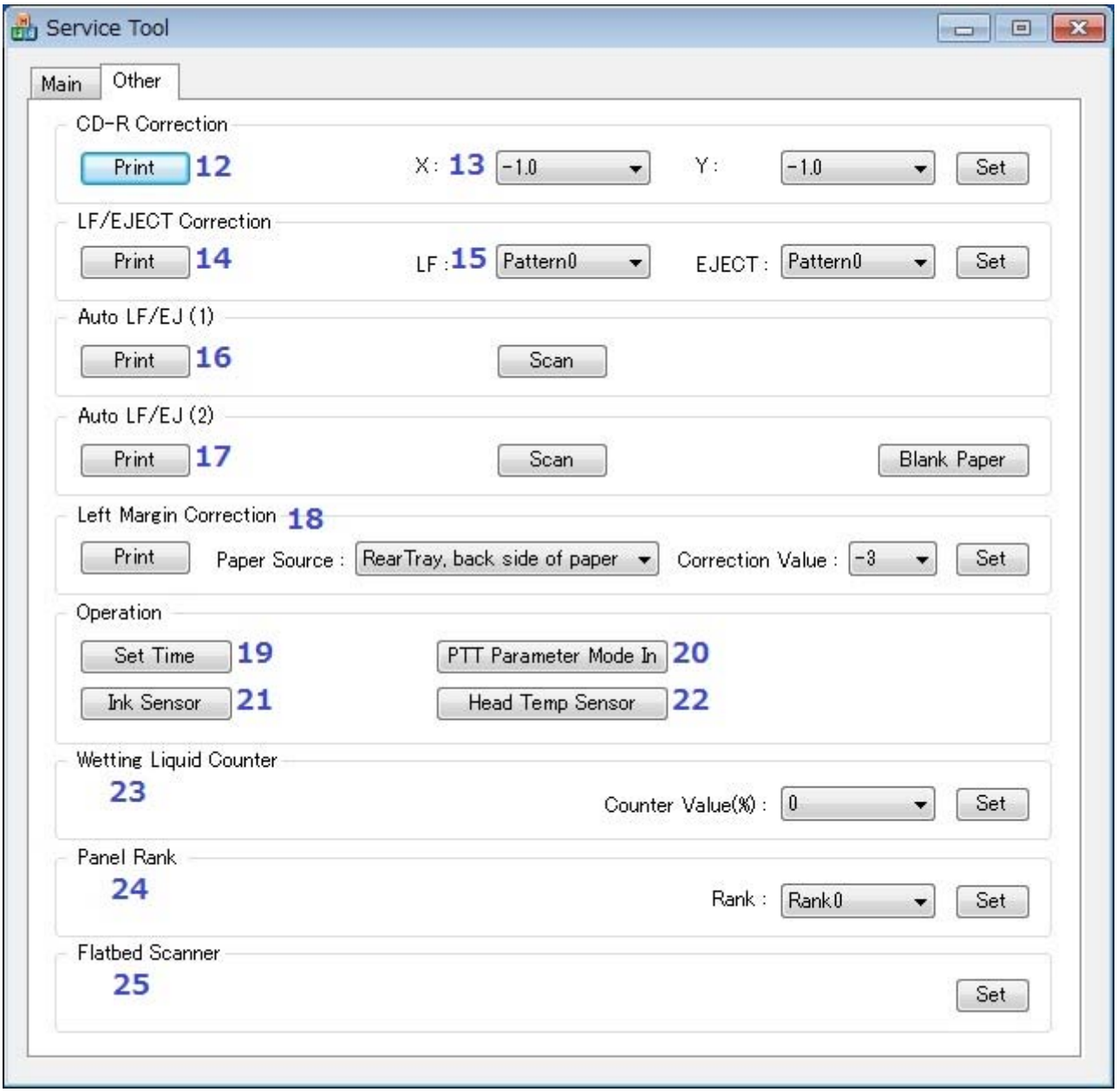
ii. When the operation is completed, "A function was finished." is displayed, and another function can be selected.

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 2.000




Service Tool
Main
Other
CD-R Correction
Print
12
X :
13
-1.0
Y :
-1.0
Set
LF/EJECT Correction
Print
14
LF :
15
Pattern0
EJECT :
Pattern0
Set
Auto LF/EJ (1)
Print
16
Scan
Auto LF/EJ (2)
Print
17
Scan
Blank Paper
Left Margin Correction
18
Print
Paper Source :
RearTray, back side of paper
Correction Value :
-3
Set
Operation
Set Time
19
PTT Parameter Mode In
20
Ink Sensor
21
Head Temp Sensor
22
Wetting Liquid Counter
23
Counter Value(%) :
0
Set
Panel Rank
24
Rank :
Rank 0
Set
Flatbed Scanner
25
Set

No.	Name	Function	Remarks
1	Test Print	Service test print	Paper will feed from the rear tray (2 sheets). Printed items: - Model name - ROM version - USB serial number - Process inspection information - Barcode (model name + destination + machine serial number) - Ink system function check result - DVD / CD sensor check result (not applicable to the MX880 series)
2	EEPROM	EEPROM information print	The dialog box opens to select the paper source. Select **Rear tray** or **Cassette**, and click **OK**.. Printed items: - Model name - ROM version - Ink absorber counter value - 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 - DVD / CD sensor check result (not applicable to the MX880 series)
5	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.
6	Deep Cleaning	Print head deep cleaning	Cleaning of both Black and Color at the same time (same as the one in the user mode)
7	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.

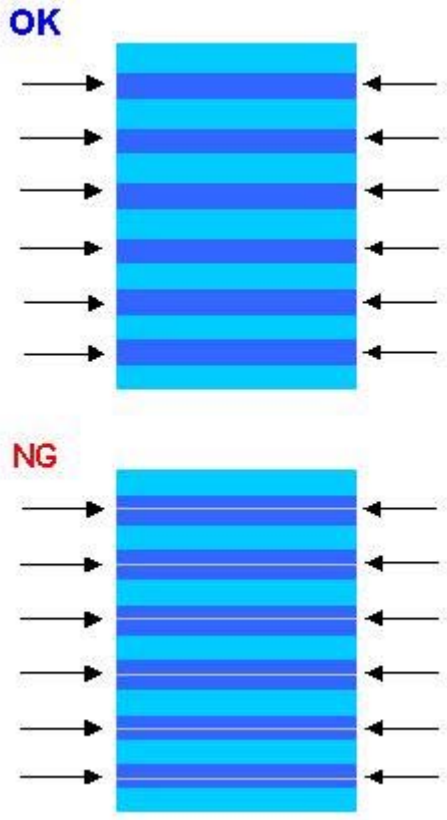
	Platen (Clear Ink Counter)	Platen ink absorber counter resetting	Not used.
8	EEPROM Save	EEPROM information saving	The EEPROM information (same as the one in EEPROM information print) is displayed on the PC or is saved to the PC as a text file. This function is not available in most cases of errors.
9	Panel Check	Button and LCD test	See "(4) Button and LCD test" below.
10	Set Destination	Destination settings	Select the destination, and click **Set**. ASA, AUS, BRA, CHN, CND, EMB, EUR, JPN, KOR, LTN, TWN, USA
11	Ink Absorber Counter	Ink absorber counter setting	See "(5) Ink absorber counter setting" below.
12	Print (CD-R Correction)	Printing of the pattern for disc label print position correction	Not used.
13	CD-R Correction	Disc label print position correction (X and Y direction)	Not used.
14	Print (LF/ EJECT Correction)	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.
15	LF/ EJECT Correction	LF / Eject correction value settings	Set the correction value based on the printed pattern (14. LF/EJECT correction pattern print). See "(3) LF / Eject correction" below.
16	Auto LF/EJ (1)	Automatic LF / Eject correction	Not used.
17	Auto LF/EJ (2)	Automatic LF / Eject correction	Not used.
18	Left Margin Correction	Left margin pattern print and correction	Not used.
19	Set Time	Time setting	Not used.
20	PTT Parameter Mode In	Entry in the PTT parameter mode	Entry in the PTT parameter mode is allowed when this button is clicked.
21	Ink Sensor	Pressure sensor correction	Not used.
22	Head Temp Sensor	Print head diode sensor correction	Not used.
23	Wetting Liquid Counter	Wetting liquid counter setting	Not used.
24	Panel Rank	Capacitive sensor sensitivity setting	Not used.
25	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 **Print** in the **LF/EJECT Correction** section 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).

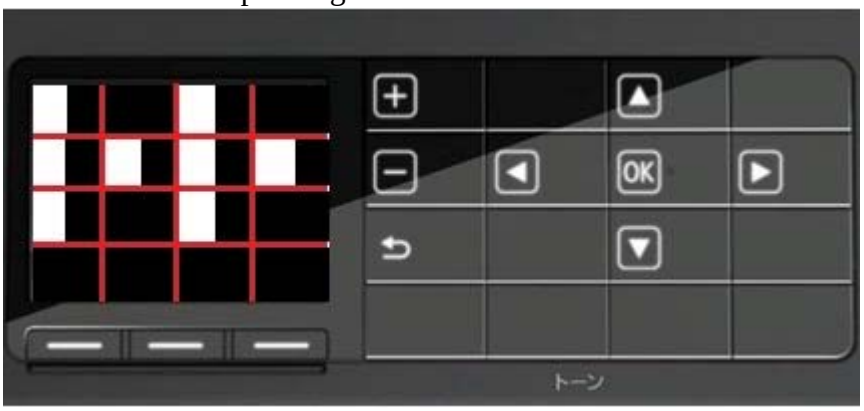
(4) Button and LCD test

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

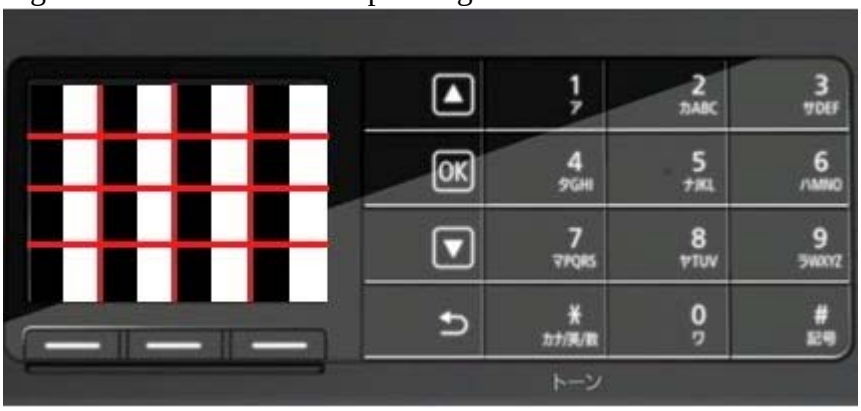
1) Dual Function Panel check

1-1) Click **Panel Check** of the Service Tool. All the buttons of the Dual Function Panel turn on and the LCD is divided into 16 white segments by the red lines.

1-2) Press the Black button. The buttons that are valid in the copy mode appear on the panel, and the segments on the LCD corresponding to those buttons turn white while the other areas turn black.



1-3) Press the Black button again. The buttons that are valid in the FAX mode appear on the panel, and the segments on the LCD corresponding to those buttons turn white while the other areas turn black.

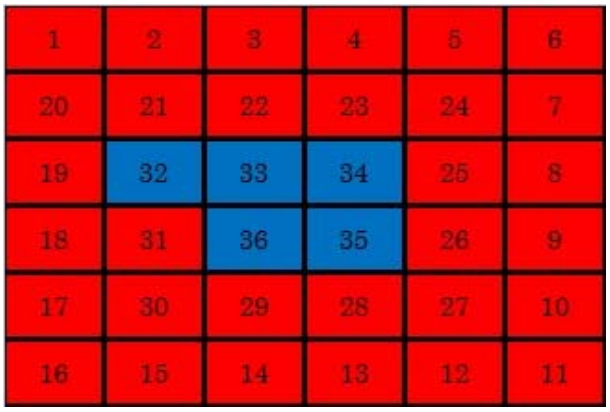


2) Button check

2-1) Press the Black button. All the LED's on the machine turn on and the LCD turns blue, waiting for a button to be pressed.

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

2-3) The LCD is divided into 36 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.

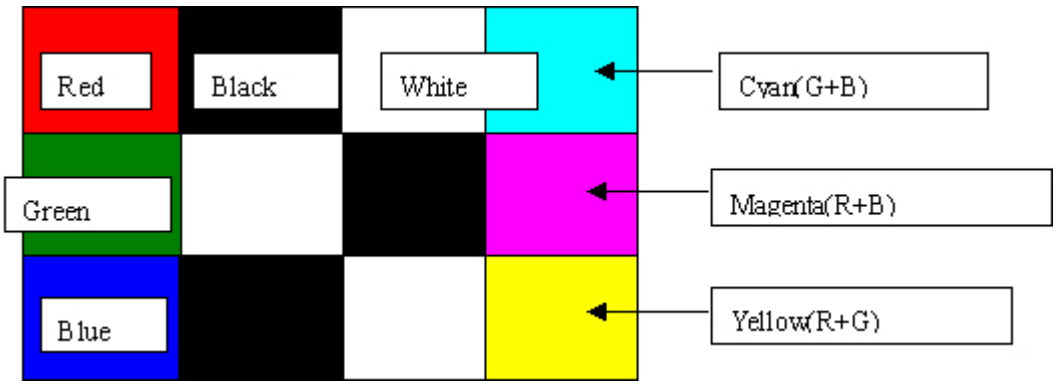


1. ON
2. Stop
3. COPY
4. FAX
5. SCAN
6. CARD
7. Setup
8. Black
9. Color
10. Redial/Pause
11. Coded Dial
12. Hook
13. [+], up cursor
14. 1
15. Up cursor, 2
16. 3
17. [-], OK
18. Left cursor, 4
19. OK, 5
20. Right cursor, 6
21. Back, down cursor
22. 7
23. Down cursor, 8
24. 9
25. Back
26. *
27. 0
28. #
29. Left function button
30. Center function button
31. Right function button

3) Scroll Wheel check

3-1) Press the Black button. The color pattern is displayed on the LCD.

3-2) Visually confirm that the patterns are displayed properly.



3-3) Press the ON button. The machine returns to be ready for another function in the service mode.

(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 User Mode>
<3-3. Adjustment and Settings in Service Mode>

3-4. Adjustment and Maintenance in PTT Parameter Mode

Enter the PTT parameter mode in the user mode as below. (The PTT parameter mode cannot be entered in the service mode.)

1) In the user mode, press the SCAN button to enter the scan mode.

2-a) Press **#, 9, 7, 6, 9, #** to enter the PTT parameter mode.

2-b) Press **#, 9, 7, 6, 8, #** to print the PTT parameter setting value.

How to finalize the data: Press the OK button to finalize the data, then press the Stop button to save the data.

How to exit the PTT parameter mode: Press the ON button to write the saved data to the EEPROM and turn off the machine.

<PTT parameter mode operation procedures>

1. In the user mode, press the SCAN button to enter the scan mode and press **#, 9, 7, 6, 9, #**.
2. The following message is displayed on the LCD.

PTT PRAMETER #1 BIT SWITCH

BIT SWITCH menu

3. Each time the right or left cursor button is pressed, the menu is changed.

PTT PRAMETER #2 NUMERIC PARAM.

NUMERIC PARAM. menu

PTT PRAMETER #3 FAX TYPE

Note: Not used in servicing.

PTT PRAMETER #4 NCU

Note: Not used in servicing.

PTT PRAMETER #5 PTT SPECIAL

Note: Not used in servicing.

PTT PRAMETER #6 FAX TEST

Note: Not used in servicing.

4. Press the OK button when “#BIT SWITCH” or “#2 NUMERIC PARAM.” is displayed to enter either of those modes.

<#1 BIT SWITCH>

1. In the #1 BIT SWITCH menu, the following screen is displayed:

   ```
   PTT PRAMETER
   #1 BIT SWITCH
   SW#01  00000000
   ```

2. Each time the up or down cursor button (or the OK button) is pressed, the SW# changes from 01 to 20. Be cautious not to select the SW numbers which are not used in servicing.

   The SW numbers used in servicing: SW# 01, 02, 03, 04, 05, 06, 07, 10, 11, 13
   The SW numbers not used in servicing (as of December 2007): SW# 08, 09, 12, 14 to 20

3. Each SW# has 8-bit information. Using the left or right cursor buttons, move the cursor to the bit to be changed, and enter the setting value (1 or 0).

   Bit7 -> 00000000 <- Bit0

4. Press the OK button to finalize the setting value. For the definition and description of each bit of each SW#, refer to the " *G3 Facsimile Service Data Service Handbook*."

   English: QY8-13BC-010
   Japanese: QY8-12B6-020

5. Press the Stop button to save the setting value.
6. Press the ON button.

<#2 NUMERIC PARAM.>

1. In the #2 NUMERIC PARAM. menu, the following screen is displayed:

   ```
   PTT PRAMETER
   #2 NUMERIC
   PARAM
   01:  00000
   ```

2. Each time the up or down cursor button (or the OK button) is pressed, the SW# changes from 01 to 60. Be cautious not to select the SW numbers which are not used in servicing.

   The SW numbers used in servicing: SW# 01, 02, 04 to 09, 16 to 24, 26, 27, 30, 31, 41, 42
   The SW numbers not used in servicing (as of December 2007): SW# 03, 10 to 15, 25, 28, 29, 32 to 40, 43 to 60

3. Enter a desired setting value, using the right or left cursor button or numeric buttons. (Specifiable values vary depending on the item.)
4. Press the OK button to finalize the selected setting value. For the definition and description of each bit of the SW#, refer to the " *G3 Facsimile Service Data Service Handbook*."

   English: QY8-13BC-010
   Japanese: QY8-12B6-020

5. Press the Stop button to save the setting value.
6. Press the ON button.

<Confirmation of the setting values>

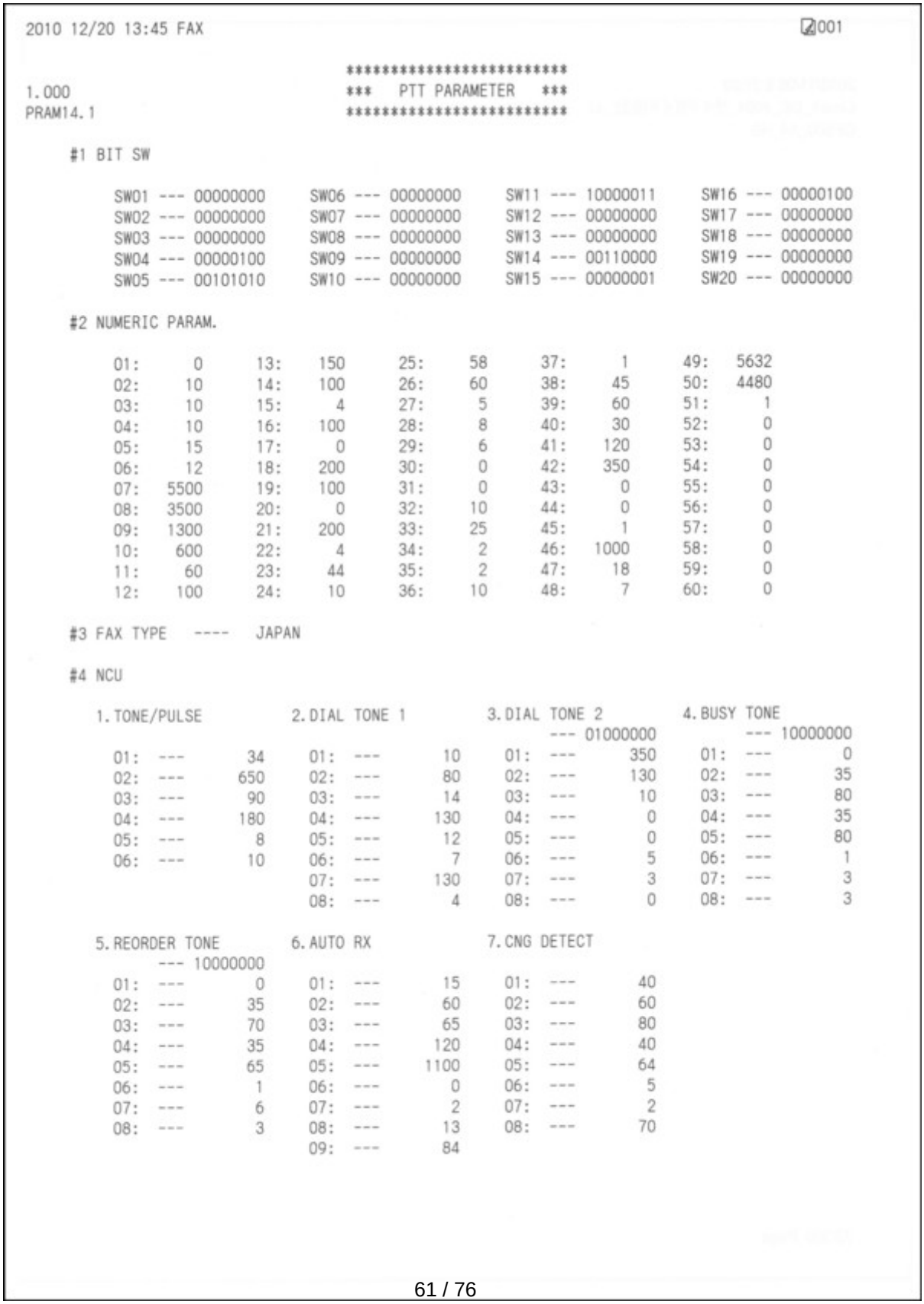
Print and confirm the PTT parameter setting values in the following procedures:

1) In the user mode, press the SCAN button, then press **#, 9, 7, 6, 8, #**.
2) The PTT parameter mode values are printed.

   For the definition and description of each bit of the SW#, refer to the "*G3 Facsimile Service Data Service Handbook*."

   English: QY8-13BC-010
   Japanese: QY8-12B6-020

PTT parameter print sample for the MX883 Japan model:



2010 12/20 13:45 FAX 001

1.000
PRAM14.1

****
*** PTT PARAMETER ***
****

#1 BIT SW

SW01	00000000	SW06	00000000	SW11	10000011	SW16	00000100
SW02	00000000	SW07	00000000	SW12	00000000	SW17	00000000
SW03	00000000	SW08	00000000	SW13	00000000	SW18	00000000
SW04	00000100	SW09	00000000	SW14	00110000	SW19	00000000
SW05	00101010	SW10	00000000	SW15	00000001	SW20	00000000

#2 NUMERIC PARAM.

01:	0	13:	150	25:	58	37:	1	49:	5632
02:	10	14:	100	26:	60	38:	45	50:	4480
03:	10	15:	4	27:	5	39:	60	51:	1
04:	10	16:	100	28:	8	40:	30	52:	0
05:	15	17:	0	29:	6	41:	120	53:	0
06:	12	18:	200	30:	0	42:	350	54:	0
07:	5500	19:	100	31:	0	43:	0	55:	0
08:	3500	20:	0	32:	10	44:	0	56:	0
09:	1300	21:	200	33:	25	45:	1	57:	0
10:	600	22:	4	34:	2	46:	1000	58:	0
11:	60	23:	44	35:	2	47:	18	59:	0
12:	100	24:	10	36:	10	48:	7	60:	0

#3 FAX TYPE ---- JAPAN

#4 NCU

1. TONE/PULSE

01:	---	34
02:	---	650
03:	---	90
04:	---	180
05:	---	8
06:	---	10

2. DIAL TONE 1

01:	---	10
02:	---	80
03:	---	14
04:	---	130
05:	---	12
06:	---	7
07:	---	130
08:	---	4

3. DIAL TONE 2 --- 01000000

01:	---	350
02:	---	130
03:	---	10
04:	---	0
05:	---	0
06:	---	5
07:	---	3
08:	---	0

4. BUSY TONE --- 10000000

01:	---	0
02:	---	35
03:	---	80
04:	---	35
05:	---	80
06:	---	1
07:	---	3
08:	---	3

5. REORDER TONE --- 10000000

01:	---	0
02:	---	35
03:	---	70
04:	---	35
05:	---	65
06:	---	1
07:	---	6
08:	---	3

6. AUTO RX

01:	---	15
02:	---	60
03:	---	65
04:	---	120
05:	---	1100
06:	---	0
07:	---	2
08:	---	13
09:	---	84

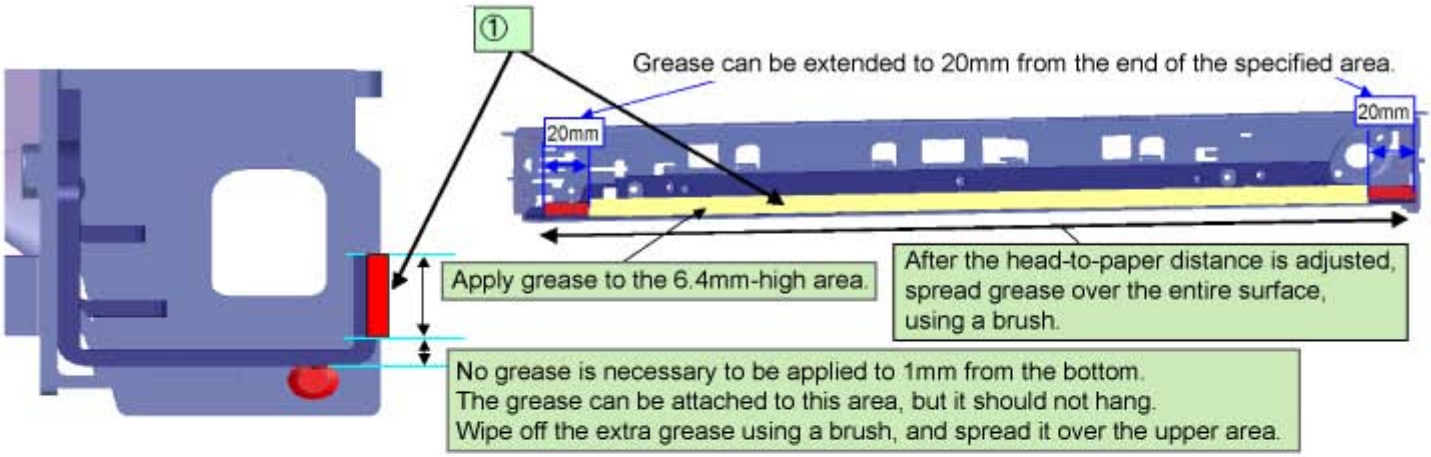
7. CNG DETECT

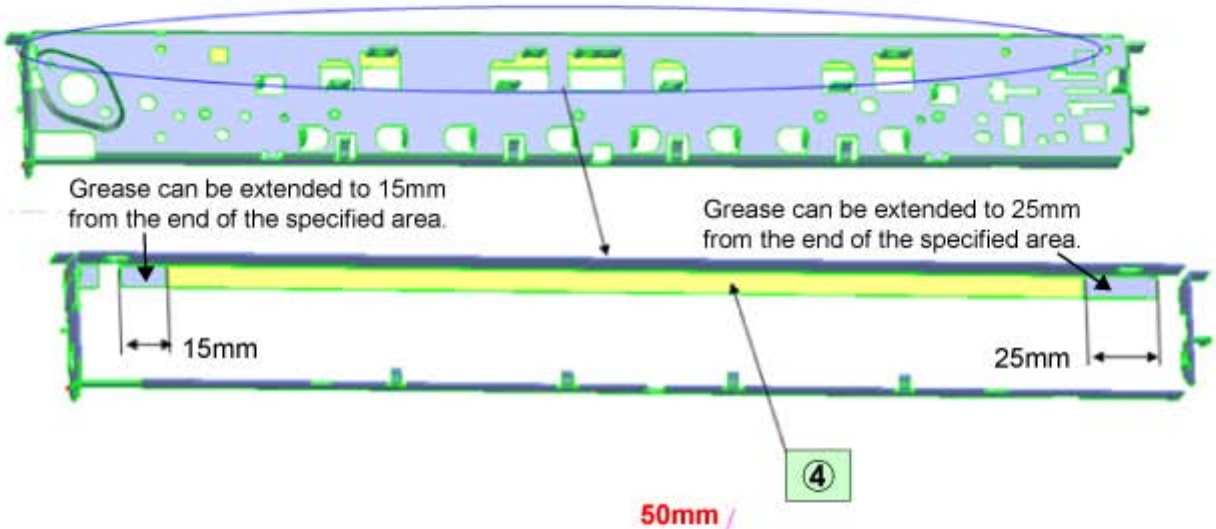
01:	---	40
02:	---	60
03:	---	80
04:	---	40
05:	---	64
06:	---	5
07:	---	2
08:	---	70

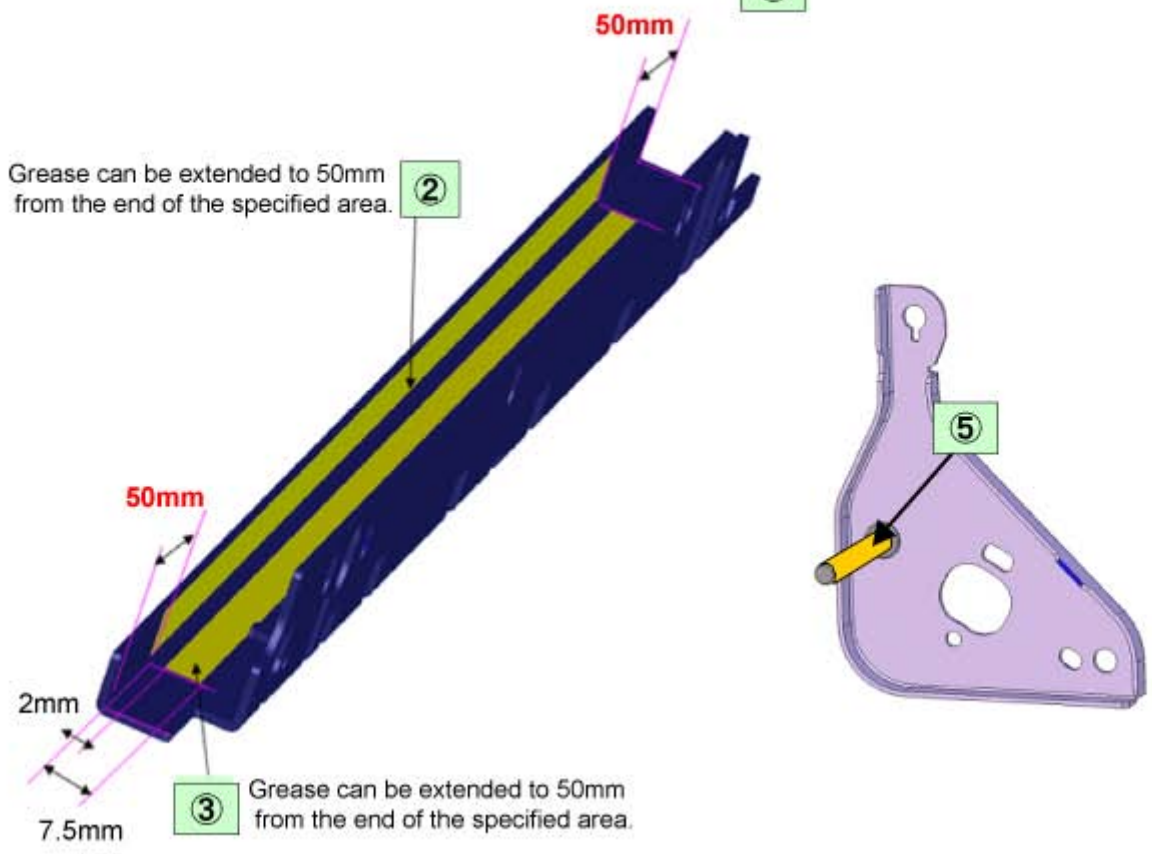
3-5. Grease Application

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
50mm
2mm
7.5mm
③
Grease can be extended to 50mm from the end of the specified area.
⑤

3-6. 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.

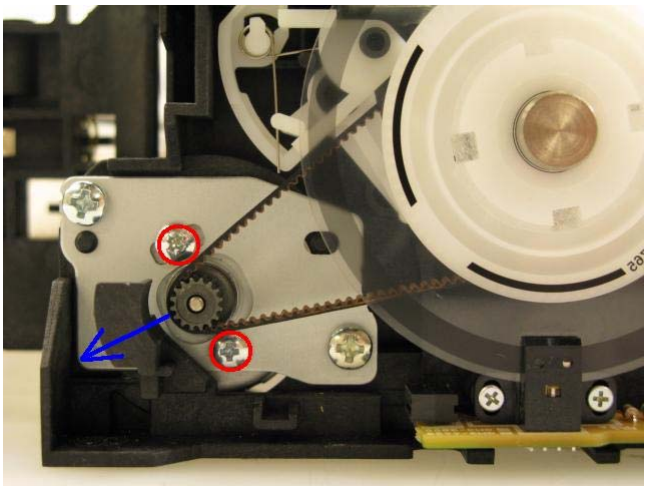
< Procedures >

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.

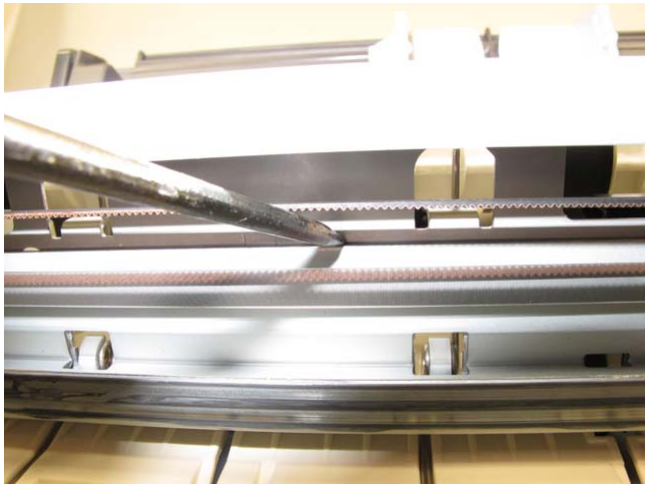


CAUTION

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 MX880 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 3-3. Adjustment and Settings in Service Mode.

(6) Preventive replacement of ink absorber

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

< Guideline for preventive replacement of ink absorber >

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

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

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

< How to judge >

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

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

Yes (80% or more) -> Replace the ink absorber.
No (less than 80%) -> Proceed to Step 2.

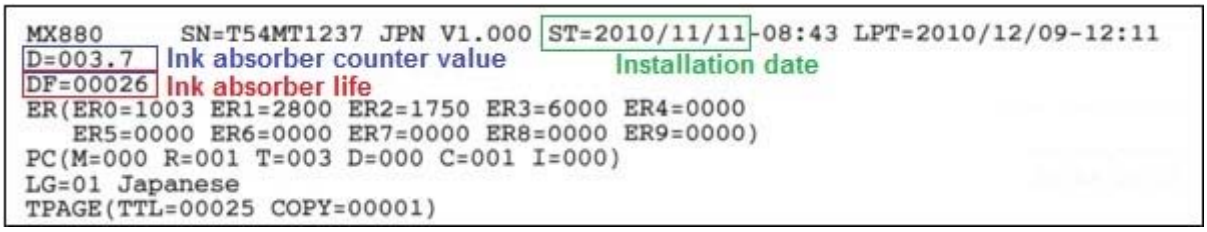
Step 2: Is "DF" 24 or more?

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

Note: - If the "ST" (installation date) value is 2010/06/30 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.

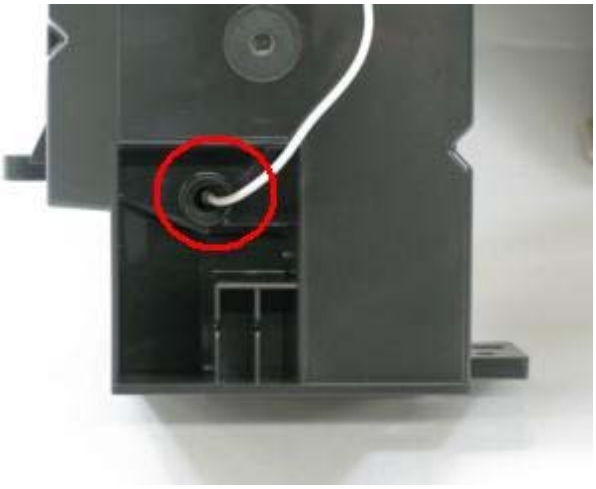
< How to read the EEPROM information print >



(7) Power supply unit and modular board replacement

1) The ground wiring to the AC adapter differs between the Japan model and the other models.

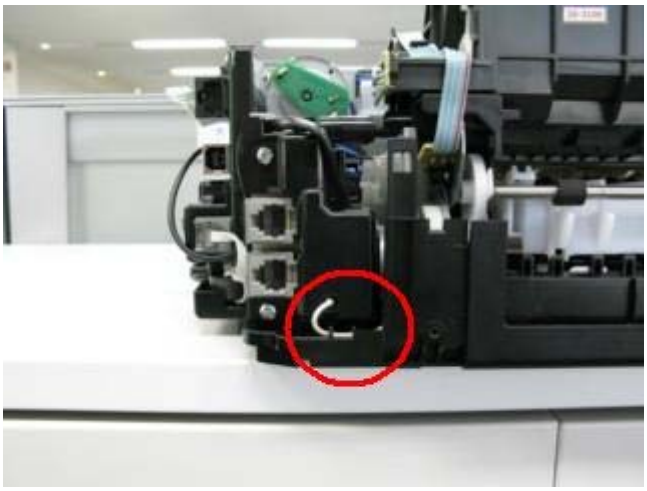
<Japan model> <Other models>



Note: The photos are of the MX870 as an example.

2) The ground wiring to the modular board differs between the Japan model and the other models.

<Japan model> <Other models>



Note: The photos are of the MX870 as an example.

(8) Rating label on the bottom case (except China*)

When the bottom case is replaced, be sure to remove the rating label from the original bottom case and attach it to the replaced new one. The rating label is given to each printer unit respectively, thus the label of one unit is valid only for that unit. For this reason, the label is not available as a service part.

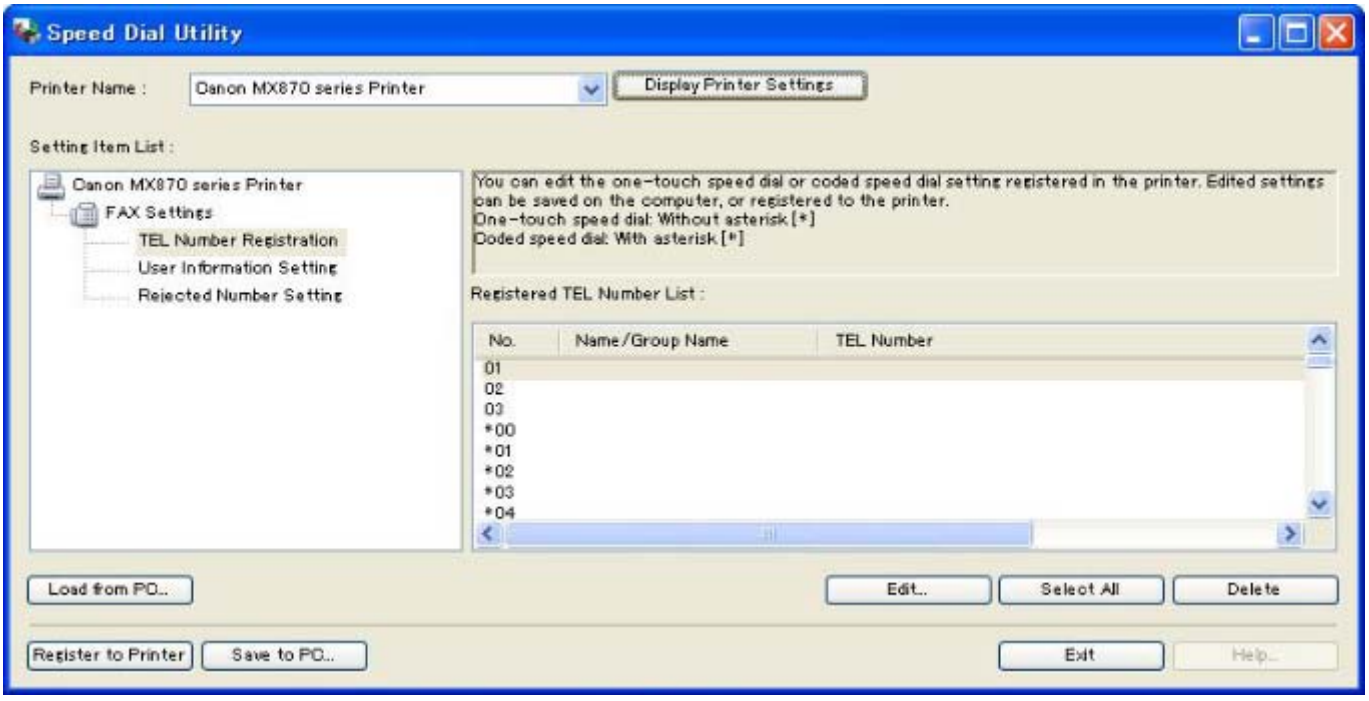
* Note that there is no shipment of the bottom case to China.

(9) PTT label on the bottom case (for New Zealand only)

When the bottom case is replaced, be sure to attach the PTT label from the original bottom case to the replaced new one.
The PTT label is given to each printer unit respectively, thus the label of one unit is valid only for that unit. For this reason, the label is not available as a service part.

(10) Speed Dial Utility

Speed Dial Utility allows users to back up or edit the registered user data (coded speed dials, group dials, phone books, etc.) on a computer. Since those user data is considered as private information and requires a careful handling, we ask users to use this utility.
The dialog box below is for the MX870 as an example.



<3-4. Adjustment and Maintenance in PTT Parameter Mode>
<3-5. Grease Application>
<3-6. Special Notes on Servicing>

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 PC

<Check point>
- Via USB connection to the PC, printing from the PC 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 | Bluetooth | Scan-to-Memory | Card Direct

Power-off in the service mode

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

External and internal appearance

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

Packaging

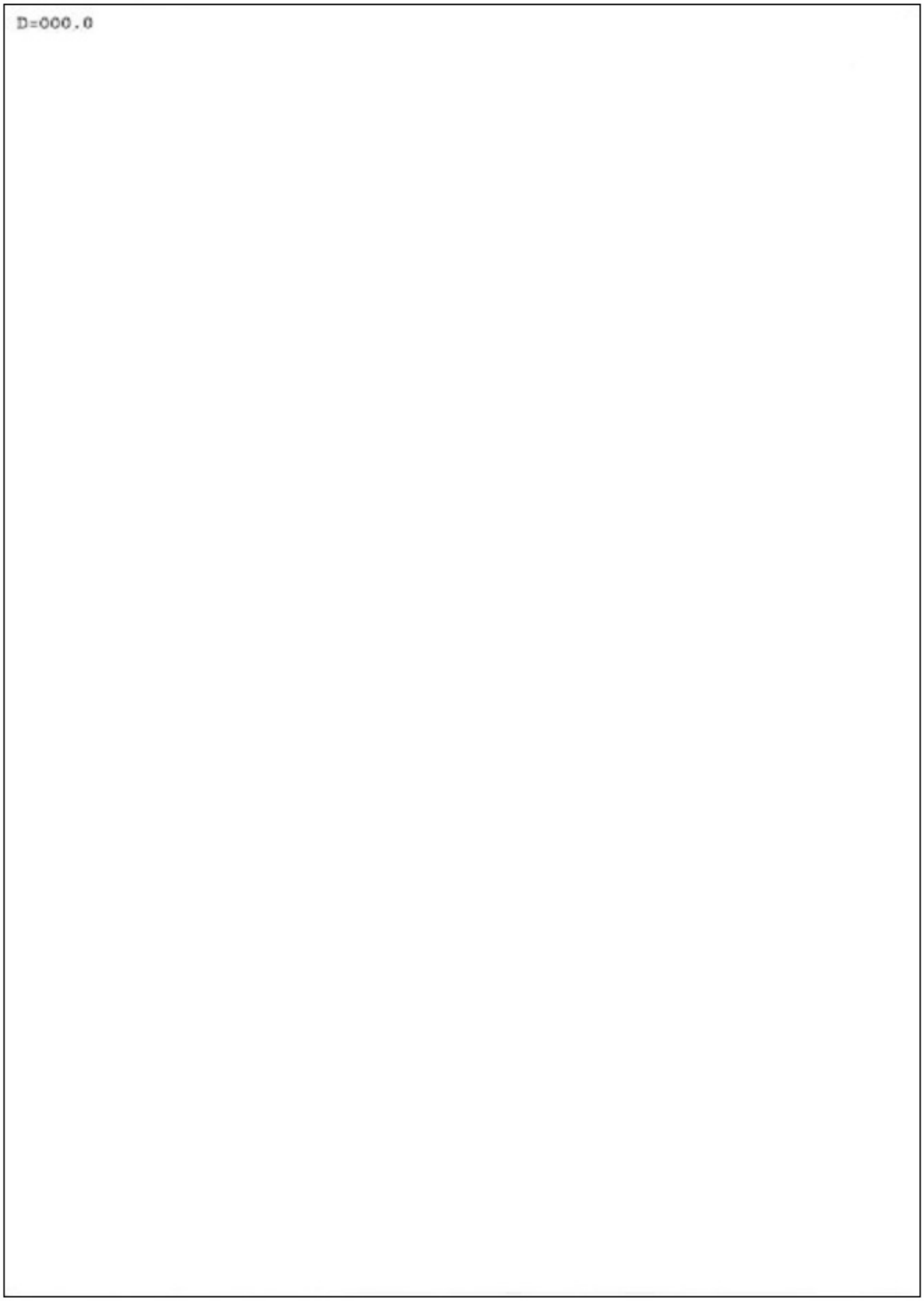
<Check point> See 6. MACHINE TRANSPORTATION.
- The carriage must be locked in the home position.

4-2. Integrated Inspection Pattern Print

< Print sample >

4-3. Ink Absorber Counter Value Print

<Print sample>



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 - PC, 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 - PC, printer driver	10 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- PC, 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.	- PC, 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 - PC, 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 - PC, 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

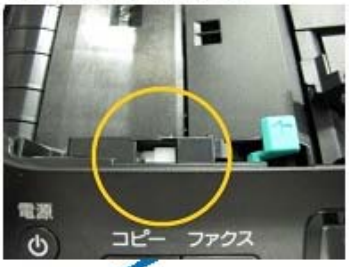
No.	Sensor	Function	Possible problems detected by the sensor
1	DES sensor	Detects paper ejection from the ADF.	- Paper jam in the ADF
2	DS sensor	Detects paper feeding from the ADF.	- No paper in the ADF
3	ADF cover sensor	Detects opening and closing of the document feeder cover.	- Although the document feeder cover is closed, the machine indicates that the cover is open.
4	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 (cover) is opened.
5	PE sensor	Detects the positions of the leading and trailing edges of paper.	- No paper - Paper jam
6	ASF cam sensor	Detects the position of the ASF cam (during paper feeding from the rear tray).	- ASF cam sensor error - Paper feed problem
7	APP encoder sensor	Detects the amount of rotation of the APP encoder. (Controls purging operation and paper feeding from the rear tray or from the cassette).	- APP sensor error - APP position error
8	LF encoder sensor	Detects the amount of rotation of the LF encoder.	- LF position error - Uneven printing
9	Eject encoder sensor	Detects rotation of the eject encoder, and controls paper feeding.	- LF position error - Uneven printing
10	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
11	Ink sensor	Detects the position of an ink tank.	- Wrong position of an ink tank - An error indicating that multiple ink tanks of the same color are installed - No recognition of an ink tank
12	Carriage encoder sensor	Detects the position of the carriage.	- Carriage position error - Printing shifts from the correct position. - Uneven printing - Strange sound
13	Valve cam sensor	Detects the position of the purge valve cam. (Controls purging operation.)	- Valve cam sensor error
14	Pump roller sensor	Detects the position of the purge pump roller. (Controls purging operation.)	- Pump roller sensor error
15	Purge cam sensor	Detects the position of the purge main cam. (Controls purging operation.)	- Purge cam sensor error

Click on the image to enlarge it.

1. DES Sensor

2. DS Sensor

3. ADF Cover Sensor



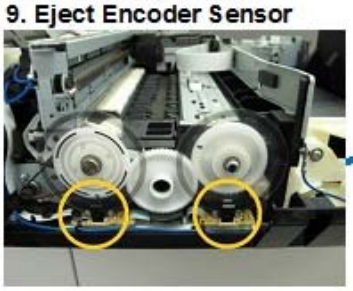
4. Scanner Open Sensor

5. PE Sensor

6. ASF Cam Sensor

7. APP Encoder Sensor

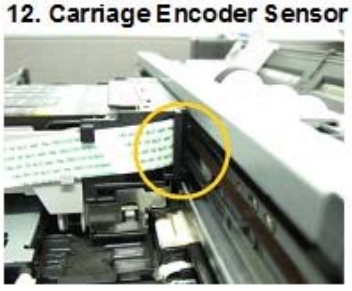
8. LF Encoder Sensor
9. Eject Encoder Sensor

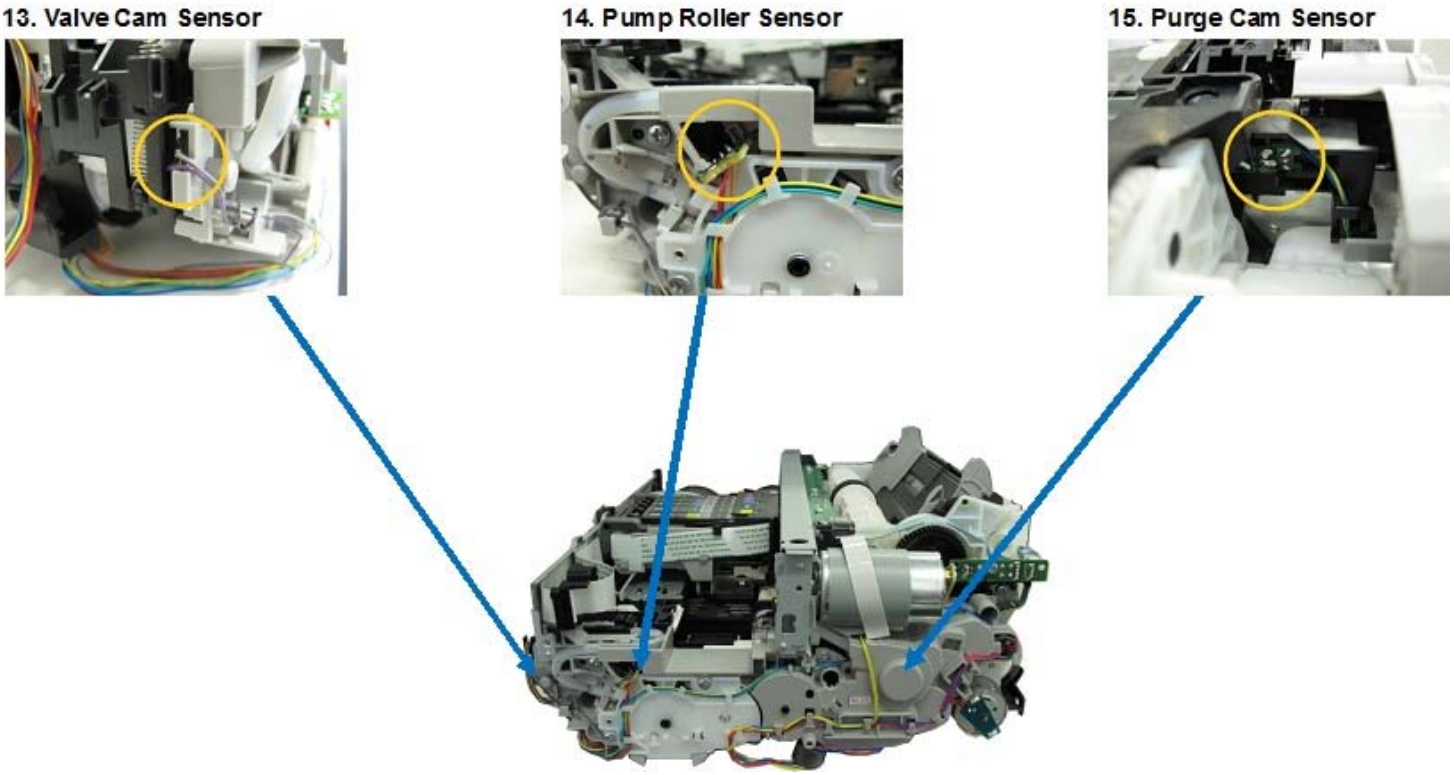


10. Temperature &
Ink Amount Sensor

11. Ink Sensor

12. Carriage Encoder 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.

Note: The photos are of the MX870 as an example.

6. MACHINE TRANSPORTATION

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

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

   See Caution 1 below.

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

   See Caution 2 below.

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

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