

MX860 / MX868

Service Manual

Revision 0



QY8-13CF-000

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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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TABLE OF CONTENTS

1. MAINTENANCE

- 1-1. Adjustment, Periodic Maintenance, Periodic Replacement Parts, and Replacement Consumables by Service Engineer
- 1-2. Customer Maintenance
- 1-3. Special Tools
- 1-4. Sensors
- 1-5. Serial Number Location

2. LIST OF ERROR DISPLAY / INDICATION

- 2-1. Operator Call Errors
- 2-2. Service Call Errors
- 2-3. FAX Errors
- 2-4. Troubleshooting by Symptom

3. REPAIR

- 3-1. Major Replacement Parts
- 3-2. Part Replacement Procedures
 - (1) External housing, scanner unit, and document cover removal
 - (2) Operation panel and document feed unit removal
 - (3) Printer unit removal, and ink absorber replacement
 - (4) Carriage unlocking
 - (5) ASF unit removal
 - (6) Carriage unit removal
 - (7) Spur unit and platen unit removal
 - (8) Purge drive system unit (right plate) and switch system unit (left plate) removal

4. ADJUSTMENT / SETTINGS

4-1. User Mode

4-2. Service Mode

- (1) Service mode operation procedures
- (2) Service Tool functions
- (3) LF / Eject correction
- (4) Button and LCD test
- (5) Ink absorber counter setting

4-3. PTT Parameter Mode

4-4. Grease Application

4-5. Special Notes on Servicing

- (1) Print head problem
- (2) Paper feed motor adjustment
- (3) Carriage unit replacement
- (4) Document pressure sheet (sponge sheet) replacement
- (5) Ink absorber counter setting
- (6) Power supply unit and modular board replacement
- (7) Rating label on the bottom case (for the models other than Japan)
- (8) PTT label on the bottom case (for New Zealand only)
- (9) NAL label on the bottom case (for China only)

4-6. Verification After Repair

- (1) Standard inspection flow
- (2) Service test print
- (3) Ink absorber counter value print

5. MACHINE TRANSPORTATION





1. MAINTENANCE



1-1. Adjustment, Periodic Maintenance, Periodic Replacement Parts, and Consumables by Service Engineer

(1) Adjustment

Adjustment	Timing	Purpose	Tool	Approx. time
EEPROM initialization	- At logic board replacement	To initialize settings	Service Tool ^{*1} Perform in the service mode.	1 min.
Destination settings (EEPROM settings)	- At logic board replacement	To set destination.	Service Tool ^{*1} Perform in the service mode.	1 min.
Ink absorber counter resetting (EEPROM settings)	- At logic board replacement - At ink absorber replacement	To reset the ink absorber counter.	Service Tool ^{*1} Perform in the service mode.	1 min.
Ink absorber counter value setting (EEPROM settings)	- At logic board replacement	To set the ink amount data in the ink absorber to the ink absorber counter.	Service Tool ^{*1} Perform in the service mode.	1 min.
Ink absorber replacement	- When the ink absorber becomes full	To replace the ink absorber with a new one.	Screwdriver, a pair of tweezers, etc.	15 min.
Paper feed motor position adjustment	- At paper feed motor replacement	To adjust the belt tension. (Position the paper feed motor so that the belt is stretched tight.)	None.	5 min.
Manual print head alignment	- At print head replacement - At logic board replacement - When print quality is not satisfying	To secure the dot placement accuracy.	None. Perform in the user mode.	10 min.
Grease application	- At carriage unit replacement	To maintain sliding properties of the carriage rail.	FLOIL KG-107A	1 min.
Ink system function check	- At logic board replacement - At spur unit replacement - At carriage unit replacement	To maintain detection functionality for presence of the ink tanks and each ink tank position.	Service Tool ^{*1} Perform in the service mode.	1 min.
LCD language settings	- At logic board replacement	To set the language to be displayed on the LCD.	None. Perform in the user mode.	1 min.
Platen glass protection sheet (document pressure sheet) position adjustment	- At protection sheet replacement - At document bottom cover replacement - At scanner unit replacement	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).	None.	1 min.
LF / Eject	- At logic board replacement	To correct line feeding (LF	Service Tool ^{*1}	5 min.

	correction	- At paper feed roller replacement	roller diameter).	Perform in the service mode.	(LF correction and Eject correction is performed at the same time.)
		- At logic board replacement - At platen unit replacement	To correct line feeding (eject roller diameter).	Service Tool*1 Perform in the service mode.	
	Carriage rail position adjustment	- At carriage unit replacement - At carriage unit removal	To set the carriage rail to the original position prior to removal or replacement of the carriage unit, put a mark on the main chassis before removal of the carriage unit.	None.	1 min.
	LAN resetting	- At logic board replacement - At WLAN board replacement	To initialize the network setting.	None. Perform in the user mode. - Machine buttons - Computer (IJ Network Tool)	1 min.
	Wired / Wireless LAN setting information display	- At confirmation of the network setting	To confirm the network setting.	None. Perform in the user mode. - Machine buttons - Computer (IJ Network Tool)	1 min.
N	FAX user data settings	- At logic board replacement - At modular board replacement	To confirm the FAX user data settings.	None. Perform in the user mode.	2 min.

N: New adjustment item

*1: Install the Service Tool version 1.030 or later 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 print head alignment, perform manual print head alignment using plain paper.

(2) Periodic maintenance

No periodic maintenance is necessary.

(3) Periodic replacement parts

There are no parts in this machine that require periodic replacement by a service engineer.

(4) Replacement consumables

There are no consumables that require replacement by a service engineer.

1-2. Customer Maintenance

Adjustment	Timing	Purpose	Tool	Approx. time
Manual print head alignment	- At print head replacement - When print quality is not satisfying (uneven printing, etc.)	To ensure accurate dot placement.	- Machine buttons - Computer (MP driver)	10 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Machine buttons - Computer (MP driver)	1 min.
Print head deep cleaning	When print quality is not satisfying, and not improved by print head cleaning.	To improve nozzle conditions.	- Machine buttons - Computer (MP 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).	- Machine buttons - Computer (MP 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.)	- Machine buttons - Computer (MP driver)	1 min.
Scanning area cleaning	When the platen glass or document pressure sheet is dirty.	To clean the platen glass and pressure sheet.	Soft, dry, and clean lint-free cloth.	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.
LAN resetting	When changing the network setting, etc.	To return the LAN setting to its original state.	- Machine buttons - Computer (IJ Network Tool)	1 min.
Wired / Wireless LAN setting information display	When changing the network setting, etc.	To confirm the LAN setting information.	- Machine buttons - Host computer (IJ Network Tool)	1 min.
FAX user data settings	When changing the telephone line type, etc.	To confirm the FAX user data settings.	- Machine buttons	2 min.
FAX number data	When the printer is repaired, etc.	To confirm that the registered FAX numbers are retained.	- Machine buttons	2 min.

1-3. Special Tools

Name	Tool No.	Application	Remarks
FLOIL KG-107A	QY9-0057-000	To the carriage rail sliding portions.	In common with the MP610, etc.

1-4. Sensors

No.	Sensor	Function	Possible problems
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	DF open sensor	Detects opening and closing of the ADF.	- The machine stays in the sleep mode even when the document cover is opened.
5	SCN open sensor	Detects opening and closing of the scanning unit (cover).	- The carriage does not move to the center.
6	PE sensor	Detects paper feeding and ejection.	- No paper - Paper jam
7	ASF sensor	Controls paper feeding from the rear tray.	- Paper feed problem - ASF sensor error
8	APP sensor	Controls paper feeding and purging operation.	- APP sensor error
9	LF encoder sensor	Detects rotation of the LF encoder, and controls its drive.	- Uneven printing - LF position error
10	Carriage encoder sensor	Detects the position of the timing slit film, and controls printing.	- Printing shifts from the correct position. - Carriage position error
11	Temperature sensor	Detects the temperature of the inside of the machine.	- Internal temperature error
12	Ink sensor	Detects the position of an ink tank.	- No recognition of an ink tank - Wrong position of an ink tank
13	Valve cam sensor	Controls purging operation.	- Valve cam sensor error
14	Pump roller sensor	Detects the position of the pump roller	- Pump roller sensor error
15	Purge cam sensor	Controls purging operation.	- PG cam sensor error

1.DES Sensor



2.DS Sensor



3.ADF Cover Sensor



4.DF Open Sensor



5.SCN Open Sensor



6.PE Sensor



7.ASF Sensor



8.APP Sensor



9.LF Encoder Sensor



10.Carriage Encoder Sensor



11.Temperature Sensor



12.Ink Sensor

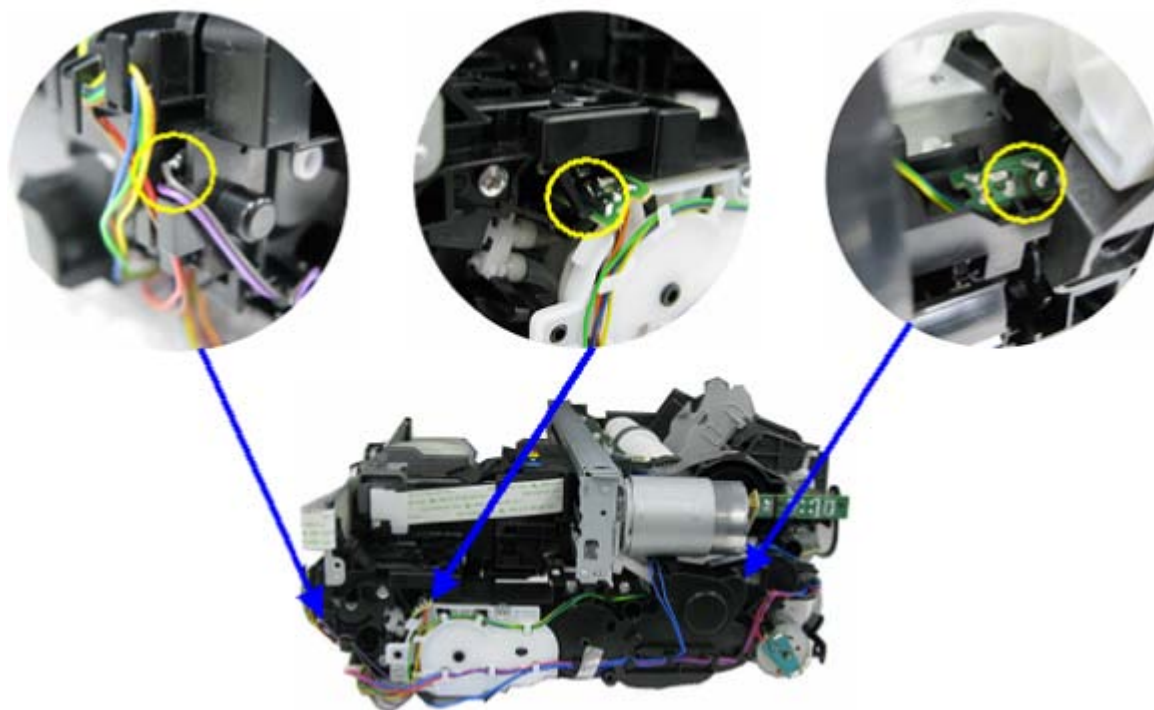


TONER
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13.Valve Cam Sensor

14.Pump Roller Sensor

15.Purge Cum Sensor



1-5. 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.

◀<1. MAINTENANCE>▶▶



2. LIST OF ERROR DISPLAY / INDICATION

Errors and warnings are displayed by the following ways:

1. Operator call errors are indicated by the Alarm LED lit in orange, and the error and its solution are displayed on the LCD in text and by icon.
2. Messages during printing from a computer are displayed on the MP 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.

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

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.	- ASF unit - Pressure roller unit - Switch system unit - Paper feed motor
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.	- Pick-up arm unit - Pressure roller unit - Switch system unit - Paper feed motor
Paper jam.	[1300]	---	The paper is jammed. Clear the paper and press [OK].	Remove the jammed paper or foreign material causing a paper jam (paper remainings, clips, pens, etc.), and press the OK button.	- ASF unit - Pick-up arm unit - Cassette unit - Pressure roller unit
Paper jam in the rear guide.	[1303]	---			
Paper jam in the under guide.	[1304]	---			
Ink may have run out.	[1600]	U041	The following ink may have run out. Replacing the ink tank is recommended.	Replace the applicable ink tank, or press the OK button to clear the error without ink tank replacement. When the error is cleared by pressing the OK button, ink may run out during printing.	- Ink tank - Spur unit - Logic board
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 - Logic board
Print head not installed, or not properly installed.	[1401]	U051	Print head is not installed. Install the print head.	Install the print head properly.	- Print head - Carriage unit - Logic board
Faulty print head ID.		U052	The type of print head is incorrect. Install the	Re-set the print head. If the error is not cleared, the print	- Print head - Logic board

Print head temperature sensor error.	[1403]		correct print head.	head may be defective. Replace the print head.	
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 - Logic board
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 - Logic board
Warning: The ink absorber becomes almost full.	[1700]	---	Contact the support center or service center for ink absorber replacement. Press [OK] to continue printing.	Replace the ink absorber, and reset its counter. [See 4-5. Special Notes on Servicing, (5) Ink absorber counter setting.] Pressing the OK button will exit the error, and enable printing without replacing the ink absorber. However, when the ink absorber becomes full, no further printing can be performed unless the applicable ink absorber is replaced.	- Absorber kit
The connected digital camera or digital video camera does not support Camera Direct Printing.	[2001]	---	Incompatible device detected. Remove the device.	Remove the cable between the camera and the machine.	- PictBridge board - Logic board
Automatic duplex printing cannot be performed.	[1310]	---	This paper is not compatible with duplex printing. Remove the paper and press [OK].	The paper length is not supported for duplex 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 feed roller unit - PE sensor board - Logic board
The remaining ink amount unknown (raw ink present).	[1683]	U130	(Applicable ink tank icon) The remaining level of the ink cannot be correctly detected.	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one. Printing with a once-empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the machine EEPROM that the function to detect the remaining ink amount was disabled.	- Ink tank - Spur unit


Ink tank not recognized.	[1684]	U140	The following ink tank cannot be recognized. (Applicable ink tank icon)	A non-supported ink tank (an ink tank that is sold in a different region from where the machine was purchased) is installed (the ink tank LED is turned off). Install the supported ink tanks.	- Ink tank - Logic board
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 - Logic board
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 - Logic board
Non-supported hub.	[2002]	---	An unsupported USB hub is connected. Remove the hub.	Remove the applicable USB hub from the PictBridge (USB) connector.	- PictBridge board - Logic board
Document cover not closed.	---	---	The feeder cover is open. Close cover and press [OK].	Close the document cover, and press the OK button.	- DF unit - DF switch unit
Paper jam in the ADF.	---	---	Document in ADF. Redo operation after checking document in ADF and pressing [OK].	Remove the paper from the ADF, and press the OK button.	- DF unit
No paper in the ADF.	---	---	No document in ADF. Press [OK] and redo operation after setting document.	Press the OK button to clear the error.	- DF unit
Paper in the ADF is too long.	---	---	Document size is too long. Redo operation after checking document on ADF and pressing [OK].	Remove the paper from the ADF, and press the OK button.	- DF unit
Duplex printing not available with the paper in the ADF.	---	---	Document size not suitable for two-sided scanning. Press [OK] to cancel operation and discharge document.	Remove the paper from the ADF, and press the OK button.	- DF unit

2-2. Service Call Errors (by Cyclic Blinking of Alarm and Power LEDs)

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.

Cycles of blinking of Alarm and Power LEDs	Error	Error code	Conditions	Solution (Check points and replacement items)
2 times	Carriage error	[5100]	An error occurred in the carriage encoder signal.	(1) Smearing or scratches on the carriage slit film; clean the timing slit film. (2) Foreign material or paper debris that obstructs the carriage movement; remove foreign material. (3) Ink tank conditions; re-set the ink tanks. (4) Cable connection (5) Part replacement: - Timing slit disk film - Carriage unit - Logic board - Carriage motor
3 times	Line feed error	[6000]	An error occurred in the LF encoder signal.	(1) Smearing or scratches on the LF / EJ slit film; clean the LF / EJ slit film. (2) Foreign material or paper debris in the LF drive; remove foreign material. (3) Cable connection (4) Part replacement: - LF / EJ slit film - LF / EJ timing sensor unit - Paper feed roller unit - Logic board - Paper feed motor
4 times	Purge cam sensor error	[5C00]	An error occurred in the purge unit.	(1) Foreign material or paper debris around the purge drive system unit; remove foreign material. (2) Cable connection (3) Part replacement: - Purge drive system unit - Logic board
5 times	ASF (cam) sensor error	[5700]	An error occurred in the ASF cam sensor.	(1) Cable connection (2) Part replacement: - ASF unit - PE sensor board unit - Logic board
6 times	Internal temperature error	[5400]	The internal temperature is not normal.	(1) Cable connection (2) Part replacement: - Spur unit - Logic board - Print head
7 times	Ink absorber full	[5B00]	The ink absorber is supposed to	(1) Ink absorber condition

		5B01]	<p>be full.</p> <p><u>Message on the LCD:</u></p> <p>Ink absorber full. Service required.</p> <p><u>Error codes:</u></p> <p>5B00: Main ink absorber is full (overseas).</p> <p>5B01: Main ink absorber is full (Japan). (In EEPROM information print, "5B00" is printed instead of "5B01.")</p>	<p>(2) Part replacement:</p> <ul style="list-style-type: none"> - Ink absorber kit <p>(3) Ink absorber counter value in the EEPROM;</p> <p>reset the ink absorber counter.</p> 
8 times	Print head temperature rise error	[5200]	The print head temperature exceeded the specified value.	<p>(1) Print head condition</p> <p>(2) Cable connection</p> <p>(3) Part replacement:</p> <ul style="list-style-type: none"> - Print head - Logic board
9 times	EEPROM error	[6800, 6801]	A problem occurred in reading from or writing to the EEPROM.	<p>(1) Part replacement:</p> <ul style="list-style-type: none"> - Logic board
10 times	VH monitor error	[B200]	The internal temperature exceeded the specified value.	<p>(1) Part replacement:</p> <ul style="list-style-type: none"> - Print head and logic board (Replace them at the same time.) - Power supply unit
11 times	Carriage lift mechanism error	[5110]	The carriage did not move up or down properly.	<p>(1) Foreign material or paper debris that obstructs the carriage movement; remove foreign material.</p> <p>(2) Part replacement:</p> <ul style="list-style-type: none"> - Switch system unit - Carriage unit
12 times	APP position error	[6A80]	An error occurred in the APP motor.	<p>(1) Foreign material or paper debris around the purge drive system unit; remove foreign material.</p> <p>(2) Foreign material or paper debris around the ASF unit; remove foreign material.</p>
14 times	APP sensor error	[6A90]	An error occurred during paper feeding or purging.	<p>(3) Cable connection</p> <p>(4) Part replacement:</p> <ul style="list-style-type: none"> - Purge drive system unit - Logic board
	Paper feed cam sensor error	[6B10]	An error occurred in the paper feed cam sensor during paper feeding from the cassette, or the paper absorbing a large amount of ink jammed in the PF rear guide.	<p>(1) Jammed paper in the PF rear guide (when a large amount of ink was absorbed in the paper); remove the jammed paper and foreign material.</p> <p>(2) Foreign material or paper debris in the cassette or in the PF rear guide; remove foreign material.</p> <p>(3) Part replacement:</p> <ul style="list-style-type: none"> - PF pick-up unit - Logic board
16 times	Pump roller sensor error	[5C20]	The pump roller position cannot be detected.	<p>(1) Cable connection</p> <p>(2) Part replacement:</p> <ul style="list-style-type: none"> - Purge drive system unit
17 times	Paper eject encoder error	[6010]	An error occurred in the paper eject encoder signal.	<p>(1) Smearing or scratches on the LF / EJ slit film;</p> <p>clean the LF / EJ slit film.</p>

				(2) Foreign material or paper debris in the paper path; remove foreign material. (3) Cable connection (4) Part replacement: - LF / EJ slit film - LF / EJ timing sensor unit - Platen unit - Logic board - Paper feed motor
19 times	Ink tank position sensor error	[6502]	None of the ink tank position is detected.	(1) Ink tank position; confirm the ink tank position. (2) Re-set or replacement of ink tanks (3) Cable connection (4) Part replacement: - Spur unit - Logic board
20 times	Other errors	[6500]	An unidentified error or a network error occurred.	(1) Part replacement: - Logic board - WLAN board
21 times	Drive switch error	[C000]	Drive was not switched properly.	(1) Foreign material or paper debris in the drive switch area; remove foreign material. (2) Ink tank conditions; confirm that the ink tanks are seated properly, or re-set the ink tanks properly. (3) Part replacement: - Carriage unit - Purge drive system unit - ASF unit
22 times	Scanner error	[5011]	An error occurred in the scanner.	(1) Document pressure sheet conditions (1) Cable connection (2) Part replacement: - Document pressure sheet (sponge sheet) - Scanner unit - Logic board
	FB motor error	[5012]	An error occurred in the scanner FB motor.	(1) Cable connection (2) Part replacement: - Scanner unit
23 times	Valve cam sensor error	[6C10]	The valve cam sensor was faulty at power-on or when purging was attempted.	(1) Foreign material or paper debris around the purge drive system unit; remove foreign material. (2) Cable connection (3) Part replacement: - Purge drive system unit - Logic board



Before replacement of the logic board ass'y, check the ink absorber counter value (by service test print or EEPROM information print). If the counter value is 7% or more, also replace the ink absorber kit when replacing the logic board ass'y. If the counter value is less than 7%, register the current ink absorber counter value to the replaced new logic board instead. [\[See 4-5. Special Notes on Servicing, \(5\) Ink absorber counter setting, for details.\]](#)

2-3. FAX Errors

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

(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/Reset 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 seconds in CBT).	- Increase the transmission level of the 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 failed.	- Try a higher transmission level.
##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 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.
##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 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.
##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 sec.) has occurred.	- Increase the period of time of the T5 time-over.
##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	- Increase the transmission level of the

		has been received.	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.

2-4. Troubleshooting by Symptom

	Symptom	Solution
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	(1) Confirm connection of the power supply unit: - Harness and connector conditions (2) Replace the following item(s): - Logic board - Power supply unit - Panel board
	A strange noise occurs.	(1) Examine and remove any foreign material or paper debris. (2) Replace the following item(s): - The part generating the strange noise - Logic board
	The LCD does not display properly. A portion of the LCD is not displayed. The display flickers.	(1) Confirm cable connection (LCD FFC and panel harness): - Harness and connector conditions - No cable breakage, etc. (2) Replace the following item(s): - LCD FFC - LCD viewer unit - Panel board - Logic board
	Paper feed problems (multi-feeding, skewed feeding, no feeding).	(1) Examine and remove any foreign material or paper debris. (2) Confirm the PF rear cover and the cassette conditions. (3) Confirm cable connection. (4) Replace the following item(s): - ASF unit (for paper feeding error from the rear tray) - PF pick-up unit (for paper feeding error from the cassette) - DF unit (for document scanning error) - PE sensor board - Pressure roller unit - Cassette unit
	Faulty scanning (no scanning, strange noise).	(1) Confirm cable connection (scanner motor cable and CIS FFC): - Harness and connector conditions - No cable breakage, etc. (2) Replace the following item(s): - Scanner unit - Logic board
Unsatisfactory print quality	No printing, or no color ejected. Faint printing, or white lines on printouts. Uneven printing. Improper color hue.	(1) Confirm the ink tank conditions: - Confirmation of the air-through of an ink tank - Re-setting of an ink tank (2) Remove foreign material from the purge unit caps, if any. (3) Perform cleaning or deep cleaning of the print head. (4) Perform print head alignment. (5) Replace the following item(s): - Print head* ¹ , and ink tanks - Logic board - Purge drive system unit

	Paper gets smeared.	(1) Clean the inside of the machine. (2) Perform bottom plate cleaning. (3) Perform paper feed roller cleaning.
	The back side of paper gets smeared.	(1) Clean the inside of the machine. (2) Perform bottom plate cleaning. (3) Examine the platen ink absorber. (4) Examine the paper eject roller. (5) Replace the following item(s): - The part in the paper path causing the smearing
	Graphic or text is enlarged on printouts in the carriage movement direction.	(1) Confirm that the carriage slit film is free from smearing or scratches: - Cleaning of the timing slit film. (2) Replace the following item(s): - Timing slit film - Carriage unit - Logic board - 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): - LF / EJ slit film - LF / EJ timing sensor unit - Platen unit - Logic board - Scanner unit (for copying)
Faulty scanning	No scanning.	(1) Replace the following item(s): - Scanner unit - Logic board
	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
Network connection problem	No printing.	(1) Examine if printing is performed properly via USB connection. (2) Confirm the network settings. (3) Replace the following item(s): - Logic board (for wired / wireless LAN) - WLAN board (for wireless LAN)
FAX problem	No FAX sending or reception.	(1) Confirm the FAX settings. (2) Replace the following item(s): - Modular board - Logic board

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

◀ <2. LIST OF ERROR DISPLAY / INDICATION> ▶



3. REPAIR

3-1. Major Replacement Parts (and Notes on Disassembling / Reassembling)

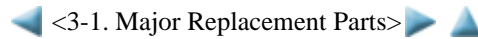
Service part	Est. time required (min.)	Recommended removal procedure / Notes on replacement *1	Adjustment / settings	Operation check
Logic board ass'y	15	(1) Right cover (2) Logic board - Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y. - Before replacement, check the ink absorber counter value (by service test print or EEPROM information print).	After replacement: 1. Initialize the EEPROM. 2. Set the ink absorber counter value. 3. Set the destination in the EEPROM. 4. Correct the CD / DVD and automatic print head alignment sensors. 5. Check the ink system function. 6. Perform LF / Eject correction. 7. Perform button and LCD test. Perform 1 to 7 in the service mode. [See 4-2. Service Mode , for details.] 8. Perform print head alignment and LCD language setting in the user mode.	- EEPROM information print - Service test print - Printing via USB connection - Copying - Direct printing from a digital camera (PictBridge)
Absorber kit	15	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Absorber kit	After replacement: 1. Reset the ink absorber counter. [See 4-2. Service Mode , for details.]	- Ink absorber counter value print (After the ink absorber counter is reset, the counter value is printed automatically.)
Carriage unit	20	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Logic board / PE sensor (7) ASF unit (8) Carriage unit	At replacement: 1. Before removal of the carriage rail, mark the carriage rail position. [See 4-5. Special Notes on Servicing , (3) Carriage unit replacement , for details.] 2. Apply grease to the sliding portions of the carriage rail. [See 4-4. Grease Application , for details.] 3. Check the ink system function. [See 4-2. Service Mode , for details.] 4. Perform print head	- Service test print (Confirm ink system function.)

			alignment in the user mode.	
Switch system unit	30	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Logic board / PE sensor (7) ASF unit (8) Carriage unit (9) Spur unit / Platen unit (10) Switch system / Paper feed motor	At replacement: 1. Adjust the paper feed motor. [See 4-5. Special Notes on Servicing, (2) Paper feed motor adjustment , for details.]	- EEPROM information print - Service test print
Paper feed motor		- The screws securing the paper feed motor are allowed to be loosened only for paper feed motor replacement. (DO NOT loosen them in any other cases.)		
Platen unit	30	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Logic board (7) Carriage unit (8) Spur unit (9) Platen unit	After replacement: 1. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print
Spur unit	30	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Logic board (7) Carriage unit (8) Spur unit (9) Platen unit - DO NOT contact the spur edges.	After replacement: 1. Check the ink system function. 2. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print
Purge drive system unit	30	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Printer unit (6) Logic board / PE sensor (7) ASF unit (8) Carriage unit (9) Spur unit / Platen unit (10) Purge drive system unit	After replacement: 1. Confirm the purging operation and the machine operation. [See 4-6. Verification After Repair for details.]	- Service test print
Carriage rail and main chassis	30	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover)	At replacement: 1. Apply grease to the sliding portions. [See 4-4. Grease	- Service test print

Idler pulley parallel pin	30	(4) Main case (5) Printer unit	Application , for details.]	
APP code wheel gear shaft	30	(6) Logic board / PE sensor (7) ASF unit (8) Carriage unit (9) Spur unit / Platen unit (10) Purge drive system unit		
Document pressure sheet	10	(1) Right cover (2) Left cover (3) Scanner unit	At replacement: 1. Confirm the document pressure sheet position. [See 4-5. Special Notes on Servicing , (4) Document pressure sheet replacement , for details.]	- Service test print
Document bottom cover	10			
Scanner unit	10			
LCD ass'y	10	(1) Panel cover (2) Operation panel (3) LCD ass'y - Be cautious not to scratch or damage the LCD cable.	At replacement: 1. Perform button and LCD test. [See 4-2. Service Mode , for details.]	- Service test print
Timing slit strip film	15	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case	After replacement: 1. Perform print head alignment in the user mode. 2. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print
Timing slit disk feed film	15	- Upon contact with the film, wipe the film with ethanol. - Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film		
Print head	1		After replacement: 1. Perform print head alignment in the user mode. 2. Perform nozzle check pattern printing in the user mode.	- Service test print
Wireless LAN board ass'y	15	(1) Right cover (2) Left cover (3) Document cover / Scanning unit (cover) (4) Main case (5) Wireless LAN board ass'y	After replacement: 1. Reset the LAN settings in the user mode. 2. Print the EEPROM information in the service mode to confirm that the WL LAN MAC address is properly updated. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print

***1: General notes:**

- Make sure that the flexible cables and wires in the harness are in the proper position and connected correctly. See [3-2. Part Replacement Procedures](#) or the Parts Catalog for details.
- Do not drop the ferrite core, which may cause damage.
- Protect electrical parts from damage due to static electricity.
- Before removing a unit, after removing the power cord, allow the machine to sit for approx. 1 minute (for capacitor discharging to protect the logic board ass'y from damages).
- Do not touch the timing slit strip film, timing slit disk feed film, and timing slit disk eject film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- 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 [4-5. Special Notes on Servicing, \(3\) Carriage unit replacement](#), for details.]



<3-1. Major Replacement Parts>

3-2. Part Replacement Procedures (Click on the image to enlarge it.)

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

(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 "4-5. Special Notes on Servicing, (6) Power supply unit and modular board replacement."

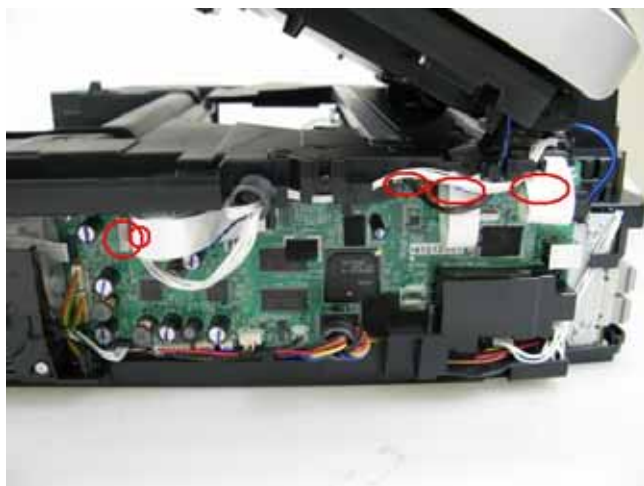


3) Remove the side cover R. (2 screws)

<The scanner unit hinges are fitted in the right and left side covers.>

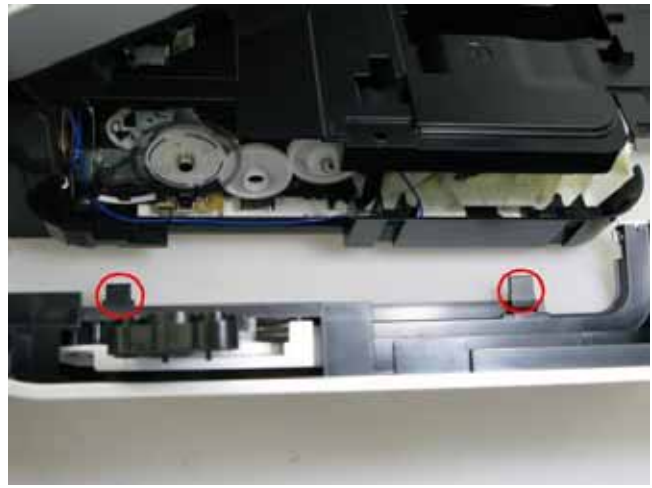


- 4) Remove the scanner cable, LCD cable, document feeder harness, panel ground harness, and core. (1 screw)
<The core fits to the main case rib.>

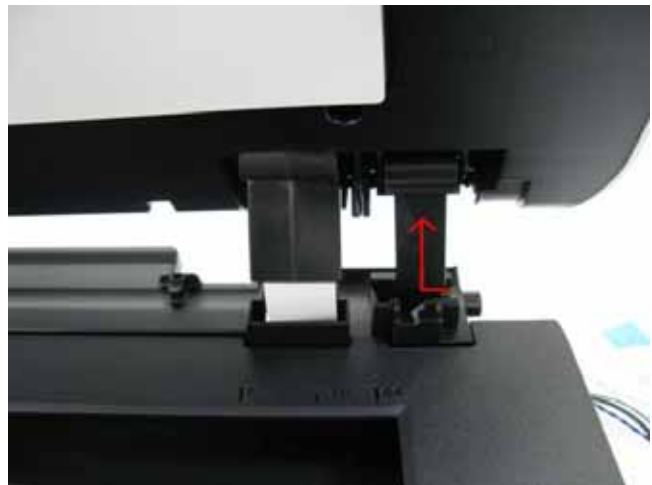


- 5) Remove the side cover L, disengage the scanner support, then separate the scanner from the printer. (4 screws)





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

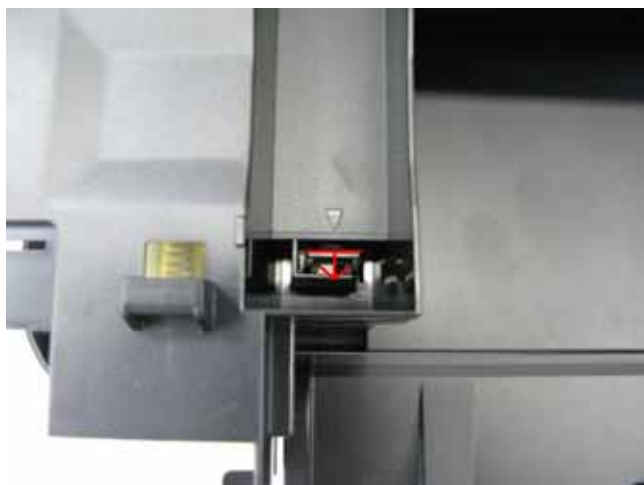


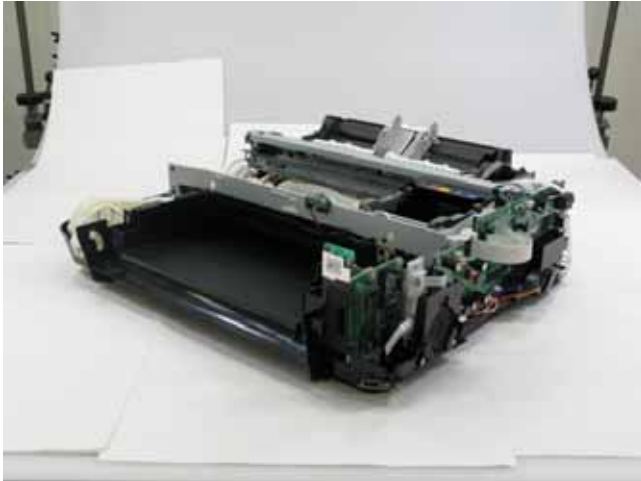
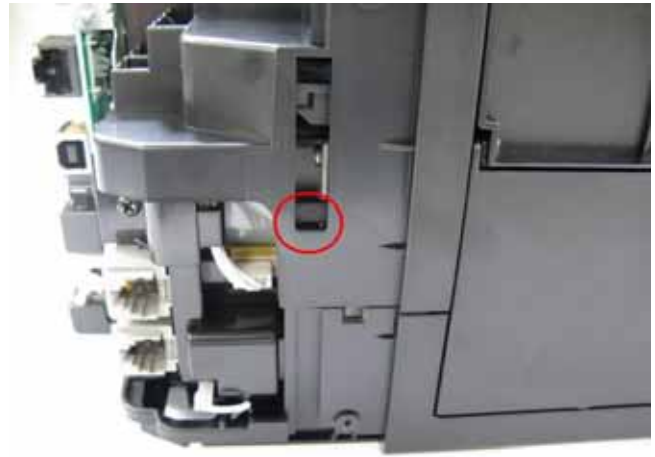
7) Remove the emblem.

<Push the emblem top to remove from the double-sided adhesive tape.>



8) Remove the main case. (no screws)



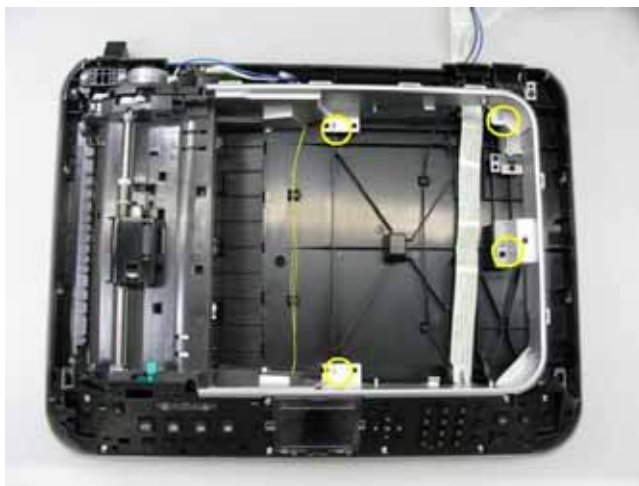
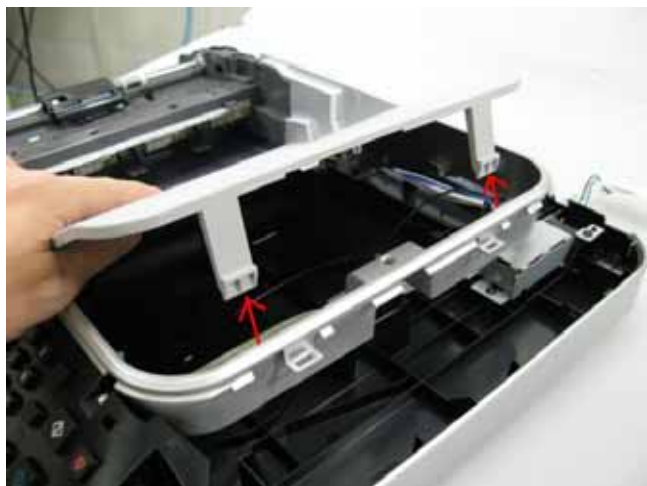


(2) Operation panel and document feed unit removal

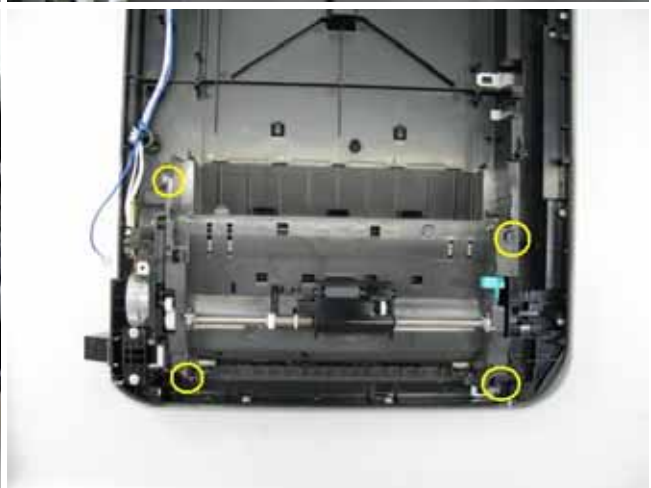
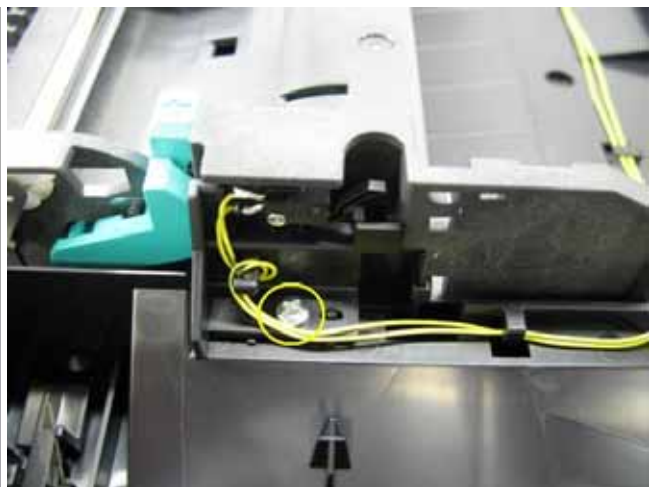
- 1) Remove the feed tray, panel cover, right cover, and rear cover. (no screws)
<Be cautious not to damage the tabs and hooks.>



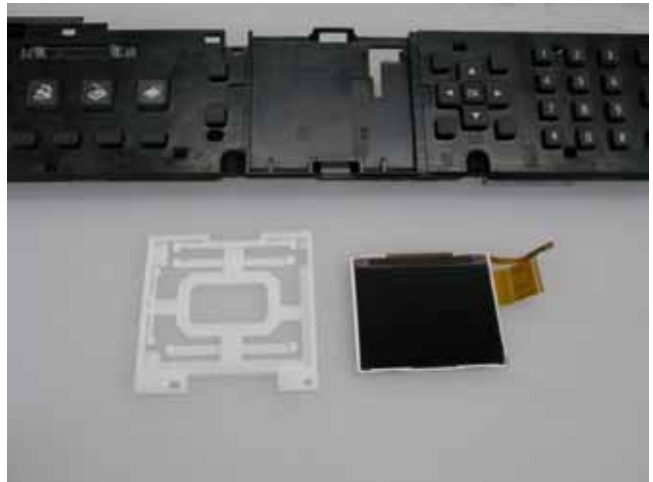
2) Remove the document feed cover, eject tray, and tray base. (4 screws)



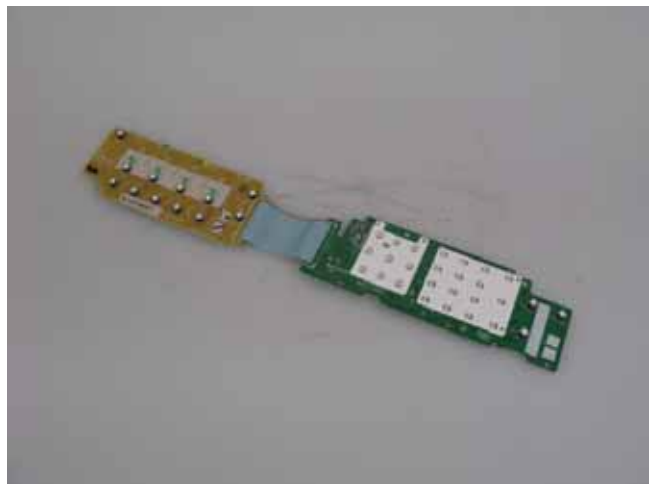
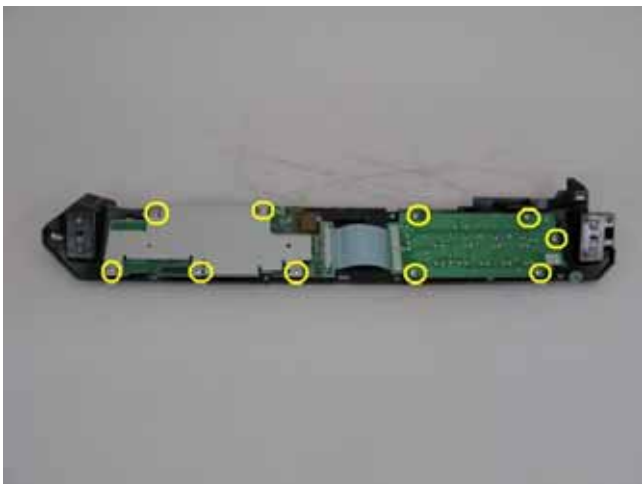
3) Remove the operation panel, document feed switch, and document feed unit. (15 screws)
<The core fits to the document feed base rib.>



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



5) Remove the panel board (10 screws).

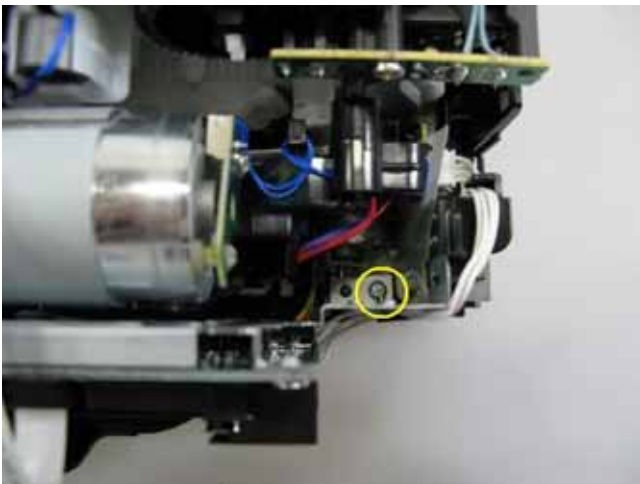


(3) Printer unit removal, and ink absorber replacement

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



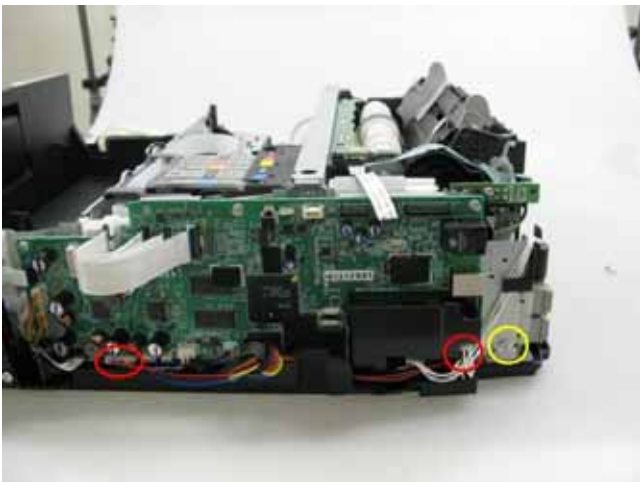
2) Separate the main PCB chassis from the bottom case. (1 screw)



3) Separate the PCI DC and GND harnesses from the printer unit. (2 screws)

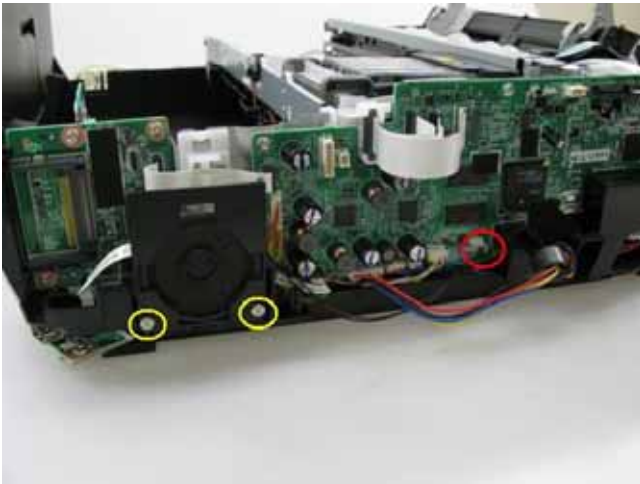
<The GND harness fits to the bottom case rib.>

See "[4-5. Special Notes on Servicing](#), (6) [Power supply unit and modular board replacement](#)."



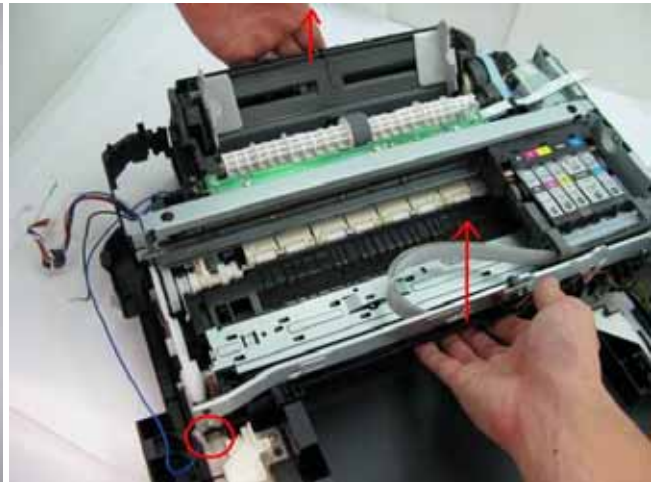
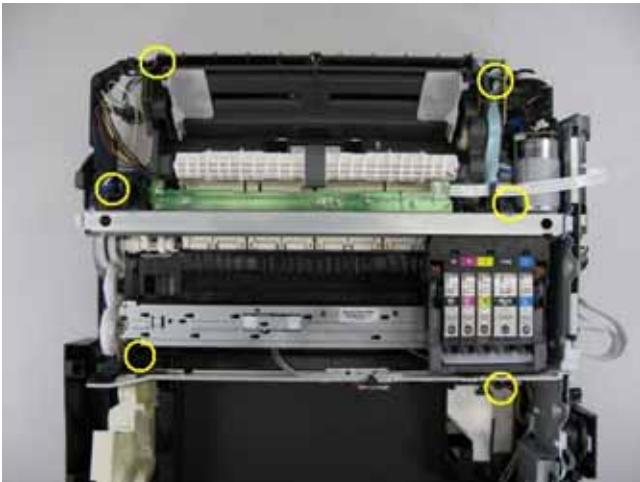


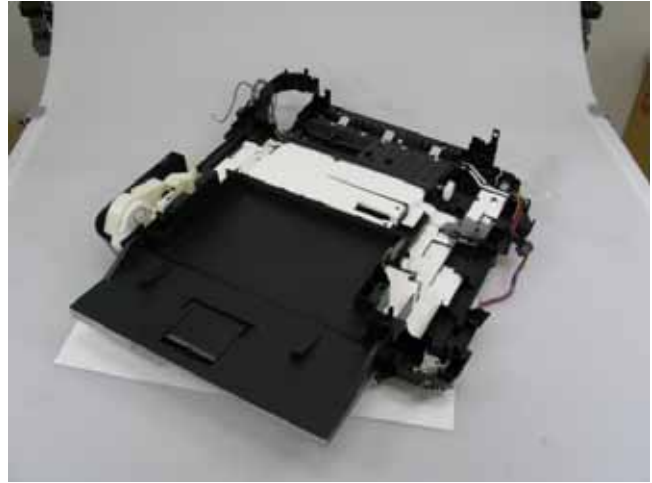
4) Remove the speaker. (2 screws)



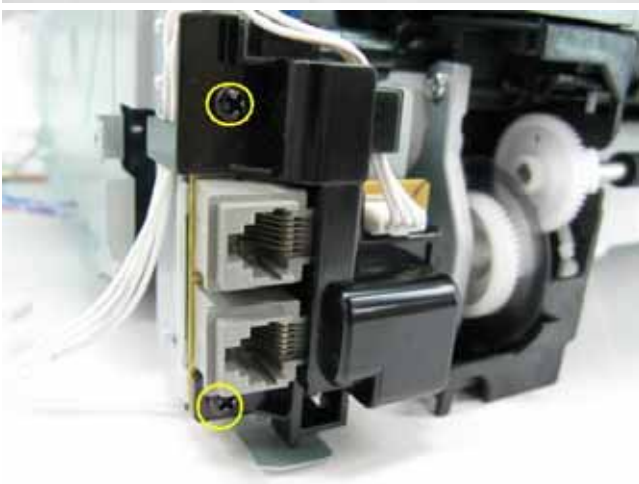
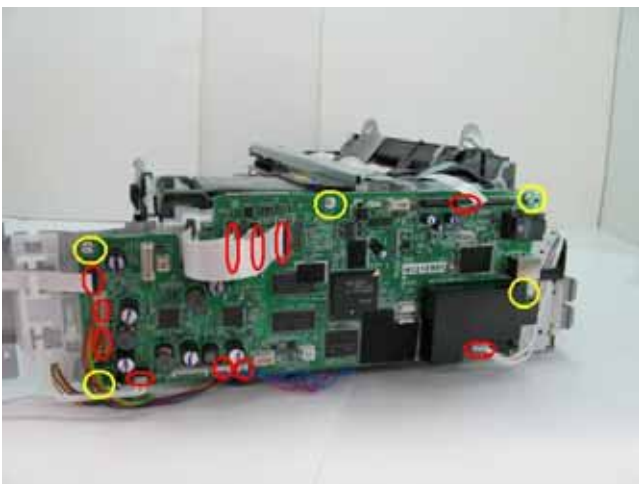
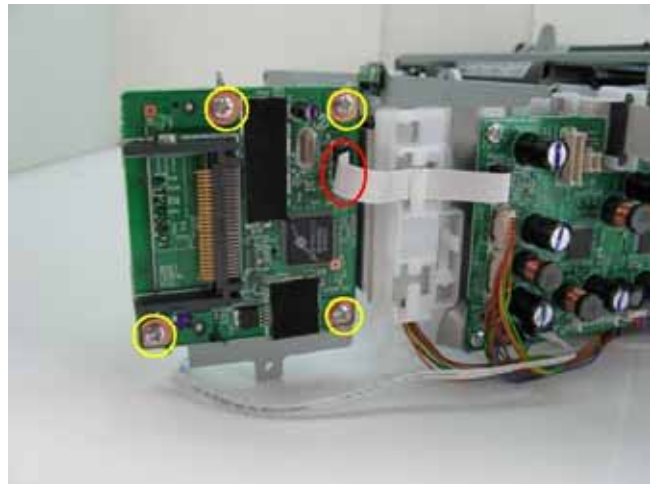
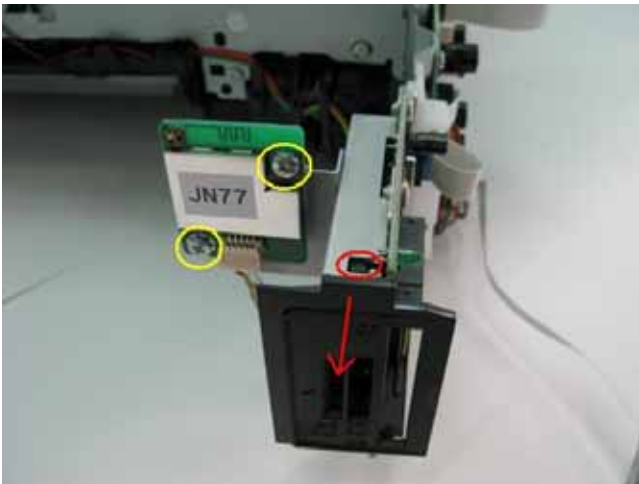
5) Remove the printer unit. (6 screws)

<While being cautious not to damage the arm that connects to the front door, lift the printer unit.>

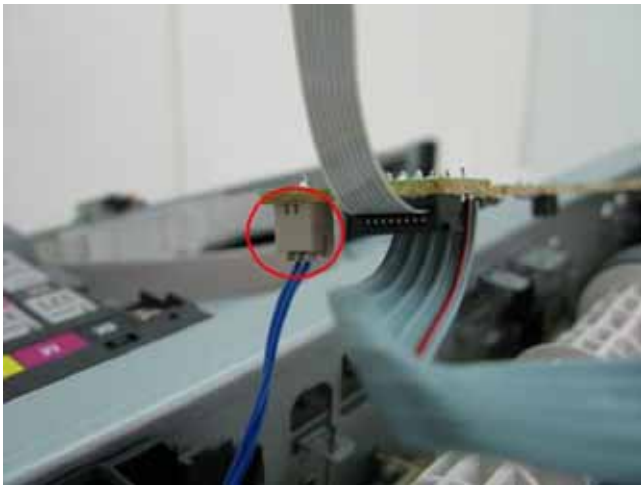
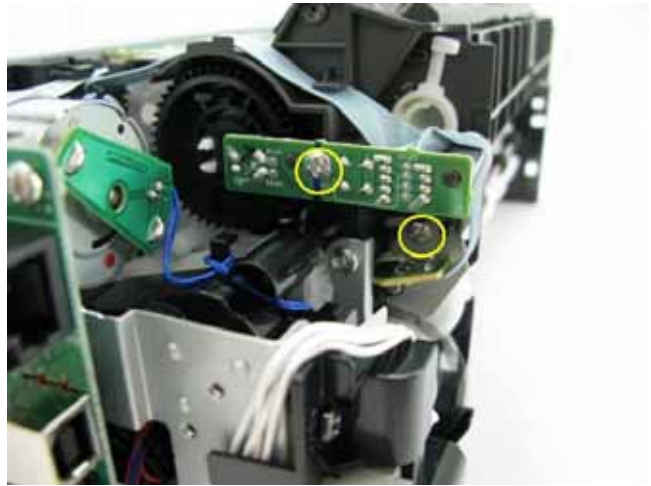




6) Remove the WLAN board, card board, main PCB, modular board, and main PCB chassis. (15 screws)
 <The core fits to the rib of the harness guide.>

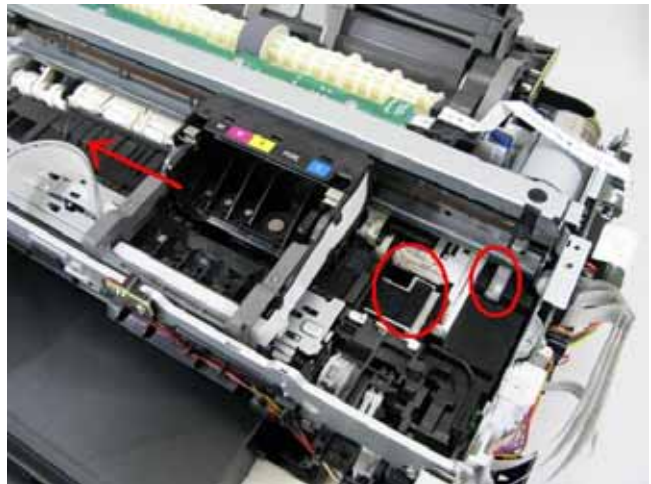


7) Remove the PE sensor board. (5 screws)



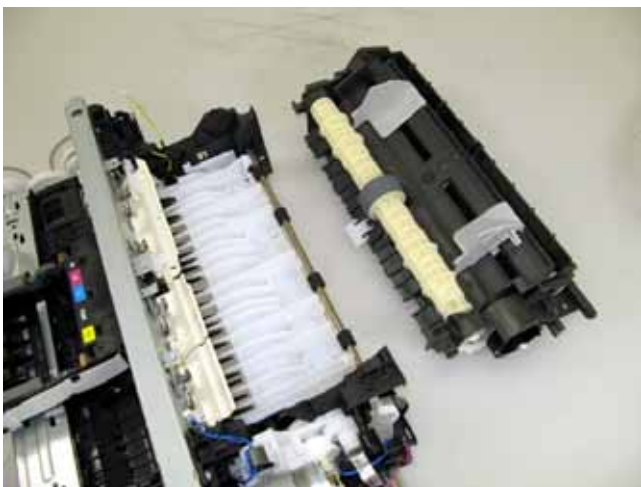
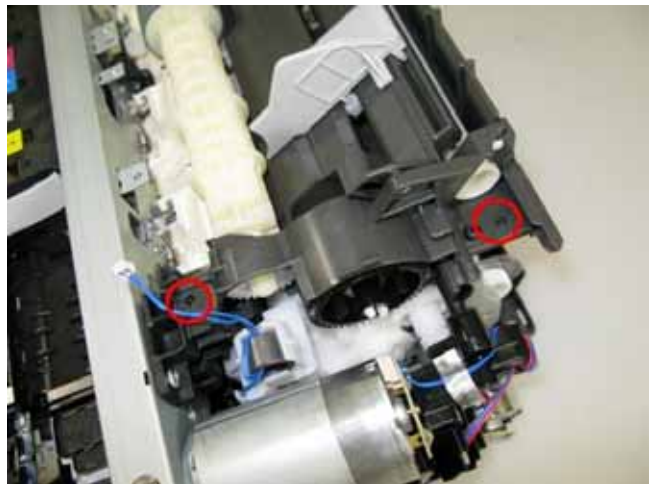
(4) Carriage unlocking

- 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).



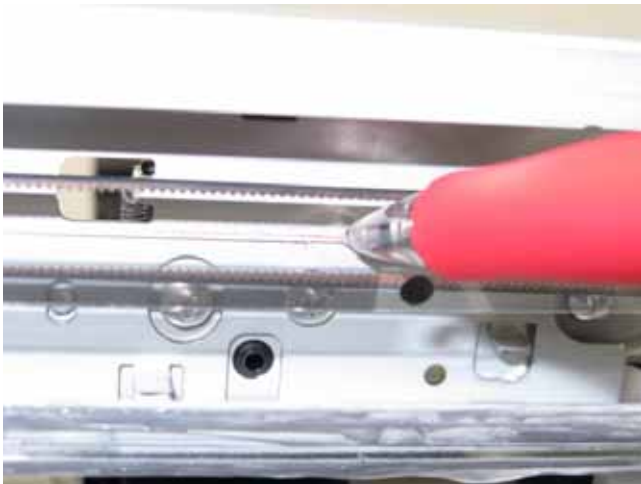
(5) ASF unit removal

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

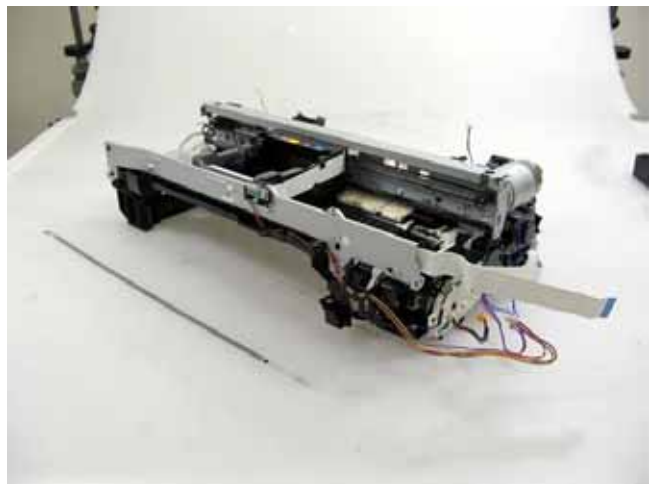


(6) Carriage unit removal

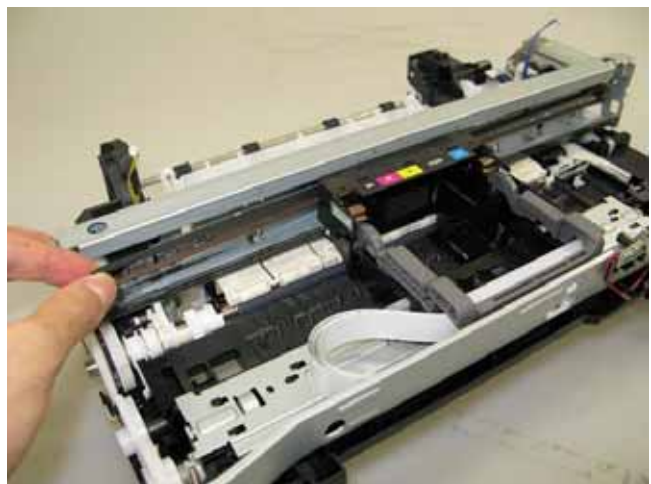
- 1) On the main chassis, mark the positions of the screws that fix the carriage rail to the main chassis (3 points for each screw: the left, right, and center).



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



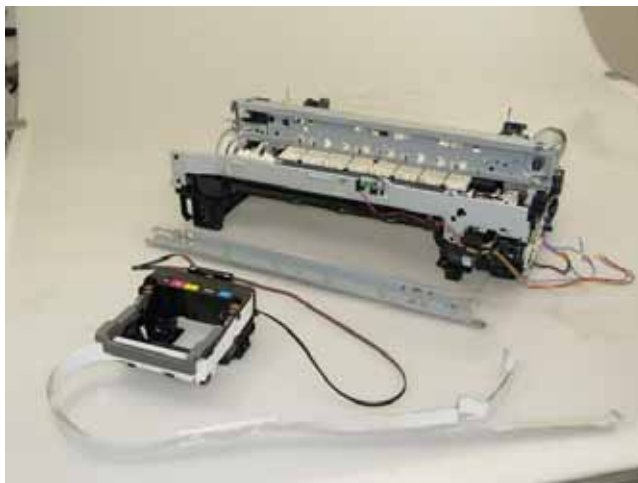
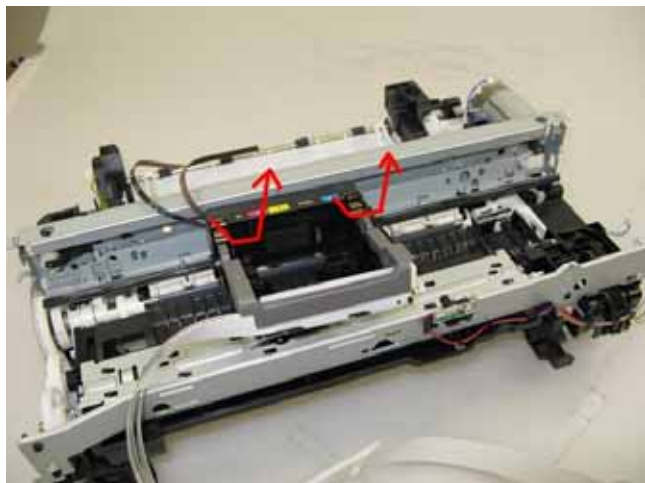
- 3) Using a pair of pliers, etc., release the left end of the pulley holder spring, then remove the carriage belt. Be cautious to keep it free from any grease.



- 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.

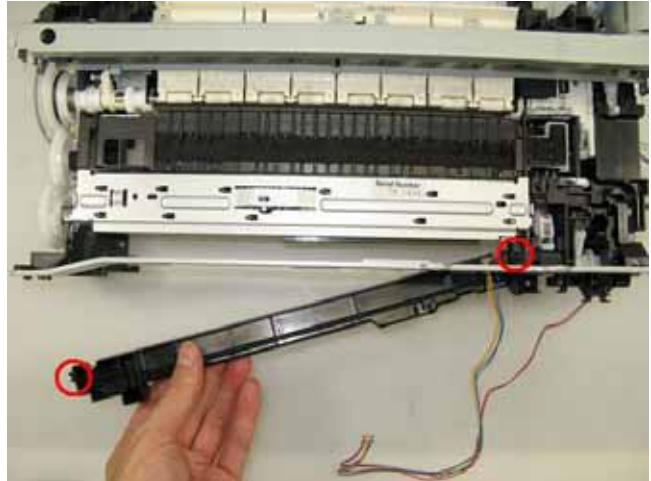
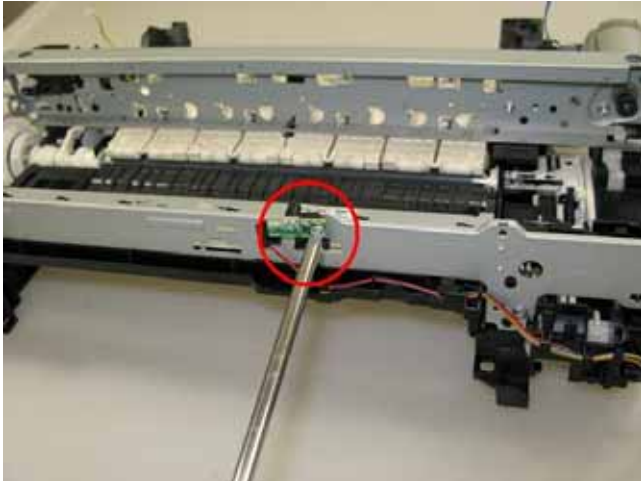


- 5) Remove the carriage unit. Be cautious that the grease will not attach to any parts.

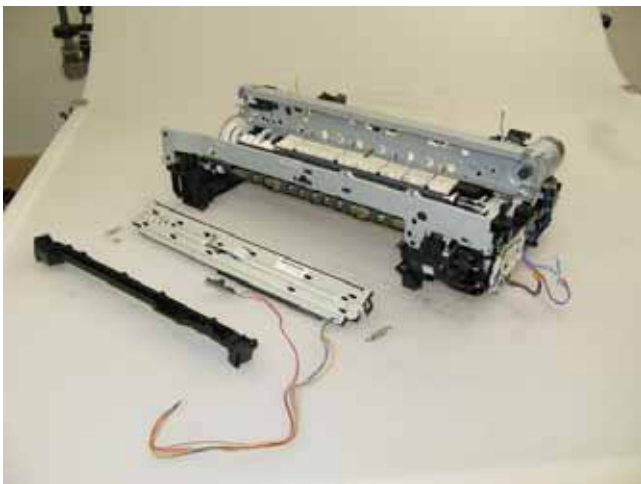
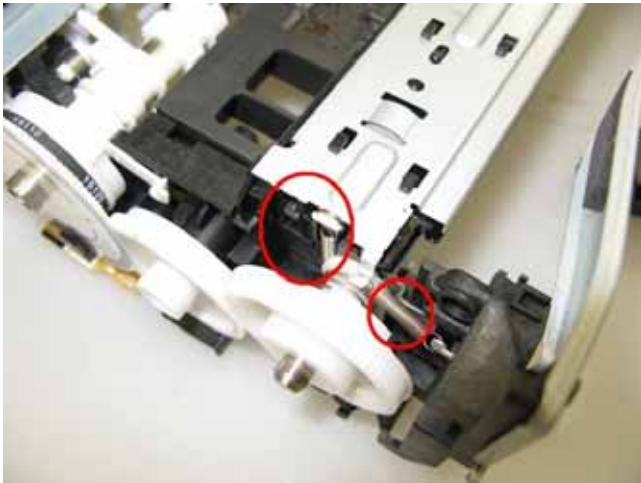


(7) Spur unit and platen unit removal

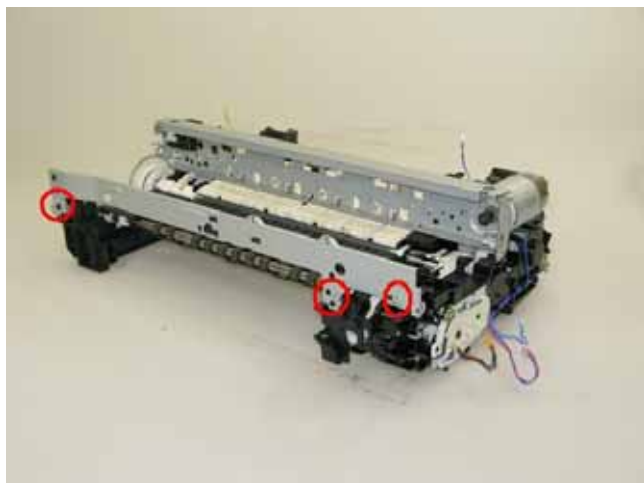
- 1) Remove the ink sensor and the middle front cover from the front chassis (1 screw each).



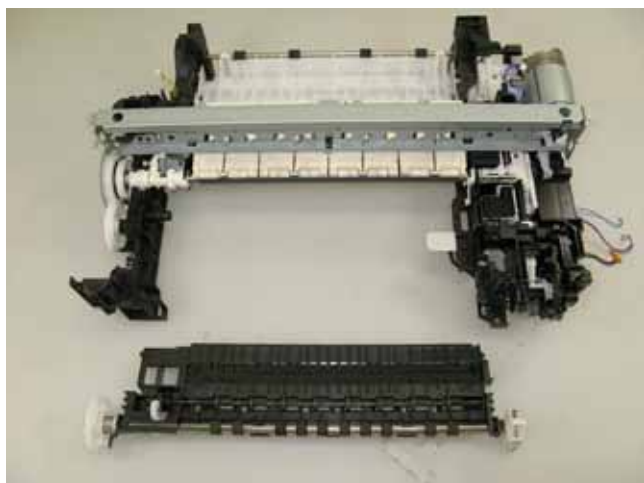
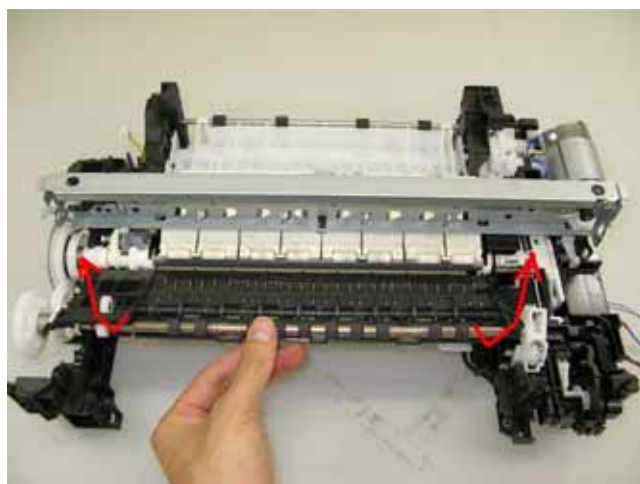
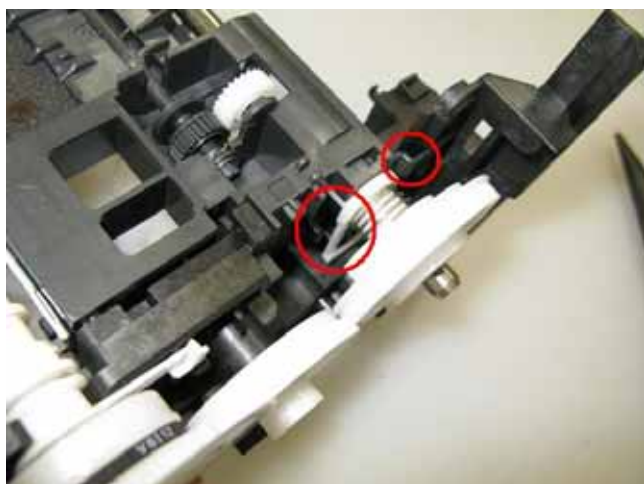
- 2) From the left and right sides of the spur unit, release the springs (2 on the left side, 1 on the right side). Then, slowly pull the spur unit upward to remove it from the platen unit.



3) Remove the front chassis (3 screws).

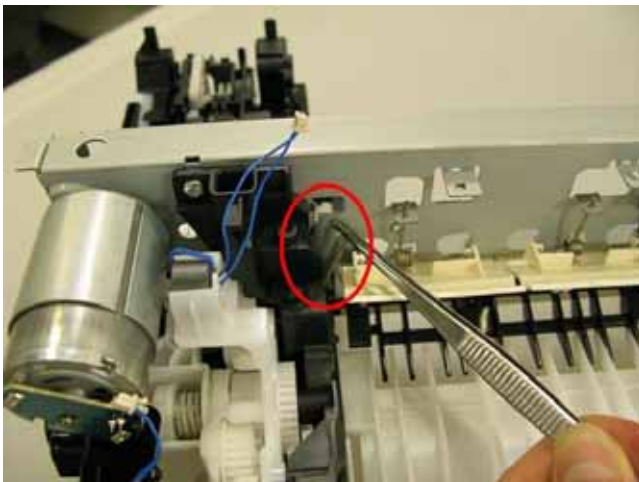
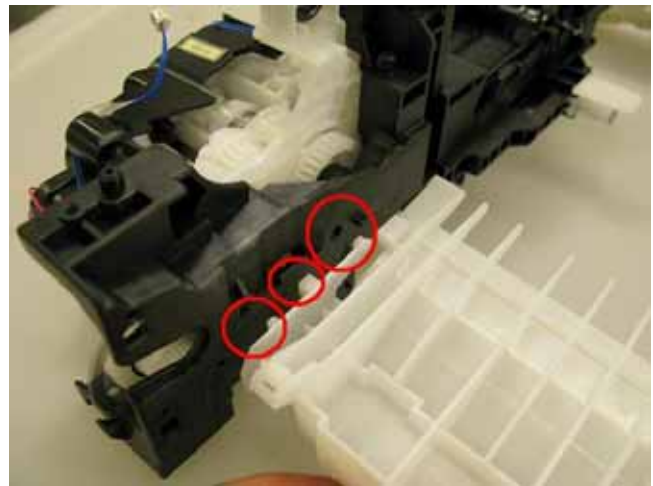
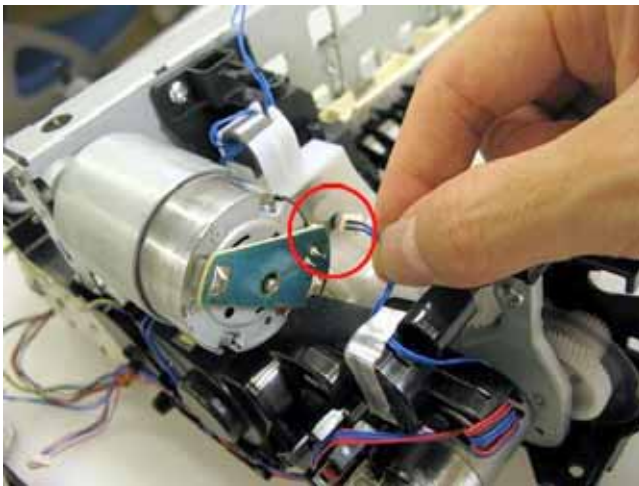
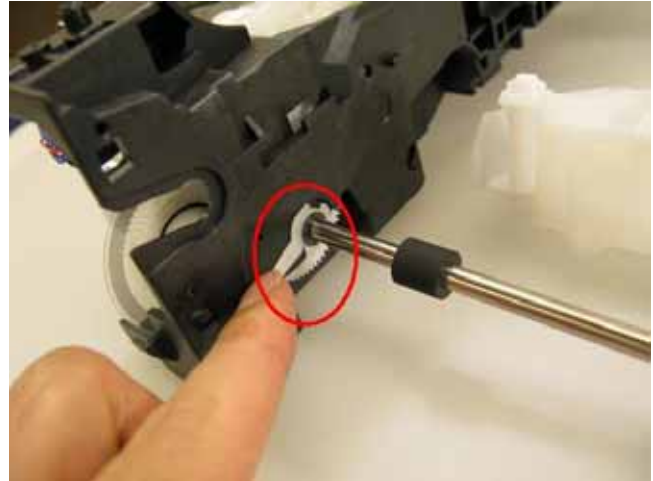
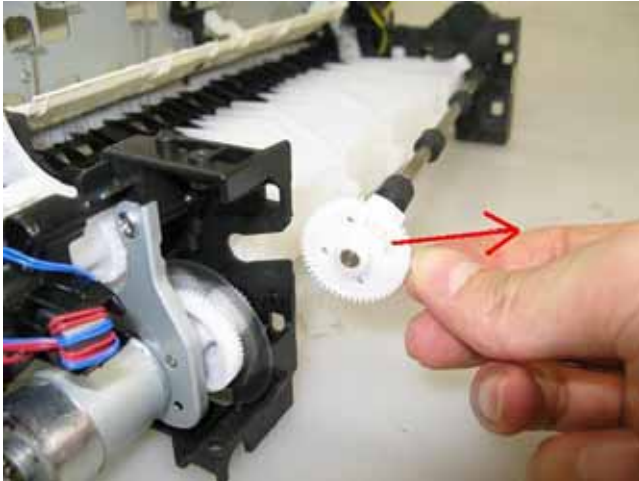


4) Unlock the paper eject roller gear. While raising the front of the platen unit, remove the platen unit from the printer unit.



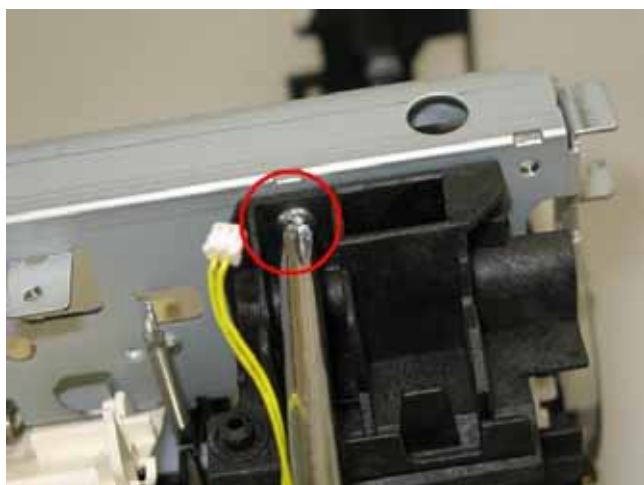
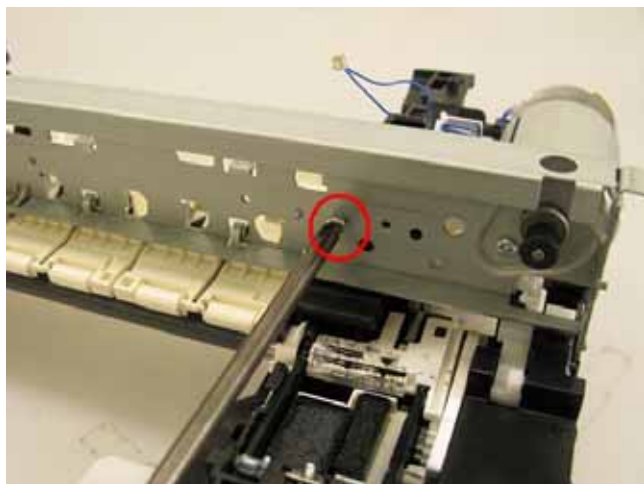
(8) Purge drive system unit (right plate) and switch system unit (left plate) removal

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

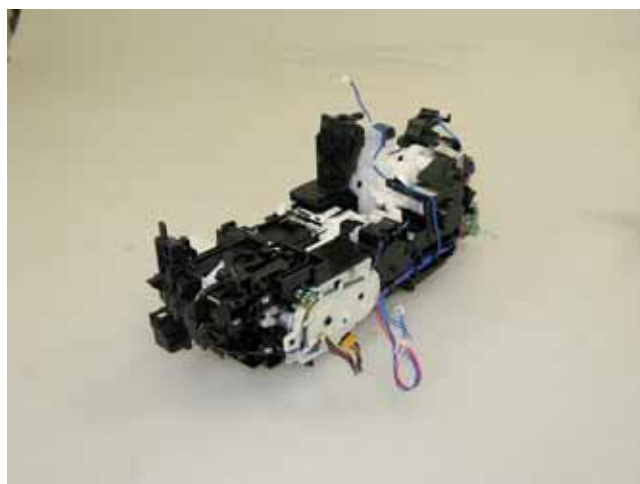
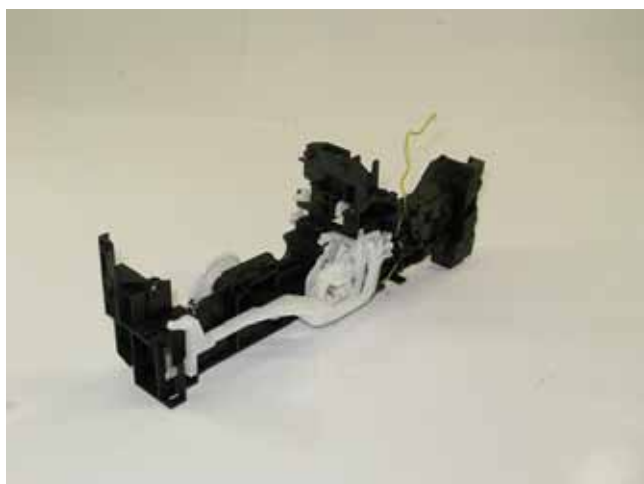


2) Remove the pressure roller springs (both the left and the right ones).

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.



◀<3-2. Part Replacement Procedures>▶▶



4. ADJUSTMENT / SETTINGS

4-1. User Mode

Function	Procedures	Remarks
Nozzle check pattern printing	Perform via the machine operation panel, or from the MP driver Maintenance tab.	Set a sheet of plain paper (A4 or Letter) in the cassette, or the rear tray if selected.
Print head manual cleaning	<ul style="list-style-type: none"> - Cleaning both Black and Color: Perform via the machine operation panel. - Cleaning Black or Color separately, or both Black and Color: Perform from the MP driver Maintenance tab. 	<p>Unclogging of the print head nozzles, and maintenance to keep the print head conditions good.</p> <p>If there is a missing portion or white streaks in the nozzle check pattern printout, perform this cleaning.</p>
Print head deep cleaning	Perform via the machine operation panel, or from the MP 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.
Manual print head alignment	Perform via the machine operation panel, or from the MP 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 MP driver Maintenance tab.	Confirmation of the current print head alignment values.
Paper feed roller cleaning	Perform via the machine operation panel, or from the MP 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 MP driver Maintenance tab.	<p>Cleaning of the platen ribs when the back side of paper gets smeared.</p> <p>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)</p>
LAN resetting	Perform via the machine operation panel, or using IJ Network Tool.	Resetting of the LAN settings to default via the operation panel (Settings -> Device settings -> LAN settings -> Reset LAN settings), or using IJ Network Tool.
LAN setting information display	Perform via the machine operation panel, or using IJ Network Tool.	Display of the wired / wireless LAN settings on the LCD, via the operation panel (Settings -> Device settings -> LAN settings -> LAN setting list (for wired LAN settings) or WLAN setting list (for wireless LAN settings)), or using IJ Network Tool.
LAN user data settings	Perform via the machine operation panel.	Confirmation of the FAX user data settings via the operation panel (FAX -> Menu -> Print reports/lists -> User's data list).
FAX number printing	Perform via the machine operation panel.	Printing of the registered FAX numbers (for confirmation) via the operation panel (FAX -> Menu -> Print reports/lists -> Telephone number list).

4-2. 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 2 times, and then release both the ON and Stop buttons. (Each time the Stop button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green, starting with Alarm LED.)
 - Without the scanner (connect the operation panel unit);

While holding the ON button, press the Stop button 3 times, and then release both the ON and Stop buttons. (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 and the machine displays "Service Mode Idle," the machine is ready for the service mode operation.

LCD ready for the service mode operation:



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

(2) Service Tool functions

Service Tool screen: Version 1.030

Service Tool

USB Port : USB001

Print

① Test Print ② EEPROM ③ CD-R ④ LF/EJECT ⑤ Left Margin

Cleaning ⑥ Deep Cleaning

Clear Ink Counter

⑦ Main ⑧ Platen

Operation

⑨ EEPROM Clear ⑩ Panel Check

Set Destination ⑪

Region : JPN

CD-R Correction ⑫

X : -1.0 Y : -1.0

LF/EJECT Correction ⑬

LF : Pattern0 EJECT : Pattern0

Left Margin Correction ⑭

Paper Source : RearTray, back side of pap

Correction Value : -3

Ink Absorber Counter ⑮

Absorber : Main Counter Value(%) : 0

Wetting Liquid Counter ⑯

Counter Value(%) : 0

No.	Name	Function	Remarks
(1)	Test Print	Service test print	<p>Paper will feed from the rear tray.</p> <p>Service test print:</p> <ul style="list-style-type: none"> - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - USB serial number - Destination - EEPROM information - Process inspection information - Barcode (model name + destination) - Ink system function check result - CD / DVD sensor check result
(2)	EEPROM	EEPROM information print	<p>The dialog box opens to select the paper source. Select Rear tray or Cassette, and click OK.</p> <p>EEPROM information print:</p> <ul style="list-style-type: none"> - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - Print information - Error information, etc.
(3)	CD-R	CD-R check pattern print	Not used in servicing.
(4)	LF / Eject	LF / Eject correction pattern print	See " LF / Eject Correction " below.
(5)	Left Margin	Left margin pattern print	Not used.
(6)	Deep Cleaning	Print head deep cleaning	Cleaning of both Black and Color at the same time
(7)	Main	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.
(8)	Platen	Platen ink absorber counter resetting	Not used.
(9)	EEPROM Clear	EEPROM initialization	<p>The following items are NOT initialized, and the shipment arrival flag is not on:</p> <ul style="list-style-type: none"> - USB serial number - Destination settings - Record of ink absorber counter resetting and setting - Record of repair at the production site - LF / Eject correction values - Left margin correction value - Production site E-MIP correction value and enabling of it - Endurance correction value and enabling of it - Record of disabling the function to detect the remaining ink amount - Ink absorber counter value (ink amount in the ink absorber)
(10)	Panel Check	Button and LCD test	See " Button and LCD Test " below.
(11)	Set Destination	Destination settings	<p>Select the destination, and click Set.</p> <p>ASA, AUS, BRA, CHN, CND, EUR, JPN, KOR, LTN, TWN, USA</p>
(12)	CD-R Correction	CD / DVD print position correction (X and Y direction)	Not used.
(13)	LF / EJECT Correction	LF / Eject correction value setting	See " LF / Eject Correction " below.
(14)	Left Margin Correction	Left margin correction value setting	Not used.
(15)	Ink Absorber Counter	Ink absorber counter setting	See " Ink Absorber Counter Setting " below.
(16)	Wetting Liquid Counter	Wetting liquid counter setting	Not used.

(3) LF / Eject Correction

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

1) Print the LF / Eject correction pattern.

Click **LF/EJECT** of the Service Tool on the connected computer, select the paper source and the paper type, and print the pattern. 5 sheets of paper will be used for the pattern printing.

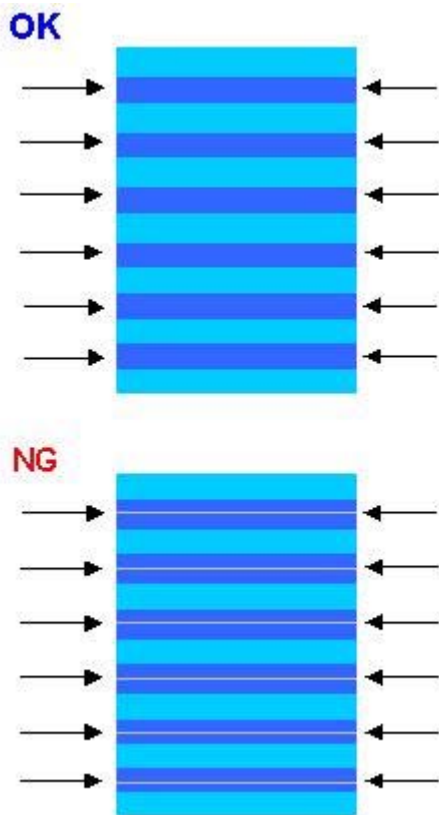
- Paper source: Select either **Rear tray** or **Cassette**.

- 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 ("Service Mode Idle" is displayed on the LCD).

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 unit.

1) Check to see if the LCD turns off properly

- 1-1) Click **Panel Check** of the Service Tool on the connected computer. All the LED's on the machine turn on and the LCD turns blue, waiting for a button to be pressed.
- 1-2) Press the OK button several times, and confirm that the LED turns off in the following order each time the OK button is pressed:
In Use/Memory -> Alarm -> MEMORY CARD -> SCAN -> FAX -> COPY

2) Button check

- 2-1) Press each button of the operation panel, to see if every button functions properly.
- 2-2) The LCD is divided into 40 segments, representing each button. The color of a segment corresponding to the pressed button changes to red.

1	2	3	4	5	6	7
22	23	24	25	26	27	8
21	36	37	38	28	9	
20	35	40	39	29	10	
19	34	33	32	31	30	11
18	17	16	15	14	13	12

- | | | |
|---------------------------|-------------------------|----------------------|
| 1. COPY button | 16. 1 | 31. Hook button |
| 2. FAX button | 17. 2 | 32. Color button |
| 3. SCAN button | 18. 3 | 33. Black button |
| 4. MEMORY CARD button | 19. Redial/Pause button | 34. * |
| 5. 01 | 20. Left cursor button | 35. 0 |
| 6. 02 | 21. Right cursor button | 36. # |
| 7. 03 | 22. 4 | 37. ON button |
| 8. 04 | 23. 5 | 38. OK button |
| 9. FAX Quality button | 24. 6 | 39. Stop button |
| 10. 05 | 25. Coded Dial button | 40. DF open sensor § |
| 11. Change Display button | 26. Back button | |
| 12. Two-Sided button | 27. Down cursor button | |
| 13. Menu button | 28. 7 | |
| 14. Up cursor button | 29. 8 | |
| 15. Settings button | 30. 9 | |

§ Open and close the document cover to check the DF open sensor.

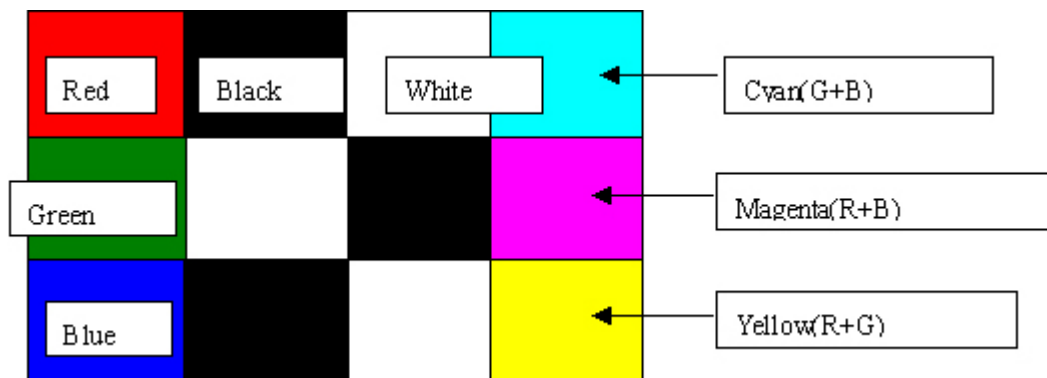
3) Card controller check

3-1) Press the OK button. The entire LCD screen turns black to indicate that the card controller is recognized.

3-2) Press the OK button again. The card controller check ends.

4) Color pattern check

4-1) The color pattern is displayed on the LCD to see if the display is correct.



4-2) Press the ON button. The machine returns to be ready for selection of another function ("Service Mode Idle" is displayed on the LCD).

(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.

◀ <4-1. User Mode & 4-2. Service Mode> ▶ ▶



4-3. 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

2009 01/15 15:50 FAX

001

1.020
PRAM 14.1

*** 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

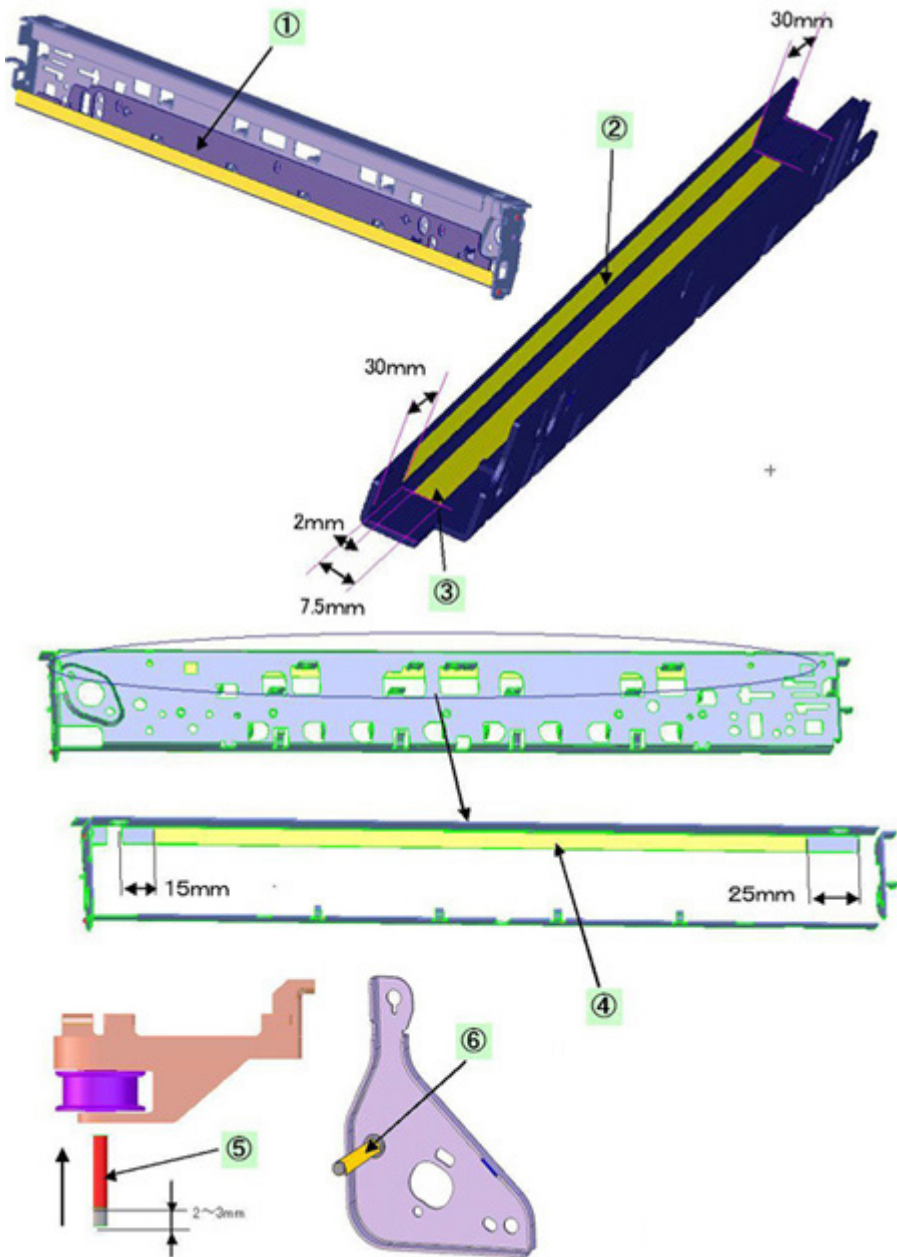
#4 NCU

1. TONE/PULSE	2. DIAL TONE 1	3. DIAL TONE 2	4. BUSY TONE
		--- 01000000	--- 10000000
01: --- 34	01: --- 10	01: --- 350	01: --- 0
02: --- 650	02: --- 80	02: --- 130	02: --- 35
03: --- 90	03: --- 14	03: --- 10	03: --- 80
04: --- 180	04: --- 130	04: --- 0	04: --- 35
05: --- 8	05: --- 12	05: --- 0	05: --- 80
06: --- 10	06: --- 7	06: --- 5	06: --- 1
	07: --- 130	07: --- 3	07: --- 3
	08: --- 4	08: --- 0	08: --- 3
5. REORDER TONE	6. AUTO RX	7. CNG DETECT	
--- 10000000			
01: --- 0	01: --- 15	01: --- 40	
02: --- 35	02: --- 60	02: --- 60	
03: --- 70	03: --- 65	03: --- 80	
04: --- 35	04: --- 120	04: --- 40	
05: --- 65	05: --- 1100	05: --- 64	
06: --- 1	06: --- 0	06: --- 5	
07: --- 6	07: --- 2	07: --- 2	
08: --- 3	08: --- 13	08: --- 70	
	09: --- 84		

4-4. Grease Application

(1) Printer unit

No	Part name	Where to apply grease / oil	Drawing No.	Grease	Grease amount (mg)
1	Carriage rail	The surface where the carriage unit slides	(1)	Floil KG107A	300 to 360
2	Carriage rail	The surface where the carriage unit slides	(2)	Floil KG107A	360 to 440
3	Carriage rail	The surface where the carriage unit slides	(3)	Floil KG107A	360 to 440
4	Main chassis	The surface where the carriage unit slides	(4)	Floil KG107A	230 to 290
5	Parallel pin	The pin surface which contacts the idler pulley hole	(5)	Floil KG107A	9 to 18
6	APP code wheel gear shaft	APP code wheel gear sliding portion (the entire surface)	(6)	Floil KG107A	9 to 18



4-5. Special Notes on Servicing

(1) Print head problem (smeared printing, uneven printing, non-ejection of ink, etc.)

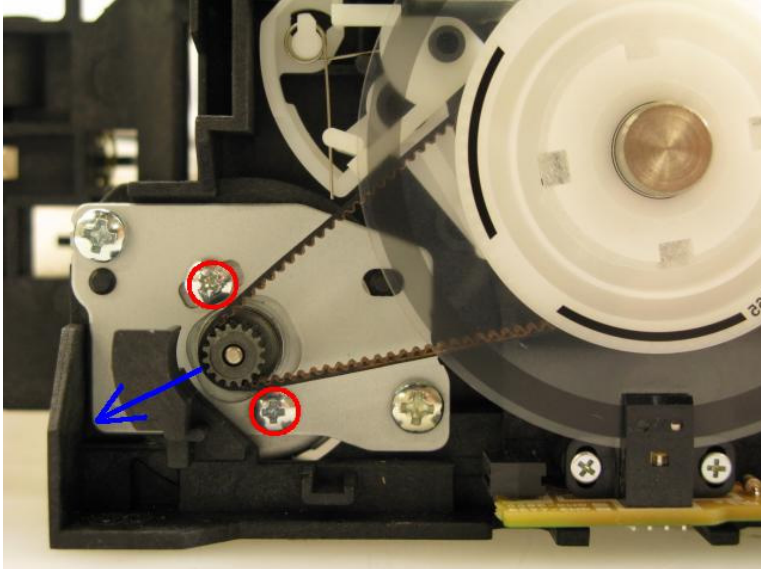
For problems that are supposed to be caused by the print head (smeared printing, uneven printing, or non-ejection of ink, etc.), print the nozzle check pattern in the user mode to determine whether the print head is faulty or not.

< Procedures >

- 1) In the user mode, print the nozzle check pattern.
- 2) If there is a missing portion in the printed pattern, perform the print head cleaning (2 times at the maximum), and print the nozzle check pattern again (in the user mode).
- 3) If the problem persists even after the print head cleaning is performed 2 times, perform the print head deep cleaning, then print the nozzle check pattern again (in the user mode).
- 4) If the problem is still not resolved, i) turn off the machine and leave it for 24 hours or longer, ii) perform the print head cleaning, and iii) print the nozzle check pattern again (in the user mode).

(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 o



for faulty print operation (due to dislocation of the belt or gear, or out-of-phase motor, etc.) occurs.



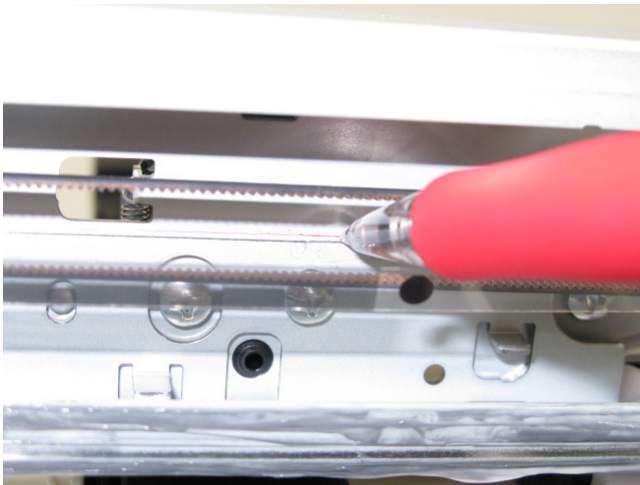
The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(3) Carriage unit replacement

To replace the carriage, the carriage rail must be removed from the main chassis (by removing the screws).

Before removing the screws, put a mark on the main chassis to indicate the carriage rail position.

After replacing the carriage, return the carriage rail to the original position while aligning the rail to the mark on the chassis.



(4) Document pressure sheet (sponge sheet) replacement



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

(5) Ink absorber counter setting

Before replacement of the logic board, check the ink absorber counter value, and register it to the replaced new logic board. (The value can be set in 10% increments.)

In addition, according to the ink absorber counter value, replace the ink absorber (ink absorber kit). When the ink absorber is replaced, reset the applicable ink absorber counter (to 0%).

- How to check the ink absorber value and the way to set the ink absorber counter:

See [4-2. Service Mode](#), [\(5\) Ink absorber counter setting](#).

(6) 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>

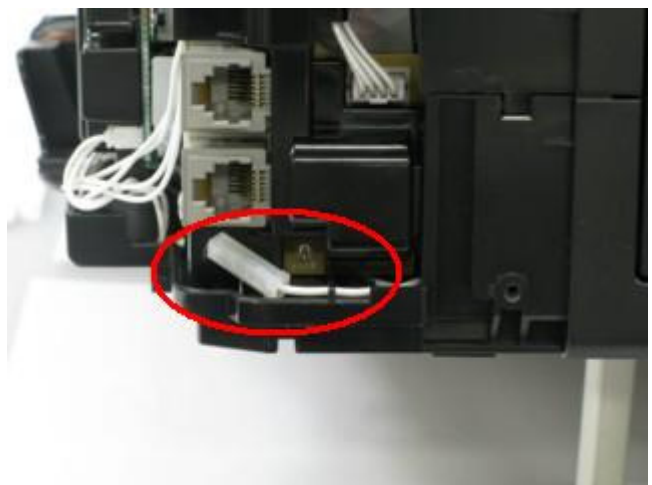


- 2) The ground wiring to the modular board differs between the Japan model and the other models.

<Japan model>

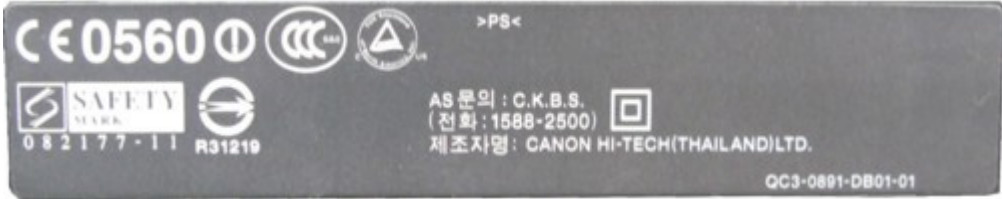


<Other models>



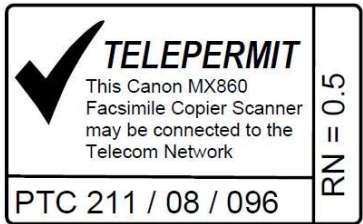
(7) Rating label on the bottom case (for the models other than Japan)

When the bottom case is replaced, be sure to attach the rating label to the replaced new bottom case.



(8) 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.



(9) NAL label on the bottom case (for China only)

When the bottom case is replaced, be sure to attach the NAL label from the original bottom case to the replaced new one. The NAL 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.



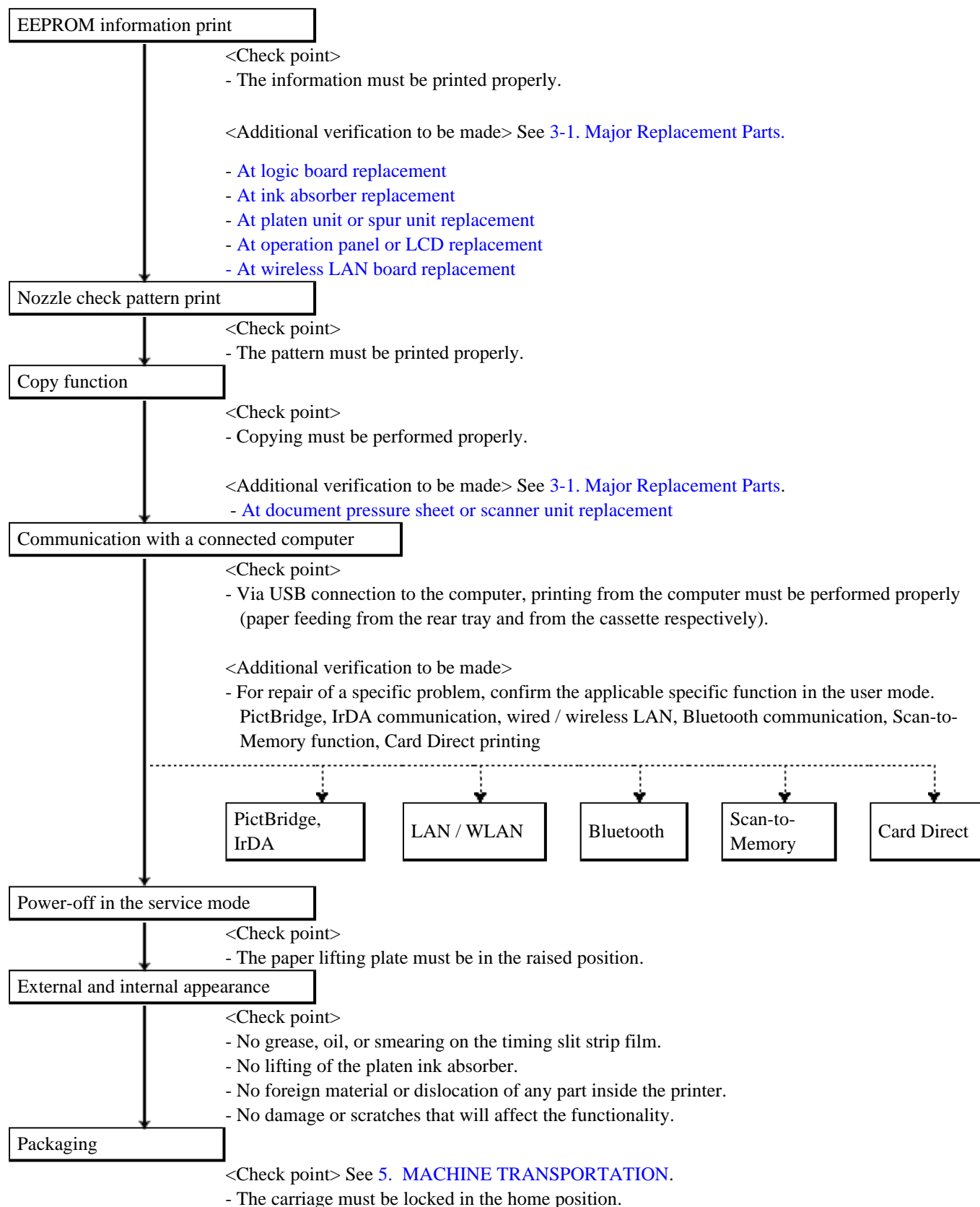
◀ <4-4. Grease Application & 4-5. Special Notes on Servicing> ▶ ▲



4-6. Verification After Repair

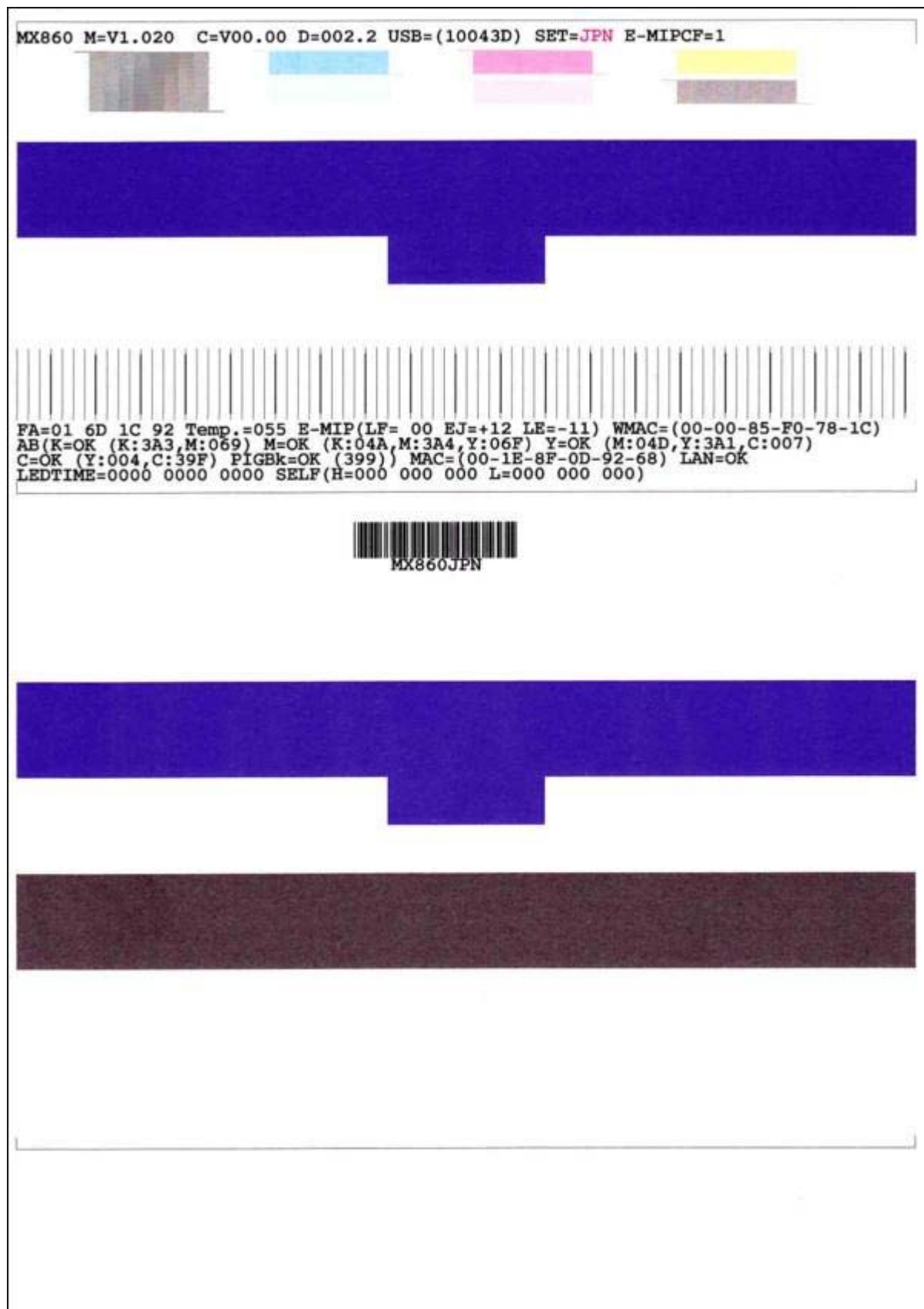
(1) Standard inspection flow

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



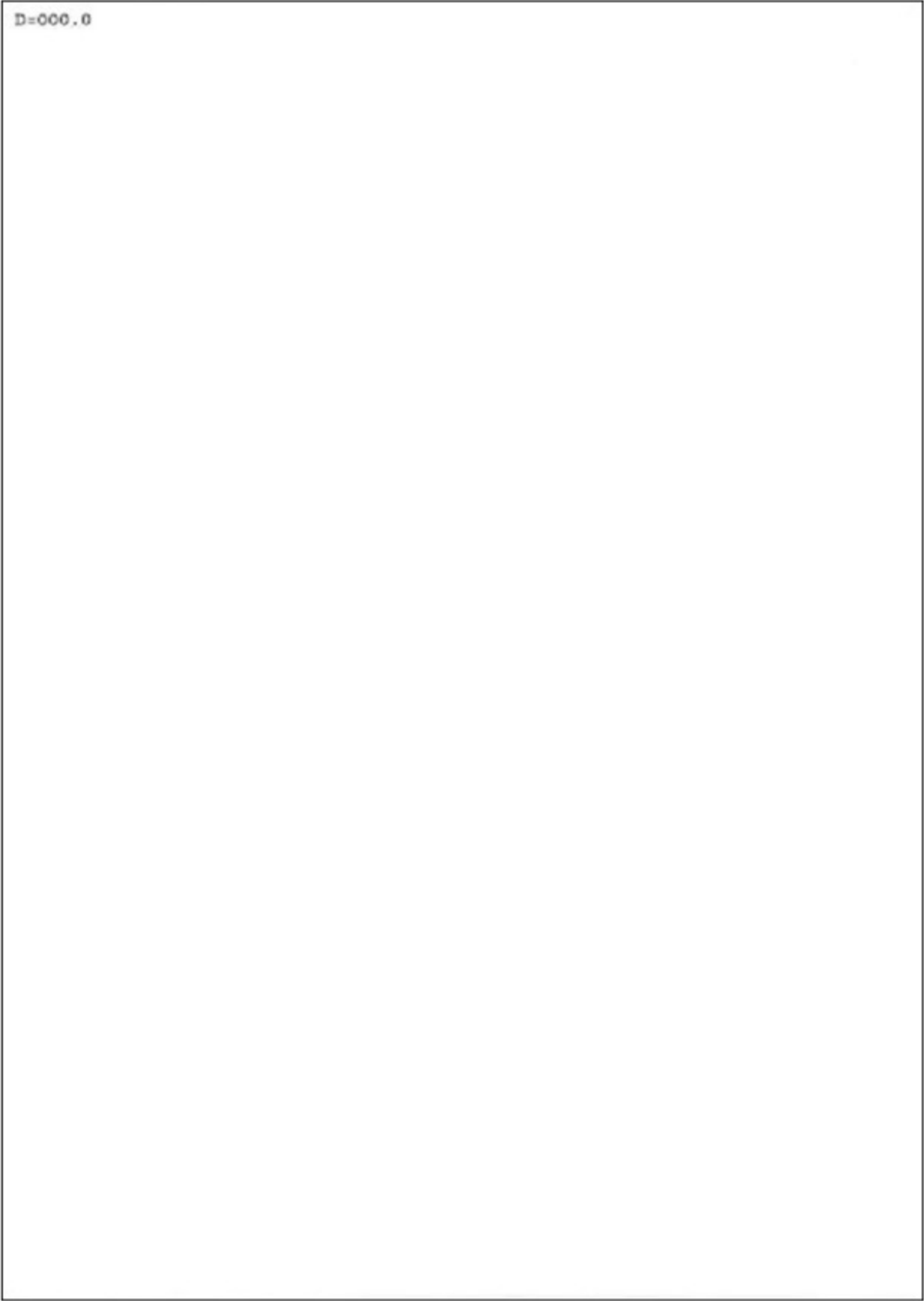
(2) Service test print

<Service test print sample>



(3) Ink absorber counter value print

<Print sample>





5. MACHINE TRANSPORTATION

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

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

See Caution 1 below.

- 3) Turn off the machine to securely lock the carriage in the home position. (When the machine is turned off, the carriage is automatically locked in place.)

See Caution 2 below.



-
- (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).
- If the packing material that fixed the carriage from the factory is still available, re-use it to fix the carriage (to prevent the carriage unlocked during transportation).