

PIXMA PRO9000

SERVICE MANUAL

Canon



I. MANUAL OUTLINE

This manual consists of the following three parts to provide information necessary to service the PIXMA Pro9000:

Part 1: Maintenance

Information on maintenance and troubleshooting of the PIXMA Pro9000

Part 2: Technical Reference

New technology and technical information such as FAQ's (Frequently Asked Questions) of the PIXMA Pro9000

Part 3: Appendix

Block diagrams and pin layouts of the PIXMA Pro9000

Reference

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



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Part 1

MAINTENANCE



1. MAINTENANCE

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

(1) Adjustment

	Adjustment	Timing	Purpose	Tool	Approx. time
	Destination settings (EEPROM settings)	- At logic board replacement	To set the 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.
	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.	2 min.
				None.	2 min.
	Grease application	- At carriage unit replacement	- To maintain sliding properties of the carriage shaft. - To protect the printer's sliding portions and gears.	EU-1	1 min.
		- At parts replacement		MOLYKOTE PG-641	
				FLOIL KG-107A	
				MOLYKOTE HP-300	
	Ink system function check	- At logic board replacement- At platen unit 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.
New	Carriage position adjustment	- At carriage unit installation (at carriage unit or platen unit replacement)	To adjust the carriage position(Mark the position of the red screws before loosening them.)	None.	1 min.
	Line feed correction	- At logic board replacement- At LF roller replacement	To correct the line feed tolerant accuracy.	None. Perform in the service mode.	1 min.

Note: The red screws on the right side of the chassis, which secure the carriage shaft position, may be loosened only when necessary.

The red screws securing the paper feed motor may be loosened only at replacement of the paper feed motor.

(2) Periodic maintenance

No periodic maintenance is necessary.

(3) Periodic replacement parts

There are no parts in this printer 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
Print head alignment	At print head replacement.	To ensure accurate dot placement.	- Printer buttons - Computer (automatic settings via the printer driver)	6 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Printer buttons - Computer (settings via the printer driver)	2 min.
Print head deep cleaning	When print quality is not satisfying, and not improved by print head cleaning.	To improve nozzle conditions.	Computer (settings via the printer driver)	3 min.
Ink tank replacement	When an ink tank becomes empty. ("No ink error" via the computer, or ink tank LED flashing fast in red)	-----	-----	2 min.
Paper feed roller cleaning	When necessary	To clean the paper feed rollers.	Printer buttons	2 min.
Bottom plate cleaning	When the back side of the paper is smeared.	To clean the platen ribs.	- Plain paper - Computer (settings via the printer driver)	1 min.

1-3. Product Life

(1) Printer

Specified print volume (I) or the years of use (II), whichever comes first.

(I) Print volume: 21,000 pages

Black	1,500 character pattern (B5 to A3)	6,300 pages
	Postcard	2,700 pages
Color	7.5% duty per color pattern (B5 to A3)	3,450 pages
	Photo, borderless printing (5 x 7 to A3+)	3,250 pages
	4 x 6, photo, borderless printing	2,100 pages
	Postcard, photo, borderless printing	3,200 pages

(II) Years of use: 5 years of use

(2) Print head

Print volume: 21,000 pages

(The breakdown is the same as the above.)

(3) Ink tank (target value)

Pattern	Ink tank used	Print yield
Color document *1	CLI-8BK	Approx. 1,550 pages
	CLI-8C	Approx. 580 pages
	CLI-8M	Approx. 410 pages
	CLI-8Y	Approx. 380 pages
	CLI-8PC	Approx. 3,600 pages
	CLI-8PM	Approx. 4,050 pages
	CLI-8R	Approx. 4,000 pages
	CLI-8G	Approx. 4,150 pages
Photo (4" x 6") *2	CLI-8BK	Approx. 1,290 pages
	CLI-8C	Approx. 900 pages
	CLI-8M	Approx. 585 pages
	CLI-8Y	Approx. 272 pages
	CLI-8PC	Approx. 195 pages
	CLI-8PM	Approx. 142 pages
	CLI-8R	Approx. 2,705 pages
	CLI-8G	Approx. 2,770 pages

*1 Color document: Declared yield value in accordance with ISO/IEC FCD24711. Values obtained by continuous printing.

*2 Photo (4" x 6"): When printing Canon standard patterns on 4" x 6" <Photo Paper Pro> continuously with the default settings of

<Photo Paper Pro> using Windows XP printer driver in borderless printing mode and Windows XP Photo Printing Wizard.

Declared yield value determined based on Canon standard method referring to ISO/IEC FCD24712.

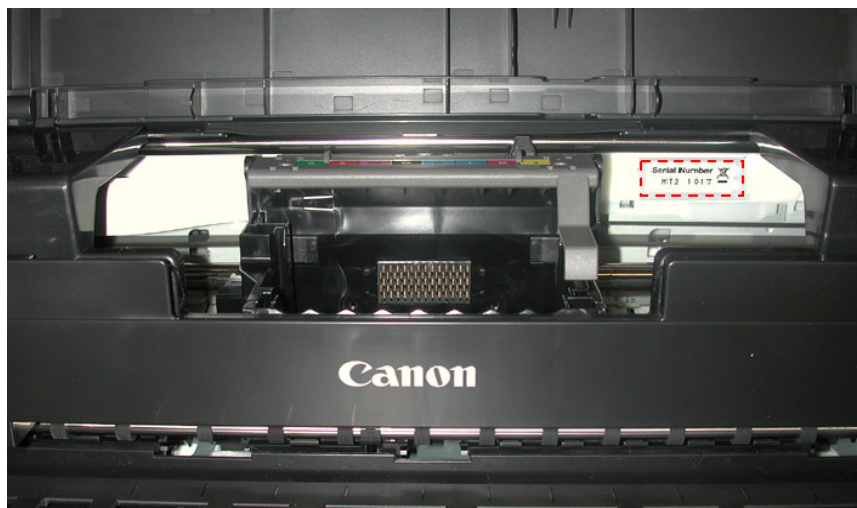
* Ink yield may vary depending on texts/photos printed, applications software used, print mode and type of paper used.

1-4. Special Tools

Name	Tool No.	Price (JPY)	Application	Remarks
FLOIL KG-107A	QY9-0057-000	210	To protect the printer's sliding portions.	In common with the S520.
EU-1	QY9-0037-000	3,080	To maintain sliding properties of the carriage shaft.	In common with the i990.
MOLYKOTE PG641	CK-0562-000	820	To protect the printer's sliding portions	In common with the S520.
MOLYKOTE HP300	QY9-0035-000	4,200	To protect the printer's sliding portions	In common with the iP4100.

1-5. Serial Number Location

On the carriage flexible cable holder (visible on the right of the carriage after the printer is turned on, the access cover is opened, and the carriage moves to the center).



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2. LIST OF ERROR DISPLAY / INDICATION

Errors are indicated by the LED, and warnings are displayed on the monitor of the computer connected to the printer.

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

Alarm LED blinking in orange	Error [Error code]	Solution	Remarks
Lit	Printing from the front tray is incomplete. [1320]	Set the paper in the front tray properly, and press the Resume/Cancel button.	Power LED lights in green (differentiating from RAM Service Call Error.)
2 times	No paper (ASF) [1000]	Set the paper in the ASF, and press the Resume/Cancel button.	
3 times	Paper jam (ASF) [1300] Paper jam (front tray) [1305]	Remove the jammed paper, and press the Resume/Cancel button.	
	Front tray closed [1250]	Open the front tray.	The error is indicated when the front tray is not opened at start of printing, or when the front tray is closed during printing.
Rear support closed [1260]	Open the rear support, and press the Resume/Cancel button.	The error is indicated when the rear support is not opened at start of paper feeding from the front tray.	
4 times	No ink [1600]	Replace the empty ink tank(s), or press the Resume/Cancel button.	Pressing the Resume/Cancel button will exit the error without ink tank replacement, however, ink may run out during printing.
	Ink tank not installed [1660]	Install the applicable ink tank(s) properly, and confirm that the LED's of all the ink tanks light red.	
5 times	The print head is not installed [1401], or it is not properly installed (Print head temperature sensor error [1403] / Faulty EEPROM data of the print head [1405]).	Install the print head properly.	
6 times	Inner cover open [1841]	Close the inner cover, and press the Resume/Cancel button.	
	Inner cover open during printing on paper [1846]	Close the inner cover, and press the Resume/Cancel button.	
	Inner cover open during printing on paper (print continuable) [1851]	Close the inner cover, and press the Resume/Cancel button.	
	Inner cover open during printing on paper (print NOT continuable) [1856]	Close the inner cover, and press the Resume/Cancel button to clear the error. The paper being printed at error occurrence will be ejected without printing the remaining data for the ejected paper, then printing will resume from the next page.	

7 times	Multiple ink tanks of the same color installed [1681]	Replace the wrong ink tank(s) with the correct one(s).	
	Ink tank in a wrong position [1680]	Install the ink tank(s) in the correct position.	
8 times	Warning: The ink absorber becomes almost full. [1700]	Pressing the Resume/Cancel button will exit the error, and enable printing.	The service call error indicating the ink absorber is full is likely to occur soon.
9 times	The connected digital camera or digital video camera does not support Camera Direct Printing. [2001]	Remove the cable between the camera and the printer.	
10 times	Front tray in the raised position [1281]	Lower the front tray, and press the Resume/Cancel button.	The error is indicated when the front tray is in the raised position at the start of printing from the ASF.
	Front tray in the raised position [1283]	Lower the front tray, and press the Resume/Cancel button. (The paper being printed at error occurrence will be ejected, and the print job will be cancelled automatically.)	The error is indicated when the front tray is raised during printing from the ASF.
	Front tray in the lowered position [1284]	Raise the front tray, and press the Resume/Cancel button. (The paper being printed at error occurrence will be ejected, and the print job will be cancelled automatically.)	The error is indicated when the front tray is lowered during printing from the front tray.
11 times	Failed in automatic print head alignment [2500]	Press the Resume/Cancel button. - If paper is being fed at error occurrence, the error is indicated after the paper is ejected. - If the error occurs, the print head alignment values are not changed. -After exit from the error by the Resume/Cancel button, the automatic print head alignment will not be re-done.	The error is indicated when the pattern is not printed due to no ink or non-ejection of ink, or when the sensor's AD value is incorrect.
	Paper size smaller than specified [1062]	Press the Resume/Cancel button. (The paper will be ejected, and the print job will be cancelled automatically.)	The error is indicated when the size of paper actually set is smaller than the one selected in the printer driver. Printing on the platen can occur. (e.g. When A4 paper is set though A3 is selected in the printer driver, the error occurs. v.v. If A3 paper is set and A4 is selected in the printer driver, then the error is not indicated and printing is performed.)
12 times	Paper not set properly in the front tray / Non-supported size of paper set in the front tray [1321]	Press the Resume/Cancel button to clear the error, then set a supported size of paper properly in the front tray.	
13 times	Remaining ink amount unknown [1683]	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one.	If an ink tank has once been removed, this error can occur.If printing is continued without replacing the applicable ink tank, the print head can be damaged.To continue printing with a refilled ink tank, press the Resume/Cancel button for 5 sec. or longer to record the use of the refilled ink tank.

			Note:After the above operation, the function to detect the remaining ink amount is disabled.
14 times	Ink tank not recognized [1684]	A non-supported ink tank is installed (the ink tank LED is turned off). Install the supported ink tanks.	
15 times	Ink tank not recognized [1410 to 1419]	An error occurred in an ink tank (the ink tank LED is turned off). Replace the ink tank(s).	
	Access cover open. [1200]	Close the access cover.	

2-2. Service Call Errors (by Cyclic Blinking in Orange (Alarm LED) and Green (Power LED), or Alarm LED Lit in Orange)

Cycles of blinking in orange (Alarm LED) and green (Power LED)	Error [Error code]	Solution (Replacement of listed parts, which are likely to be faulty)
2 times	Carriage error [5100]	<ul style="list-style-type: none"> - Carriage unit (QM2-2967) - Timing slit strip film (QC1-8293) - Logic board ass'y (QM2-3180)*¹ - Carriage motor (QK1-2141)
3 times	Line feed error [6000]	<ul style="list-style-type: none"> - Timing sensor unit (QM2-2683) - Timing slit disk film (QC1-4375) - Feed roller ass'y (QL2-1213) - Platen unit (QM2-2964) - Logic board ass'y (QM2-3180)*¹ - Paper feed motor (QK1-0637)
4 times	Purge cam sensor error [5C00]	<ul style="list-style-type: none"> - Purge unit (QM2-2973) - Logic board ass'y (QM2-3180)*¹
5 times	ASF (cam) sensor error [5700]	<ul style="list-style-type: none"> - Sheet feed unit (QM3-1672)
6 times	Internal temperature error [5400]	<ul style="list-style-type: none"> - Logic board ass'y (QM2-3180)*¹
7 times	Ink absorber full [5B00]	<ul style="list-style-type: none"> - Ink absorber kit (QY5-0165)
8 times	Print head temperature rise error [5200]	<ul style="list-style-type: none"> - Print head (QY6-0055) - Logic board ass'y (QM2-3180)*¹
9 times	EEPROM error [6800]	<ul style="list-style-type: none"> - Logic board ass'y (QM2-3180)*¹
10 times	Carriage board error [9100 / 9200 / 9201]	<ul style="list-style-type: none"> - Carriage unit (QM2-2967) - Logic board ass'y (QM2-3180)*¹
11 times	Carriage lift mechanism error [5110]	<ul style="list-style-type: none"> - PR lift shaft ass'y (QL2-1224) - Sheet feed unit (QM3-1672) - Logic board ass'y (QM2-3180)*¹ - CR lift sensor unit (QM2-3184)
12 times	AP position error [6A00]	<ul style="list-style-type: none"> - Sheet feed unit (QM3-1672) - Logic board ass'y (QM2-3180)*¹ - Purge unit (QM2-2973)
13 times	PF position error [6B00]	<ul style="list-style-type: none"> - Sheet feed unit (QM3-1672) - Logic board ass'y (QM2-3180)*¹
14 times	PF cam sensor error [6B10]	<ul style="list-style-type: none"> - Sheet feed unit (QM3-1672)

		- Logic board ass'y (QM2-3180)*1
15 times	USB Host VBUS overcurrent [9000]	- Logic board ass'y (QM2-3180)*1
16 times	Valve sensor error [6C00]	- Logic board ass'y (QM2-3180)*1 - Purge unit (QM2-2973)
17 times	Motor driver error [6D00]	- Logic board ass'y (QM2-3180)*1
18 times	Spur base lift mechanism error [5120]	- Spur base lift shaft ass'y (QL2-1223) - Spur base unit (QM2-2963) - Spur base lift unit (QM2-2982) - Sheet feed unit (QM3-1672) - Logic board ass'y (QM2-3180)*1
19 times	Ink tank position sensor error [6502]	- Sensor multi harness ass'y (QM2-3458) - Logic board ass'y (QM2-3180)*1
20 times	Other hardware error [6500]	- Logic board ass'y (QM2-3180)*1
Continuous alternate blinking	ROM error	- Logic board ass'y (QM2-3180)*1
Alarm LED lit (Power LED is Off)	RAM error	- Logic board ass'y (QM2-3180)*1

*1: Before replacement of the logic board ass'y, check the ink absorber counter value (by EEPROM information print). If the counter value is 7% or more, also replace the ink absorber kit (QY5-0165) when replacing the logic board ass'y.
[See Section 3-3. Adjustment / Settings, (6) Service mode, for details.]

2-3. Warnings

Printer (no LED indications):

Displayed warning	Remarks
Low ink	Status indication only.
Print head temperature rise	If the print head temperature is high when the access cover is opened, the warning is displayed*1. When the print head temperature falls, the warning is released.
Protection of excess rise of the print head temperature	If the print head temperature exceeds the specified limit, a Wait is inserted during printing.

*1: If the warning is displayed, the carriage does not move to the ink tank replacement position when the access cover is opened.

2-4. Troubleshooting by Symptom

	Symptom	Solution	Remarks
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	Replace the - AC adapter, or - logic board ass'y*1.	
	A strange noise occurs.	Remove foreign material, or attach a removed part if any.	
	Printing stops mid-way.	Replace the logic board ass'y*1.	
Paper feed problems	Multiple sheets feed.	Replace the sheet feed unit.	
	Paper does not feed.	Remove foreign material, or replace the sheet feed unit.	
	Paper feeds at an angle.	Remove foreign material, adjust the paper guide, or replace the sheet feed unit.	
Unsatisfactory print quality	No printing, or no color ejected.	Replace the - ink tank, - print head*2, or - logic board ass'y*1, remove foreign material from the purge unit caps, if any, or replace the purge unit.	
	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.	Remove and re-install the print head, or replace the - ink tank, - print head*2, - purge unit, or - logic board ass'y*1.	
	Paper gets smeared.	Feed several sheets of paper, perform bottom plate cleaning, or clean the paper path with cotton swab or cloth.	
	A part of a line is missing on printouts.	Replace the - ink tank, or - print head*2.	
	Color hue is incorrect.	Replace the - ink tank, or - print head*2, or perform print head alignment.	
	Printing is incorrect.	Replace the logic board ass'y*1.	
	No ejection of black ink.	Replace the - ink tank, or - print head*2, or remove foreign material from the purge unit caps, if any, or replace the purge unit.	
	Graphic or text is enlarged on printouts.	When enlarged in the carriage movement direction, clean grease or oil off the timing slit strip film, or replace the - timing slit strip film, - carriage unit, or- logic board ass'y*1. When enlarged in the paper feed direction, clean grease or oil off the timing slit disk film, or replace the - timing slit disk film, - timing sensor unit, or - logic board ass'y*1.	

*1: Before replacement of the logic board ass'y, check the ink absorber counter value (by EEPROM information print). If the counter value is 7% or more, also replace the ink absorber kit (QY5-0165) when replacing the logic board ass'y.
[See Section 3-3. Adjustment / Settings, (6) Service mode, for details.]

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

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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 QM2-3180	<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 EEPROM information print). If the value is 7% or more, also replace the ink absorber kit when replacing the logic board ass'y. [See 3-3. Adjustment / Settings, (6) Service mode, for details.] 	After replacement: <ol style="list-style-type: none"> 1. Initialize the EEPROM. 2. Reset the ink absorber counter. 3. Set the destination in the EEPROM. 4. Correct the automatic print head alignment sensors. 5. Check the ink system function. [See 3-3. Adjustment / Settings, (6) Service mode, for details of 1 to 5] 6. Perform the print head alignment in the user mode. 	<ul style="list-style-type: none"> - EEPROM information print - Service test print - Printing via USB connection - Direct printing from a digital camera
Ink absorber kit QY5-0165		After replacement: <ol style="list-style-type: none"> 1. Reset the ink absorber counter. [See 3.3. Adjustment / Settings, (6) Service mode.] 	<ul style="list-style-type: none"> - Service test print - EEPROM information print
Carriage unit QM2-2967	<ul style="list-style-type: none"> - The red screws on the right side of the chassis, which secure the carriage shaft position, may be loosened only for removal and re-installation of the carriage unit. (Do not loosen them for other purposes.) - Do not remove (or loose) the red screw on the top center of the chassis (The screw secures the carriage upper shaft). See 3-2. Special Notes on Repair Servicing, (2) Red screw which secures the carriage upper shaft.] 	At replacement: <ol style="list-style-type: none"> 1. Apply grease to the sliding portions. [See 3-3. Adjustment / Settings, (3) Grease application.] After replacement: <ol style="list-style-type: none"> 1. Correct the automatic print head alignment sensors. [See 3.3. Adjustment / Settings, (6) Service mode.] 2. Check the ink system function. [See 3.3. Adjustment / Settings, (6) Service mode.] 3. Perform the print head alignment in the user mode. At removal and re-installation: <ol style="list-style-type: none"> 1. Before loosening the red screws, mark their positions. After the carriage unit is installed, adjust the carriage shaft position. [See 3.3. Adjustment / Settings, (2) Carriage unit position adjustment.] 	<ul style="list-style-type: none"> - Service test print (Confirm ink system function.)
Paper feed motor QK1-0637	<ul style="list-style-type: none"> - The red screws securing the paper feed motor are allowed to be loosened. (DO NOT loosen any other red screws.) 	At replacement: <ol style="list-style-type: none"> 1. Adjust the paper feed motor. [See 3-3. Adjustment / Settings, (1) Paper feed motor adjustment.] 	<ul style="list-style-type: none"> - Service test print (Confirm the automatic print head alignment correction, and the ink system function.)
Sensor multi harness ass'y QM2-3458		After replacement: <ol style="list-style-type: none"> 1. Check the ink system function. [See 3-3. Adjustment / Settings, (6) Service mode.] 	<ul style="list-style-type: none"> - Service test print (Confirm the automatic print head alignment correction, and the ink system function.)
Timing slit strip film QC1-8293	<ul style="list-style-type: none"> - Upon contact with the film, wipe the film with ethanol. - Confirm no grease is on the film. 	After replacement: <ol style="list-style-type: none"> 1. Perform the print head alignment in the user mode. 	<ul style="list-style-type: none"> - Service test print
Timing slit disk film QC1-4375	<ul style="list-style-type: none"> - (Wipe off any grease thoroughly with ethanol.) - Do not bend the film. 		
		1-10	

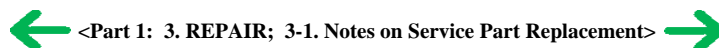
Print head QY6-0055		After replacement: 1. Perform the print head alignment in the user mode.	- Service test print
Feed roller ass'y QL2-1213		After replacement: 1. Adjust the line feeding. [See 3.3. Adjustment / Settings, (6) Service mode.]	- Service test print

*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, (1) Flexible cable and harness wiring, connection, 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 printer 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 and timing slit disk film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- Exercise caution with the red screws, as follows:
 - i. The red 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. The red screws on the right side of the main chassis, securing the carriage shaft position, may be loosened only at removal and re-installation of the carriage unit. (DO NOT loosen them in other cases).
 - iii. Do not remove (or loose) the red screw on the top center of the chassis (The screw secures the carriage upper shaft.).

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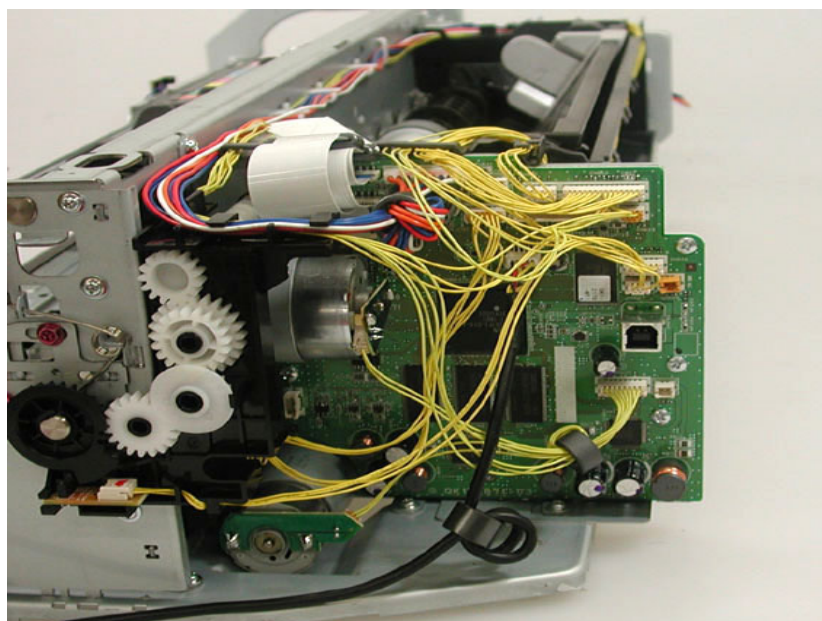
3-2. Special Notes on Repair Servicing

(1) Flexible cable and harness wiring, connection

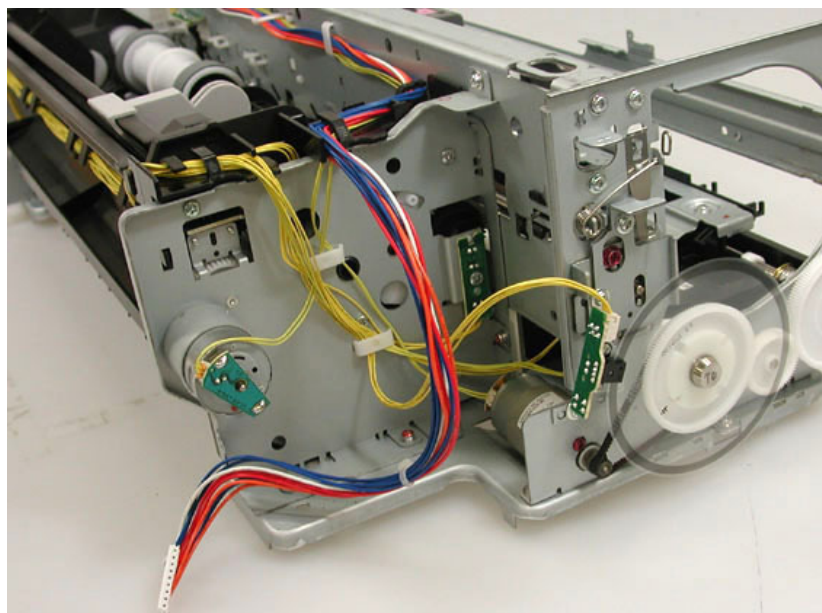
Be cautious of wiring of the flexible cables and harness. Improper wiring or connection may cause breakage of a line, leading to ignition or emission of smoke.



(I) Logic board ass'y wirin



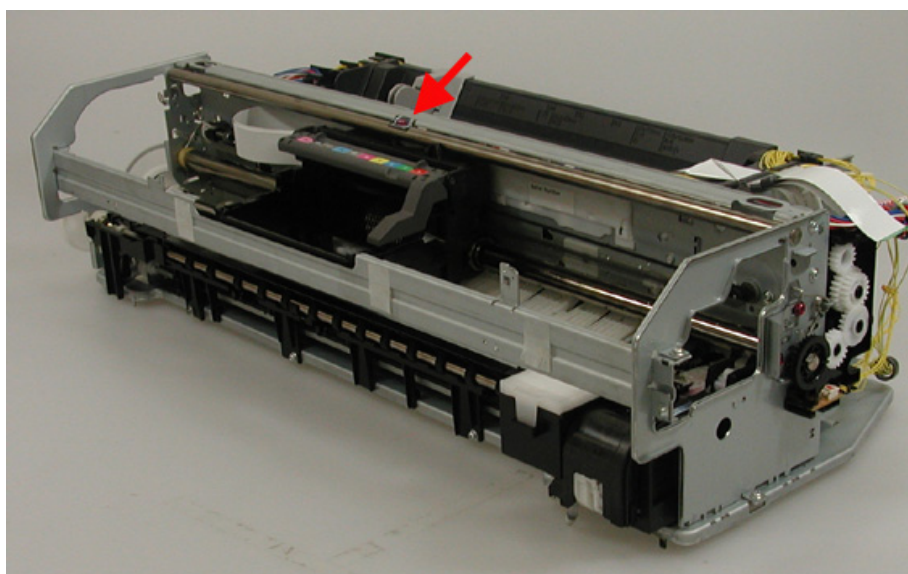
(II) Paper feed motor side wiring



(2) Red screw which secures the carriage upper shaft

The red screw which secures the carriage upper shaft is already adjusted to maintain the proper distance between the print head and paper when the printer is shipped from the factory.

Do not remove (or loose) the screw: Not possible to restore the adjustment at a local service center once unfastened.



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← <Part 1: 3. REPAIR; 3-2. Special Notes on Repair Servicing> →

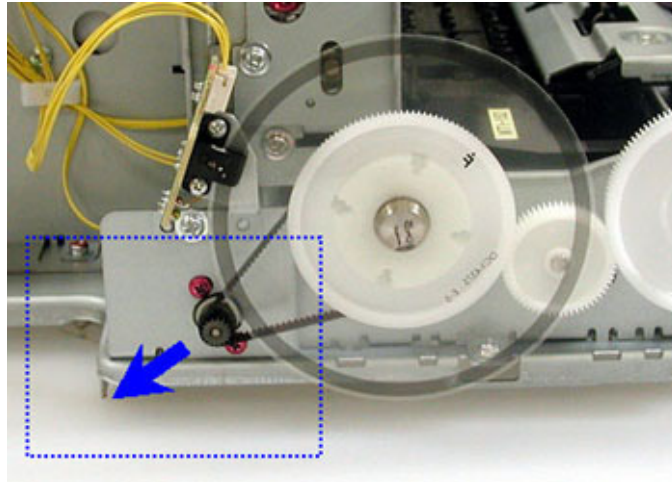


3-3. Adjustment / Settings

(1) Paper feed motor adjustment

Perform the following adjustments when the paper feed motor unit is replaced:

- 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 figure 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.



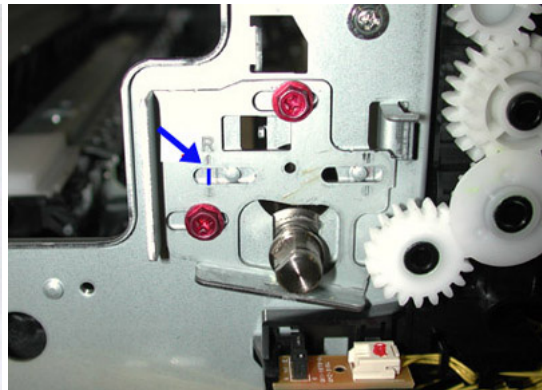
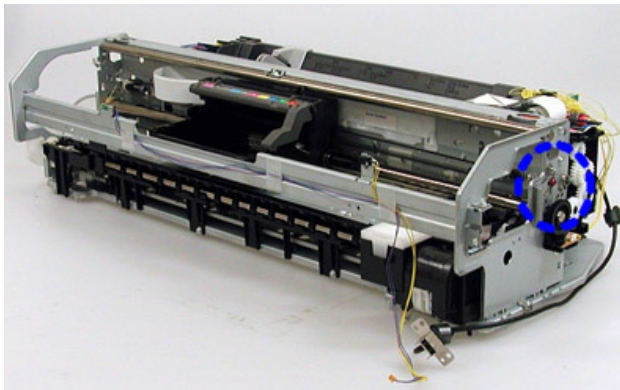
Note: The red screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(2) Carriage unit position adjustment

Perform the following adjustments when the carriage unit is removed and reassembled:

Before removal of the carriage unit:

- 1) Draw a mark-off line on the chassis along the straight line below the "R" on the right carriage shaft adjusting plate before removal, so that you can easily tell where to align on e part to the other when reassembling them. (The left adjusting plate is not removed.)



- 2) Remove the red screws from the adjusting plate.

At assembly of the carriage unit:

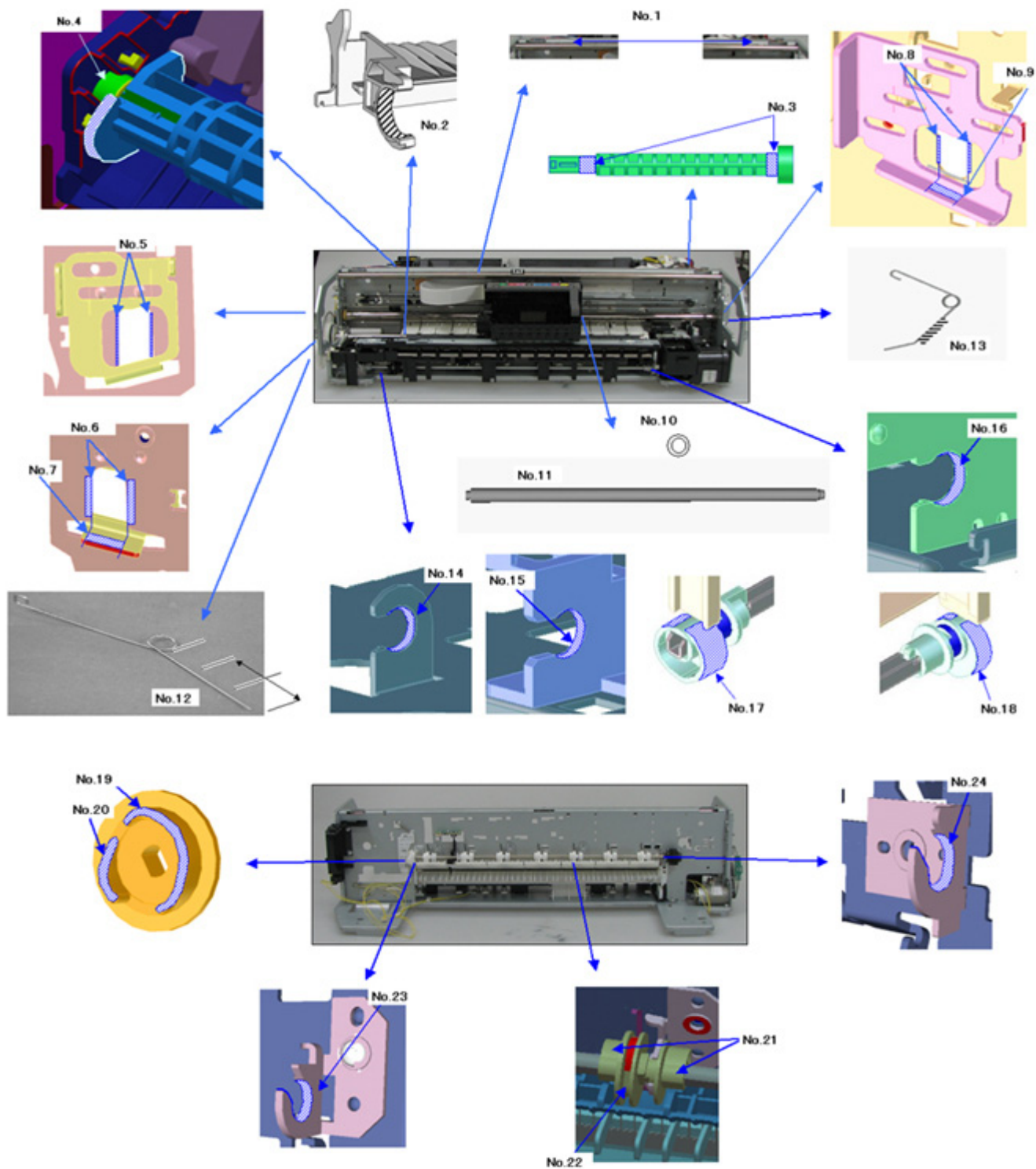
- 1) Align two parts at the mark-off line, then fasten the red screws.
- 2) After assembly of the carriage unit, be sure to perform the service test print, and confirm that no strange noise or faulty printing (uneven printing or contact of the print head to the paper) occur.

Note: The red screws securing the carriage-shaft-adjusting plate may be loosened only at replacement of the carriage unit. DO NOT loosen them in other cases.

(3) Grease application

No	Part name	Where to apply grease	Grease name	Grease amount (mg)	Number of drops*	Number of locations to apply grease
1	Carriage upper shaft	Carriage slider sliding portion	KG107A	300 +/- 40	-	-
2	Paper guide flapper	Line feed roller sliding portion (paper guide flapper bushing)	KG107A	18 to 36	2	1
3	CL input gear shaft	CL input gear shaft sliding portion of the CL gear base	PG641	18 to 36	1	2
4	ASF Pick up Shaft	Cam contacting the pressure plate slider	HP-300	18 to 36	2	1
5	Chassis	Carriage shaft sliding portion on the left side of the chassis	KG107A	18 to 36	1	2
6	Chassis	Carriage shaft cam L sliding portion on the left side of the chassis	KG107A	18 to 36	1	2
7	Adjust plate L	Carriage shaft cam L sliding portion of the adjust plate L	KG107A	18 to 36	2	1
8	Chassis	Carriage shaft sliding portion on the right side of the chassis	KG107A	18 to 36	1	2
9	Adjust plate R	Carriage shaft cam R sliding portion of the adjust plate R	KG107A	18 to 36	2	1
10	Oil pad	Oil pads (right and left)	EU-1	190 +/- 19	-	2
11	Carriage shaft	Carriage shaft	EU-1	180 +/- 45	-	-
12	Carriage shaft spring L	Carriage shaft sliding portion of the carriage shaft spring L	KG107A	4.5 to 9	1/2	1
13	Carriage shaft spring R	Carriage shaft sliding portion of the carriage shaft spring R	KG107A	4.5 to 9	1/2	1
14	Bottom chassis	SB lift cam L sliding portion	KG107A	9 to 18	1	1
15	SB lift base	SB lift input gear sliding portion	PG641	9 to 18	1	1
16	Center chassis	SB lift cam R sliding portion	KG107A	9 to 18	1	1
17	SB lift cam L	Cam contacting the spur base	PG641	18 to 36	2	1
18	SB lift cam R	Cam contacting the spur base	PG641	18 to 36	2	1
19	AP swing arm lock cam	AP swing arm lock lever sliding portion	PG641	9 to 18	1	1
20	AP swing arm lock cam	AP swing arm lock lever sliding portion	PG641	4.5 to 9	1/2	1
21	PR release cam	PR holder sliding portion	KG107A	126 to 252	1	14
22	PR release cam	PR SP sliding portion	HP-300	126 to 252	2	7
23	PR lift chassis	PR release cam sliding portion	HP-300	54 to 108	2	3
24	PR lift chassis 2	PR lift shaft gear sliding portion	HP-300	18 to 36	2	1

* 1 drop = 9 to 18 mg



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← <Part 1: 3. REPAIR; 3-3. Adjustment / Settings, (1) to (3)> →



(4) Ink absorber counter setting

When the logic board ass'y is replaced, reset the ink absorber counter. In addition, according to the counter value, replace the ink absorber kit. The standard counter value for replacement is given in the table below.

Ink absorber counter ^{*1}	Ink absorber kit replacement
Less than 7%	Not required.
7% or more	Required.

*1: Check the counter values by EEPROM information print.
[See 3.3. Adjustment / Settings, (6) Service mode, for details.]

(5) User mode

Function	Procedures	Remarks
Print head manual cleaning	- Cleaning both black and color: See "Standalone printer operation" below. - Cleaning black or color separately, or both black and color: Perform from the printer driver Maintenance tab.	
Print head deep cleaning	- Cleaning black or color separately, or both black and color: Perform from the printer driver Maintenance tab.	
Paper feed roller cleaning	See "Standalone printer operation" below.	
Nozzle check pattern printing	See "Standalone printer operation" below.	Also available from the printer driver Maintenance tab.
Print head alignment	See "Standalone printer operation" below.	In Custom Settings of the printer driver Maintenance tab, manual print head alignment (by selecting the optimum values) as with the conventional models can be performed.
Bottom plate cleaning	Perform from the printer driver Maintenance tab.	Cleaning of the platen ribs when the back side of paper gets smeared.
Print head replacement	The print head is replaceable at the same position as for ink tank replacement. (Open the access cover. When the carriage stops at the center, the print head can be replaced.)	

<Standalone printer operation>

- 1) Turn on the printer.
- 2) Press and hold the Resume/Cancel button until the Power LED blinks in green the specified number of times listed in the table below, and release it. The operation starts.

Power LED blinking	Operation	Remarks
1 time	Print head manual cleaning	
2 times	Nozzle check pattern printing	Set a sheet of plain paper (A4 or letter) in the ASF.
3 times	Paper feed roller cleaning	
4 times	Automatic print head alignment	Set a sheet of plain paper (A4 or letter) in the ASF.
5 times	Bottom plate cleaning	Fold a sheet of plain paper (A4 or letter) in half, then unfold and set it in the ASF with the folded ridge facing down.
6 times	Unspecified	
7 times	Head-to-paper distance setting to the widest	
8 times or more	Unspecified	

(6) Service mode

Function	Procedures	Remarks
Service test print - Model name - Destination - ROM version - USB serial number - Ink amount in the ink absorber - Ink system function check result	See "Service mode operation procedures" below.	Set a sheet of A3 or LDR size paper. For print sample, see 3-4. Verification Items, (1) Service test print, <Service test print sample> .
EEPROM initialization	See "Service mode operation procedures" below.	The following items are NOT initialized, and the shipment arrival flag is not on: - USB serial number - Destination settings - Ink absorber counter
Ink absorber counter reset	See "Service mode operation procedures" below.	If the counter value is 7% or more, replace the ink absorber kit.
Destination settings	See "Service mode operation procedures" below.	

Note: At the end of the service mode, press the Power button. The paper lifting plate of the sheet feed unit will be raised.

<Service mode operation procedures>

- 1) With the printer power turned off, while pressing the Resume/Cancel button, press and hold the Power button. (DO NOT release the buttons. The Power LED lights in green to indicate that a function is selectable.)
- 2) While holding the Power button, release the Resume/Cancel button. (DO NOT release the Power button.)
- 3) While holding the Power button, press the Resume/Cancel button 2 times, and then release both the Power and Resume/Cancel buttons. (Each time the Resume/Cancel 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^{*1}, press the Resume/Cancel button the specified number of time(s) according to the function listed in the table below. (Each time the Resume/Cancel 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	See 3-4. Verification Items, (1) Service test print.
2 times	Green (Power)	EEPROM information print	See 3-4. Verification Items, (2) EEPROM information print.
3 times	Orange (Alarm)	EEPROM initialization	
4 times	Green (Power)	Ink absorber counter resetting	After entering the counter resetting mode, press the Resume/Cancel button 2 times, then the Power button. The counters will be reset.
5 times	Orange (Alarm)	Destination settings	After entering the destination settings mode, press the Resume/Cancel button the specified number of time(s) to select the destination. For detail, see "Destination settings procedures" below.
6 times	Green (Power)	Print head deep cleaning	(Cleaning of both black and color)
7 times	Orange (Alarm)	Reserved	
11 to 13 times	Orange (Alarm) at odd numbers Green (Power) at even numbers	Return to the menu selection	
14 and 15	Green (Power) at	Reserved	

times	14 times Orange (Alarm) at 15 times		
16 to 21 times*2	Green (Power) at even numbers Orange (Alarm) at odd numbers	Return to the menu selection	

*1: If the LED does not light in green (the printer does not enter the service mode), disconnect the power cord and plug it again. Then start from step 1) to start the printer in the service mode again.

If the automatic power-on function is enabled in the printer, the printer enters the service mode for the first time, but it will never enter the service mode if the printer is turned off by the Power button. This is because the printer remains to be turned on internally if the power is turned off by the Power button. To prevent this, disconnection of the power cord is required before starting the printer in the service mode.

*2: If the Resume/Cancel button is pressed 22 or more times, the Alarm or Power LED lights steadily without any changes.

<Destination settings procedures>

In the destination settings mode, press the Resume/Cancel button the specified number of time(s) according to the destination listed in the table below, and press the Power button.

Time(s)	LED indication	Destination	
0 times	Green (Power)	No change of the destination	
1 time	Orange (Alarm)	Japan	
2 times	Green (Power)	Korea	
3 times	Orange (Alarm)	US	
4 times	Green (Power)	Europe	
5 times	Orange (Alarm)	Australia	
6 times	Green (Power)	Asia	
7 times	Orange (Alarm)	China	
8 times	Green (Power)	Taiwan	
9 times or more	Orange (Alarm)	Return to the menu selection	

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

[See 3.4. Verification Items, (1) Service test print, or (2) EEPROM information print.]

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3-4. Verification Items

(1) Service test print

<EEPROM information contents>

On the service test print (sample below), confirm the EEPROM information as shown below. (The information is given in the upper portion of the printout.)

Pro9000: Model name

JPN: Destination

Vx.xx: ROM version

USB (xxxxxx): USB serial number

FA = xx xx xx: Reserved for plant use

D = xxx.x: Ink amount in the ink absorber (%)

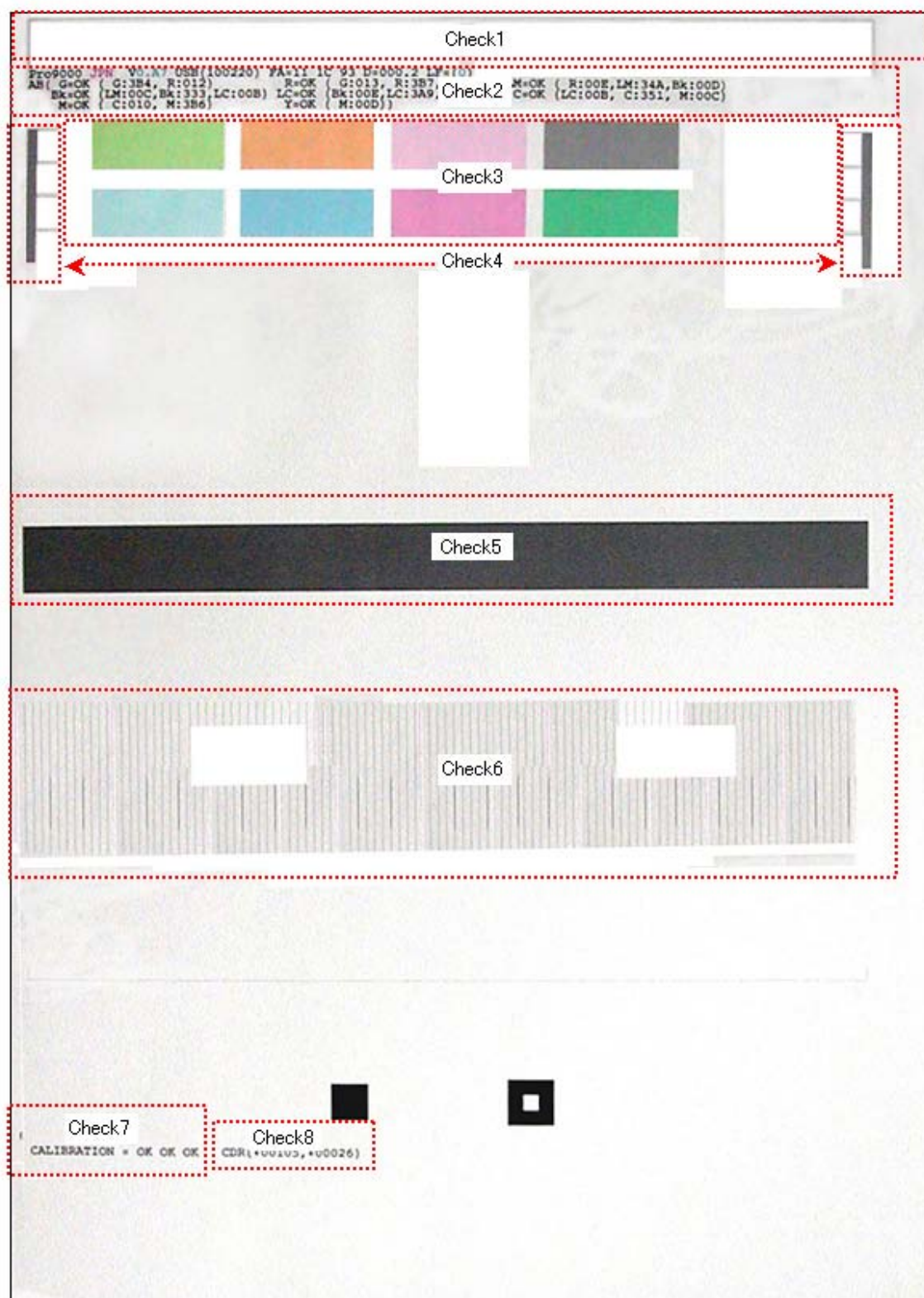
AB (LM = OK ...): Ink system check result

Note: The ink amount in the ink absorber should be confirmed by EEPROM information print (not by service test print).

<Print check items>

On the service test print (sample below), confirm the following items:

- Check 1, top of form accuracy: The lines shall not extend off the paper.
- Check 2, EEPROM information
- Check 3, nozzle check pattern: Ink shall be ejected from all nozzles.
- Check 4, check pattern for uneven printing due to line feeding: There shall be no remarkable streaks or unevenness.
- Check 5, check pattern for uneven printing due to carriage movement (standard mode): There shall be no remarkable unevenness.
- Check 6, check pattern for straight line and carriage accuracy: There shall be no misalignment or breakage of the lines.



(2) EEPROM information print

<How to read EEPROM information print>

Print sample:

Pro9000 JPN V1.04 IF(USB2=1) D=004.5 ST=2005/12/27-18:30
ER(ER0=1000 ER1=5100) LPT=2006/02/09-09:09
PC(M=002 R=000 T=001 D=009 C=009)
CLT0=2006/02/25-18:30 CLT1=2006/02/25-18:30)
CH=00002 CT(G=003 R=040 PM=001 BK=001 PC=001 C=009 M=002 Y=012)
IS(G=0 R=0 PM=0 BK=0 PC=0 C=0 M=0 Y=0)
P_ON(S=00009) A_REG=1 M_REG=0
UR(A(Goe)=000 B(Roe)=-01 C(PMoe)=-01 D(BKoe)=000 E(PCoe)=-01 F(Coe)=000
G(Moe)=-01 H(BK-CL)=-01 I(Gbi)=000 J(Rbi)=000 K(PMbi)=000 L(BKbi)=000
M(PCbi)=000 N(Cbi)=000 O(Mbi)=000 P(GbiPP)=000 Q(RbiPP)=000 R(PMbiPP)=000
S(BKbiPP)=000 T(PCbiPP)=000 U(CbiPP)=000 V(MbiPP)=000)
WP=0024 MSD(015)
PAGE(All=00083 PP=00035 HR+MP=00003 PR+SP+SG =00000 GP =00000 FA=00000 PC=00000
EV=00000)
SPPAGE(All=00003 PP=00005 HR+MP=00003 PR+SP+SG =00000 GP =00000 FA=00000 PC=00000
EV=00000)

SIZE=(A3=00020 A4=00050 2L=00000 L=00000 PC=00013) GRAY=00000

Head TempBK=18.5 Head TempC=17.5 Env Temp=30.0 FF(88 2C 11)

HDEEPROM

V0001 SN=0000-0074
LN(00000 00000 00001 00003 00001 00000 00000) ID=00
IL=(G=000 R=000 PM=000 BK=000 PC=000 C=000 M=000 Y=000)

Printed items:

1. Model name (destination) 2. ROM version 3. Connected I/F (USB2) 4. Ink amount in the ink absorber 5. Installation date
6. Operator call/service call error record 7. Last printing time
8. Purging count (manual/deep cleaning/timer/dot count/ink tank replacement)
9. Cleaning time (Gr.1/Gr.2)
10. Print head replacement count 11. Ink tank replacement count (G/R/PM/BK/PC/C/M/Y)
12. Ink status (G/R/PM/BK/PC/C/M/Y)
13. Power-on count (soft) 14. Automatic print head alignment by user 15. Manual print head alignment by user
16. User print head alignment values (Goe/Roe/PMoe/BKoe/PCoe/Coe/
Moe/BK-CL/Gbi/Rbi/PMbi/BKbi/
PCbi/Cbi/Mbi/GbiPP/RbiPP/PMbiPP/
BKbiPP/PCbiPP/CbiPP/MbiPP)
17. Wiping count 18. Camera Direct Print-supported device connection record 19. Longest period where printing stops
20. ASF feed pages (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, Fine Art Paper, postcard, envelope)
21. Front tray feed pages (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, Fine Art Paper & Canvas & board paper, postcard, envelope)
22. Camera Direct print pages (total, A3, A4) 23. Borderless print pages (total, A3, A4)
24. Print pages by paper size (A3, A4, 5x6, 4x6, postcard) 25. Grayscale print pages 26. n/a
27. n/a 28. n/a 29. Print head temperature (Chip 1/Chip 2) 30. Inside temperature 31. Line inspection information

HDEEPROM

32. Version 33. Serial number
34. Lot number 35. Print head ID
36. Ink ejection level (G, R, PM, BK, PC, C, M, Y)

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4. PRINTER TRANSPORTATION

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

- 1) In the service mode, press the Power button to finish the mode, and confirm that the paper lifting plate of the sheet feed unit is raised.
- 2) Keep the print head and ink tanks installed in the carriage.
[See Caution 1 below.]
- 3) Turn off the printer to securely lock the carriage in the home position. (When the printer is turned off, the carriage is automatically locked in place.)
[See Caution 2 below.]

Caution:

- (1) If the print head is removed from the printer and left alone by itself, ink is likely to dry. For this reason, keep the print head installed in the printer 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.

Memo:

If the print head must be removed from the printer and transported alone, perform the following:

- (1) 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).

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Part 2

TECHNICAL REFERENCE



1. NEW TECHNOLOGIES

(1) New ink tank system (CLI-8)

An LED is installed in each ink tank.

By the LED indication, wrong installation of the ink tanks will be prevented, and the remaining ink level can be visually recognized with the ink tanks seated in the carriage.

(2) Monochrome printing

Black ink printing instead of the previous gray-scale printing makes the monochrome printing full-fledged.

(3) Front feed

In addition to ASF, the manual and switchback paper feed system from the front tray is adopted. This system makes the various types of media such as the large sized paper (14"x17"), non-Canon branded Fine Art paper, and board paper (maximum: 1.2 mm) usable.

(4) High durability

The printable number of paper is greatly increased by enlarging the ink absorber and attaching the special bushings to the paper feed and eject rollers.

i9900 / i9950: 10,000 pages -> Pro9000: 21,000 pages.

(5) Paper width sensor

The sensor on the carriage detects the width of paper to prevent users' operation errors (to prevent printing on the platen).

(6) Direct Printing function

The Pro9000 supports PictBridge. (Bubble Jet Direct is not supported.)

New function:

- Supported paper size: 10" x 12", 14" x 17"
- Supported paper type: Fine Art paper, SG201 8" x 10"
- Manual color adjustment: The color modes of Natural, Natural M, Warm Tone, Cool Tone, and Black / White are added.

Brightness can be corrected with Vivid ON / OFF options.

(7) New color mode

The new color mode which is best suited for a retouch is employed.

(8) Easy-PhotoPrint Pro

Easy-PhotoPrint Pro is packed with the printer for Photoshop CS / CS2 to enable plug-in.

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2. CLEANING MODE AND AMOUNT OF INK PURGED

To prevent printing problems due to bubbles, dust, or ink clogging, print head cleaning is performed before the start of printing (when the cleaning flag is on), except in the following cases:

- Cleaning on arrival: Performed when the access cover is closed.
- Manual cleaning / deep cleaning: Performed manually.

<Cleaning mode list>

HB-A: G/R/PM/BK/PC, HB-B: C/M/Y

Condition	Details	Amount of ink used (g) (in the normal temperature/humidity environment)	Est. required time (sec.) (not including the time of opening the caps)
On arrival of the printer (All at the same time)	Only first cleaning after shipped from the plant.	4.3	125
Dot count cleaning (HB-A/HB-B/All at the same time)	When the specified number of dots are printed since the previous cleaning.	1.1 (HB-A) 0.8 (HB-B)	85 (All at the same time) 75 (HB-A only) 75 (HB-B only)
Timer cleaning - 1 (HB-A/HB-B/All at the same time)	If 120 to 480 hours have elapsed since the previous cleaning till the start of the next printing.	1.1 (HB-A) 0.8 (HB-B)	85 (All at the same time) 75 (HB-A only) 75 (HB-B only)
Timer cleaning - 2 (HB-A/HB-B/All at the same time)	If over 480 hours have elapsed since the previous cleaning till the start of the next printing.	2.1 (HB-A) 1.7 (HB-B)	115 (All at the same time) 100 (HB-A only) 100 (HB-B only)
At print head replacement (All at the same time)	When the print head is replaced with other one.	4.3	125
At print head removal/installation. (All at the same time)	When the print head is removed and re-installed.	3.8	115
At ink tank replacement *1 (HB-A/HB-B/All at the same time)	When a ink tank is replaced (without the print head removal or re-installation.)	1.3 (HB-A) 1.0 (HB-B)	85 (All at the same time) 75 (HB-A only) 75 (HB-B only)
Manual cleaning (HB-A/HB-B/All at the same time)	- Via the operation panel (All at the same time only) - Via the printer driver (Selectable from HB-A, HB-B, or All at the same time)	1.3 (HB-A) 1.0 (HB-B)	85 (All at the same time) 75 (HB-A only) 75 (HB-B only)
Deep cleaning (HB-A/HB-B/All at the same time)	Via the printer driver (Selectable from HB-A, HB-B, or All at the same time)	2.1 (HB-A) 1.7 (HB-B)	115 (All at the same time) 100 (HB-A only) 100 (HB-B only)
If the print head has not been capped before power-on (All at the same time)		3.8	115

*1: If an ink tank is removed for 60 seconds or longer, cleaning is performed.

(Cleaning is performed according to the period of time an ink tank is removed from the print head, regardless of whether the ink tank is actually replaced or not. If the same ink tank is removed and installed back multiple number of times, cleaning is performed based on the accumulated period of time the ink tank is removed.)

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3. PRINT MODE

	Default setting
	Selectable in the printer driver Main tab
	Selectable after clicking Custom in the Main tab

Print control Bi: Bi-directional
 Uni: Uni-directional

Ink used 4-color: CLI-8BK / C / M / Y
 6-color: CLI-8BK / C / M / Y / PC / PM
 8-color: CLI-8BK / C / M / Y / PC / PM / R / G

3-1. Color Printing via Computer

Paper type	Item	Printer driver Custom setting				
		5	4	3	2	1
Plain paper	Print quality	Custom 1 pass, Bi 600 x 1200 4-color	Fast 1 pass, Bi 600 x 1200 4-color	Standard 2 passes, Uni / Bi 2400 x 1200 4-color		High 8 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Photo Paper Pro (PR-101)	Print quality			Standard 4 passes, Bi 2400 x 1200 6-color	Custom 8 passes, Bi 4800 x 2400 6-color	High 8 passes, Bi 4800 x 2400 8-color
	Print control					
	Resolution					
	Ink used					
Photo Paper Plus Glossy (PP-101 / PS-101 / PS-201)	Print quality		Fast 3 passes, Bi 1200 x 1200 6-color	Standard 4 passes, Bi 2400 x 1200 6-color		High 8 passes, Bi 4800 x 2400 8-color
	Print control					
	Resolution					
	Ink used					
Photo Paper Plus Semi-gloss (SG-201)	Print quality			Standard 4 passes, Bi 2400 x 1200 6-color		High 8 passes, Bi 4800 x 2400 8-color
	Print control					
	Resolution					
	Ink used					
Glossy Photo Paper (GP-401)	Print quality		Fast 4 passes, Bi 2400 x 1200 6-color			High 8 passes, Bi 4800 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Matte Photo Paper (MP-101)	Print quality			Standard 8 passes, Uni 2400 x 2400 6-color		High 12 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Fine Art Paper (FA-PR1 / FA-ME1)	Print quality			Standard 8 passes, Bi 2400 x 2400 6-color		High 12 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Fine Art Paper (FA-PM1 / Canvas / Non-Canon brand)	Print quality					High 8 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Fine Art Paper (Board paper)	Print quality					High 12 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
High Resolution Paper (HR-101)	Print quality			Standard 4 passes, Uni 2400 x 1200 6-color		High 8 passes, Bi 2400 x 2400 6-color
	Print control					
	Resolution					
	Ink used					
Swellable Polymer Paper	Print quality			Standard 8 passes, Bi		
	Print control					

	Resolution Ink used			2400 x 1200 6-color		
Transparency (CF-102)	Print quality Print control Resolution Ink used		Fast 4 passes, Bi 2400 x 1200 4-color	Standard 8 passes, Bi 2400 x 1200 4-color		
T-shirt transfer (TR-301)	Print quality Print control Resolution Ink used			Standard 8 passes, Bi 2400 x 1200 4-color		

3-2. Monochrome Printing via Computer

Paper type	Item	Printer driver Custom setting				
		5	4	3	2	1
Plain paper	Print quality Print control Resolution Ink used	Custom 1 pass, Bi 600 x 1200 4-color	Fast 1 pass, Bi 600 x 1200 4-color	Standard 2 passes, Uni / Bi 2400 x 1200 4-color		High 8 passes, Bi 2400 x 1200 6-color
Photo Paper Pro (PR-101 / PH-101)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color	Custom 12 passes, Uni ^{*1} 1200 x 1200 6-color	High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Photo Paper Plus Glossy (PP-101 / PS-101 / PS-201)	Print quality Print control Resolution Ink used		Fast 12 passes, Uni ^{*1} 1200 x 1200 6-color	Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Photo Paper Plus Semi-gloss (SG-201)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Glossy Photo Paper (GP-401)	Print quality Print control Resolution Ink used		Fast 12 passes, Uni ^{*1} 1200 x 1200 6-color			High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Matte Photo Paper (MP-101)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Fine Art Paper (FA-PR1)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Fine Art Paper (FA-PM1 / Canvas / Non-Canon brand)	Print quality Print control Resolution Ink used					High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Fine Art Paper (Board paper)	Print quality Print control Resolution Ink used					High 12 passes, Uni ^{*1} 1200 x 1200 6-color
High Resolution Paper (HR-101)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		High 12 passes, Uni ^{*1} 1200 x 1200 6-color
Swellable Polymer Paper	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 6-color		

Transparency (CF-102)	Print quality Print control Resolution Ink used		Fast 12 passes, Uni ^{*1} 1200 x 1200 4-color	Standard 12 passes, Uni ^{*1} 1200 x 1200 4-color		
T-shirt transfer (TR-301)	Print quality Print control Resolution Ink used			Standard 12 passes, Uni ^{*1} 1200 x 1200 4-color		

*1: 192/768 nozzles used.

3-3. Camera Direct Printing (Color)

Paper type	Item	Printer driver Custom setting				
		5	4	3	2	1
Plain paper	Print quality Print control Resolution Ink used					High 8 passes, Bi 2400 x 2400 6-color
Photo Paper Pro (PR-101)	Print quality Print control Resolution Ink used					High 8 passes, Bi 4800 x 2400 6-color
Photo Paper Plus Glossy Photo Paper Plus Semi-gloss (PP-101 / SG-201)	Print quality Print control Resolution Ink used					High 8 passes, Bi 2400 x 2400 6-color
Fine Art Paper	Print quality Print control Resolution Ink used					High 8 passes, Bi 2400 x 2400 6-color

3-4. Camera Direct Printing (Monochrome)

Paper type	Item	Printer driver Custom setting				
		5	4	3	2	1
Plain paper	Print quality Print control Resolution Ink used					High 12 passes, Bi ^{*1} 1200 x 1200 6-color
Photo Paper Pro (PR-101)	Print quality Print control Resolution Ink used					High 12 passes, Bi ^{*1} 1200 x 1200 6-color
Photo Paper Plus Glossy Photo Paper Plus Semi-gloss (PP-101 / SG-201)	Print quality Print control Resolution Ink used					High 12 passes, Bi ^{*1} 2400 x 1200 6-color
Fine Art Paper	Print quality Print control Resolution Ink used					High 12 passes, Bi ^{*1} 1200 x 1200 6-color

*1: 192/768 nozzles used.


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4. FAQ (Problems Specific to the Pro9000 and Corrective Actions)

No.	*	Function	Phenomenon	Condition	Cause	Corrective action	Possible call or complaint
1	A	Print results	Uneven printing at the leading or trailing edge of paper in monochrome photo printing	<ul style="list-style-type: none"> - Monochrome printing is performed without leaving the margin of 45mm at both the top and bottom ends of paper. - All kinds of paper 	<ul style="list-style-type: none"> - At the leading edge: Due to variation of the head-to-paper distance when the top edge of paper passes under the spur. - At the trailing edge: Due to variation of the head-to-paper distance when the bottom edge of passes under the LF roller. 	Leave the margin of 45mm at both the top and bottom ends of paper. (In Easy- PhotoPrint Pro packed with the printer, the print layout with the recommended margins is available.)	<ul style="list-style-type: none"> - Uneven printing at both the top and bottom ends of paper occurs. - Print failure occurs.
2	B	Print results	Paper abrasion at the leading or trailing edge of the Photo Rag paper in monochrome printing	<ul style="list-style-type: none"> - Monochrome printing is performed without leaving the margin of 35mm at both the top and bottom ends of the Photo Rag paper. - The paper abrasion on the trailing edge occurs more easily than the leading edge. - The paper abrasion does not occur on the other Fine Art Paper than Photo Rag because the paper size ("Art XX*" Margin: 35mm) must be specified on the printer driver before printing on them. <p>* XX is paper size.</p>	In monochrome printing, the leading and trailing edge of paper are easily curled because the printing speed of monochrome printing is slower than color printing.	<ul style="list-style-type: none"> - Specify the paper size which is available for Fine Art Paper. ("Art XX" Margin: 35mm) - The paper setting choices on PictBridge compliant devices are not available for Fine Art Paper. Print from a PC when using Fine Art Paper. 	<ul style="list-style-type: none"> - The leading or trailing edge of paper smears. - The leading or trailing edge of paper abrades.
3	B	Printing time	Low throughput in monochrome printing (It takes 30 minutes to print a sheet of A3 paper.)	Monochrome printing is selected on the printer driver and printing is performed.	Since the number of passes is increased and the number of nozzles to be used is limited. (Printing is performed with 192 of the 768 nozzles.)	Make the photo (image) data in grayscale, and print it in the color mode, though the color hue will differ from the one printed in the monochrome mode.	It takes time to print in monochrome.
4	C	Setup	Carriage error or strange noise at power-on during setup	The protective material is not removed from inside the printer before the printer is turned on.	Since the protective material blocks the carriage to move.	Turn off the printer, remove the protective material from inside the printer, then turn on the printer.	<ul style="list-style-type: none"> - An error occurs. - The Power and Alarm lamps alternately blink 2 times. - A strange noise is heard.
			Non-ejection of ink due to incorrect	Both sides (front, rear) of the ink tank are not fully seated in the print head. Users are prone to be misled to the error since	Due to the large clearance between the print head lock	- Re-install the ink tank in the correct position,	- Print head alignment error occurs.

5	A	Setup	installation of the ink tank	<p>the ink lamp lights even when only the front side of the tank is clicked into place.</p> 	<p>lever and the ink tanks, the tank(s) can be improperly installed without users noticing it is wrong.</p>	<p>then perform the cleaning.</p> <ul style="list-style-type: none"> - The sheet to warn the incorrect installation is enclosed (from the beginning of the mass production.) 	<p>(The error lamp blinks 11 times.).</p> <ul style="list-style-type: none"> - Uneven printing - No printing - Non-ejection of a specific ink.
6	A	Print results	Paper abrasion at the trailing edge of the print head	<ul style="list-style-type: none"> - In the environment of low humidity (about under 30 %) 	<p>The trailing edge of paper curls after it passes through the pinch rollers.</p>	<ul style="list-style-type: none"> - Enable Prevent paper abrasion in the printer driver. <p>Memo: Raising the room humidity with a humidifier reduces the incidence.</p>	<ul style="list-style-type: none"> - Paper smeared. - Scratches on paper.
7	B	Print results	Paper abrasion	<p>The printer is waiting for the data transmission from the PC during printing.</p>	<p>The printed part of the paper is curled little by little while the printer is waiting for the data transmission.</p>	<ul style="list-style-type: none"> - Transmit the data from the PC to the printer as speedily as possible. - Close the unnecessary applications and files before printing. - Do not perform Background printing. 	<ul style="list-style-type: none"> - Paper smeared. - Scratches on paper.
8	B	Print results	Non-ejection of ink and white spots when printing on Fine Art Paper	<p>Printing is performed on Fine Art Paper.</p>	<p>Typically, Fine Art Paper has paper debris on it. If the paper debris comes in the nozzles when the printer performs printing, it causes a non-ejection of ink. If the paper debris comes off the surface of printed paper, it causes white spots.</p>	<ul style="list-style-type: none"> - Brush away paper debris from the Fine Art Paper before printing. - If the print head nozzles clog with paper debris, perform Cleaning to clear the nozzles. - The instruction paper of the Museum Etching explains how to brush away paper debris. 	<ul style="list-style-type: none"> - Streaks appear. - White spots occurs.

* Occurrence level:

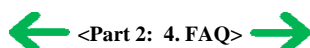
A: The symptom is likely to occur frequently (Caution required).

B: The symptom may occur under certain conditions, but likeliness is assumed very low in practical usage.

C: The symptom is unlikely to be recognized by a user, and no practical issues are assumed.

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Part 3

APPENDIX



PIXMA Pro9000 Specifications

<Printer>

Type	Desktop serial color bubble jet printer																
Paper feeding method	Auto sheet feed (ASF, front feed,)																
Resolution	4,800 x 2,400dpi (Max.)																
Throughput (target value)	<div>- 4 x 6, borderless printing *1: Approx. 29 sec. (PR101, default settings)</div> <div>- Camera Direct Printing *2: Approx. 92 sec. (4 x 6, borderless printing, PP-101, default settings)</div> <div>For reference:</div> <table><tr><td></td><td>Custom 5</td><td>Standard</td></tr><tr><td>Black (Fine Black)</td><td>16ppm</td><td>4.7ppm</td></tr><tr><td>Color (Fine Color)</td><td>15ppm</td><td>4.4ppm</td></tr></table> <div>*1: Based on Canon standard pattern. Print speed may vary depending on system configuration, interface, software, document complexity, print mode, page coverage, type of paper used and does not take into account data processing time on host computer.</div> <div>*2: When printing a 6 megapixel image taken by certain Canon digital camera from PictBridge on default settings using Photo Paper Plus Glossy without border.</div> <div>Actual print speed may vary depending on image data, print mode, type of paper used and device that the printer is connected to.</div> <div>Note: Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.</div>				Custom 5	Standard	Black (Fine Black)	16ppm	4.7ppm	Color (Fine Color)	15ppm	4.4ppm					
	Custom 5	Standard															
Black (Fine Black)	16ppm	4.7ppm															
Color (Fine Color)	15ppm	4.4ppm															
Printing direction	Bi-directional, uni-directional																
Print width	Max. 349.2mm (356mm in borderless printing)																
Interface	USB 2.0 Hi-Speed																
ASF stacking capacity	Plain paper: Max. 13mm (Approx. 150 sheets of 64g/m ² paper)																
Paper weight	ASF: 64 to 105g/m ² Front tray: 1.2mm (Max.)																
Detection functions	Access cover open, Presence of print head, Opening / Closing of front door, Remaining ink amount (optical / dot count), Printing position, Paper presence, Paper end sensor, Ink amount in the ink absorber, Internal temperature, Pick-up roller, Paper feed roller position, Carriage position, Head-to-paper distance, Supported camera direct printing device, Paper width sensor, Opening / Closing of rear tray, Front tray position																
Acoustic noise (Highest print quality)	- Highest print quality settings using photo paper pro: Approx. 39dB																
Environmental requirements	<table><tr><td rowspan="2">During operation</td><td>Temperature</td><td colspan="2">5C to 35C (41F to 95F)</td></tr><tr><td>Humidity</td><td colspan="2">10%RH to 90%RH (no condensation)</td></tr><tr><td rowspan="2">Non operation</td><td>Temperature</td><td colspan="2">0C to 40C (32F to 104F)</td></tr><tr><td>Humidity</td><td colspan="2">5%RH to 95%RH (no condensation)</td></tr></table>			During operation	Temperature	5C to 35C (41F to 95F)		Humidity	10%RH to 90%RH (no condensation)		Non operation	Temperature	0C to 40C (32F to 104F)		Humidity	5%RH to 95%RH (no condensation)	
During operation	Temperature	5C to 35C (41F to 95F)															
	Humidity	10%RH to 90%RH (no condensation)															
Non operation	Temperature	0C to 40C (32F to 104F)															
	Humidity	5%RH to 95%RH (no condensation)															
Power supply	Power supply voltage, frequency AC 100 to 240V, 50/60Hz	Power consumption Approx. 20W	Standby Approx. 1.8W	Power-off Approx. 1.0W													
External dimensions	Printer: With the support and trays retracted: Approx. 660 (W) x 354 (D) x 191 (H)mm With the support and trays extended: Approx. 660 (W) x 904 (D) x 372 (H)mm																
Weight	Approx. 14kg, not including print head and optional units																
Related standards (Printer, Adapter)	Electromagnetic radiance: VCCI, FCC, IC, CE Mark, SATO, Gost-R, C-Tick, CCC, RPC, Korea MIC, EK Electrical safety: Electrical Appliance and Material Safety Law (DENAN), UL, C-UL, CB Report, CE Mark, GS, Gost-R, FT, SASO, CCC, SPRING, Korea EK, IRAM (Argentina), RPC Environmental regulations: RoHS (EU), WEEE (EU), Green Point (Germany), Energy Star, Blue Angel, Eco Mark, Law on Promoting Green Purchasing																
Serial number location	On the carriage flexible cable holder (visible on the right of the carriage after the printer is turned on, the access cover is opened, and the carriage moves to the center.)																

Remaining ink amount detection	Available (automatic detection by dot count, enabled at default)
Paper type detection	Not available
Print head alignment	Available (automatic or manual alignment via the printer driver Maintenance tab, or automatic alignment via the Resume/Cancel button in Camera Direct Printing, automatic alignment at default)


<Print head>

Type	Single head with 8 removable ink tanks (each color)
Print head	Each color: 768 nozzles (1,200dpi) All nozzles: 2pl of ink droplet (Min.)
Ink color	Pigment-based black, cyan, magenta, yellow, photo cyan, photo magenta, red, and green
Ink tank	CLI-8BK / C / M / Y / PC / PM / R / G
Weight (Net)	Print head, approx. 100g (not including ink tanks, packing materials, and packaging)
Supply method	As a service part (not including ink tanks)
Part number	QY6-0055-000

Note: The ink tanks for the Japanese models (BCI-7e) are not compatible with those for the non-Japanese models (CLI-8). Be sure to use the appropriate ink tanks in servicing.

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