

MP610

Service Manual

Revision 0

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Scope

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

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

Revision

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

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1. MAINTENANCE

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

(1) Adjustment

Adjustment	Timing	Purpose	Tool	Approx. time
EEPROM initialization	- At logic board replacement	To initialize settings	None. Perform in the service mode.	1 min.
Destination settings (EEPROM settings)	- At logic board replacement	To set destination.	None. 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.	None. 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.	None. 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.
CD / DVD detection sensor light volume correction *1	- At carriage unit replacement - At logic board replacement	To correct the light volume for the CD / DVD detection sensor.	None. Perform in the service mode.	5 min.
Automatic 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. (Use MP-101.)
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.	13 min.
Grease application	- At carriage unit replacement - At lift cam replacement - To gears - At Easy-Scroll Wheel replacement	To maintain sliding properties of the following items: - Carriage shaft - Lift cam bushing - Machine sliding portions (gears) - Wheel base	FLOIL KG-107A	1 min.
Ink system function check	- At logic board replacement - At spur base replacement - At carriage unit replacement	To maintain detection functionality for presence of the ink tanks and each ink tank position.	None. 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	1 min.

				mode.	
Platen glass protection sheet (document pressure plate sheet) position adjustment	- At protection sheet replacement - At protection sheet frame replacement - At scanner unit replacement	To maintain scanning accuracy, hold the sheet with the long side down, then fit its lower right corner to the platen glass reference mark (front right).	None.		1 min.
LF / Eject correction	- At logic board replacement - At feed roller ass'y replacement	To correct line feeding (LF roller diameter).	None. Perform in the service mode.		5 min. (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).	None. Perform in the service mode.		

*1: Only for CD / DVD printing supported regions.



- DO NOT loosen the red screws at both ends of the carriage shaft, securing the print head position, as they are not re-adjustable.
- The red screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit.
- For the automatic print head alignment, use Matte Photo Paper (MP-101), which is packed with the machine before shipment. If Matte Photo Paper (MP-101) is not available, perform manual print head alignment using plain paper.

(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
Automatic print head alignment	- At print head replacement - When print quality is not satisfying (uneven printing, etc.)	To ensure accurate dot placement.	- Machine buttons - Matte Photo Paper (MP-101) - Computer (MP driver)	10min. (Use MP-101.)
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)	13 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Machine buttons - Computer (MP driver)	1 min.
Print head deep	When print quality is not satisfying, and not	To improve nozzle	- Machine	2 min.

cleaning	improved by print head cleaning.	conditions.	buttons - Computer (MP driver)	
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 rear tray.	- Machine buttons - Computer (MP driver)	2 min.
Rear tray sub-roller cleaning	When the paper fed from the rear tray is smeared due to ink mist attached to the rear tray sub-rollers.	To clean the rear tray sub-rollers.	- Machine buttons	1 min.
Bottom plate cleaning	When the back side of the paper is smeared.	To clean the platen ribs.	- Machine buttons - Computer (MP driver)	1 min.
Scanning area cleaning	When the platen glass or document pressure plate sheet is dirty.	To clean the platen glass and plate sheet.	Soft, dry, and clean lint-free cloth.	1 min.
Exterior cleaning	When necessary	To clean the machine exterior	Soft, dry, and clean lint-free cloth.	1 min.

1-3. Special Tools

Name	Tool No.	Application	Remarks
FLOIL KG-107A	QY9-0057-000	To the carriage shaft sliding portions, lift cam bushing, and Easy-Scroll Wheel base.	In common with the MP600, etc.

1-4. Serial Number Location



On the carriage flexible cable holder (visible on the right of the carriage after the machine is turned on, the scanning unit is opened, and the carriage stops at the ink tank replacement position)

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 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/OFF 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/Reset 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
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.
No CD / DVD tray *1.	[1001]	---	There is no CD-R tray. Attach the tray and press [OK].	Set the CD / DVD tray, and press the OK button.
No CD or DVD *1.	[1002]	---	Printable disc is not set. Correctly place a disc in the CD-R tray and press [OK].	Set a CD or DVD in the CD / DVD tray, and inset the CD / DVD tray in the proper position. Then, press the OK button.
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.
Paper jam.	[1300]	---	The paper is jammed. Clear the paper and press [OK].	Remove the jammed paper, and press the OK button.
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 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.
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 temperature sensor error.	[1403]	U052	The type of print head is incorrect. Install the correct print head.	Re-set the print head. If the error is not cleared, the print head may be defective. Replace the print head.
Faulty EEPROM data of the print head.	[1405]			
Inner cover error.	[1841] ^{*2} , [1846] ^{*2} , [1851] ^{*1} , [1856] ^{*1}	---	Inner cover is open. Close the inner cover and press [OK].	Close the inner cover, and press the OK button.
	[1850] ^{*1} , [1855] ^{*1}	---	Open the inner cover, place the CD-R tray and press [OK].	Open the inner cover which functions as the CD / DVD tray feeder, set the CD / DVD tray in the

				feeder, and press the OK button.
Multiple ink tanks of the same color installed.	[1681]	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 in a wrong position.	[1680]	U072	Some ink tanks are not installed in place.	Install the ink tank(s) in the correct position.
Warning: The ink absorber becomes almost full.	[1700, 1701]	---	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 3-3. Adjustment / Settings, (6) Service mode.] Pressing the OK button will exit the error, and enable printing without replacing the ink absorber. However, when the ink absorber becomes full, no further printing can be performed unless the applicable ink absorber is replaced.
The connected digital camera or digital video camera does not support Camera Direct Printing.	[2001]	---	The device may be incompatible. Remove the device and check the manual supplied with the connected device.	Remove the cable between the camera and the machine.
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).
Failed in automatic print head alignment.	[2500]	---	Auto head align has failed. Press [OK] and repeat operation. <See manual>	Press the OK button to clear the error, then perform the automatic print head again. (In the MP610, use Matte Photo Paper MP-101.)
The remaining ink amount unknown.	[1683]	U130	(Applicable ink tank icon) The remaining level of the following ink cannot be correctly detected. Replace the ink tank.	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one. Printing with a once-empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop/Reset 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 not recognized.	[1684]	U140	The following ink tank cannot be recognized. (Applicable ink tank icon)	A non-supported ink tank is installed (the ink tank LED is turned off). Install the supported ink tanks.
Ink tank not recognized.	[1410 to 1419]	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).
No ink (no raw ink).	[1688]	U163	The following ink has run out. Replace the ink tank. (Applicable ink tank icon)	Replace the empty ink tank(s), and close the scanning unit (printer cover). Printing with an empty ink tank can damage the machine. To continue printing without replacing the ink tank(s), press the Stop/Reset button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the machine that the function to detect the remaining ink amount was disabled.
Non-supported hub	[2002]	---	An unsupported USB hub is connected. Remove the hub.	Remove the applicable USB hub from the PictBridge (USB) connector.

*1: Only for models supporting CD / DVD printing

*2: Only for models not supporting CD / DVD printing

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 (Replacement of listed parts, which are likely to be faulty)
2 times	Carriage error	[5100]	An error occurred in the carriage encoder signal.	- Carriage unit - Timing slit film - Logic board - Carriage motor
3 times	Line feed error	[6000]	An error occurred in the LF encoder signal.	- Timing sensor unit - Timing slit disk film - Feed roller - Logic board - Paper feed motor
4 times	Purge cam sensor error	[5C00]	An error occurred in the purge unit.	- Purge unit - Logic board
5 times	ASF (cam) sensor error	[5700]	This error takes place when feeding paper from the rear tray after an error occurred in the ASF cam sensor.	- Sheet feed unit - ASF_PE sensor board - Logic board
6 times	Internal temperature error	[5400]	The internal temperature is not normal.	- Logic board
7 times	Ink absorber full	[5B00, 5B01]	The ink absorber is supposed to be full. <u>Message on the LCD:</u> Ink absorber full. Service required. <u>Error codes:</u> 5B00: Main ink absorber is full (overseas). 5B01: Main ink absorber is full (Japan).	- Ink absorber kit
8 times	Print head temperature rise error	[5200]	The print head temperature exceeded the specified value.	- Print head - Logic board
9 times	EEPROM error	[6800]	A problem occurred in writing to the EEPROM.	- Logic board
10 times	VH monitor error	[B200]	The internal temperature exceeded the specified value.	- Print head - Carriage unit - Logic board
11 times	Carriage lift mechanism error	[5110]	The carriage did not move up or down properly.	- Sheet feed unit - PR lift shaft ass'y - Carriage lift sensor unit - Logic board
12 times	AP position error	[6A00]	An error occurred in the AP motor during purging operation.	- Sheet feed unit - Purge unit - Logic board
13 times	Paper feed position error	[6B00]	An error occurred in the paper feed motor during line feeding.	- Sheet feed unit - Logic board
14 times	Paper feed cam sensor error	[6B10]	An error occurred in the paper feed cam sensor during paper feeding from the cassette.	- Sheet feed unit - Logic board
15 times	USB Host VBUS overcurrent	[9000]	The USB Host VBUS is overloaded.	- Logic board
16 times	Pump roller sensor error	[5C20]	The pump roller position cannot be detected.	- Purge unit - Logic board
17 times	Paper eject encoder error	[6010]	An error occurred in the paper eject encoder signal.	- Platen unit - Timing sensor unit

				- Timing slit disk eject film - Paper feed motor - Logic board
19 times	Ink tank position sensor error	[6502]	None of the ink tank position is detected.	- Platen unit - Logic board
22 times	Scanner home position error	[5010]	The scanner unit cannot detect the home position, or the scanner unit warming-up is not performed properly at power-on. On the LCD, "Scanner is not operating correctly." is displayed.	- Scanner unit
Power LED turned off, and Alarm LED lit	ROM / RAM error	---	The check sum value is incorrect in the ROM check or RAM check at hard-power-on.	- 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 3-3. Adjustment / Settings, \(6\) Service mode, for details.\]](#)

2-3. Other Error Messages

Message on the LCD	Cause	Solution
The selected paper cannot be fed from cassette. Change the paper source and press [OK].	The paper type being used (business card, Credit Card size paper, or stickers, etc.) is not supported for paper feeding from the cassette.	Change the paper source to the rear tray.
Cannot specify the followings together. Change one of the settings.	Settings made conflict each other. (e.g. Selecting borderless printing on plain paper)	Change the settings so that they will not conflict each other.
Device memory is full. Reduce the amount of photos, films, copies to scan.	The memory is not sufficient to do the print job in copying.	Reduce the amount of data to be printed, or print from a computer.
Press <>. (<>: Color button icon)	The Black button was pressed, but it is invalid.	A temporary error. Press the Color button to continue the operation.
Press <>. (<>: Black button icon)	The Color button was pressed, but it is invalid.	A temporary error. Press the Black button to continue the operation.
There are no photos in memory card.	Supported image files are not in the memory card.	A temporary error. - Confirm that supported image files are in the memory card. - Images with double-byte characters used in the file name (or folder name) may not be recognized. Change the file (or folder) name so that it contains only single-byte alphanumeric characters. - If images are edited on the computer, print them from the computer.
The value exceeds the number of copies you can print.	During selecting images or specifying the number of copies, the total print quantity exceeds the prescribed value of 999.	A temporary error. The last operation before the error is cancelled, and the total print quantity returns to the value before the error.
Memory card is not set. Insert the card after checking the direction.	The memory card is not inserted in the slot properly.	Set a memory card.
DPOF information is not saved in the memory card.	DPOF print was selected in the menu, but no DPOF files are contained in the memory card.	A temporary error. The LCD automatically returns to the display before the error occurrence.
The number of copies to print is not set. Input the number of copies.	Printing was attempted with the print quantity left "0" (zero).	A temporary error. Specify the print quantity.

This layout is available only for A4 or 8.5"x11"(215x279).	In Layout print, "Mixed 1, 2, or 3" which is available only with A4 or Letter size paper is selected, but the paper size is not set to A4 or Letter.	A temporary error. The LCD automatically returns to the display before the error occurrence.
Cannot specify "stickers" and "half-side layout" together. Check markings on handwriting sheet.	The selected layout on the handwriting sheet is not supported for Stickers.	A temporary error. Press the OK button to clear the error. The LCD returns to the display before the error occurrence.
Change the setting after removing the card.	With a memory card inserted in the slot, change of the Read/Write attribute was attempted.	A temporary error. Remove the memory card, then change the Read/Write attribute.
The card is currently write-enabled. Set to read-only mode before performing operation.	With the memory card set to the Read/write mode, Card Direct printing operation was attempted from the menu.	A temporary error. Remove the memory card, change the memory card setting to Read-only, then perform Card Direct printing.
The paper size is not correct. Check the page size you have set.	Non-supported size of paper for Camera Direct printing via PictBridge connection is selected.	Cancel printing on the digital camera. Confirm the paper size, and print again.
Failed to scan Photo Index Sheet. Check orientation and position, and make sure platen and sheet are clean. <See manual>	The machine failed in scanning the Photo Index Sheet.	Press the OK button to clear the error. Confirm the following, then try again: - Fill in all the circles on the Photo Index Sheet.
Failed to scan handwriting sheet. Check orientation and position, and make sure platen and sheet are clean. <See manual>	The machine failed in scanning the handwritten Photo Index Sheet.	- Place the sheet in the correct orientation and position.
Failed to scan DVD/CD handwriting sheet. Check orientation and position, and make sure platen and sheet are clean.	The machine failed in scanning the handwritten DVD / CD sheet.	
Failed to scan Photo Index Sheet. Check for missed and improper markings.	The machine scanned the Photo Index Sheet, but markings in the sheet were incorrect.	Press the OK button to clear the error. Confirm the following, then try again: - Fill in all the circles on the Photo Index Sheet properly.
Failed to scan handwriting sheet. Check for missed and improper markings.	The machine scanned the handwritten Photo Index Sheet, but markings in the sheet were incorrect.	- Place the sheet in the correct orientation and position.
Failed to scan DVD/CD handwriting sheet. Check for missed and improper markings.	The machine scanned the DVD/CD handwritten sheet, but markings in the sheet was incorrect.	
Failed to scan. Either document cannot be scanned or is not placed on the platen glass.	The machine failed in scanning the document for Fit-to-page copy.	Press the OK button to clear the error. Correct the settings, then try the operation again.
Cover is open. Close cover.	The cover was opened during printing.	Close the cover. The LCD returns to the display before the error occurrence.
Scanner is not operating correctly.	The CIS cannot detect the home position, or the scanner unit warming-up is not performed properly at power-on.	Press the OK button to clear the error, and turn the machine off and on again. If the error still occurs, repair servicing is required.

2-4. Warnings

Warning	Message on the LCD	Solution
Low ink	"!" is indicated for an applicable ink tank icon in the Status Monitor.	No special solution. Since the ink will be used up soon, prepare for a new ink tank.
Print head temperature rise	If the print head temperature does not fall, the print head error will occur.	When the print head temperature falls, the error is automatically cleared. If the print head error is indicated, repair servicing is required.
Protection of excess rise of the print head temperature	If the print head temperature does not fall, the print head error will occur.	If the print head temperature exceeds the specified limit, an intermission is inserted during printing.
Restrictions on paper	The current paper cannot be set. Change the size and type.	Re-select the supported paper type and size.
USB cable not connected	Set the PC to start scan.	Connect the USB cable, then turn on the computer.
Cancellation of image select information	Reset the selected photo information? Yes No	<ul style="list-style-type: none"> - Select Yes, and press the OK button. => The image selection is cancelled, and the menu or sub-menu is displayed. - Select No, and press the OK button. => The LCD returns to the display immediately before the message was displayed.
	Do you want to clear the image scanned from the photo? Yes No	
	Do you want to clear the scanned image and rescan? Yes No	

2-5. Troubleshooting by Symptom

	Symptom	Solution
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	<ul style="list-style-type: none"> - Confirm the connection of <ul style="list-style-type: none"> - the power cord, and - between the logic board and the power supply unit. - Replace the <ul style="list-style-type: none"> - power supply unit, or - logic board.
	A strange noise occurs.	<ul style="list-style-type: none"> - Remove foreign material. - Attach a removed part if any. - Check the operation of the moving parts (such as purge unit, carriage unit, and paper feeding mechanism) - Replace a faulty part, if any.
	Nothing is displayed on the LCD.	<ul style="list-style-type: none"> - Confirm the connection between the operation panel, the LCD unit, and the logic board. - Replace the <ul style="list-style-type: none"> - operation panel unit, or - logic board.
	A portion of the LCD is not displayed. The display flickers.	<ul style="list-style-type: none"> - Perform the button and LCD test in the service mode, and confirm that the LCD is displayed without any segments missing or flickering. - Confirm the connection between the operation panel, the scanning unit, and the logic board. - Replace the <ul style="list-style-type: none"> - operation panel unit, or - logic board.
	Paper feed problems (multi-feeding, skewed feeding, no feeding).	<ul style="list-style-type: none"> - Examine the inside to confirm that no parts are damaged, and the rollers are clean. - Remove foreign material. - Adjust the paper guide properly.

		<ul style="list-style-type: none"> - Set the paper properly. - Confirm the following: <ul style="list-style-type: none"> - selected paper source - attachment of the rear cover - connection of each harness and the logic board - sheet feeder unit operation - Replace the <ul style="list-style-type: none"> - sheet feeder unit, - cassette unit, or - logic board.
	Carriage movement problems (contact to other parts, strange noise).	<ul style="list-style-type: none"> - Confirm that the carriage timing slit strip film is free from damage or grease. - Clean the carriage timing slit strip film (with ethanol and lint-free paper). - Remove foreign material. - Replace the <ul style="list-style-type: none"> - carriage timing slit strip film, or - carriage unit.
	Faulty scanning (no scanning, strange noise).	<ul style="list-style-type: none"> - Confirm the connection between the scanning unit and the logic board. - Replace the <ul style="list-style-type: none"> - scanning unit, or - logic board.
	The CD / DVD tray is not pulled in the feeder.	<ul style="list-style-type: none"> - Confirm that the reflector of the CD / DVD tray is clean and is free from any damages. - Replace the <ul style="list-style-type: none"> - CD / DVD tray, or - logic board.
Unsatisfactory print quality	No printing, or no color ejected.	<ul style="list-style-type: none"> - Confirm that the orange tape is properly removed from an ink tank, and the ink tanks are installed properly. - Perform print head maintenance. - Replace the <ul style="list-style-type: none"> - ink tank, - print head*¹. - Remove foreign material from the purge unit caps, if any. - Replace the <ul style="list-style-type: none"> - purge unit, or - logic board.
	Printing is faint, or white lines appear on printouts even after print head cleaning. Line(s) not included in the print data appears on printouts.	<ul style="list-style-type: none"> - Remove and re-install the print head. - Confirm that the ink tanks are installed properly. - Perform print head maintenance. - Replace the <ul style="list-style-type: none"> - ink tank, or - print head*¹. - Perform the following: <ul style="list-style-type: none"> - Automatic or manual print head alignment in the user mode - LF / Eject correction in the service mode - Clean the paper feed rollers. - Replace the <ul style="list-style-type: none"> - purge unit, or - logic board.
	Paper gets smeared.	<ul style="list-style-type: none"> - Feed several sheets of paper. - Perform bottom plate cleaning. - Clean the paper path with a cotton swab or cloth. - Clean the paper feed rollers.
	The back side of paper gets smeared.	<ul style="list-style-type: none"> - Clean the platen rib (clean the paper path with a cotton swab or cloth). - Confirm that the platen ink absorber fits in place properly. - Confirm that the paper eject rollers are free from ink smear.

	A part of a line is missing on printouts.	<ul style="list-style-type: none"> - Perform nozzle check pattern printing, and confirm that ink is properly ejected from all the nozzles. - Replace the <ul style="list-style-type: none"> - ink tank, or - print head*1.
	Color hue is incorrect.	<ul style="list-style-type: none"> - Confirm that the ink tanks are installed properly. - Perform print head maintenance. - Replace the <ul style="list-style-type: none"> - ink tank, or - print head*1 - Perform print head alignment.
	Printing is incorrect.	Replace the logic board.
	No ejection of black ink.	<ul style="list-style-type: none"> - Confirm that the ink tanks are installed properly. - Perform print head maintenance. - Replace the <ul style="list-style-type: none"> - ink tank, or - print head*1. - Remove foreign material from the purge unit caps, if any. - Replace the purge unit.
	Graphic or text is enlarged on printouts.	<p>When enlarged in the carriage movement direction:</p> <ul style="list-style-type: none"> - Clean grease or oil off the timing slit strip film. - Replace the <ul style="list-style-type: none"> - timing slit strip film, - carriage unit, - logic board, or - scanning unit (when copying) <p>When enlarged in the paper feed direction:</p> <ul style="list-style-type: none"> - Clean grease or oil off the timing slit disk film or the timing slit disk eject film. - Replace the <ul style="list-style-type: none"> - timing slit disk film, - timing slit disk eject film, - timing sensor unit, - LF roller, - platen unit, - logic board, or - scanning unit (when copying)
Faulty scanning	No scanning.	<ul style="list-style-type: none"> - Confirm the connection between the scanning unit and the logic board. - Replace the <ul style="list-style-type: none"> - scanning unit, or - logic board. - Confirm that the MP drivers are installed properly. - Confirm that the USB cable is connected properly.
	Streaks or smears on the scanned image.	<ul style="list-style-type: none"> - Clean the platen glass. - Confirm the connection between the scanning unit and the logic board. - Replace the <ul style="list-style-type: none"> - scanning unit, - logic board, or - document pressure plate sheet.

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

3. REPAIR

3-1. Notes on Service Part Replacement (and Disassembling / Reassembling)

Service part	Notes on replacement *1	Adjustment / settings	Operation check
Logic board ass'y	<ul style="list-style-type: none"> - 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). [See 3-4. Verification Items, (1) Service test print for details.] 	After replacement: <ol style="list-style-type: none"> 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. [See 3-3. Adjustment / Settings, (6) Service mode, for details of 1 to 7.] 8. Perform print head alignment and LCD language setting in the user mode. 	<ul style="list-style-type: none"> - EEPROM information print - Service test print - Printing via USB connection - Copying - Direct printing from a digital camera (PictBridge)
Absorber kit		After replacement: <ol style="list-style-type: none"> 1. Reset the ink absorber counter. [See 3-3. Adjustment / Settings, (6) Service mode, for details.] 	<ul style="list-style-type: none"> - Ink absorber counter volume print (After the ink absorber counter is reset, the counter value is printed automatically.)
Carriage unit		At replacement: <ol style="list-style-type: none"> 1. Apply grease to the sliding portions.[See 3-3. Adjustment / Settings, (3) Grease application.] 2. Check the ink system function. [See 3-3. Adjustment / Settings, (6) Service mode, for details.] 3. Perform print head alignment in the user mode. 	<ul style="list-style-type: none"> - Service test print (Confirm CD / DVD and automatic print head alignment sensor correction, and ink system function.)
Paper feed motor	<ul style="list-style-type: none"> - The red 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.) 	At replacement: <ol style="list-style-type: none"> 1. Adjust the paper feed motor. [See 3-3. Adjustment / Settings, (1) Paper feed motor adjustment, for details.] 	
Platen unit		After replacement: <ol style="list-style-type: none"> 1. Check the ink system function. 2. Perform LF / Eject correction. [See 3-3. Adjustment / Settings, (6) Service mode, for details.] 	<ul style="list-style-type: none"> - Service test print
PR lift shaft ass'y		At replacement: <ol style="list-style-type: none"> 1. Apply grease to the sliding portions. 	<ul style="list-style-type: none"> - Service test print
Input carriage lift gear			

Easy-Scroll Wheel base		[See 3-3. Adjustment / Settings, (3) Grease application, for details.]	
Document pressure plate unit		After replacement: 1. Confirm the document pressure plate sheet position. [See 3-3. Adjustment / Settings, (2) Document pressure plate sheet replacement, for details.] 2. Check the LCD and operation panel. [See 3-3. Adjustment / Settings, (6) Service mode, for details.]	
Document pressure plate sheet			
Document pressure plate sheet frame			
Scanner unit			
Operation panel board ass'y	- Be cautious not to scratch or damage the LCD hinge FFC.	At replacement: 1. Check the LCD and operation panel. [See 3-3. Adjustment / Settings, (6) Service mode, for details.]	
LCD viewer unit			
Timing slit strip film	- Upon contact with the film, wipe the film with ethanol. - Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film	After replacement: 1. Perform print head alignment in the user mode. 2. Perform LF / Eject correction in the service mode. [See 3-3. Adjustment / Settings, (6) Service mode, for details.]	- Service test print
Timing slit disk film			
Timing slit disk eject film			
Print head		After replacement: 1. Perform print head alignment in the user mode.	- 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. [Special Notes on Repair Servicing](#) 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 film, and timing slit disk eject film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- For the MP610 automatic print head alignment, use Matte Photo Paper (MP-101) to ensure alignment accuracy.
- Exercise caution with the screws, as follows:
 - i. The screws of the paper feed motor may be loosened only at replacement of the paper feed motor unit (DO NOT loosen them in other cases).
 - ii. DO NOT loosen the red screws on both sides of the main chassis, securing the carriage shaft positioning (they are not adjustable in servicing)

3-2. Special Notes on Repair Servicing (Click on the image to enlarge it.)

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

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

- 1) Remove the cassette.
- 2) Open the front door and scanner unit, then remove the side cover R (3 screws).
 <While slightly pulling up the back of the scanner unit, remove the side cover R. The side cover R holds the scanner unit hinge.>



- 3) Remove the document cover (document pressure plate unit).
 <While slightly pushing the left and right hinges toward the center, pull the cover upward to remove it. The cover will not be removed just by pulling it.>
 <Disconnect the 2 connectors of the operation panel harness and 1 connector which fixes the core position.>

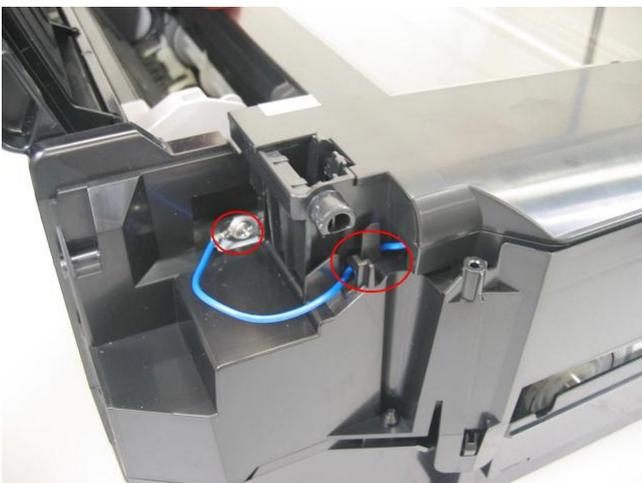
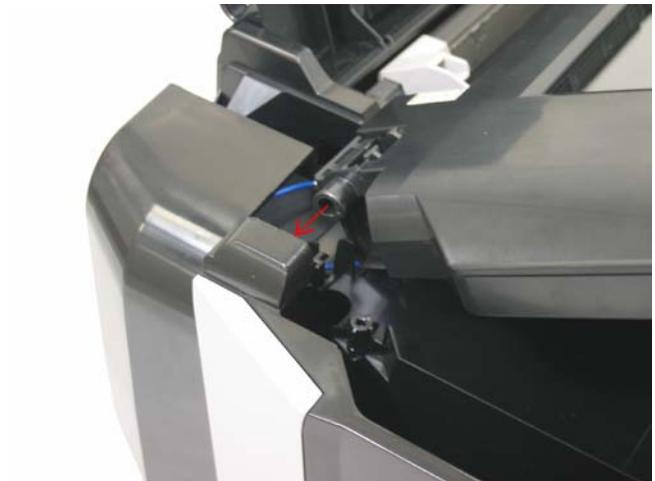


4) Remove the side cover L (3 screws).

<The side cover L holds the scanner unit hinge.>

<Since the pressure of the scanner lock arm spring is in the upward direction, hold the scanner unit while removing the side cover.>

<In the left back of the scanner unit, the ground wire is fastened to the chassis. Be cautious of it.>



5) Remove the scanner unit.

<Disconnect the FFC and scanner motor cable connector from the logic board>

<Disengage the scanner lock arm from the scanner unit.>

<While rotating the scanner unit slightly toward the outside, release the scanner lock arm from the scanner unit.>

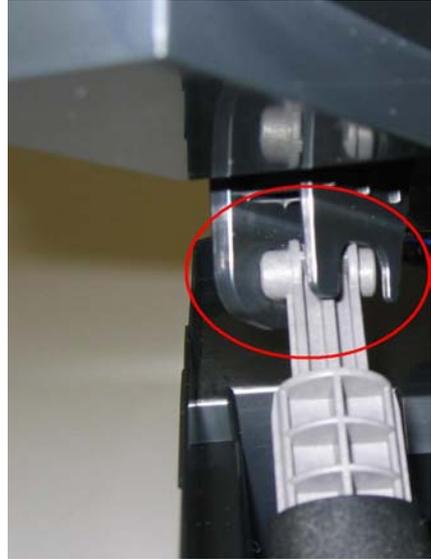
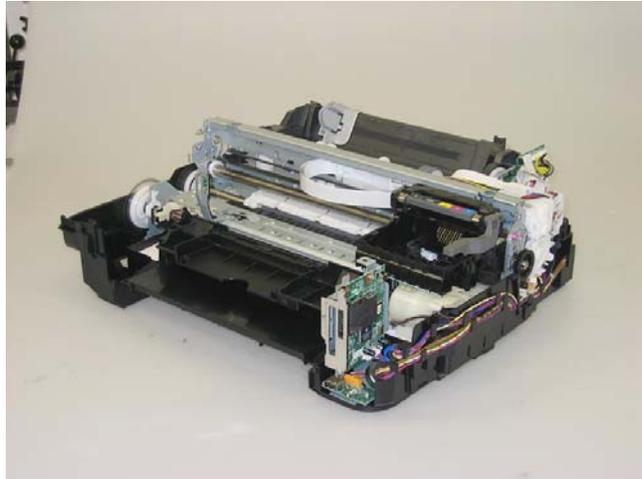
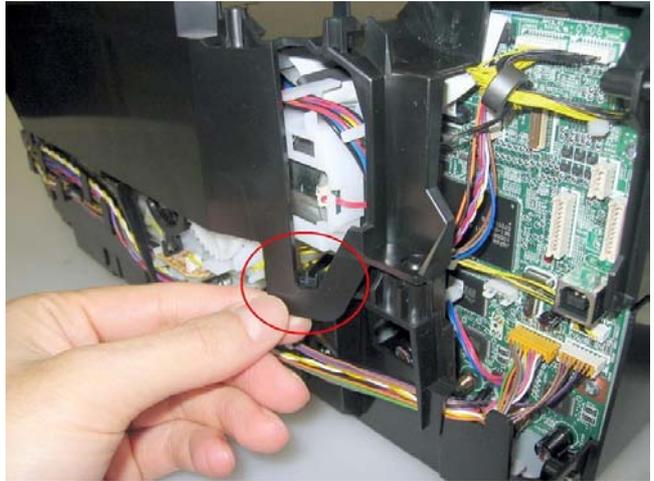
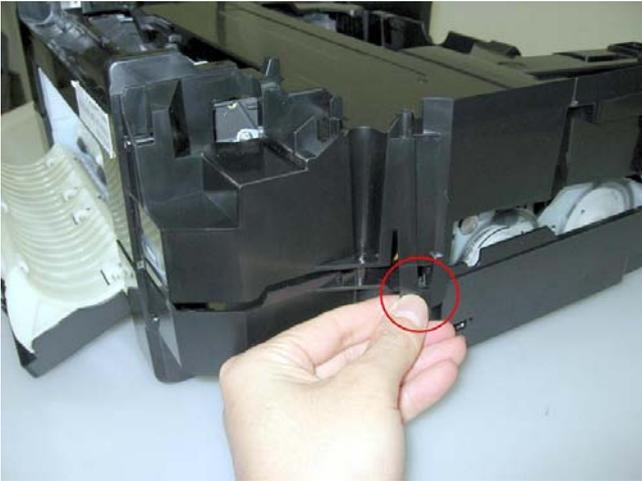
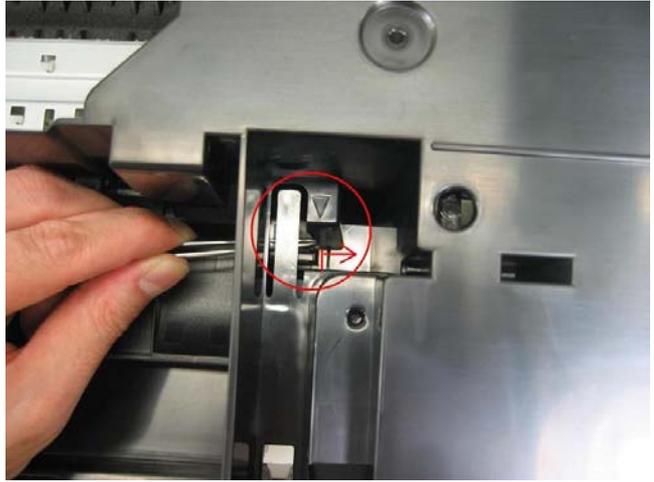


Photo up: Scanner unit

Photo on the left: Machine after the scanner unit is removed

<Remove the scanner lock arm or paper support when necessary.>

6) Remove the main case.
<Release the 4 claws, and pull the main case (no screws).>



(2) Operation panel removal

1) Remove the screws from the bottom of the document cover (7 screws).

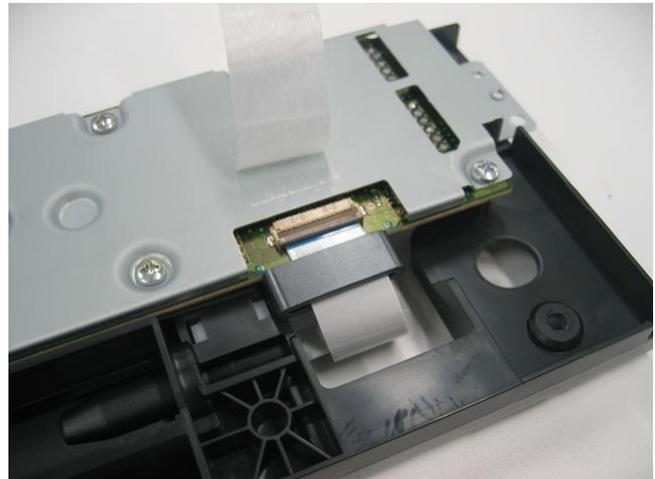
<Remove the top cover from the base, while exercising caution not to break the claws.>



2) Remove the panel frame from the top cover (6 screws).

<The FFC core is fixed to the unit with filament tape, as shown in the photo.>

<Pull the operation panel cover upward to remove it. There are 4 claws each in the front and in the back.>



3) Remove the LCD and panel board from the panel frame.

<Using longnose pliers, hold the LCD hinge through its two holes. While moving the hinge to compress the spring, remove the LCD from the panel frame.>

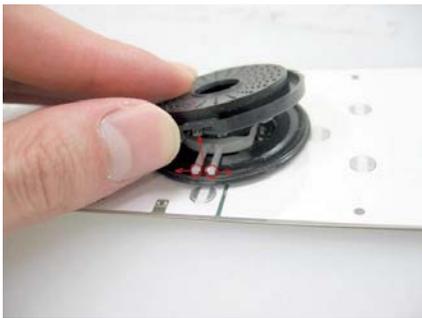
<Remove the panel chassis, and panel board (6 screws).>



4) Remove the Easy-Scroll Wheel from the panel board.

<Be cautious not to touch the grease between the wheel and the wheel base.>

See 3-3. [Adjustment / Settings](#), (3) [Grease application](#).

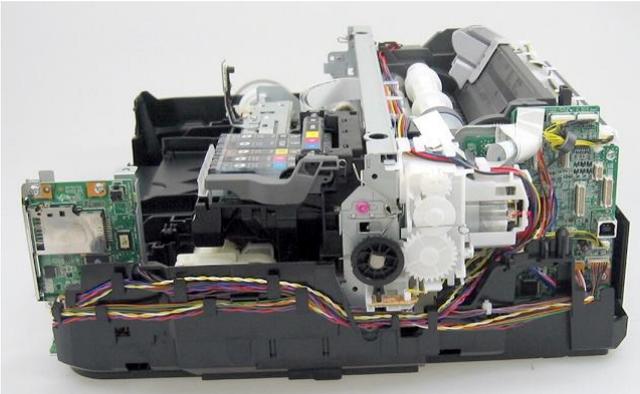


(3) Cable wiring and connection

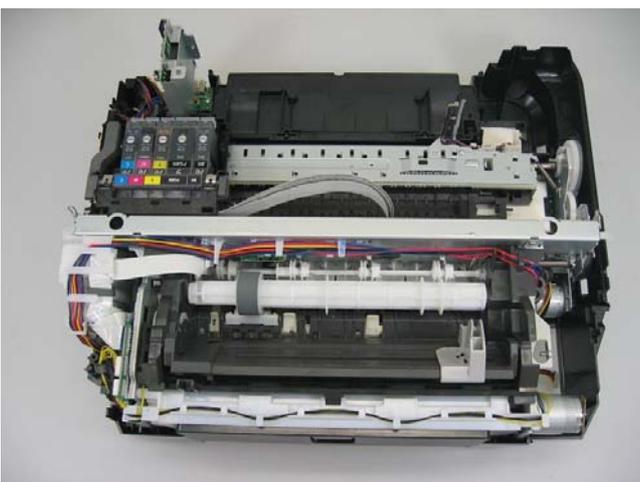
1) Wiring on the right side

<The cables are fit in the bottom case>

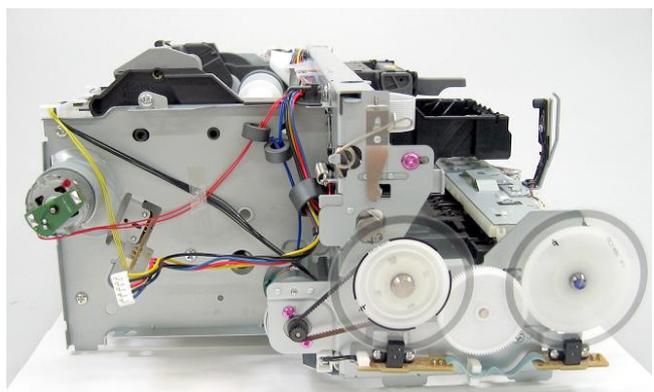
<Be cautious of the position of the screw that fixes the ground wire. The ground wire passes through the same cores as the card harness.>



2) Seen from the back side of the machine (Note the DC harness position.)

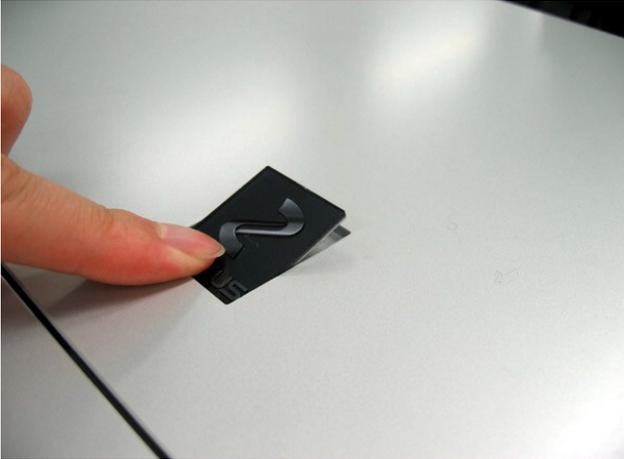


3) Right side of the machine (AC adapter and bottom case removed)



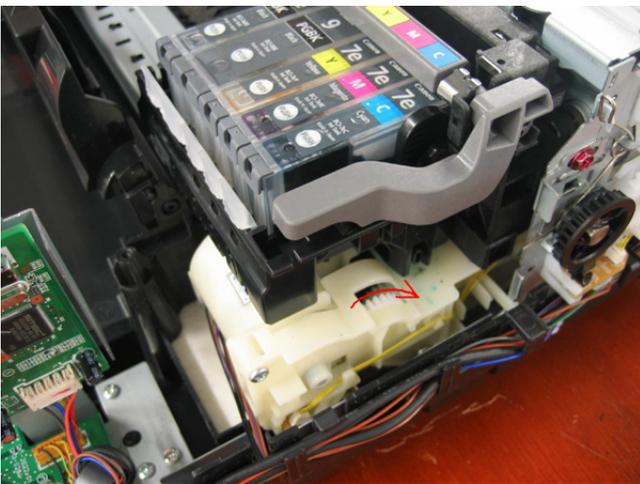
(4) Emblem removal

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

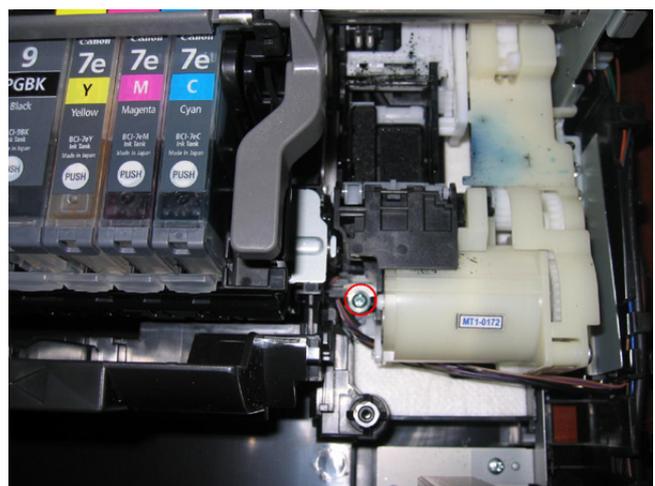
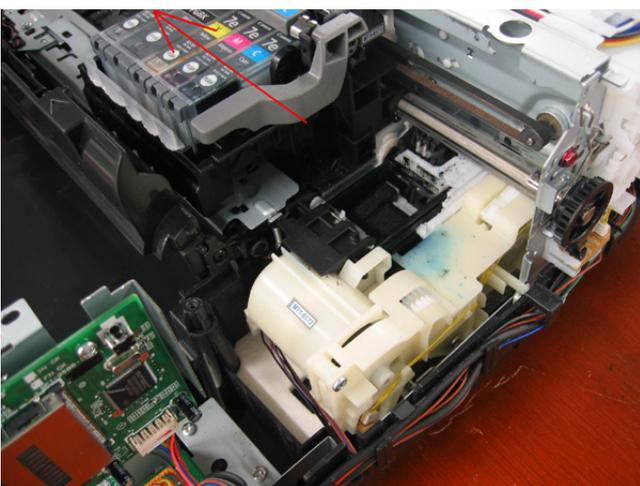


(5) Printer unit separation from the bottom case (how to remove the screw under the purge unit)

1) Rotate the purge unit gear toward the rear side of the machine to unlock the carriage.



2) Slide the carriage to the opposite of the home position (to the left), and remove the screw.

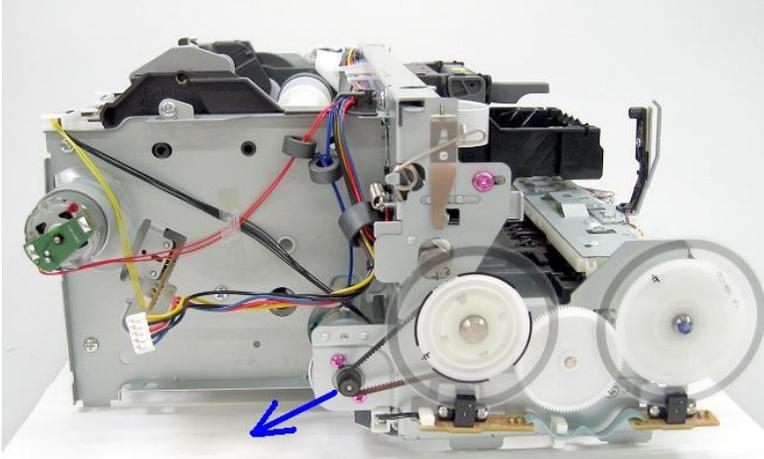


◀<3-2. Special Notes on Repair Servicing>▶▶

3-3. Adjustment / Settings

(1) Paper feed motor adjustment

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



- 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.

(2) Document pressure plate sheet (sponge sheet) replacement



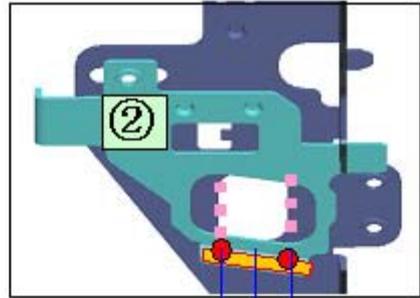
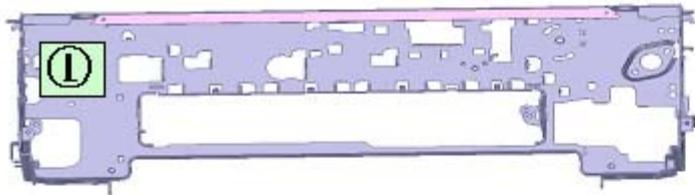
- 1) Peel off the cover sheet from the double-sided adhesive tape on the back of the document pressure plate sheet.
With the long-side down, position the lower-right corner of the document pressure plate sheet at the scanning reference point on the platen glass (front right where the red lines cross in the photo above).
- 2) Slowly close the document pressure plate while maintaining the hinge position. The document pressure plate sheet will attach to the plate.
- 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.

(3) Grease application

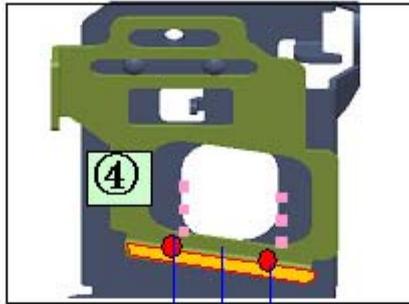
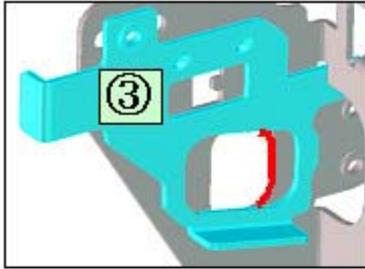
1) Printer unit

No	Part name	Where to apply grease / oil	Drawing No.	Grease / oil	Grease / oil amount (mg)	Number of drops x locations
1	Chassis ass'y	Entire surface the carriage slider contacts	(1)	Floil KG107A	27 to 54	3 x 1
2	Adjust plate L	Carriage shaft cam L sliding portion	(2)	Floil KG107A	18 to 36	2 x 1
3	Chassis ass'y	Carriage shaft sliding portion on the left side of the chassis (1 location)	(3)	Floil KG107A	9 to 18	1 x 1
4	Adjust plate R	Carriage shaft cam R sliding portion	(4)	Floil KG107A	18 to 36	2 x 1
5	Chassis ass'y	Carriage shaft sliding portion on the right side of the chassis (1 location)	(5)	Floil KG107A	9 to 18	1 x 1
6	Chassis ass'y	PR lift shaft cam contact portion (3 locations)	(6)	Floil KG107A	18 to 27	1.5 x 3
7	Idler pulley	The shaft surface which contacts the idler pulley hole	(7)	Floil KG107A	9 to 18	1 x 1
8	Carriage shaft	Entire surface of the carriage shaft where the carriage unit slides	(8)	Floil KG107A	200 to 400	
9	Carriage shaft spring L	Carriage shaft sliding portion (to the end of the spring)	(9)	Floil KG107A	9 to 18	1 x 1
10	Carriage shaft	Carriage shaft surface where the carriage unit slides (and where the machine-application of the grease is not feasible)	(10)	Floil KG107A	9 to 18	1 x 1
11	CL gear base	Outer surface of the CL idle gear R cylinder	(11)	Floil KG107A	9 to 18	1 x 1
12	CL gear base	Outer surface of the CL output gear cylinder	(12)	Floil KG107A	9 to 18	1 x 1
13	CL input gear	Joint of the CL gear base	(13)	Floil KG107A	9 to 18	1 x 1
14	CL input gear	CL input gear teeth	(14)	Floil KG107A	9 to 18	1 x 1

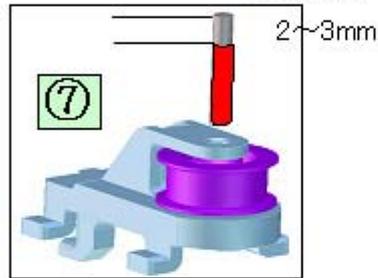
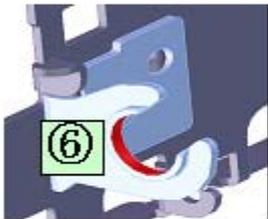
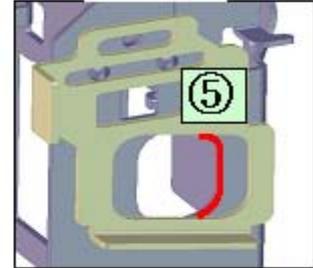
1 drop = 9 to 18 mg



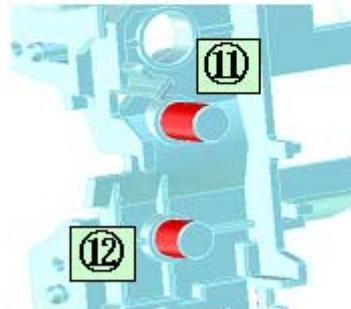
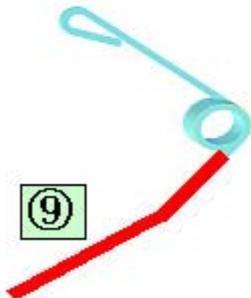
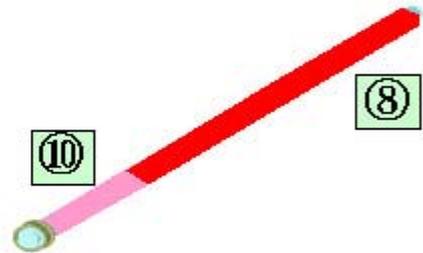
4mm 4mm



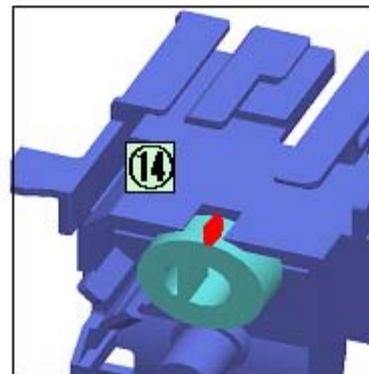
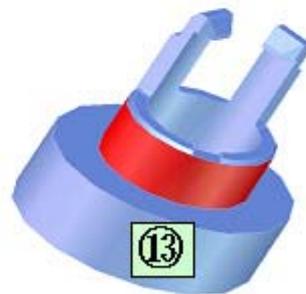
6mm 6mm



2~3mm



12



14

2) Operation panel / Easy-Scroll Wheel

No	Part name	Where to apply grease / oil	Drawing No.	Grease / oil	Grease / oil amount (mg)	Number of drops x locations
15	Easy-Scroll Wheel base	Easy-Scroll Wheel sliding portions	(15)	Floil KG107A	9 to 18	1 x 4
16	Easy-Scroll Wheel	Joint of the ring keys (up / down / right / left cursor buttons)	(16)	Floil KG107A	1 to 3	0.16 x 1

1 drop = 9 to 18 mg



(4) 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 counter value:

See 3-4. [Verification Items](#), (1) [Service test print](#).

- How to set the ink absorber counter:

See 3-3. [Adjustment / Settings](#), (6) [Service mode](#), "[Ink absorber counter setting](#)."

◀ <3-3. Adjustment / Settings, (1) to (4)> ▶ ▲

(5) 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 rear tray or the cassette which is selected on the Paper Feed Switch button.
Print head manual cleaning	- Cleaning both Black and Color: Perform via the machine operation panel. - Cleaning Black or Color separately, or both Black and Color: Perform from the MP driver Maintenance tab.	Unclogging of the print head nozzles, and maintenance to keep the print head conditions good. If there is a missing portion or white streaks in the nozzle check pattern printout, perform this cleaning.
Print head deep cleaning	Perform via the machine operation panel, or from the 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.
Automatic print head alignment	Perform via the machine operation panel, or from the MP driver Maintenance tab.	If automatic alignment is not effective, perform manual print head alignment. (2 sheets of A4 Matte Photo Paper)
Manual print head alignment	Perform via the machine operation panel, or from the MP driver Maintenance tab.	Set 4 sheets of plain paper (A4 or Letter) in the rear tray or the cassette which is selected on the Paper Feed Switch button. (4 sheets of A4 plain paper)
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 rotate while being pushed to the paper lifting plate. Since the rollers will wear in this cleaning, it is recommended to perform this only when necessary.
Bottom plate cleaning	Perform via the machine operation panel, or from the MP driver Maintenance tab.	Cleaning of the platen ribs when the back side of paper gets smeared. Fold a sheet of plain paper (A4 or Letter) in half crosswise, then unfold and set it in the rear tray with the folded ridge facing down.

(6) Service mode

<Service mode operation procedures>

- 1) With the machine power turned off, while pressing the Stop/Reset button, press and hold the ON/OFF button. (DO NOT release the buttons). The Power LED lights in green to indicate that a function is selectable.
- 2) While holding the ON/OFF button, release the Stop/Reset button. (DO NOT release the ON/OFF button.)
- 3) While holding the ON/OFF button, press the Stop/Reset button 2 times, and then release both the ON/OFF and Stop/Reset buttons. (Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green, starting with Alarm LED.)
- 4) When the Power LED lights in green (and "Service Mode CANON Idle" is displayed on the LCD), press the Stop/Reset button the specified number of time(s) according to the function listed in the table below, then press the ON/OFF button. (Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green, starting with Alarm LED.)

Time(s)	LED indication	Function	Remarks
0 times	Green (Power)	Power off	When the print head is not installed, the carriage returns and locks in the home position capped.
1 time	Orange (Alarm)	Service test print	Service test print - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - USB serial number - Destination - EEPROM information - Ink system function check result - Barcode (model name + destination) See 3-4. Verification Items, (1) Service test print, "Service test print sample."
2 times	Green (Power)	EEPROM information print	EEPROM information print - Model name - Destination - ROM version - Ink absorber counter value (ink amount in the ink absorber) - Print information - Error information, etc.
3 times	Orange (Alarm)	EEPROM initialization	The following items are NOT initialized, and the shipment arrival flag is not on: - USB serial number - Destination settings - Record of ink absorber counter resetting and setting - Record of repair at the production site - CD / DVD print position correction value - LF / Eject correction values - Left margin correction value - Production site E-MIP correction value and enabling of it - Endurance correction value and enabling of it - Record of disabling the function to detect the remaining ink amount - Ink absorber counter value (ink amount in the ink absorber)
4 times	Green (Power)	Ink absorber counter resetting	Set a sheet of A4 or Letter sized plain paper in the rear tray or cassette, and reset the ink absorber counter. After the ink absorber counter is reset, the counter value is printed automatically.

			See " Ink absorber counter resetting " below and the print sample in 3-4. Verification Items, (2) Ink absorber counter value print.
5 times	Orange (Alarm)	Destination settings	Press the Stop/Reset button the specified number of time (s) according to the destination. See " Destination settings " below.
6 times	Green (Power)	Print head deep cleaning	Cleaning of both Black and Color
7 times	Orange (Alarm)	CD / DVD check pattern print	Not used in servicing.
8 times	Green (Power)	CD / DVD print position correction (horizontal: X direction)	Not used in servicing.
9 times	Orange (Alarm)	CD / DVD print position correction (vertical: Y direction)	Not used in servicing.
10 times	Green (Power)	LF / Eject correction	See " LF / Eject correction " below.
11 times	Orange (Alarm)	Left margin correction	Not used in servicing.
12 times	Green (Power)	Button and LCD test	See " Button and LCD test " below.
13 times	Orange (Alarm)	Ink absorber counter setting	See " Ink absorber counter setting " below.
14 times	Green (Power)	Return to the menu selection	
15 times	Orange (Alarm)	Return to the menu selection	
16 times or more	Green (Power)	Return to the menu selection	



If the Stop/Reset button is pressed 14 or more times, the Alarm LED (orange) or Power LED (green) lights steadily without any changes.

<Destination settings>

In the destination settings mode, press the Stop/Reset button the specified number of time(s) according to the destination listed in the table below, and press the ON/OFF button.

Time(s)	LED indication	Destination	CD / DVD print
0 times	Green (Power)	No change of the destination	---
1 time	Orange (Alarm)	Japan	Supported
2 times	Green (Power)	Korea	Not supported
3 times	Orange (Alarm)	US	Not supported
4 times	Green (Power)	Europe	Supported
5 times	Orange (Alarm)	Australia	Supported
6 times	Green (Power)	Asia	Supported
7 times	Orange (Alarm)	China	Supported
8 times	Green (Power)	Taiwan	Supported
9 times	Orange (Alarm)	Latin America	No sales of the MP610
10 times	Green (Power)	Brazil	No sales of the MP610
11 times	Orange (Alarm)	Canada	Not supported
12 times or more	Green (Power)	Return to the destination selection	---



After setting the destination, confirm the model name and destination in service test print or EEPROM information print.

<Ink absorber counter resetting>

Reset the ink absorber counter (to 0%) when the ink absorber is replaced, or when necessary after the logic board is replaced.

- 1) In the service mode, press the Stop/Reset button 4 times, then press the ON/OFF button. The ink absorber counter value of the EEPROM is reset to 0%.
- 2) The flag for resetting of the ink absorber counter is set to ON, and the ink absorber counter value is automatically printed from the selected paper source.

("D=000.0" is printed at the top left of the paper.) See [3-4. Verification Items, \(2\) Ink absorber counter value print, "print sample."](#)

<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) In the service mode, press the Stop/Reset button 13 times, then press the ON/OFF button to enter the ink absorber counter setting mode.
- 3) In the ink absorber counter setting mode, press the ON/OFF button again to enter the main ink absorber counter setting mode. (Since the procedure for setting the ink absorber counter is common among all the models, this step is necessary to set the counter value for the main ink absorber.)
- 4) The ink absorber counter value can be set in 10% increments by pressing the Stop/Reset button. Press the Stop/Reset button the appropriate number of time(s) to select the value which is closest to the actual ink absorber counter value.

Time(s)	Ink absorber counter value to be set (%)
0 times	0%
1 time	10%
2 times	20%
3 times	30%
4 times	40%
5 times	50%
6 times	60%
7 times	70%
8 times	80%
9 times	90%
10 times or more	Not valid. Press the ON/OFF button to return to the ink absorber counter setting mode.

5) Press the ON/OFF button to set the selected value to the EEPROM. Print EEPROM information to confirm that the value is properly set to the EEPROM.

<LF / Eject correction>

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

Details: Print the LF / Eject correction pattern on a sheet of paper. Select the Pattern No. (0 to 2) in which streaks or lines are the least noticeable, press the Stop/Reset button the same number of time(s) as the selected Pattern No., then press the ON/OFF button. (See the flowchart below.)

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).

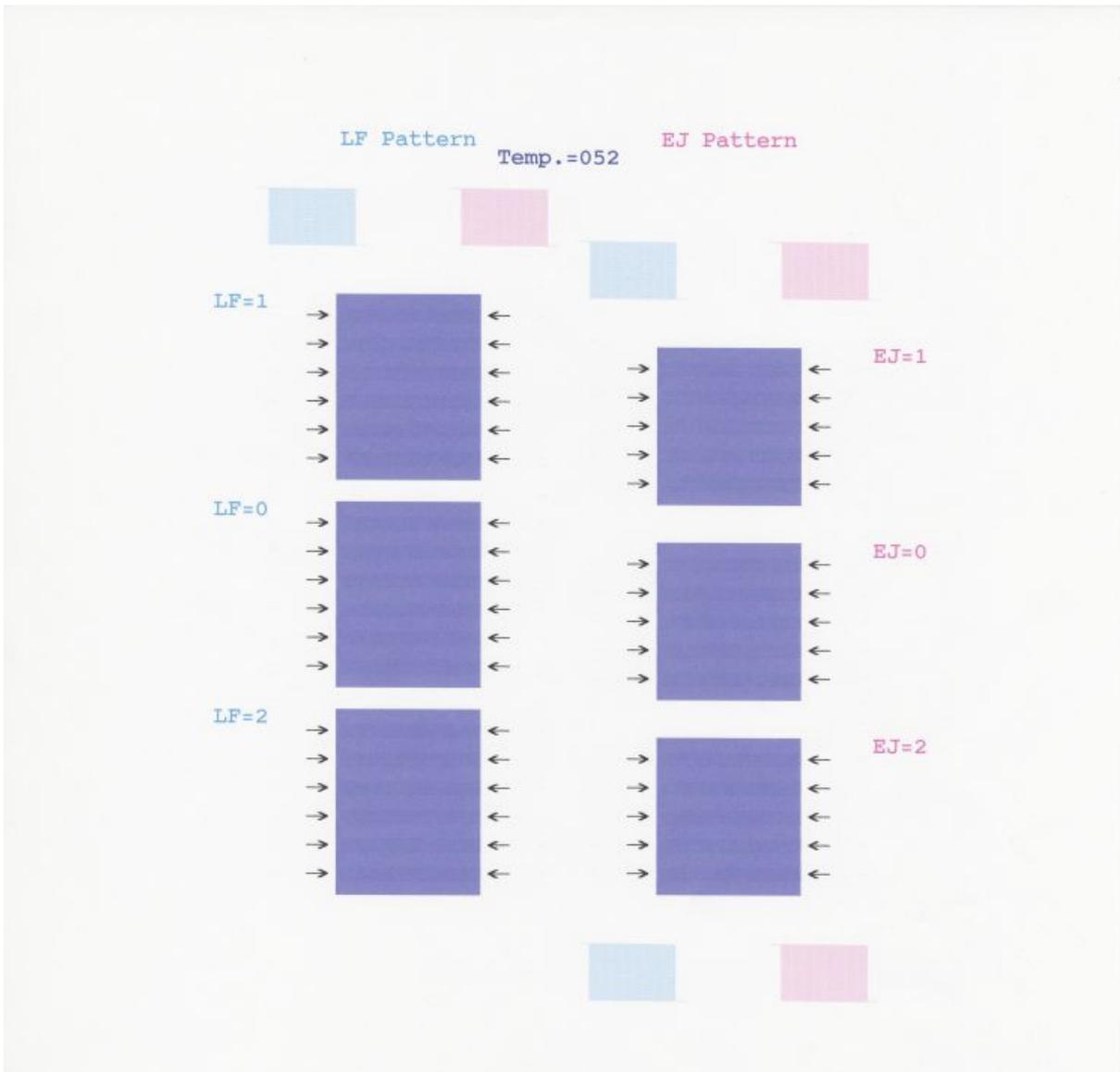
1) In the LF / Eject correction mode, press the Stop/Reset button the specified number of time(s) according to the paper to be used in LF / Eject correction listed in the table below, then press the ON/OFF button. (Set a sheet of selected paper in the rear tray.)

Time(s) (L)	Paper
1 time	HR-101
2 times	GF-500, Office Planner
3 times	HP BrightWhite
4 times	Canon Extra, STEINBEIS

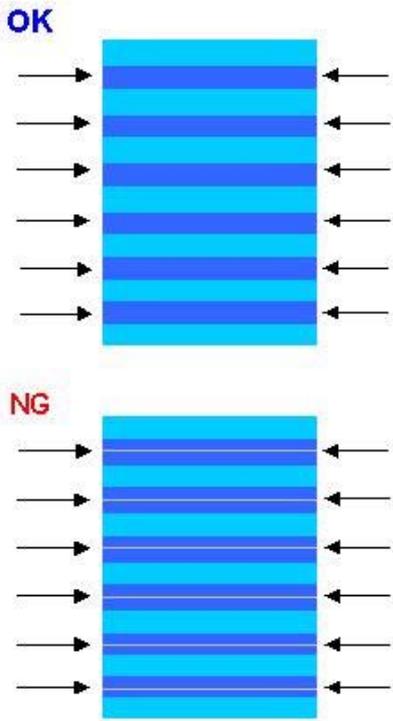


- Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.
- If the Stop/Reset button is NOT pressed, and only the ON/OFF button is pressed, the machine remains in the LF / Eject correction mode.
- If the Stop/Reset button is pressed 5 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

2) The LF / Eject correction pattern for the selected paper is printed. (LF correction values from 0 to 2 on the left, Eject correction values from 0 to 2 on the right)



3) In the printout, select the Pattern No. in which streaks or lines are the least noticeable.



3-1) LF correction value

Press the Stop/Reset button the same number of time(s) as the selected Pattern No., then press the ON/OFF button.

Selected pattern number	Number of times the Stop/Reset button is pressed (M)
1	1 time
0	0 times
2	2 times



- Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.
- If the Stop/Reset button is pressed 3 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

3-2) Eject correction value

Press the Stop/Reset button the same number of time(s) as the selected Pattern No., then press the ON/OFF button.

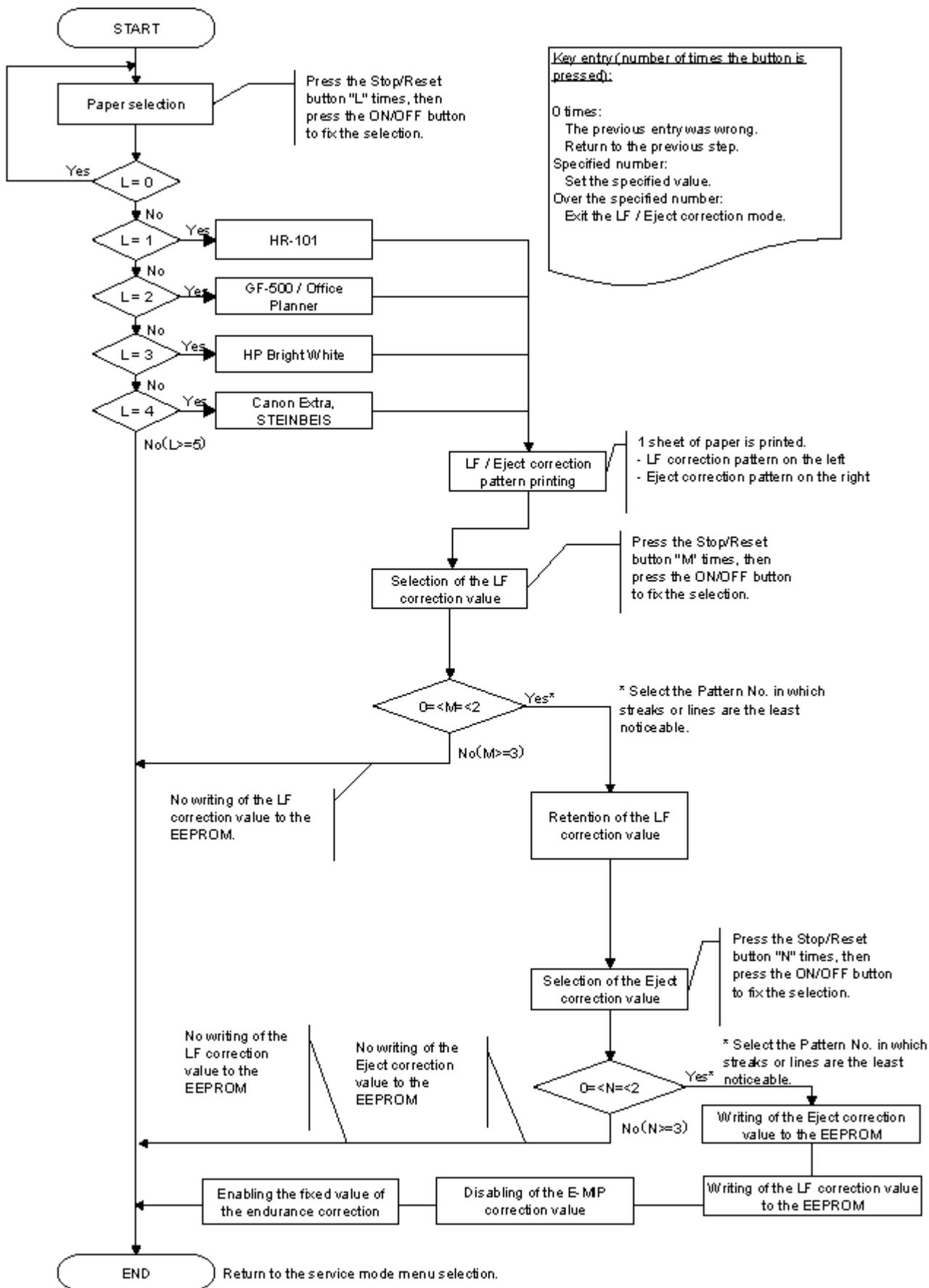
Selected pattern number	Number of times the Stop/Reset button is pressed (N)
1	1 time
0	0 times
2	2 times



- Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.
- If the Stop/Reset button is pressed 3 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

4) The selected LF correction value or Eject correction value is written to the EEPROM, and the flag for the E-MIP correction value becomes OFF, enabling the LF / Eject correction values written to the EEPROM. Then, the flag for the fixed value of the endurance correction becomes ON, and the machine returns to the service mode menu selection.

LF / Eject correction flowchart:



<Left margin correction>

Adjust the left margin for duplex printing or printing from the cassette.

1) Duplex printing from the rear tray and cassette

In the left margin correction mode, press the Stop/Reset button 1 time, then press the ON/OFF button 1 time. Duplex printing is performed from the rear tray and cassette.

Number of times the Stop/Reset button is pressed (L)	Operation
0 times	No operation
1 time	Duplex printing from the rear tray and cassette
2 times	Return to the service mode menu selection (no writing to the EEPROM)

From each paper source (rear tray and cassette), 2 sheets of paper are ejected. The first sheet is blank, and the left margin correction pattern is printed on the second sheet.

<Printing sequence>

For detail, see the flowcharts below.

- i. A sheet of paper feeds from the rear tray, and ejected blank (single-sided printing).
- ii. A sheet of paper feeds from the rear tray. Nothing is printed on the front side, and the pattern is printed on the back side (duplex printing).
- iii. A sheet of paper feeds from the cassette, and ejected blank (single-sided printing).
- iv. A sheet of paper feeds from the cassette. The pattern is printed on both sides of paper (duplex printing).

A total of 4 sheets are ejected.

After this, set the correction value to the EEPROM in the steps below.

2) Selection of the parameter mode for left margin correction

Press the Stop/Reset button the specified number of time(s) according to the parameter mode listed in the table below, then press the ON/OFF button.

Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.

Number of times the Stop/Reset button is pressed (M)	Parameter mode
0 times	Duplex printing from the rear tray and cassette
1 time	Back side of paper fed from the rear tray
2 times	Front side of paper fed from the cassette
3 times	Back side of paper fed from the cassette
4 times or more	Return to the service mode menu selection (after writing to the EEPROM)

3) Setting of the left margin correction value ("+" means to increase the left margin)

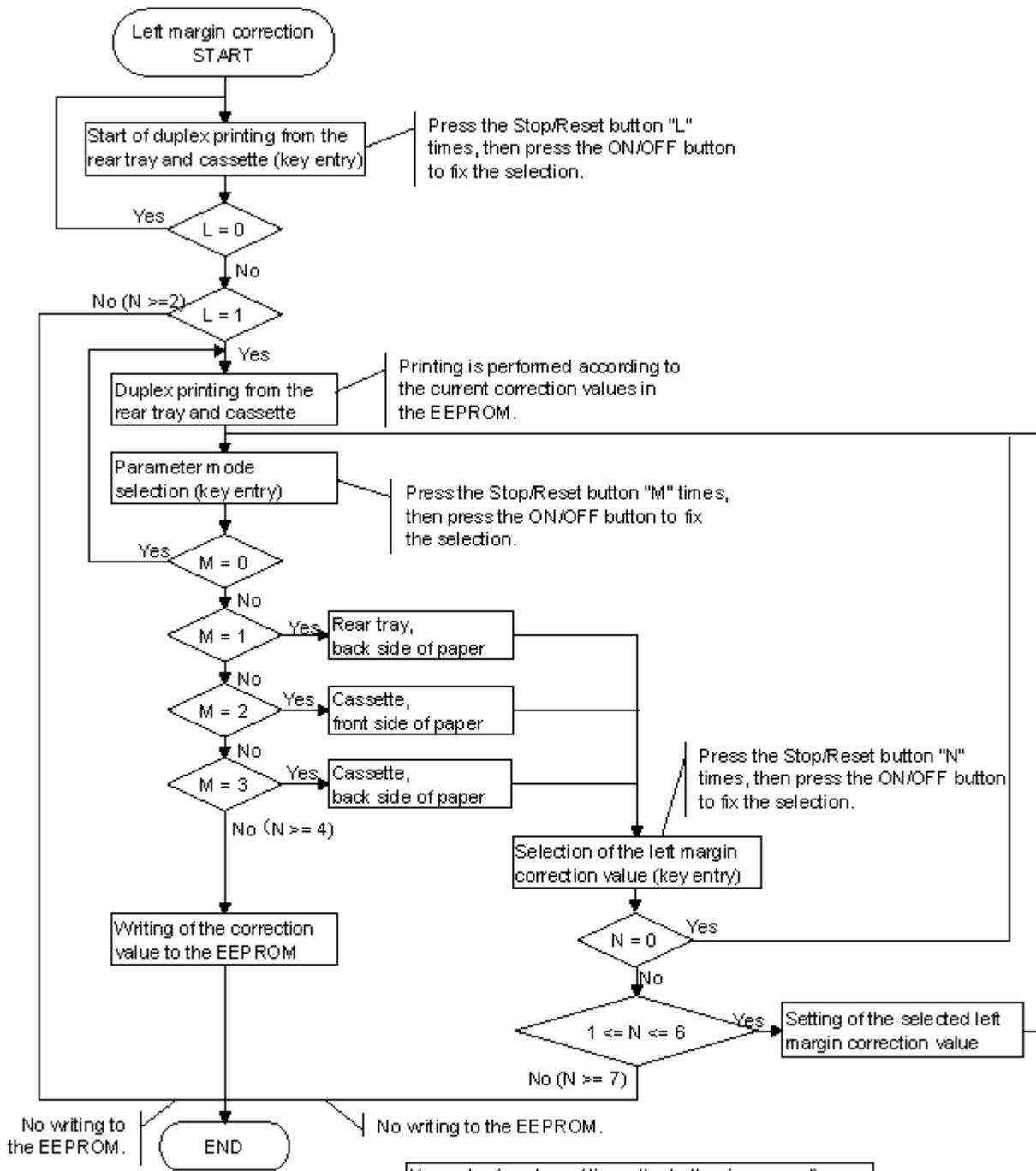
Press the Stop/Reset button the specified number of time(s) according to the correction value listed in the table below, then press the ON/OFF button.

Number of times the Stop/Reset button is pressed (N)	Left margin correction value
0 times	Return to the parameter mode selection for left margin correction
1 time	+1 pitch
2 times	+2 pitches
3 times	+3 pitches
4 times	-1 pitch
5 times	-2 pitches
6 times	-3 pitches
7 times or more	Return to the service mode menu selection (no writing to the EEPROM)

After the value is set, the machine returns to the parameter mode selection. Repeat steps 2) and 3) to adjust the left margin in each parameter mode: "back side of paper fed from the rear tray," "front side of paper fed from the cassette," and "back side of paper fed from the cassette."

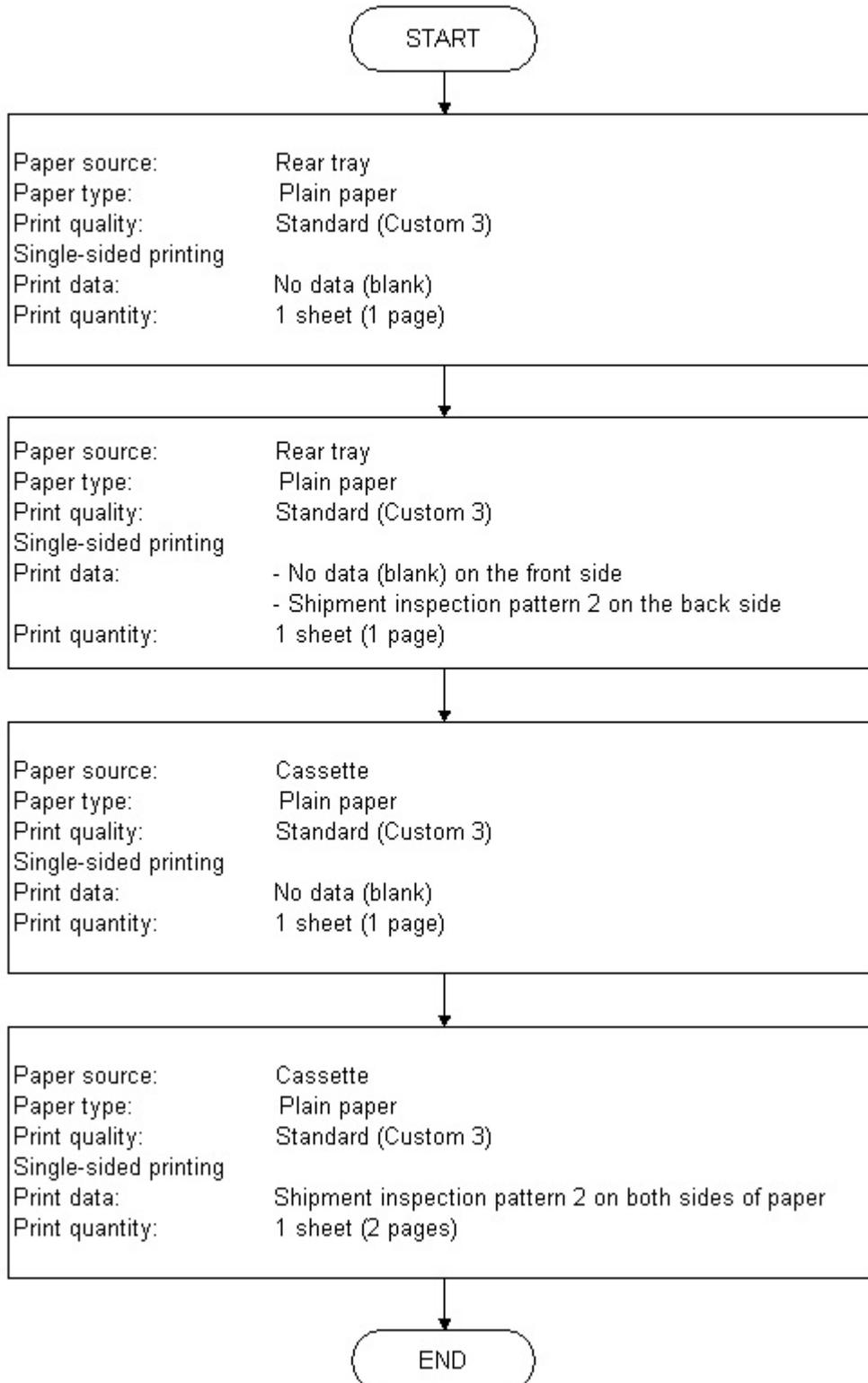
4) After the left margin correction in all the parameter modes is completed, press the Stop/Reset button 4 times or more in the parameter mode selection, then press the ON/OFF button to return to the service mode menu selection.

Left margin correction flowchart:



Key entry (number of times the button is pressed):
 0 times:
 The previous entry was wrong.
 Return to the previous step.
 Specified number:
 Set the specified value.
 Over the specified number:
 Exit the left margin correction mode.
 Before writing to the EEPROM, values in the RAM area can be overwritten by using key entry.

Duplex printing from the rear tray and cassette



<Button and LCD test>

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

- 1) In the button and LCD test mode, press the Stop/Reset button. The LCD turns blue, waiting for a button to be pressed.
- 2) Press each button of the operation panel.
- 3) Only one button should be pressed at one time. If 2 or more buttons are pressed at the same time, only one of them is considered to be pressed, and the other buttons are ignored.

The LCD is divided into 25 segments, representing each button. The color of a segment corresponding to the pressed button changes to red.

After all the 17 buttons are pressed, the remaining segments (from 18 to 25) turn red at the same time.

1	2	3	4	5
16	17	18	19	6
15	24	25	20	7
14	23	22	21	8
13	12	11	10	9

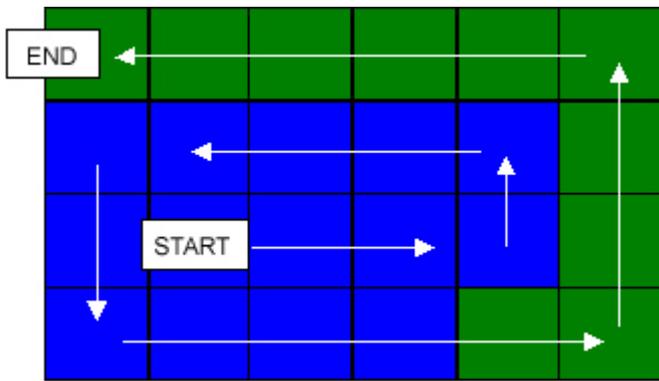
- | | |
|-----------------------------|---------------------------|
| 1. ON/OFF button | 11. Left function button |
| 2. Paper Feed Switch button | 12. Right function button |
| 3. NAVI button | 13. OK button |
| 4. HOME button | 14. [+] button |
| 5. Back button | 15. [-] button |
| 6. Up cursor button | 16. Black button |
| 7. Right cursor button | 17. Color button |
| 8. Down cursor button | 18. Stop/Reset button |
| 9. Left cursor button | |

- 4) Rotate the Easy-Scroll Wheel clockwise and counterclockwise 1 round (24 steps) each, as follows:

- 4-1) Rotate the Easy-Scroll Wheel clockwise step by step. The LCD is divided into 24 segments, representing each step. The color of a segment corresponding to the step changes from red to green. If the wheel is rotated counterclockwise before clockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated counterclockwise returns to red. If the wheel keeps rotated clockwise over 1 round (24 steps), the color of segment(s) corresponding to the extra number of steps returns to red, starting with the "Start" segment in the figure below.

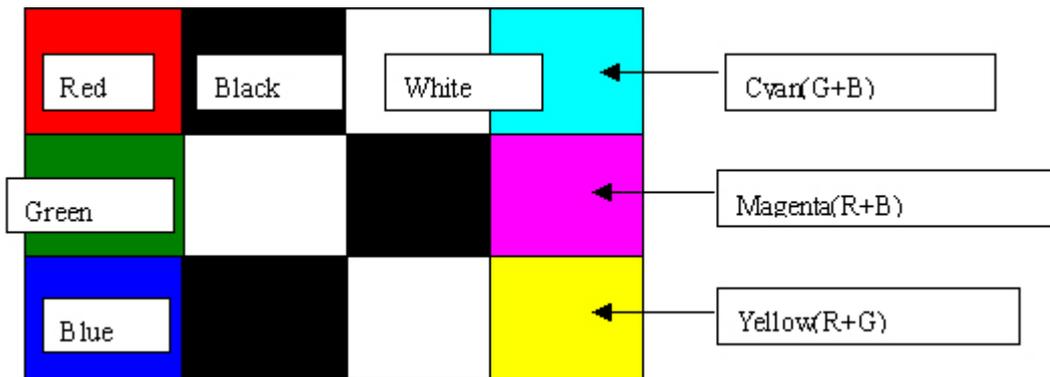


- 4-2) When the Easy-Scroll Wheel is rotated clockwise 1 round (24 steps), press the OK button.
- 4-3) Rotate the Easy-Scroll Wheel counterclockwise step by step. The LCD is divided into 24 segments, representing each step. The color of a segment corresponding to the step changes from green to blue. If the wheel is rotated clockwise before counterclockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated clockwise returns to green. If the wheel keeps rotated counterclockwise over 1 round (24 steps), the color of segment(s) corresponding to the extra number of steps returns to green, starting with the "Start" segment in the figure below.



4-4) When the Easy-Scroll Wheel is rotated counterclockwise 1 round (24 steps, and all the segments are in blue), press the OK button. The color pattern is displayed on the LCD.

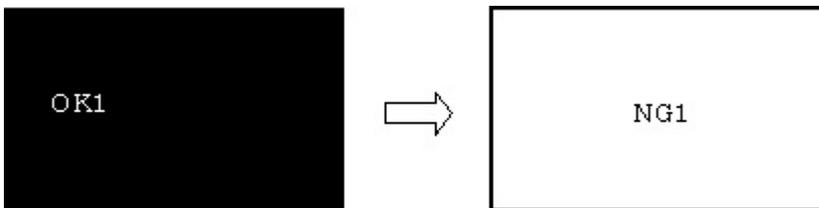
If there is any segment that is not in blue when the OK button is pressed, the display remains unchanged.



5) Adjust the transparent color and LCD flicker, as follows:

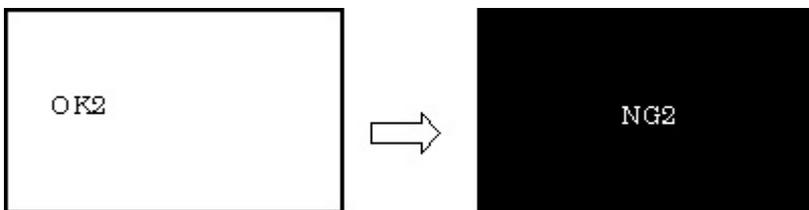
5-1) Press the OK button. "OK1" in white is displayed on the black background.

If the result is not good, "NG1" in black is displayed on the white background (transparent color) immediately after "OK1."



5-2) Press the OK button. "OK2" in black is displayed on the white background.

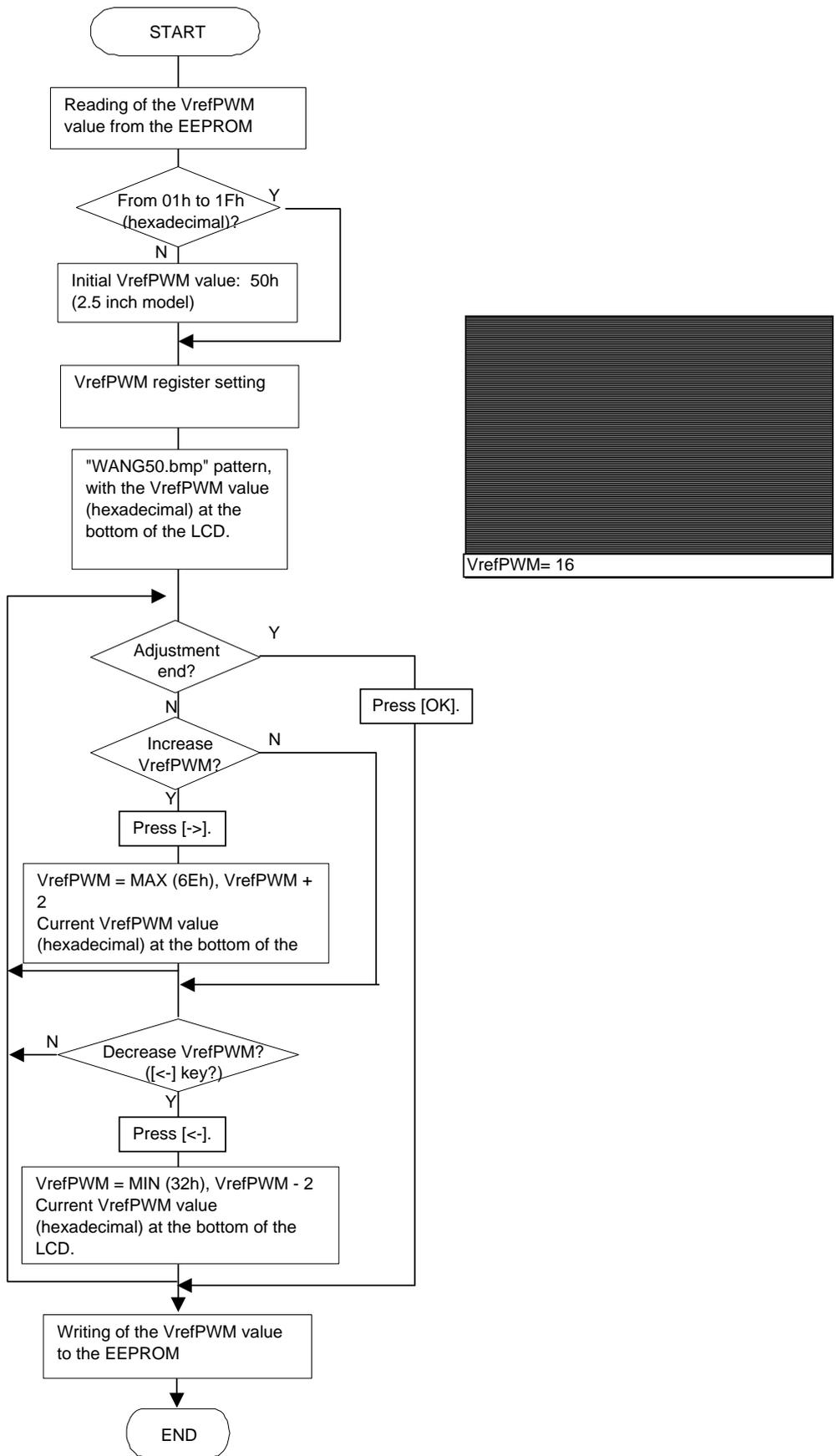
If the result is not good, "NG2" in white is displayed on the black background (transparent color) immediately after "OK2."



5-3) Press the OK button. The machine enters the LCD flicker adjustment mode. (See the flowchart below.)

5-4) Press the ON/OFF button to return to the service mode menu selection.

Flicker adjustment mode flowchart:



3-4. Verification Items

(1) Service test print

<Service test print sample>



(2) Ink absorber counter value print

<Print sample>

D=000.0

◀ <3-4. Verification Items> ▶ ▲

4. MACHINE TRANSPORTATION

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

- 1) In the service mode, press the ON/OFF 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.
-



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).

◀ <4. MACHINE TRANSPORTATION> ▶