

Pro9500 Mark II

Service Manual

Revision 0



QY8-13CI-000

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Scope

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

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

Revision

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

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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	Service Tool* ¹ Perform in the service mode.	1 min.
	Destination settings (EEPROM settings)	- At logic board replacement	To set destination.	Service Tool* ¹ Perform in the service mode.	1 min.
	Ink absorber counter resetting (EEPROM settings)	- At logic board replacement - At ink absorber replacement	To reset the ink absorber counter.	Service Tool* ¹ Perform in the service mode.	1 min.
	Ink absorber counter value setting (EEPROM settings)	- At logic board replacement	To set the ink amount data in the ink absorber to the ink absorber counter.	Service Tool* ¹ Perform in the service mode.	1 min.
	Wetting liquid counter value setting (EEPROM settings)	- At logic board replacement - At blade cleaner unit replacement	To set the wetting liquid counter value.	Service Tool* ¹ Perform in the service mode.	1 min.
	Ink absorber replacement	- When the ink absorber becomes full	To replace the ink absorber with a new one.	Screwdriver, a pair of tweezers, etc.	10 min.
	Blade cleaner unit replacement	- When the wetting liquid is used up	To replace the blade cleaner unit with a new one.	Screwdriver, etc.	10 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.
	Automatic print head alignment	- At print head replacement - At logic board replacement - When print quality is	To secure the dot placement accuracy.	None. Perform in the user mode.	5 min.

		not satisfying			
	Grease application	<ul style="list-style-type: none">- At carriage unit replacement- At PR lift shaft replacement- At other part replacement	To maintain sliding properties of the carriage shaft, PR lift shaft, other sliding parts, and gears.	<ul style="list-style-type: none">- EU-1- FLOIL GP-1000R- MOLYKOTE PG641- FLOIL KG-107A- MOLYKOTE HP300	1 min.
	Ink system function check	<ul style="list-style-type: none">- At logic board replacement- At spur unit replacement- At carriage unit replacement	To maintain detection functionality for presence of the ink tanks and each ink tank position.	Service Tool* ¹ Perform in the service mode.	1 min.
	CD / DVD detection sensor light volume correction* ²	<ul style="list-style-type: none">- At logic board replacement- At carriage unit replacement	To correct the light volume for the CD / DVD detection sensor.	Service Tool* ¹ Perform in the service mode.	2 min.
	LF / Eject correction	<ul style="list-style-type: none">- At logic board replacement- At paper feed roller replacement- At platen unit replacement	To correct the paper feeding amount according to each LF and eject roller.	Service Tool* ¹ Perform in the service mode.	5 min.
	Carriage shaft position adjustment	<ul style="list-style-type: none">- At carriage unit replacement- At carriage unit removal	To set the carriage shaft to the original position prior to removal or replacement of the carriage unit, put a mark on the main chassis before removal of the carriage unit.	None.	1 min.
	Eject roller position adjustment	<ul style="list-style-type: none">- At platen unit replacement- At platen unit removal	To prevent the eject roller from being deflected due to the pressure of the spur unit.	None.	1 min.

*1: Install the Service Tool version 1.030 or later to a pre-registered computer.

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



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- Red screws as well as regular (silver) screws need adjustments during servicing.
 - 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.
 - The screws securing the carriage shaft may be loosened only at removal of the carriage unit. DO NOT loosen them in other cases.
 - The screws securing the eject roller may be loosened only at removal of the platen unit. DO NOT loosen them in other cases.
-

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.	- Printer buttons - Computer (printer driver)	5 min.
Manual print head alignment	- At print head replacement - When print quality is not satisfying (uneven printing, etc.)	To ensure accurate dot placement.	- Computer (printer driver)	10 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Printer buttons - Computer (printer driver)	1 min.
Print head deep cleaning	When print quality is not satisfying, and not improved by print head cleaning.	To improve nozzle conditions.	- Computer (printer driver)	2 min.
Ink tank replacement	When an ink tank becomes empty. ("No ink error" displayed on the PC monitor, 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.	- Computer (printer driver)	2 min.
Bottom plate cleaning	When the back side of the paper is smeared.	To clean the platen ribs. (Feed the paper from the rear tray.)	- Printer buttons - Computer (printer driver)	1 min.
Exterior cleaning	When necessary.	To clean the printer exterior, or to wipe off dusts.	Soft, dry, and clean lint-free cloth.	1 min.
CD / DVD print position adjustment ^{*1}	At CD / DVD printing, when necessary.	To correct CD / DVD print position.	- Computer (application software)	5 min.
Ink agitation	When uneven printing occurs, or when the automatic ink agitation ("Execute ink quality maintenance automatically" in the printer driver) is disabled for one or more weeks.	To prevent sedimentation of the pigment.	- Computer (printer driver)	2 min.

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

(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.

1-3. Special Tools

Name	Tool No.	Application	Remarks
FLOIL KG-107A	QY9-0057-000	To the printer's sliding portions.	In common with the Pro9000 and Pro9500.
EU-1	QY9-0037-000	To the carriage shaft sliding portions.	In common with the Pro9000 and Pro9500.
MOLYKOTE PG641	CK-0562-000	To the printer's sliding portions.	In common with the Pro9000 and Pro9500.
MOLYKOTE HP300	QY9-0035-000	To the printer's sliding portions.	In common with the Pro9000 and Pro9500.
FLOIL GP-1000R	QY9-0071-000	To the PR lift shaft sliding portions.	In common with the Pro9000 and Pro9500.

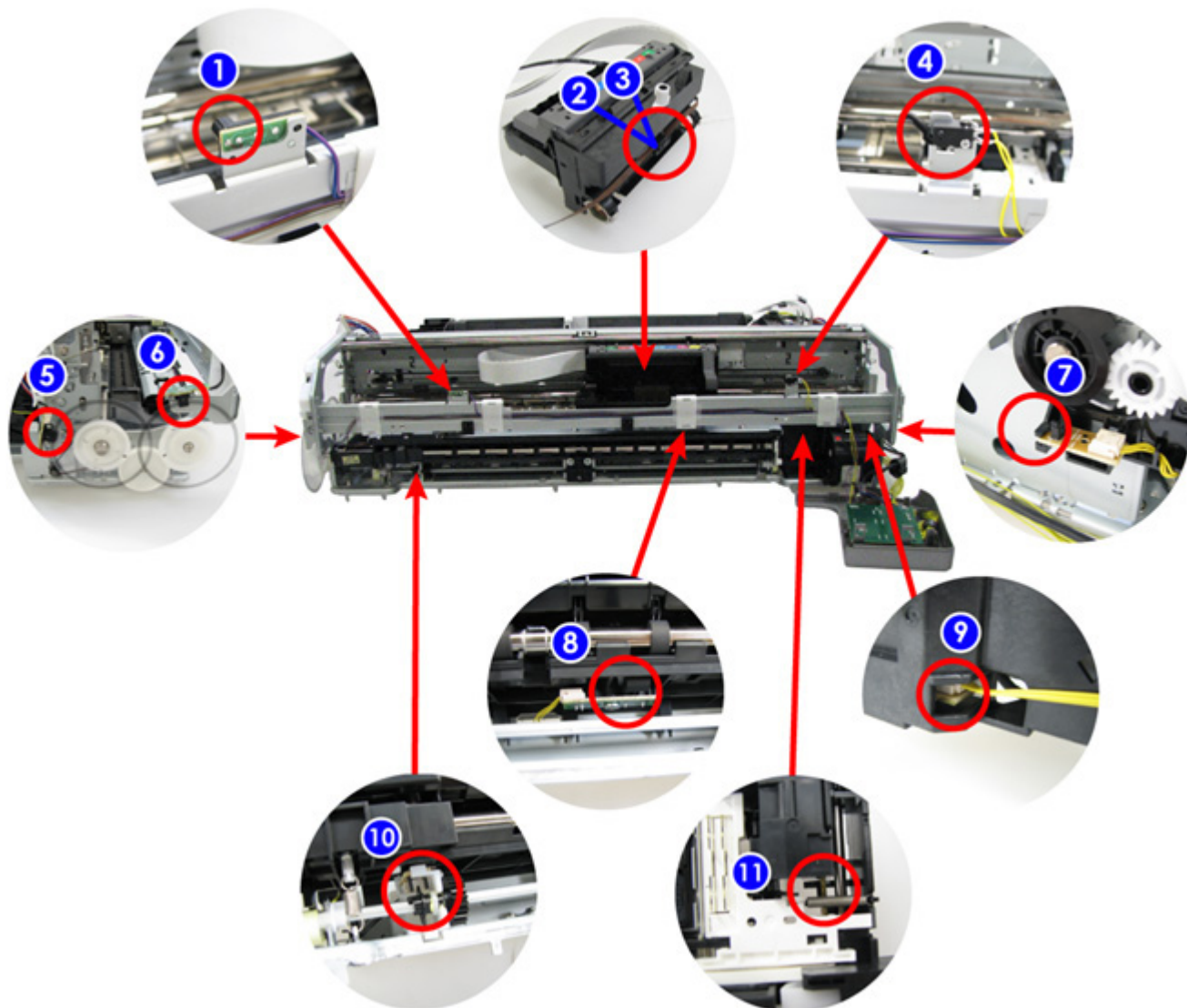
1-4. Sensors

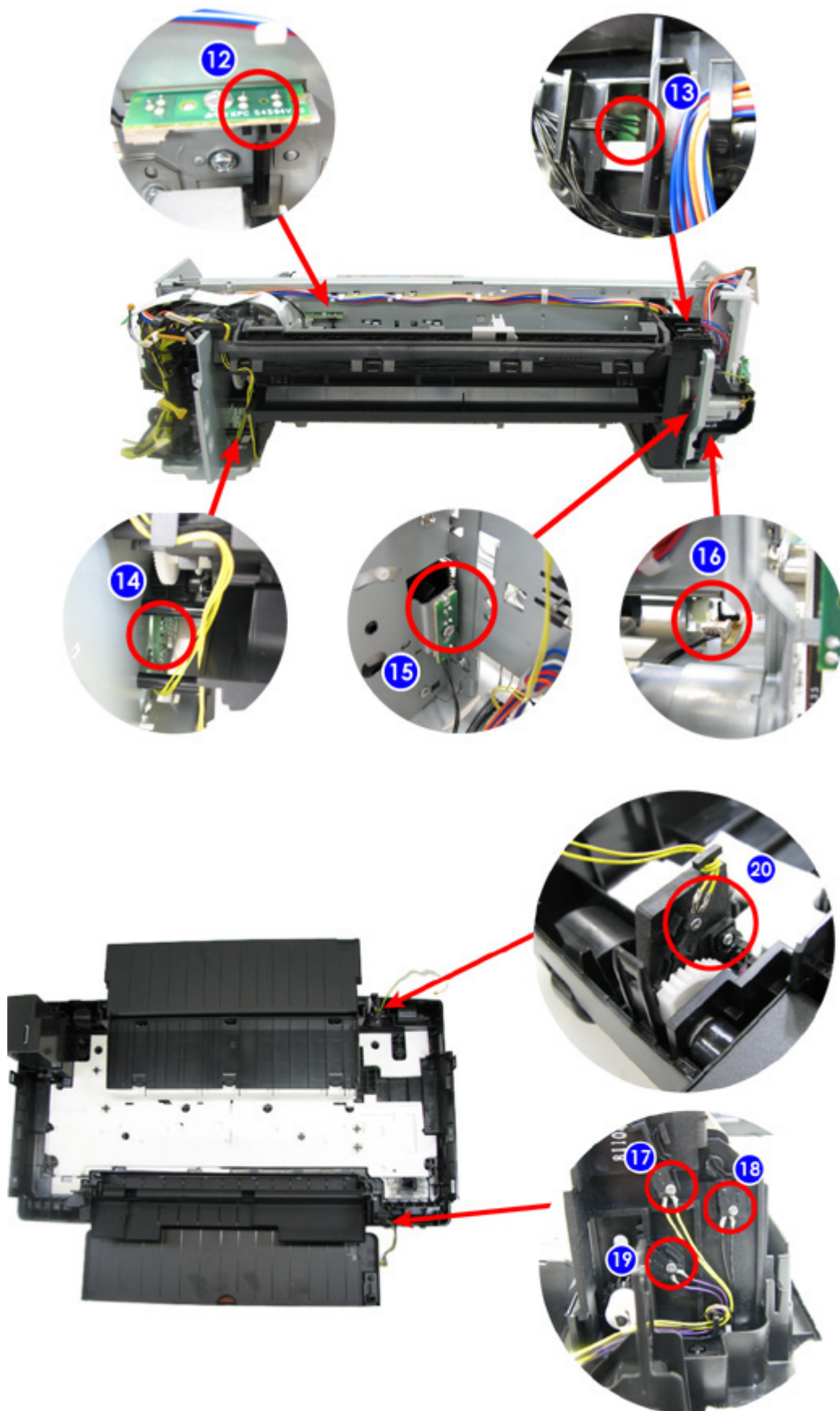
No.	Sensor	Function	Possible problems
1	Ink sensor	Detects the position of an ink tank.	- No recognition of an ink tank - Wrong position of an ink tank
2	Temperature sensor	Detects the temperature of the inside of the printer.	- Internal temperature error
3	Carriage encoder sensor	Detects the position of the timing slit film, and controls printing.	- Printing shifts from the correct position. - Carriage position error
4	Top cover open sensor	Detects opening and closing of the top cover.	- The carriage does not move to the center.
5	LF encoder sensor	Detects rotation of the LF encoder, and controls its drive.	- Uneven printing - LF position error
6	Eject encoder sensor	Detects rotation of the eject encoder, and controls its drive.	- Uneven printing at the trailing edge of paper - Eject encoder error
7	Carriage lift sensor	Detects the position of the carriage lift cam.	- Carriage lift mechanism error
8	Front feeding PE sensor	Detects paper feeding and ejection from the front tray.	- No paper - Paper jam
9	Pump roller sensor	Detects the position of the pump roller	- PG cam sensor error
10	Spur base lift sensor	Detects the position of the spur base lift cam.	- Spur base lift mechanism error
11	Purge cam sensor	Controls purging operation.	- PG cam sensor error
12	PE sensor	Detects paper feeding and ejection.	- No paper - Paper jam

13	PRSB sensor	Controls drive of the pressure roller lift cam and spur base lift cam.	- PRSB position error
14	AP sensor	Controls paper feeding and purging operation.	- AP position error
15	PR cam sensor	Detects the position of the pressure roller lift cam.	- Paper cannot be set for front feeding. (The pressure roller is in the lowered position, preventing paper from being inserted for front feeding.)
16	LF position sensor	Detects the standard rotation position of the feed roller.	- LF error
17	Front tray open sensor	Detects opening and closing of the front tray.	- Front tray closed
18	Inner cover open sensor	Detects opening and closing of the inner cover.	- Errors relating to opening or closing of the inner cover
19	Front tray position sensor	Detects whether the front tray is in the raised position or lowered position.	- Errors relating to the front tray position (raised or lowered)
20	Front feed support open sensor	Detects opening and closing of the front feed support (rear cover).	- Front feed support closed



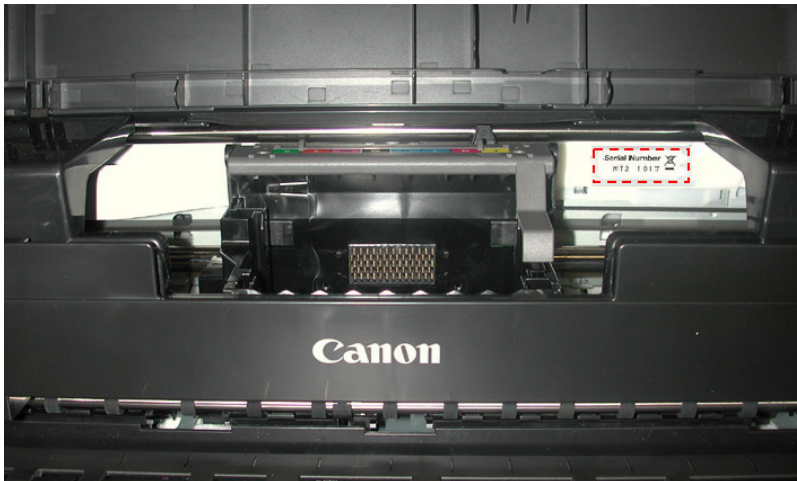
Click on the image to enlarge it.





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 top cover is opened, and the carriage moves to the center).



◀ <1. MAINTENANCE> ▶ ▲

2. LIST OF ERROR DISPLAY / TROUBLESHOOTING

Errors and warnings are displayed by the following ways:

1. Operator call errors are indicated by the Alarm LED lit in orange, and the error messages are displayed by the printer driver Status Monitor.
2. Error codes (the latest 10 error codes at the maximum) are printed in the "operator call/service call error record" area in EEPROM information print

Buttons valid when an operator call error occurs:

1. Power button: To turn the printer off and on again.
2. Resume/Cancel button: To cancel the job at error occurrence, and to clear the error.

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

Alarm LED blinking in orange	Error	Error code	U No.	Solution	Parts that are likely to be faulty
Alarm LED lit	Printing from the front tray not completed.	[1320]	---	Set the paper, and press the Resume/Cancel button.	- Platen unit - Front door unit - Rear tray holder R unit
2 times	No paper in the rear tray.	[1000]	---	Confirm that the rear tray is selected as the paper source. Set the paper in the rear tray, and press the Resume/Cancel button.	- ASF unit - Pressure roller unit - PE sensor - Paper feed motor
	No CD-R tray. ^{*1}	[1001]	---	Set the CD-R tray and press the Resume/Cancel button.	- CD-R tray - Carriage unit
	No CD or DVD. ^{*1}	[1002]	---	Set a CD or DVD in the CD-R tray and insert the CD-R tray in the proper position. Then, press the Resume/Cancel button.	- CD-R tray - Carriage unit
3 times	Paper jam.	[1300]	---	Remove the jammed paper or foreign material causing a paper jam (paper remainings, clips, pens, etc.), and press the Resume/Cancel button.	- ASF unit - Pressure roller unit - PE sensor - Feed roller - Platen unit
	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	- Front door unit - Front cover R

				the front tray is closed during printing.)	unit
	Front feed support closed	[1260]	---	Open the front feed support. (The error is indicated when the front feed support is closed at paper feeding from the front tray.)	- Rear tray unit - Rear tray holder R unit
4 times	Ink may have run out.	[1600]	U041	Replace the applicable ink tank, or press the Resume/Cancel button to clear the error without ink tank replacement. When the error is cleared by pressing the Resume/Cancel button, ink may run out during printing.	- Ink tank - Logic board
	Ink tank not installed.	[1660]	U043	Install the applicable ink tank(s) properly, and confirm that the LED's of all the ink tanks light red.	- Ink tank - Carriage unit - Logic board
5 times	Print head not installed, or not properly installed.	[1401]	U051	Install the print head properly.	- Print head - Carriage unit - Logic board
	Faulty print head ID.		U052	Re-set the print head. If the error is not cleared, the print head may be defective. Replace the print head.	- Print head - Logic board
	Print head temperature sensor error.	[1403]			
	Faulty EEPROM data of the print head.	[1405]			
6 times	Inner cover open ^{*2}	[1841]	---	Close the inner cover and press the Resume/Cancel button.	- Front door unit
	Inner cover open during printing on paper ^{*2}	[1846]	---		- Inner cover unit - Front cover R unit
	Inner cover open during printing on paper (print continuable) ^{*1}	[1851]	---		
	Inner cover open during printing on paper (print NOT continuable) ^{*1}	[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.	
	Inner cover closed	[1850]	---	Open the inner cover, set the CD-R	

	during CD / DVD printing (print continuable)* ¹			tray on it, and press the Resume/Cancel button.	
	Inner cover closed during CD / DVD printing (print NOT continuable)* ¹	[1855]	---	Open the inner cover and press the Resume/Cancel button to clear the error. The CD or DVD being printed at error occurrence will be ejected without printing the remaining data for the ejected CD or DVD, then the next print job will be performed.	
7 times	Multiple ink tanks of the same color installed.	[1487]	U071	Replace the wrong ink tank(s) with the correct one(s).	- Ink tank - Logic board
	Ink tank in a wrong position.	[1680]	U072	Install the ink tank(s) in the correct position.	
8 times	Warning: The ink absorber becomes almost full.	[1700]	---	Replace the ink absorber, and reset its counter. [See 4-4. Special Notes on Servicing, (5) Ink absorber counter setting.] Pressing the Resume/Cancel button will exit the error, and enable printing without replacing the ink absorber. However, when the ink absorber becomes full, no further printing can be performed unless the applicable ink absorber is replaced.	- Absorber kit
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.	- DSC harness - Logic board
10 times	Front tray in the raised position (print continuable)	[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 rear tray.)	- Front door unit - Front cover R unit
	Front tray in the lowered position (print continuable)	[1282]	---	Raise the front tray, and press the Resume/Cancel button. (The error is indicated when the front tray is in the lowered position at the start of printing from the front tray.)	
	Front tray in the raised position (print NOT continuable)	[1283]	---	Lower the front tray, and press the Resume/Cancel button. (The error is indicated when the front tray is raised position during printing from	

				the rear tray.)	
	Front tray in the lowered position (print NOT continuable)	[1284]	---	Raise the front tray, and press the Resume/Cancel button. (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 to clear the error, then perform the automatic print head alignment again.	<ul style="list-style-type: none"> - Print head - Ink tank - Carriage unit - Logic board
	Paper size smaller than specified	[1062]	---	<p>Press the Resume/Cancel button. (The paper will be ejected, and the print job will be cancelled automatically.)</p> <p>The error is indicated when the size of paper actually set is smaller than the one selected in the printer driver, to prevent printing on the platen. (e.g. When A4 paper is set in the printer though A3 is selected in the printer driver, the error occurs. If A3 paper is set in the printer and A4 is selected in the printer driver, then the error does not occur.)</p>	<ul style="list-style-type: none"> - Carriage unit - Logic board
12 times	Paper not set properly in the front tray, or 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.	<ul style="list-style-type: none"> - Platen unit - Feed roller - Paper feed motor
	Ink tank replaced during printing	[FFFF]	---	If ink runs out and the empty ink tank is replaced during printing, ink agitation is performed after the ink tank replacement, then printing stops with the message displayed on the screen. To resume printing, press the Resume/Cancel button. Printing resumes after cleaning is performed.	<ul style="list-style-type: none"> - Ink tank - Logic board - Carriage unit
14 times	Ink tank not recognized.	[1684]	U140	A non-supported ink tank (an ink tank that is sold in a different region from where the printer was purchased) is installed (the ink tank LED is turned off). Install the supported ink tanks.	<ul style="list-style-type: none"> - Ink tank - Logic board - Carriage unit
15 times	Ink tank not recognized.	[1682]	U150	A hardware error occurred in an ink tank (the ink tank LED is turned off).	<ul style="list-style-type: none"> - Ink tank - Logic board

				Replace the ink tank(s).	- Carriage unit
17 times	No ink (no raw ink).	[1698]	U172	<p>Replace the empty ink tank(s). This error is indicated when the applicable ink tank has never been removed until ink is used up. (Printing cannot be continued even when the Resume/Cancel button is pressed for 5 sec. or longer.)</p> <p>If the ink tank is removed and re-set again (without being replaced with a new one), the error of 18 blinks is indicated.</p>	<ul style="list-style-type: none"> - Ink tank - Logic board - Carriage unit
18 times	Remaining ink amount unknown.	[1699]	U182	<p>Replace the ink tank with a new one. This error is indicated when the applicable ink tank has been removed before the error occurrence. Printing with an empty ink tank can damage the printer.</p> <p>To continue printing without replacing the ink tank(s), press the Resume/Cancel button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the printer that the function to detect the remaining ink amount was disabled.</p>	<ul style="list-style-type: none"> - Ink tank - Logic board - Carriage unit
19 times	Non-supported hub.	[2002]	---	Remove the applicable USB hub from the PictBridge (USB) connector.	<ul style="list-style-type: none"> - DSC harness - Logic board

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

*2: Only for CD / DVD printing no-supported regions.

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, "A printer error has occurred. Turn the printer off and then on again. If this doesn't clear the error, see the user's guide for more detail." is displayed in the printer driver Status Monitor.

Cycles of blinking of Alarm and Power LEDs	Error	Error code	Conditions	Solution (Check points and replacement items)
2 times	Carriage error	[5100]	An error occurred in the carriage encoder signal.	(1) Smearing or scratches on the carriage slit film: clean the timing slit film. (2) Foreign material or paper debris that obstructs the carriage movement: remove foreign material. (3) Ink tank conditions: re-set the ink tanks. (4) Cable connection (5) Part replacement: - Timing slit film - Carriage unit - Logic board - Carriage motor
3 times	Line feed error	[6000]	An error occurred in the LF encoder signal.	(1) Smearing or scratches on the LF slit disk film: clean the LF slit disk film. (2) Foreign material or paper debris in the LF drive: remove foreign material. (3) Cable connection (4) Part replacement: - LF slit disk film - LF / EJ timing sensor unit - Paper feed roller unit - Logic board - Paper feed motor
4 times	Purge cam sensor error	[5C00]	An error occurred in the purge unit.	(1) Foreign material or paper debris around the purge unit: remove foreign material. (2) Cable connection (3) Part replacement: - Purge unit - Logic board
5 times	ASF (cam)	[5700]	An error occurred in the	(1) Cable connection

	sensor error		ASF cam sensor during paper feeding from the rear tray.	(2) Part replacement: - ASF unit - Logic board
6 times	Internal temperature error	[5400]	The internal temperature is not normal.	(1) Cable connection (2) Part replacement: - Carriage unit - Logic board - Print head
7 times	Ink absorber full	[5B00, 5B01]	The ink absorber is supposed to be full. <u>Error codes:</u> 5B00: Overseas 5B01: Japan (In EEPROM information print, "5B00" is printed instead of "5B01.")	(1) Ink absorber condition (2) Part replacement: - Ink absorber kit (3) Ink absorber counter value in the EEPROM: reset the ink absorber counter.
	No wetting liquid	[5250]	The wetting liquid is used up.	(1) Part replacement: - Blade cleaner unit (3) Wetting liquid counter value in the EEPROM: reset the wetting liquid counter.
8 times	Print head temperature rise error	[5200]	The print head temperature exceeded the specified value.	(1) Print head condition (2) Cable connection (3) Part replacement: - Print head - Logic board
9 times	EEPROM error	[6800, 6801]	A problem occurred in reading from or writing to the EEPROM.	(1) Part replacement: - Logic board
10 times	VH monitor error	[B200]	The VH (print head drive voltage) is out of the specified value.	(1) Part replacement: - Print head and logic board (Replace them at the same time.) - Carriage unit - Power supply unit
11 times	Carriage lift mechanism error	[5110]	The carriage did not move up or down properly.	(1) Foreign material or paper debris that obstructs the carriage movement: remove foreign material. (2) Part replacement: - Carriage lift gear unit - Carriage lift sensor - ASF unit - Logic board
12 times	AP position	[6A00]	An error occurred in the	(1) Foreign material or paper

	error		AP motor (on the right side of the ASF unit).	debris around the ASF unit: remove foreign material.
13 times	PRSB position error	[6B00]	An error occurred in the PRSB motor (on the left side of the ASF unit).	(2) Cable connection (3) Part replacement: - ASF unit - Logic board
17 times	Paper eject encoder error	[6010]	An error occurred in the paper eject encoder signal.	(1) Smearing or scratches on the EJ slit disk film: clean the EJ slit disk film. (2) Foreign material or paper debris in the paper path: remove foreign material. (3) Cable connection (4) Part replacement: - EJ slit disk film - LF / EJ timing sensor unit - Platen unit - Logic board - Paper feed motor
18 times	Spur base lift mechanism error	[5120]	The spur base did not move up or down properly.	(1) Cable connection (2) Part replacement: - ASF unit - Spur base lift unit - Logic board
19 times	Ink tank position sensor error	[6502]	None of the ink tank position is detected.	(1) Ink tank position: confirm the ink tank position. (2) Re-set or replacement of ink tanks (3) Cable connection (4) Part replacement: - Ink tank position sensor error - Logic board
20 times	Other errors	[6500]	An unidentified error or a network error occurred.	(1) Part replacement: - Logic board



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

2-3. Troubleshooting by Symptom

	Symptom	Solution (Parts that are likely to be faulty)
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	(1) Confirm connection of the power supply unit: - Harness and connector conditions (2) Replace the following item(s): - Logic board - Power supply unit - Front cover R unit
	A strange noise occurs.	(1) Examine and remove any foreign material or paper debris. (2) Replace the following item(s): - The part generating the strange noise - Logic board
	Paper feed problems (multi-feeding, skewed feeding, no feeding).	(1) Examine and remove any foreign material or paper debris. (2) Confirm cable connection. (3) Replace the following item(s): - ASF unit - PE sensor board - Pressure roller unit - Platen unit
Unsatisfactory print quality	No printing, or no color ejected. Faint printing, or white lines on printouts. Uneven printing. Improper color hue.	(1) Confirm the ink tank conditions: - Confirmation of the air-through of an ink tank - Re-setting of an ink tank (2) Remove foreign material from the purge unit caps, if any. (3) Perform cleaning or deep cleaning of the print head. (4) Perform print head alignment. (5) Replace the following item(s): - Print head ^{*1} , and ink tanks - Logic board - Purge unit
	Paper gets smeared.	(1) Clean the inside of the printer. (2) Perform bottom plate cleaning. (3) Perform paper feed roller cleaning.
	The back side of paper gets smeared.	(1) Clean the inside of the printer. (2) Perform bottom plate cleaning. (3) Examine the platen ink absorber. (4) Examine the paper eject roller. (5) Replace the following item(s): - The part in the paper path causing the smearing

3. REPAIR

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

Service part	Est. time required (min.)*1	Recommended removal procedure / Notes on replacement *2	Adjustment / settings	Operation check
Logic board ass'y	15	(1) External housing (2) Printer unit (3) Logic board ass'y - Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y. - Before replacement, check the ink absorber counter value (by service test print or EEPROM information print).	After replacement: 1. Initialize the EEPROM. 2. Set the ink absorber counter value. 3. Set the destination in the EEPROM. 4. Correct the CD / DVD and automatic print head alignment sensors. 5. Check the ink system function. 6. Perform LF / Eject correction. 7. Set the wetting liquid counter value. [See 4-2. Service Mode , for details.] 8. Perform print head alignment in the user mode.	- EEPROM information print - Service test print - Printing via USB connection - Direct printing from a digital camera (PictBridge)
Absorber kit	10	(1) External housing (2) Printer unit (3) Absorber kit	After replacement: 1. Reset the ink absorber counter. [See 4-2. Service Mode , for details.]	- Ink absorber counter value print (After the ink absorber counter is reset, the counter value is printed automatically.)
Blade cleaner unit	5	(1) External housing (2) Front stay (3) Blade cleaner unit	After replacement: 1. Reset the wetting liquid counter. [See 4-2. Service Mode , for details.]	- EEPROM information print
Carriage unit	15	(1) External housing (2) Carriage unit - The screws on the carriage shaft adjustment plate are allowed to be loosened only at replacement of the	At replacement: 1. Before removal of the carriage shaft, mark the carriage shaft position. [See 4-4. Special Notes on Servicing , (3)]	- Service test print (Confirm ink system function.)

		carriage unit. DO NOT loosen them in other cases.	Carriage unit replacement , for details.] 2. Apply grease to the sliding portions of the carriage shaft. [See 4-3. Grease Application , for details.] 3. Check the ink system function. [See 4-2. Service Mode , for details.] 4. Perform print head alignment in the user mode.	
Paper feed motor	10	(1) External housing (2) Printer unit (3) Paper feed motor - The screws securing the paper feed motor are allowed to be loosened only for paper feed motor replacement. DO NOT loosen them in other cases.	At replacement: 1. Adjust the paper feed motor. [See 4-4. Special Notes on Servicing, (2) Paper feed motor adjustment , for details.]	- EEPROM information print - Service test print
Platen unit	25	(1) External housing (2) Printer unit (3) Carriage unit (4) Blade cleaner unit (5) Spur base unit (6) Platen unit - The screws securing the adjustment plate are allowed to be loosened only for platen unit replacement. DO NOT loosen them in other cases.	After replacement: 1. Adjust the eject roller shaft position. [See 4-4. Special Notes on Servicing, (4) Platen unit replacement , for details.] 2. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print
Spur base unit	20	(1) External housing (2) Printer unit (3) Carriage unit (4) Blade cleaner unit (5) Spur unit - DO NOT contact the spur edges.	After replacement: 1. Confirm the printer operation. [See 4-5. Verification After Repair , for details.]	- EEPROM information print - Service test print
Purge unit	10	(1) External housing (2) Front stay (3) Blade cleaner unit (4) Purge unit	After replacement: 1. Confirm the purging operation and the printer operation.	- Service test print

			[See 4-5. Verification After Repair for details.]	
Feed roller ass'y	45	(1) External housing (2) Printer unit (3) Carriage unit (4) Blade cleaner unit (5) Spur base unit (6) Platen unit (7) Logic board ass'y (8) Sheet feed unit (9) Pressure roller ass'y (10) Feed roller ass'y	After replacement: 1. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- Service test print
Timing slit strip film	5	(1) External housing (2) Timing slit strip film / Timing slit disk feed film - Upon contact with the film, wipe the film with ethanol.	After replacement: 1. Perform print head alignment in the user mode. 2. Perform LF / Eject correction in the service mode. [See 4-2. Service Mode , for details.]	- EEPROM information print - Service test print
Timing slit disk feed film	5	- Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film.		
Print head	1		After replacement: 1. Perform print head alignment in the user mode. 2. Perform nozzle check pattern printing in the user mode.	- Service test print
Sheet feed unit	20	(1) External housing (2) Printer unit (3) Logic board ass'y (4) Sheet feed unit	After replacement: 1. Confirm the printer operation. [See 4-5. Verification After Repair , for details.]	- EEPROM information print - Service test print

	Graphic or text is enlarged on printouts in the carriage movement direction.	(1) Confirm that the timing slit film is free from smearing or scratches: - Cleaning of the timing slit film. (2) Replace the following item(s): - Timing slit film - Carriage unit - Logic board
	Graphic or text is enlarged on printouts in the paper feed direction.	(1) Confirm that the LF / EJ slit film is free from smearing or scratches: - Cleaning of the LF / EJ slit film.. (2) Replace the following item(s): - LF / EJ slit film - LF / EJ timing sensor unit - Platen unit - Logic board

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

◀ <2. LIST OF ERROR DISPLAY / TROUBLESHOOTING> ▶ ▲

*1: Not including adjustment time after replacement.

***2: General notes:**

- Make sure that the flexible cables and wires in the harness are in the proper position and connected correctly. See [3-2. Part Replacement Procedures](#) or the Parts Catalog for details.
- Do not drop the ferrite core, which may cause damage.
- Protect electrical parts from damage due to static electricity.
- Before removing a unit, after removing the power cord, allow the 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, timing slit disk feed film, and timing slit disk eject film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- Exercise caution with the screws, as follows:
 - i. The screws of the paper feed motor may be loosened only at replacement of the paper feed motor unit (DO NOT loosen them in other cases). [See [4-4. Special Notes on Servicing, \(2\) Paper feed motor adjustment](#), for details.]
 - ii. Before loosening the 2 screws that fix the carriage shaft to the main chassis, mark the screw positions so that the carriage shaft will be re-attached to the main chassis in its original position. [See [4-4. Special Notes on Servicing, \(3\) Carriage unit replacement](#), for details.]
 - iii. The screws securing the adjustment plate of the eject roller shaft may be loosened only at replacement of the platen unit (DO NOT loosen them in other cases). [See [4-4. Special Notes on Servicing, \(4\) Platen unit replacement](#), for details.]

◀ <3-1. Major Replacement Parts> ▶ ▲

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

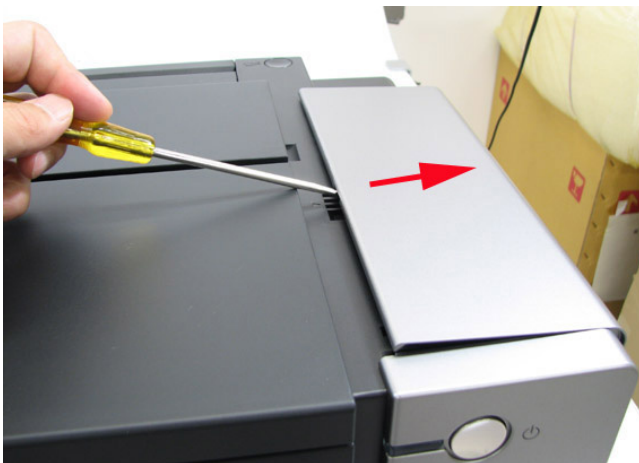
Be sure to protect the printer from static electricity in repair servicing, especially for the logic board and panel board.

(Photos of the Pro9000 Mark II are used in some steps.)

(1) External housing removal

1) Remove the side covers L and R. (no screw)

Release the tabs on the top, then slide the covers downward.



2) Remove the front covers L and R. (no screw)

Release the tabs at the top, then slide the covers upward.



3) Remove the main case. (no screw)

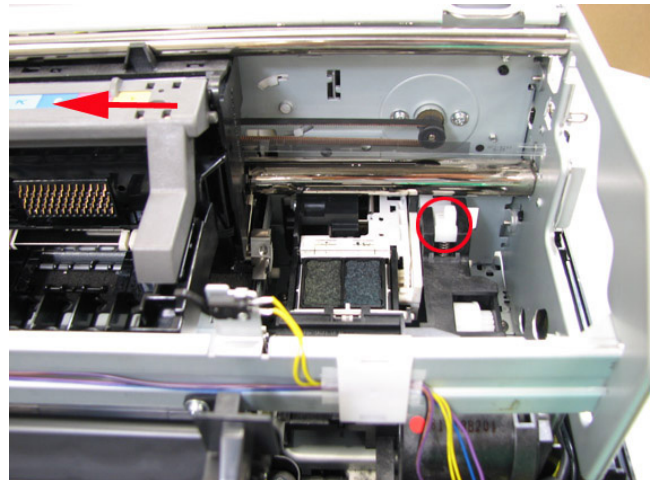
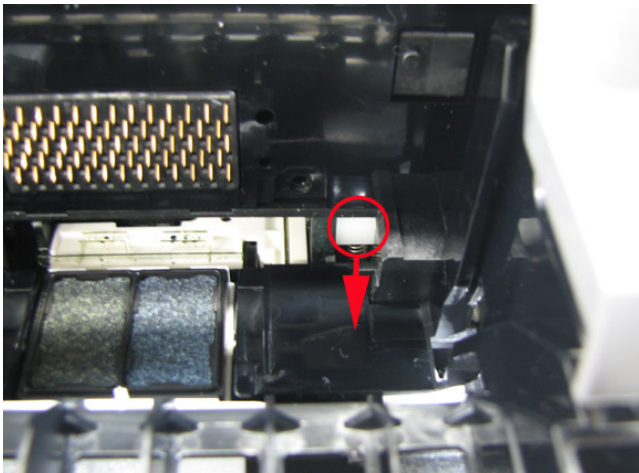
Release 2 tabs on the front, 1 tab from each side, and 2 tabs on the back (6 tabs in total).



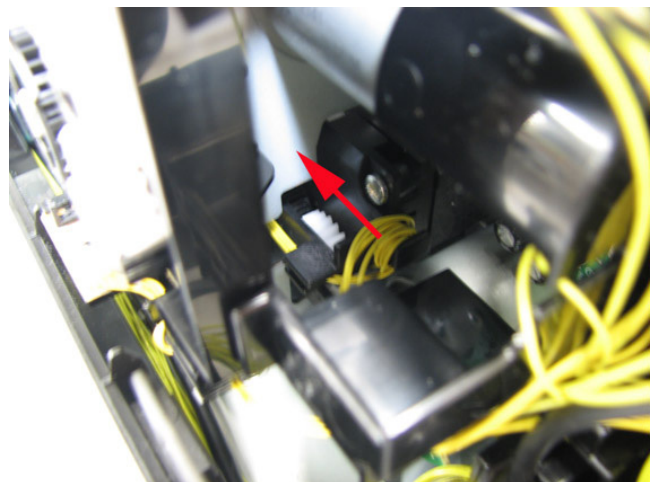
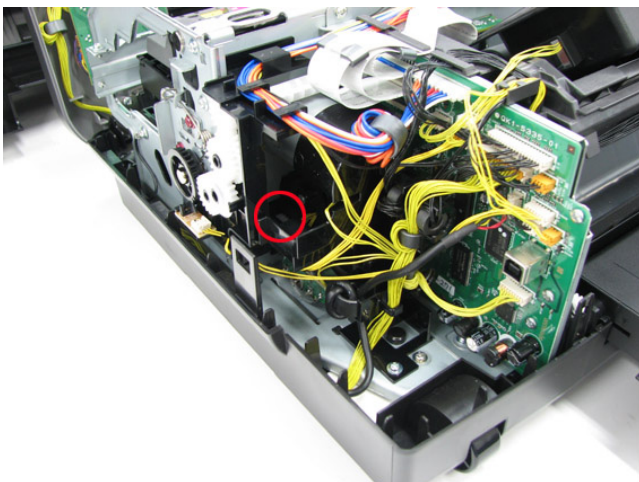
(2) Carriage unlocking

The carriage can be unlocked in either of the following two ways:

- a) While unlocking the carriage by pressing and holding down the carriage lock pin, slide the carriage to the left (to the opposite of the home position).

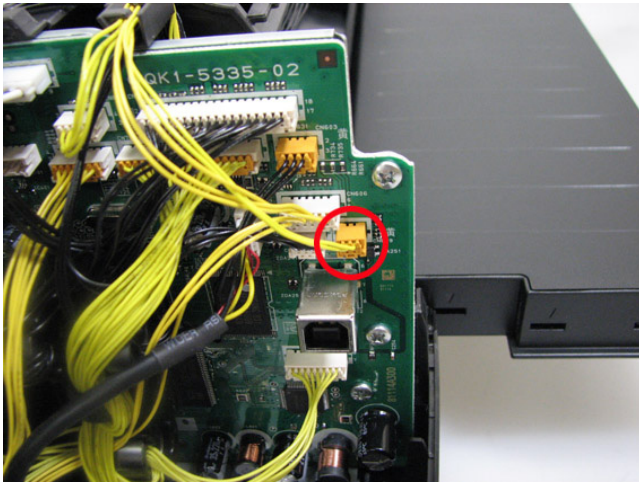
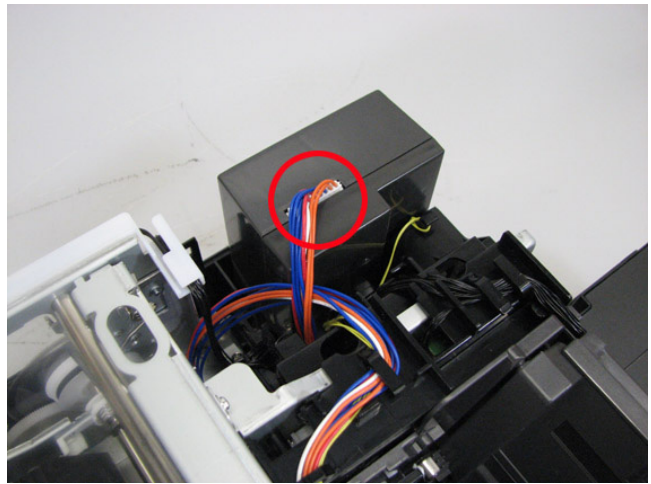
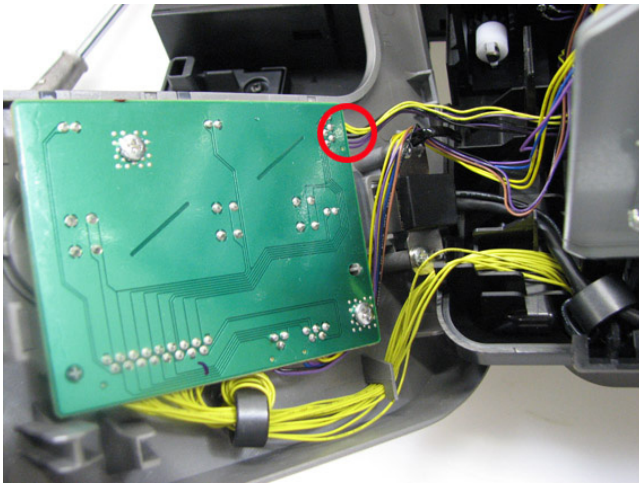


- b) Rotate the gear at the back of the purge unit to unlock the carriage, and slide the carriage to the left (to the opposite of the home position).

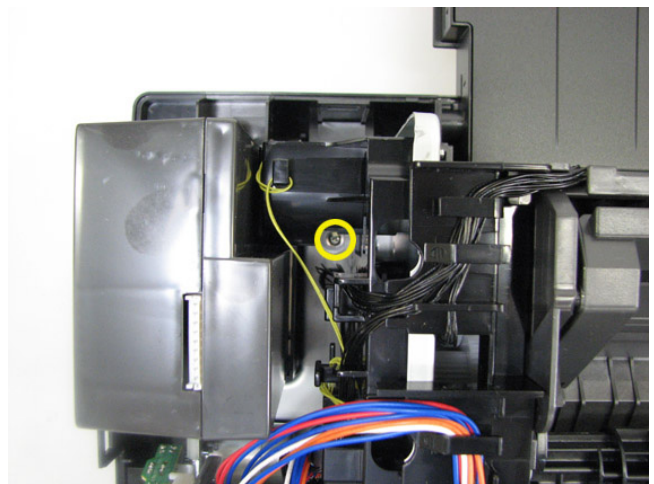
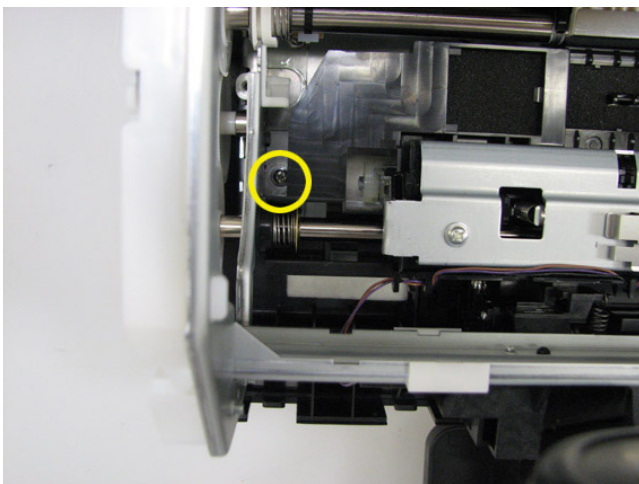
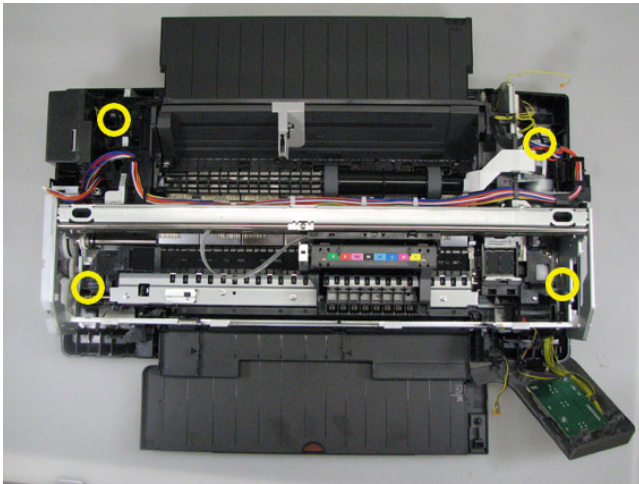


(3) Printer unit removal

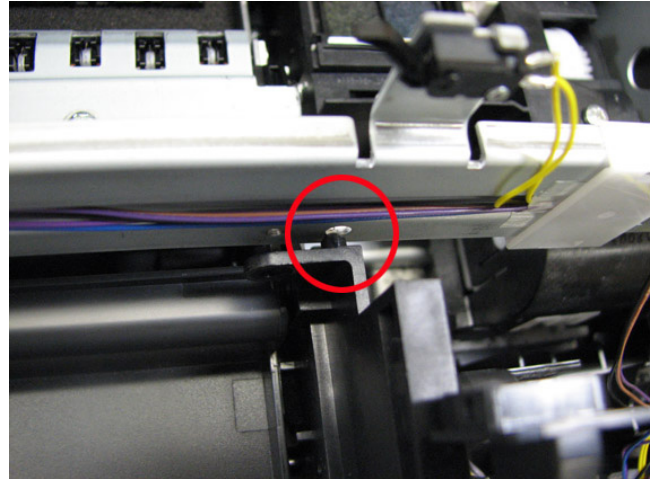
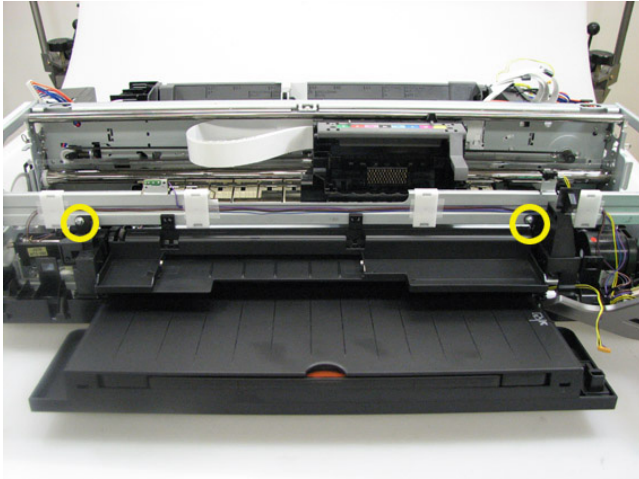
- 1) Disconnect one panel board connector (red-circled), the AC adapter connector, and one logic board connector (red-circled).



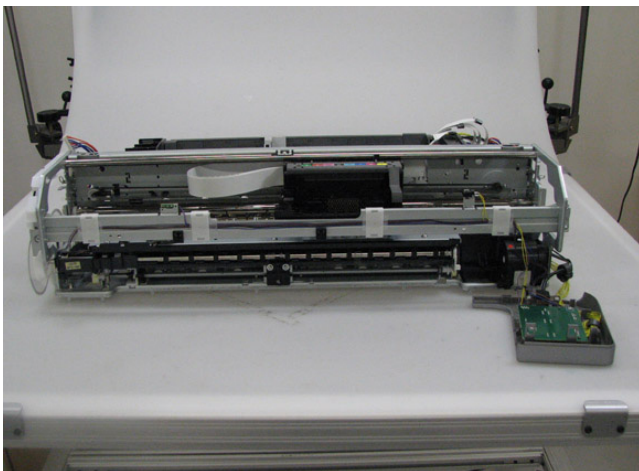
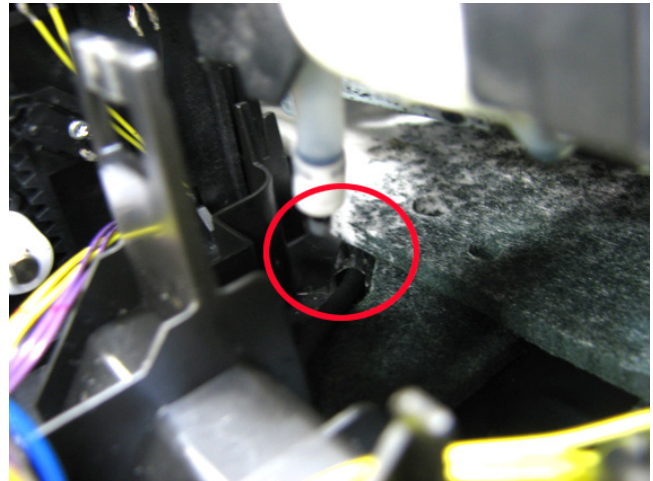
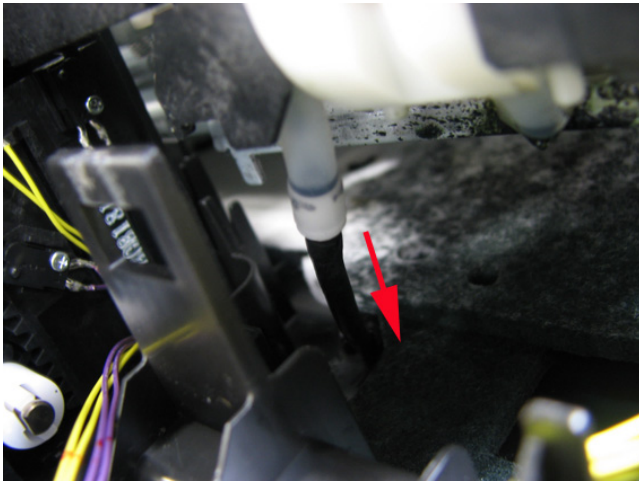
2) Separate the chassis from the bottom case. (4 screws)



3) Remove the screws and disengage the boss that fix the front stay to the front door holder, then separate the printer unit from the bottom case. (2 screws)

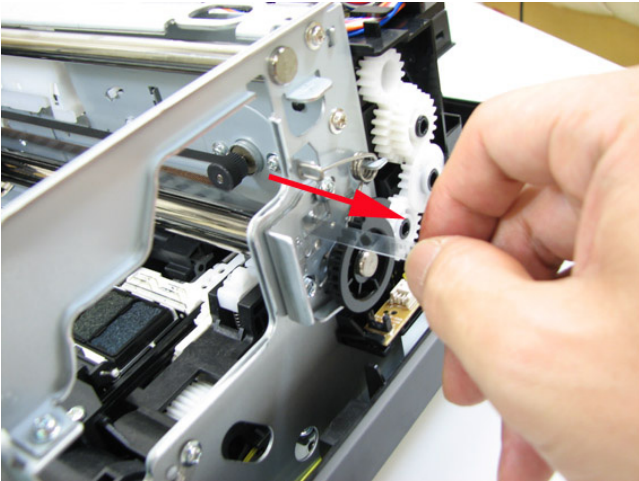


4) While slightly lifting up the right side of the printer, disconnect the tube under the purge unit by pulling the tube downward, then remove the printer unit.

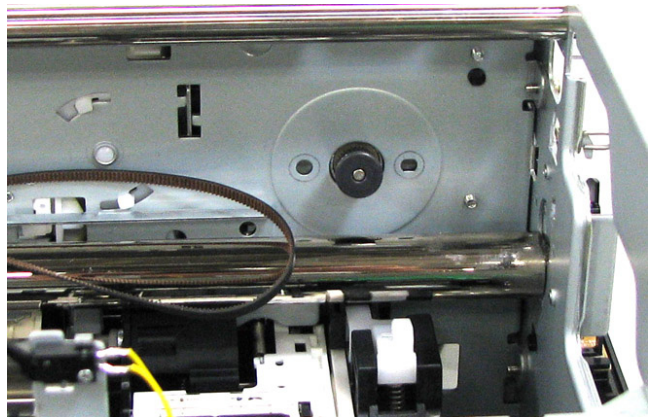
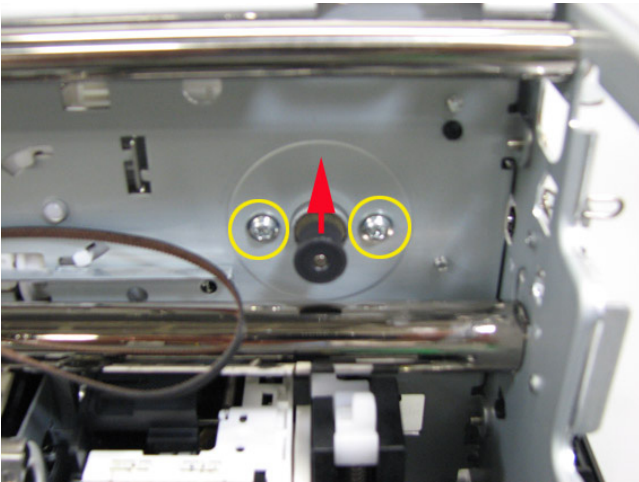


(4) Carriage unit removal

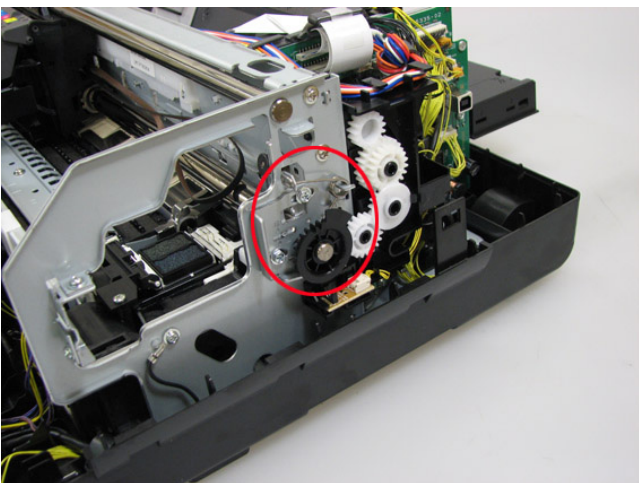
1) Remove the timing slit film. Be cautious to keep it free from any grease or damage.



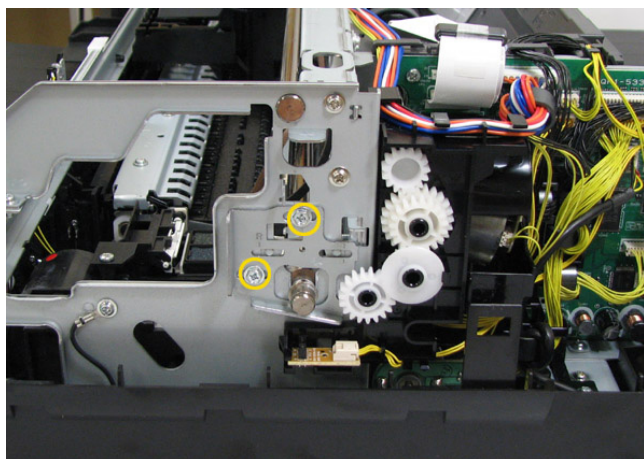
2) Disengage the carriage belt, remove the screws from the carriage motor, then push the pulley upward (as indicated by the red arrow). (2 screws)



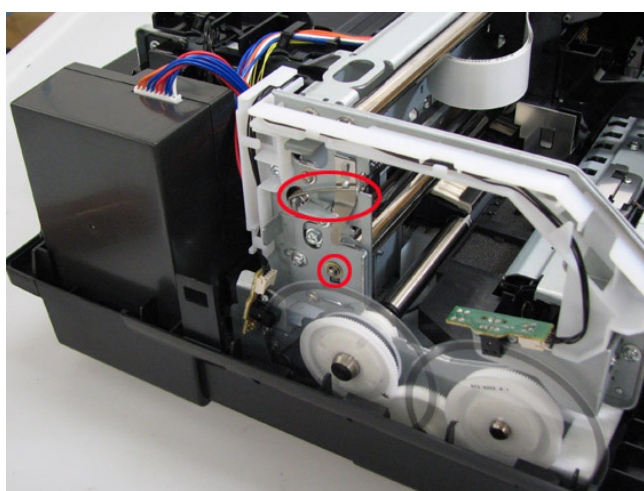
3) Remove the carriage shaft fixing spring R and the shaft cam.



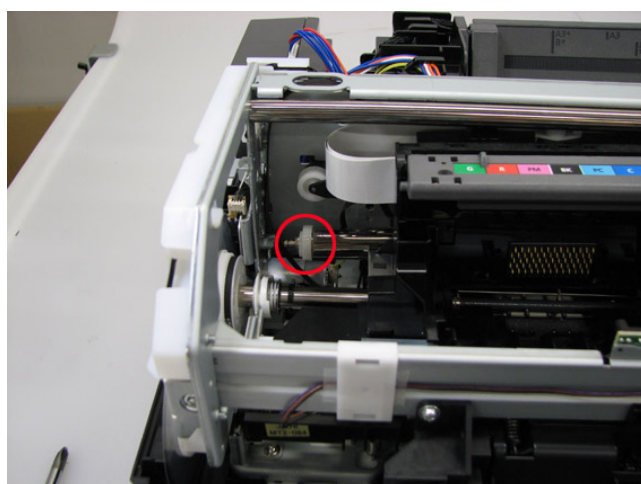
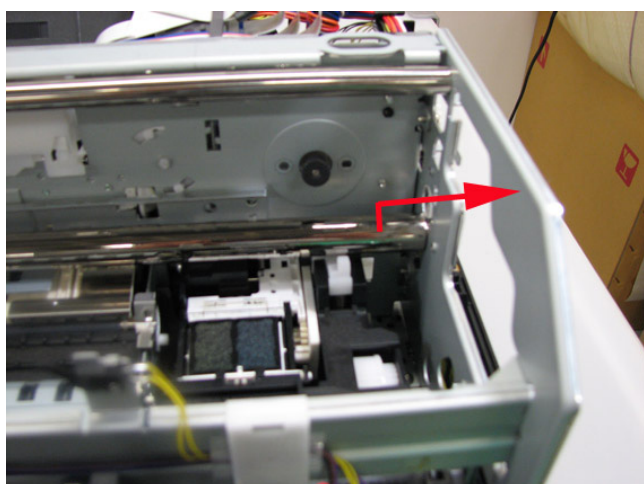
- 4) Mark the position of the carriage shaft adjustment plate, then remove its screws. (2 screws)
See [4-4. Special Notes on Servicing](#), [\(3\) Carriage unit replacement](#), for details.



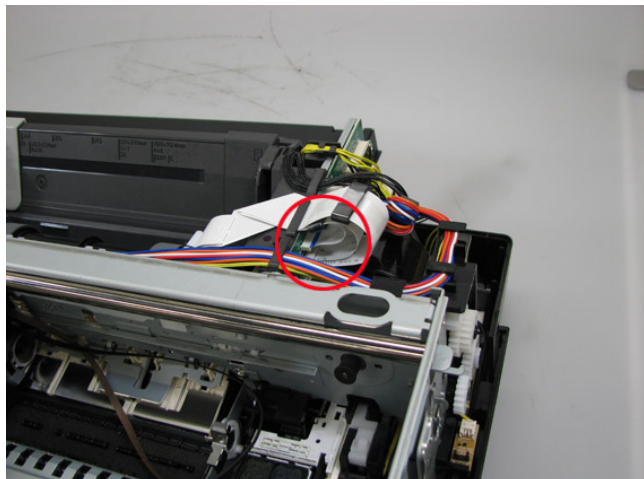
- 5) Remove the carriage shaft fixing spring L, E-ring, and washer.



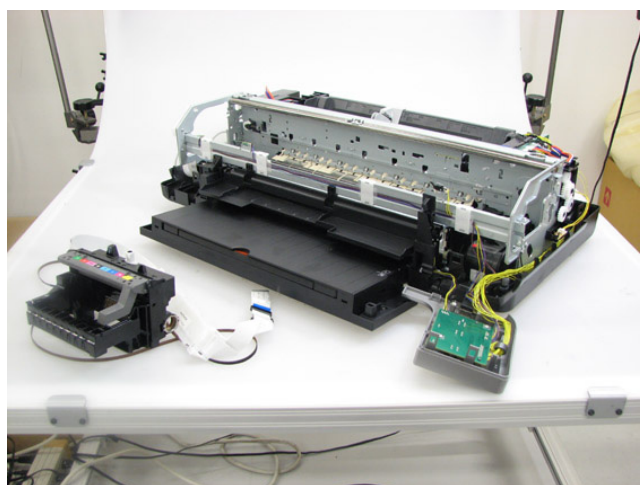
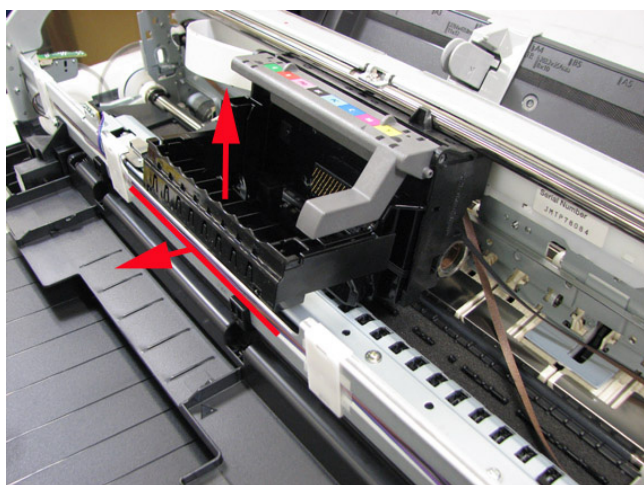
- 6) Remove the carriage shaft, and the cam on the left side.



7) Disconnect the carriage cable from the logic board.

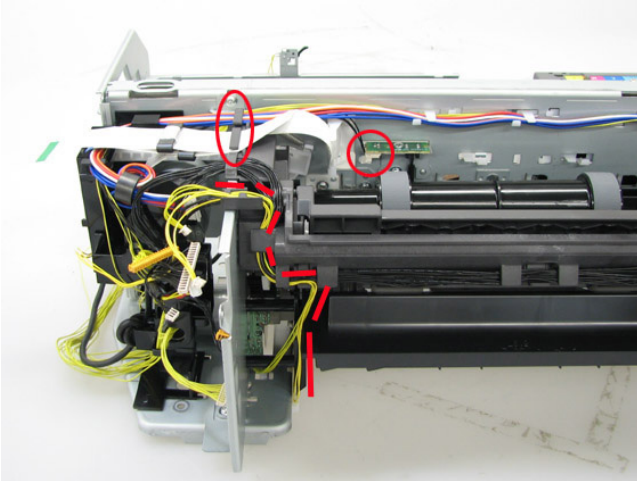


8) Slide the carriage unit to the center (the ink tank replacement position). While slightly pulling the front stay toward you, remove the carriage unit.



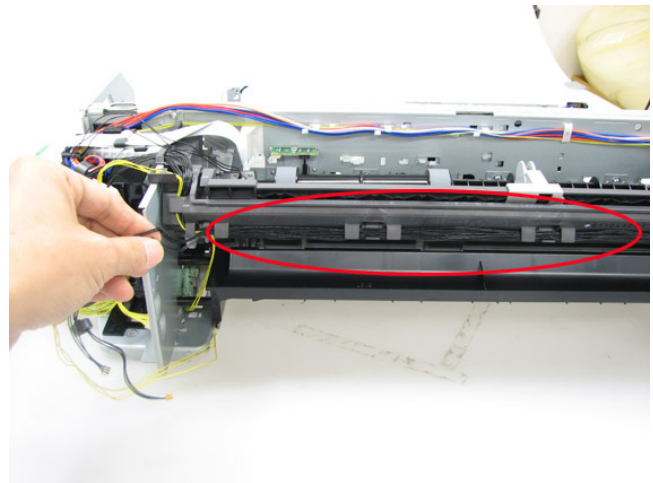
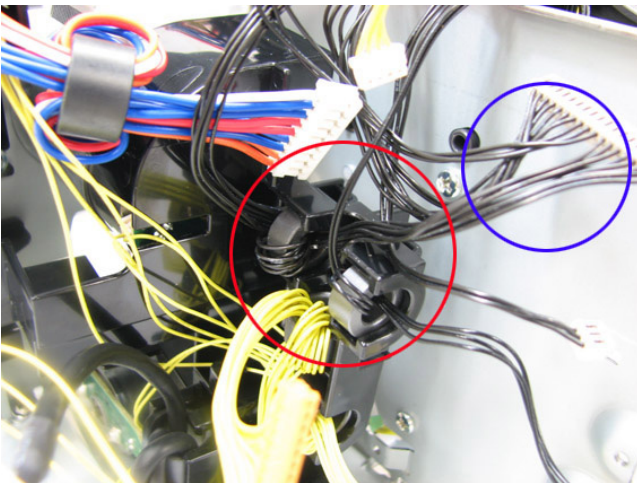
(5) ASF unit removal

- 1) Disconnect the PE sensor connector, carriage cable, and front feed PE sensor cable from the ASF.

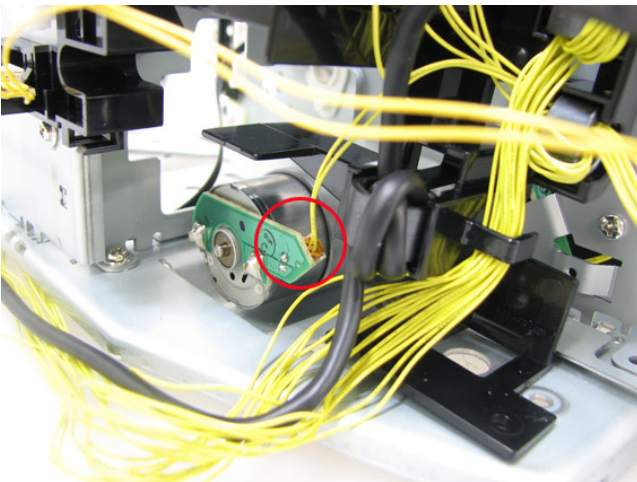


- 2) Disengage the two cores.

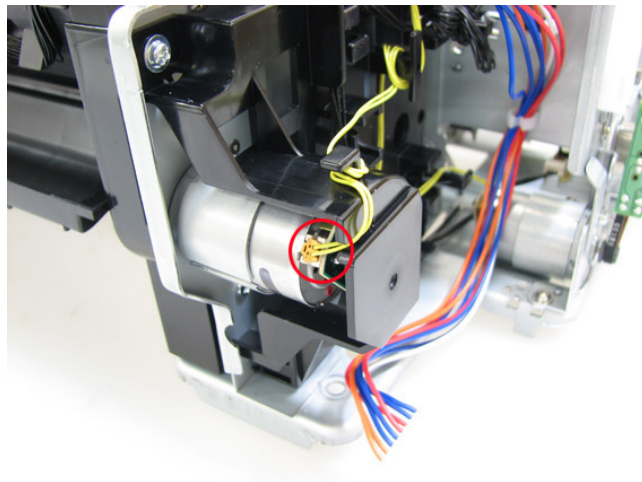
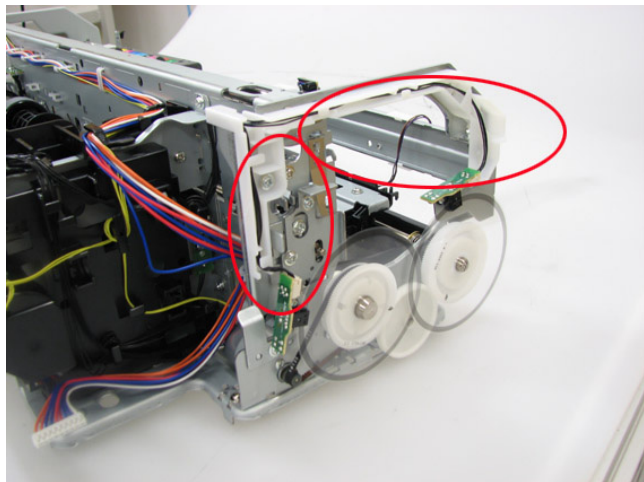
For the cables indicated by the blue circle in the photo, only six of them pass through the core. Keep those cables connected to the ASF, and just leave them (with the core) away from the ASF. For the cables that pass through the other core, disconnect the cables (connector) and the core from the ASF.



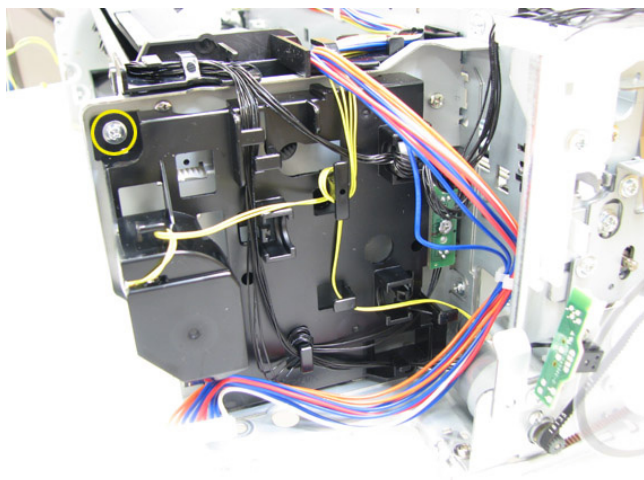
- 3) Remove the ASF motor connector.



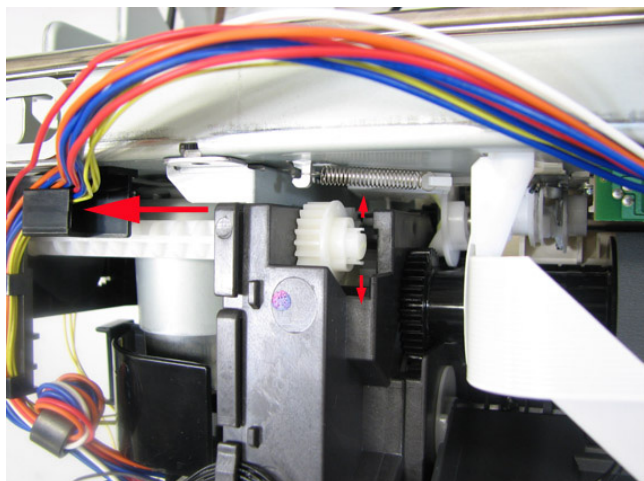
4) Disconnect the LF / EJ encoder cable, and remove the PRSB motor connector.



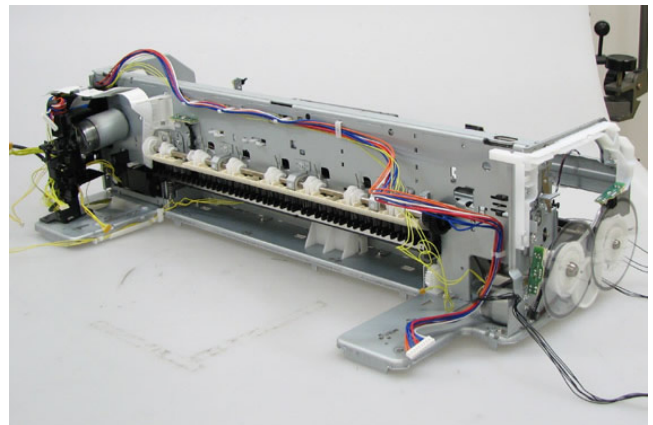
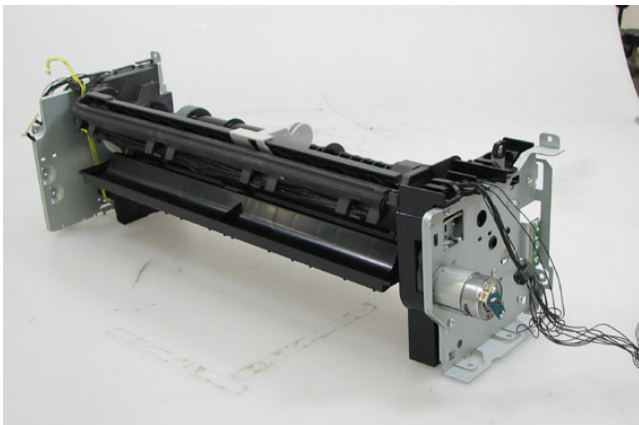
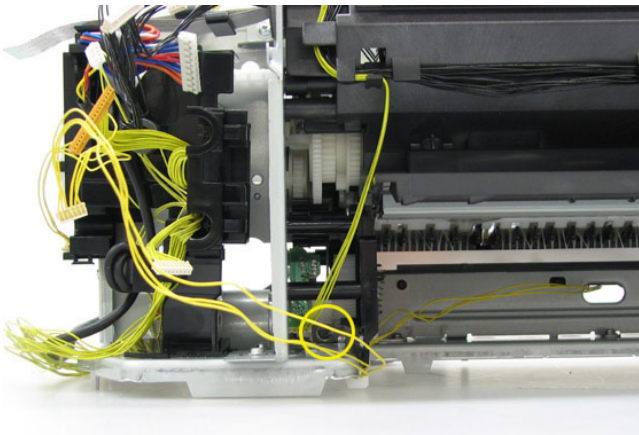
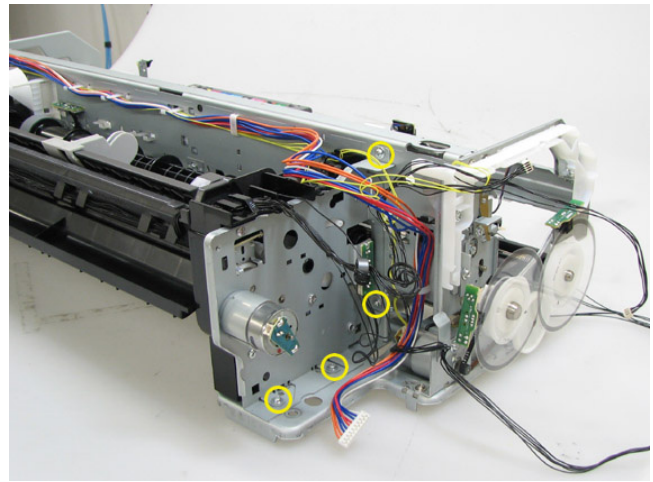
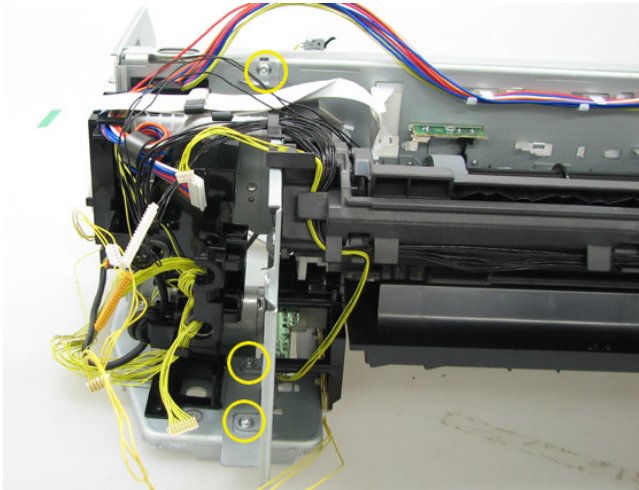
5) Release the cables from the cable guide, then remove the cable guide. (1 screw)



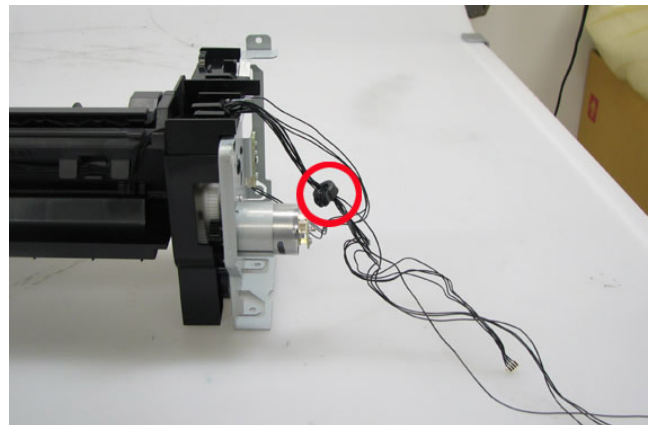
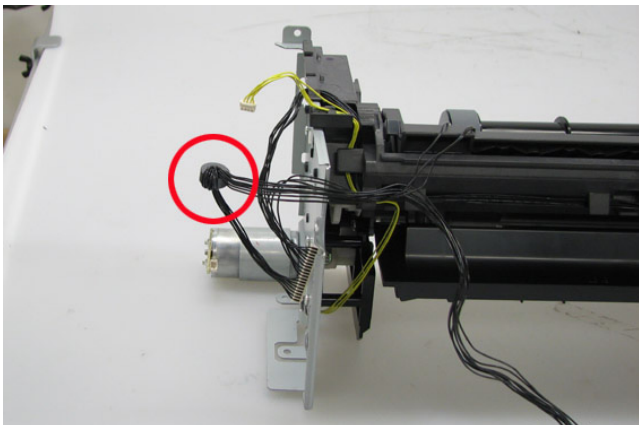
6) Disengage the gear from the carriage lift mechanical part.



7) Remove the screws that fix the ASF to the chassis, and separate the ASF from the chassis (8 screws).

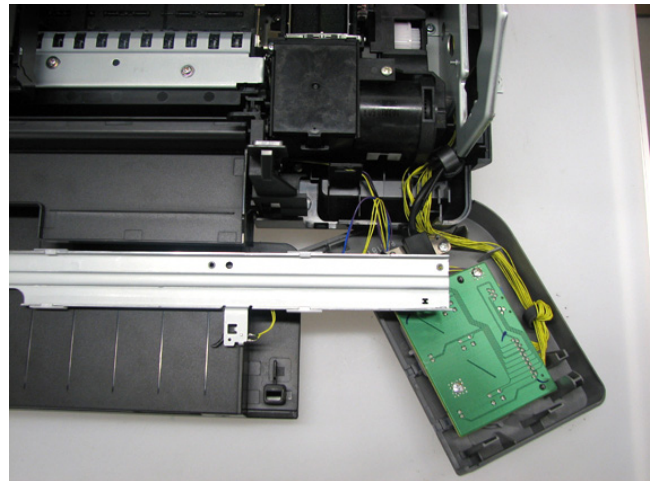
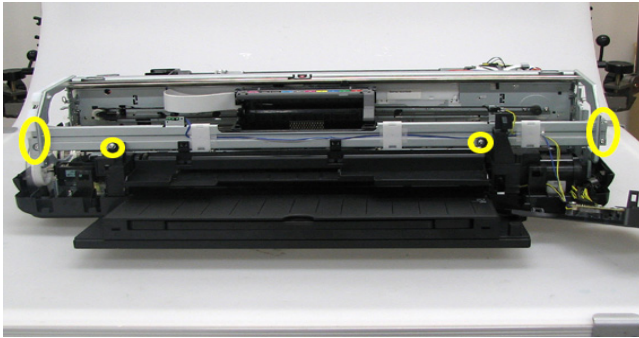


8) Remove the left and right cores.

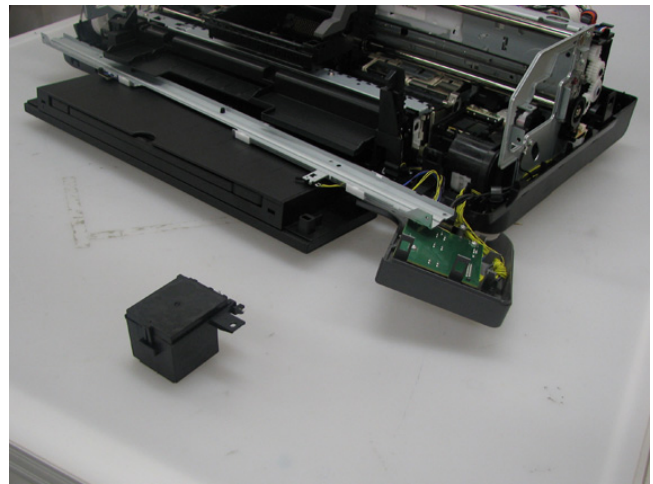
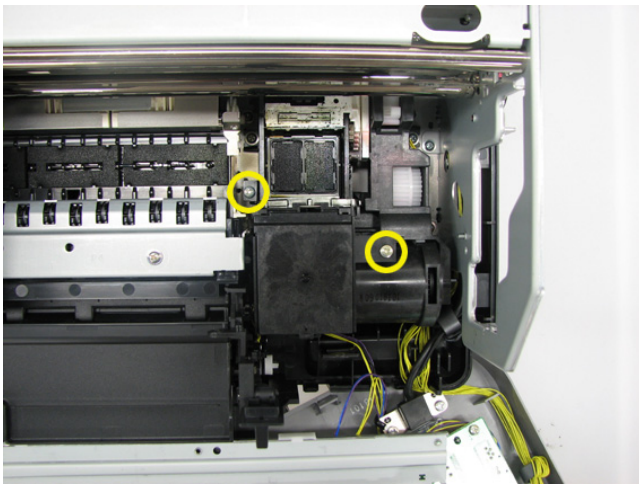


(6) Blade cleaner unit and purge unit removal

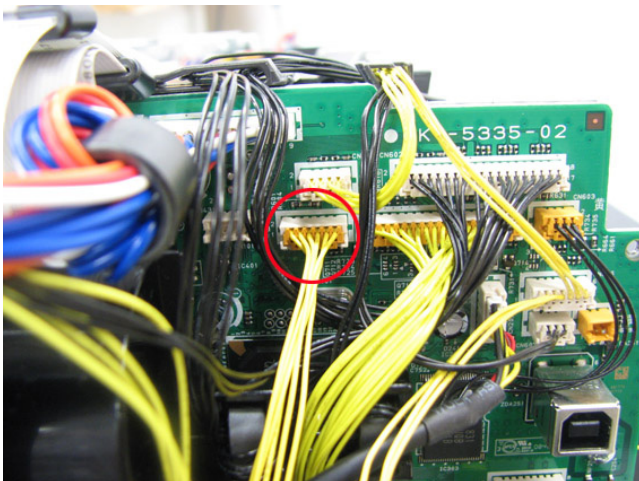
- 1) Remove the screws from the front stay, and lay down the front stay as shown in the photo. (6 screws)



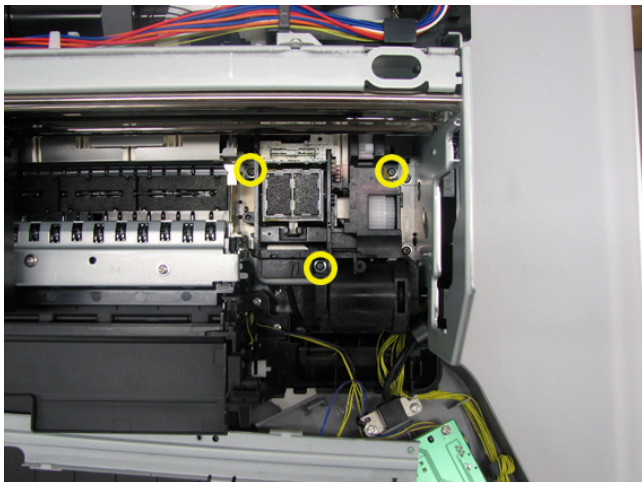
- 2) Remove the blade cleaner unit.



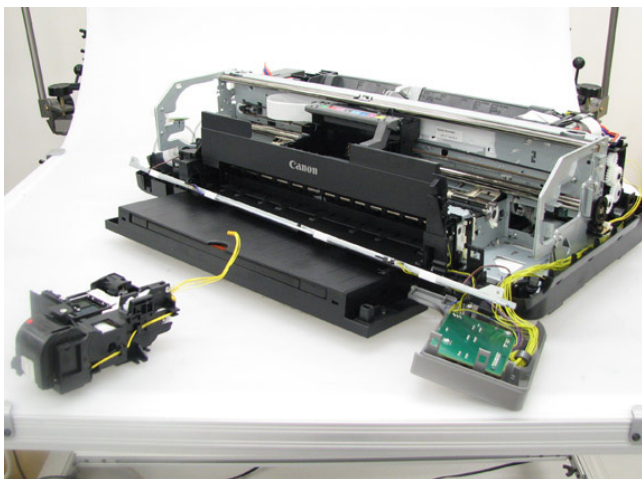
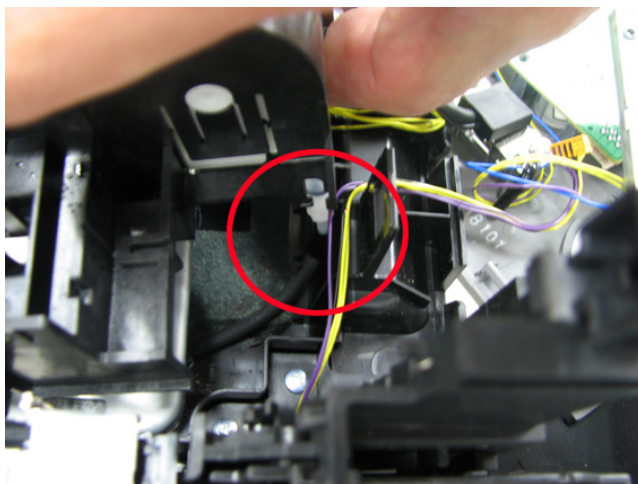
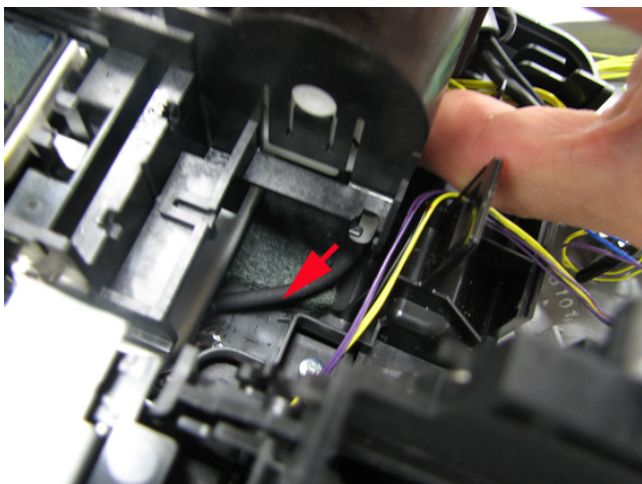
- 3) Remove the connector from the logic board.



4) Remove the screws from the purge unit. (3 screws)

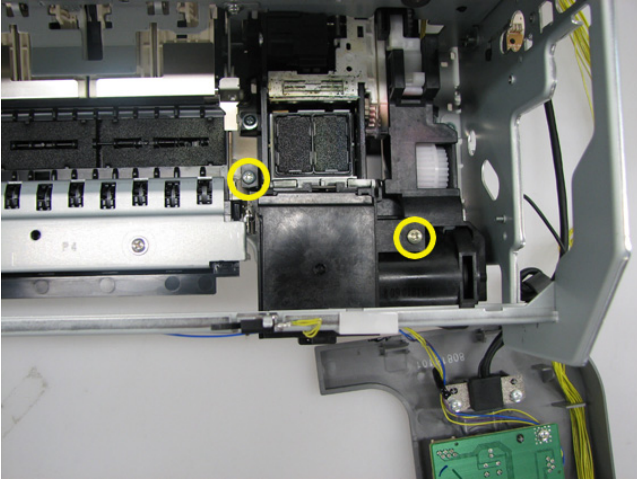


5) While slightly lifting the front side of the purge unit, disconnect the tube, then remove the purge unit.

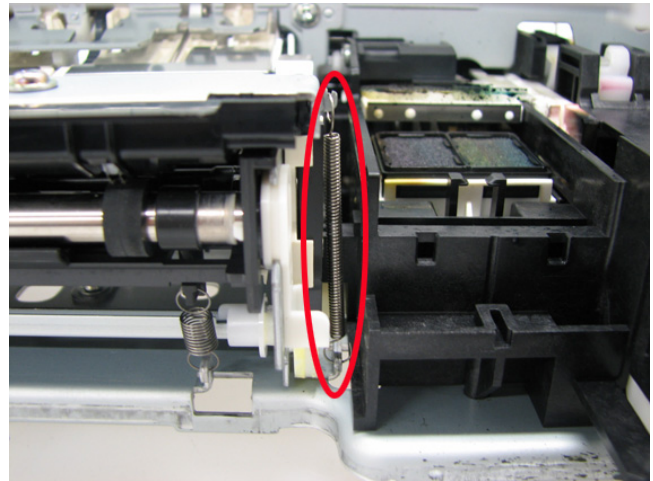
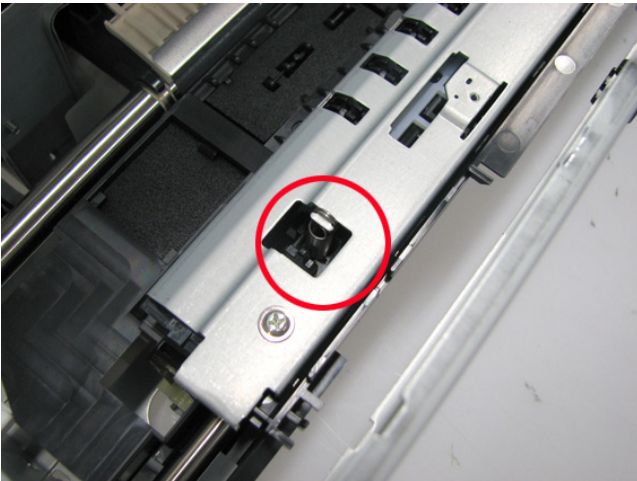


(7) Spur base unit and platen unit removal

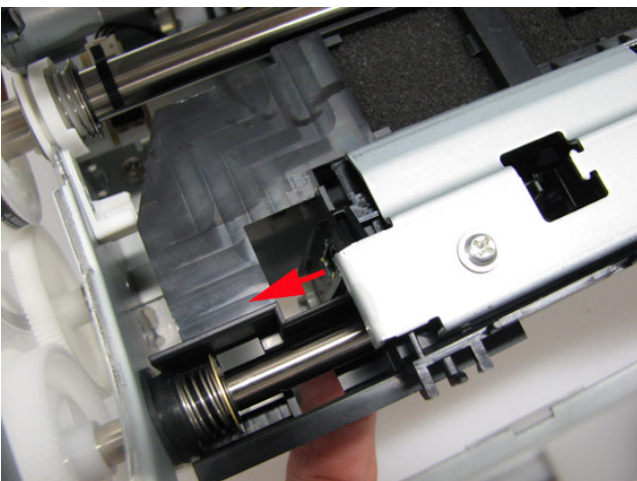
1) Remove the blade cleaner unit. (2 screws)



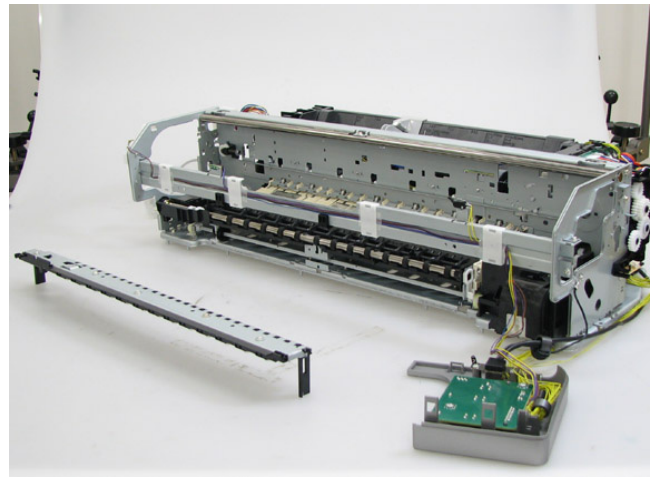
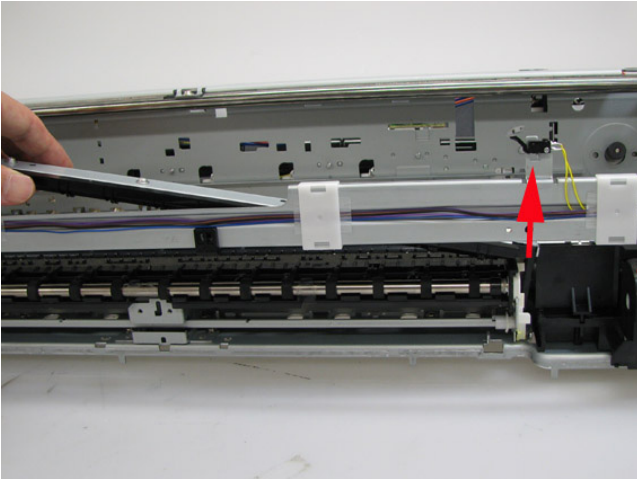
2) On the left and right sides of the spur unit, disengage the springs.



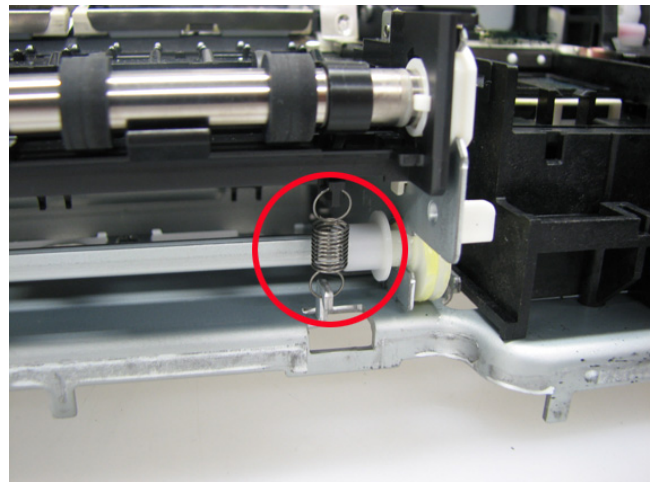
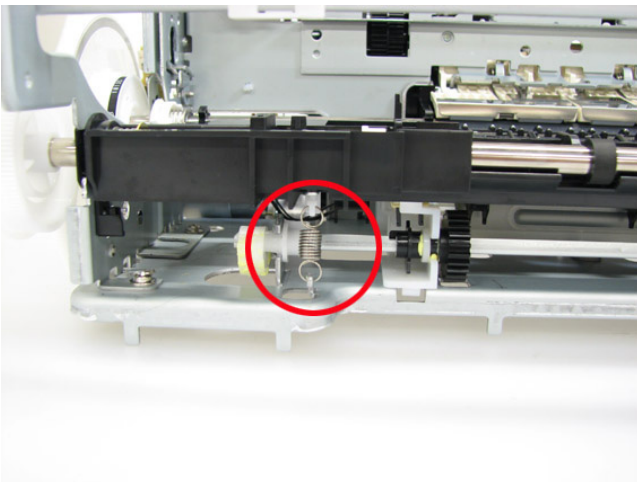
3) On the left side (the opposite side of the home position), disengage the spur base unit from the platen unit, and lift that side of the spur base unit.



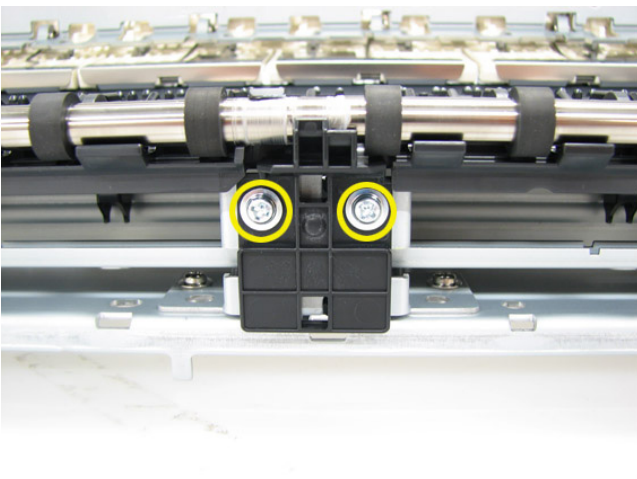
- 4) While holding the spur base unit at an angle, slide it to disengage the other side of the spur base unit from the platen unit.



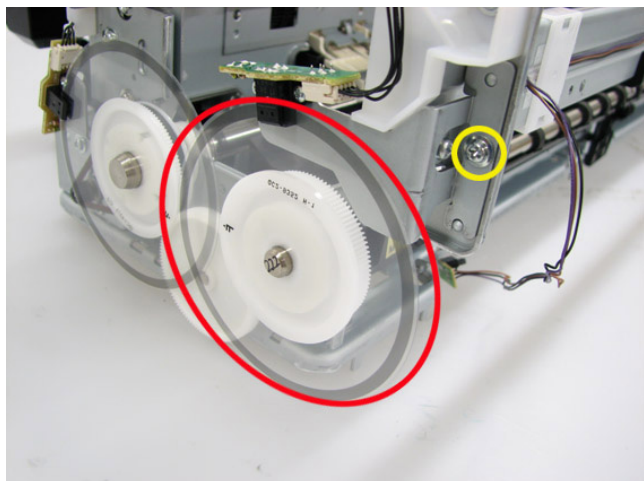
- 5) From the left and right sides of the platen unit, remove the springs.



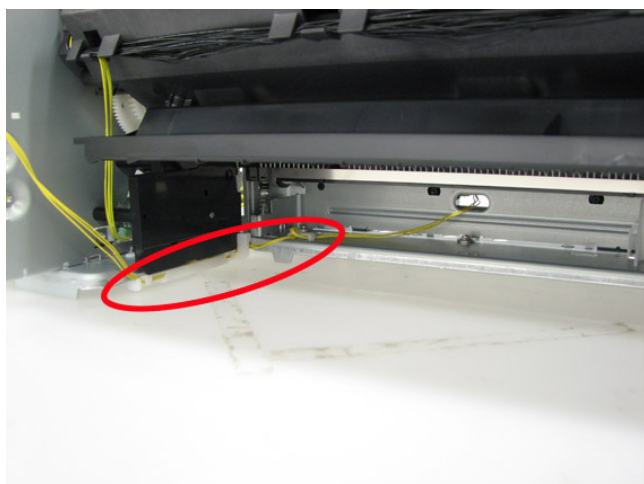
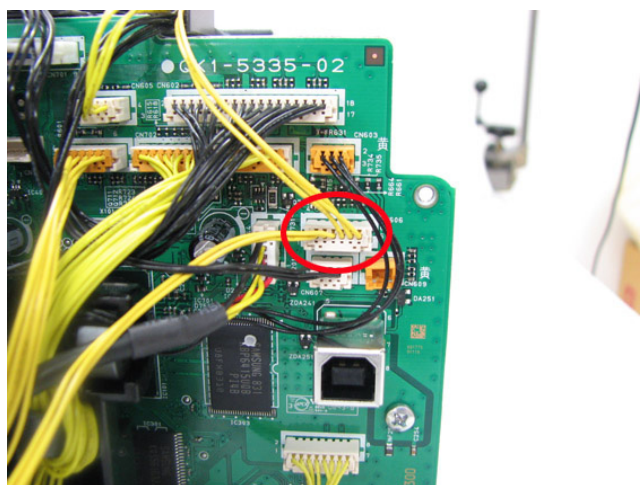
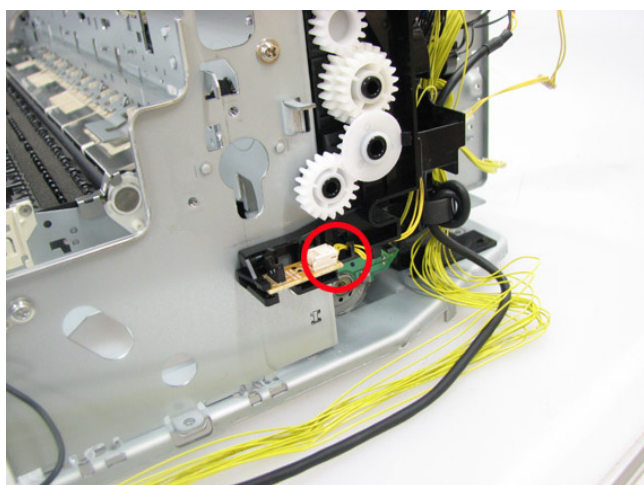
- 6) Remove the eject roller shaft adjustment plate. (2 screws)
See [4-4. Special Notes on Servicing, \(4\) Platen unit replacement](#), for details.



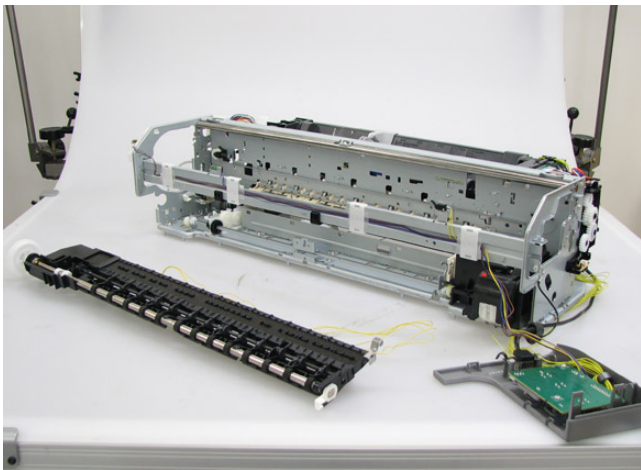
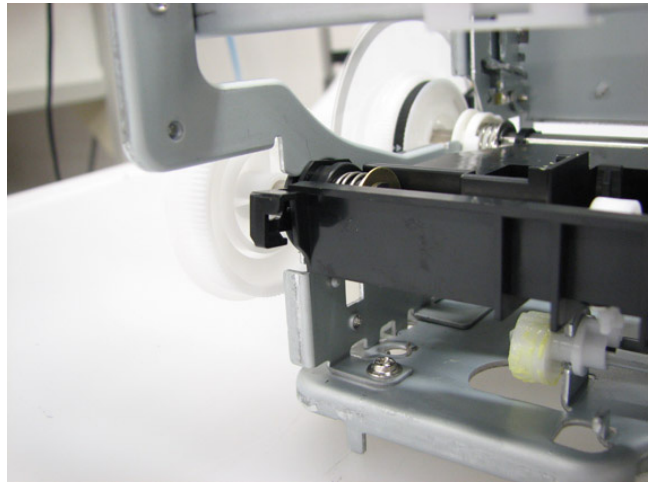
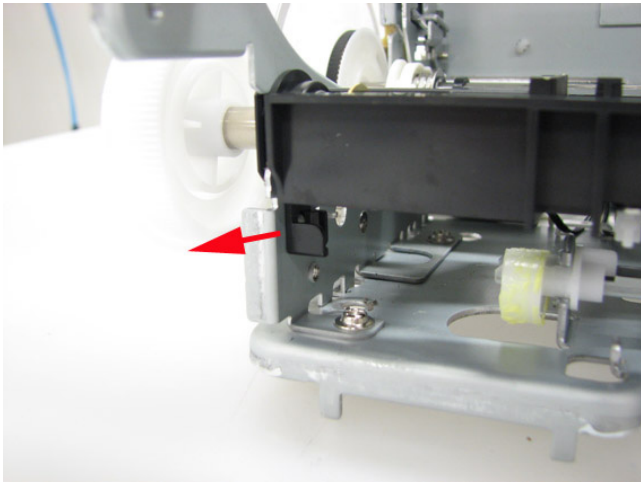
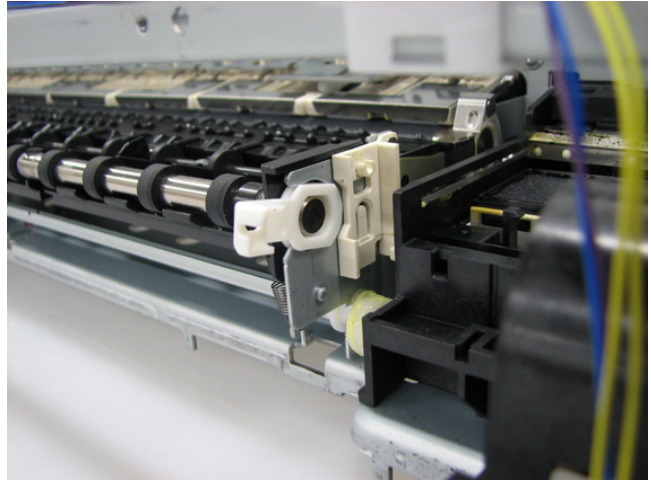
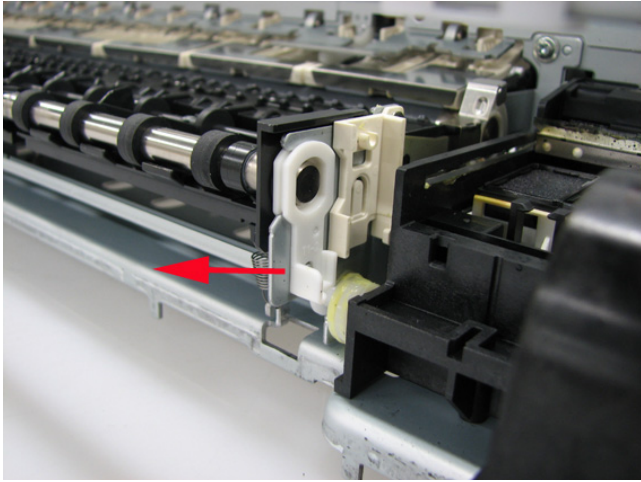
7) Remove the timing slit disk and the eject encoder holder. (1 screw)



8) Remove the carriage lift sensor connector and the logic board connector, then release the cables from the cable guide.

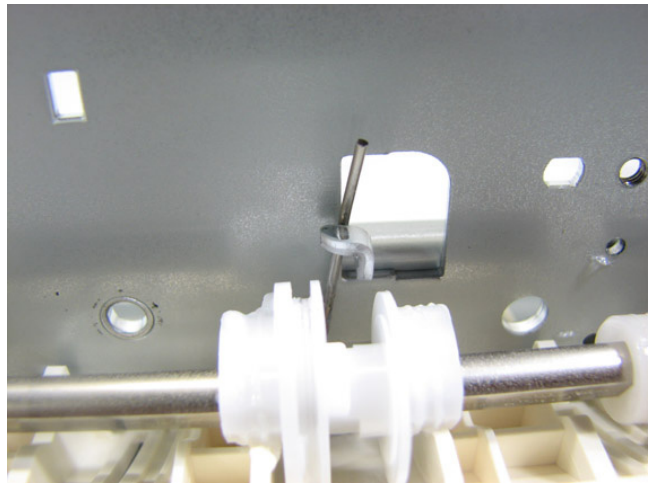
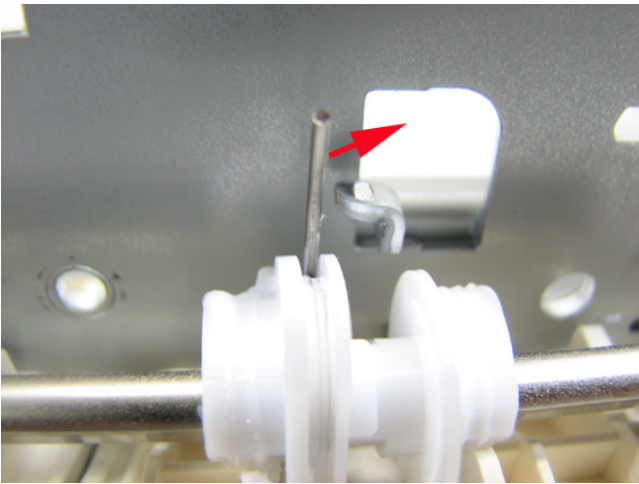
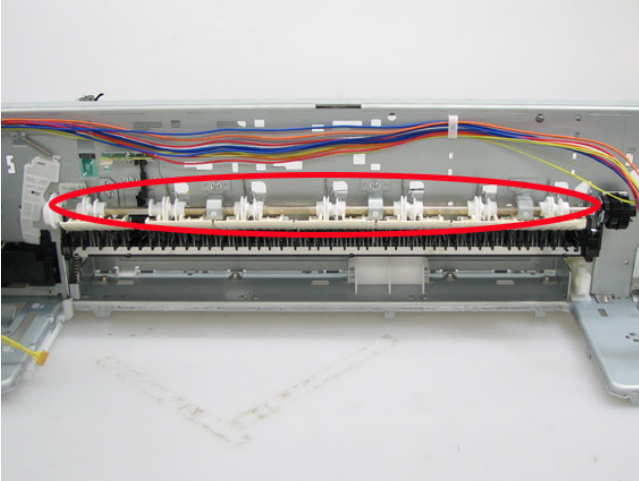


9) On the left and right sides of the eject roller shaft, rotate the shaft bush to release the shaft. Then, pull the platen unit toward you to remove it from the chassis.

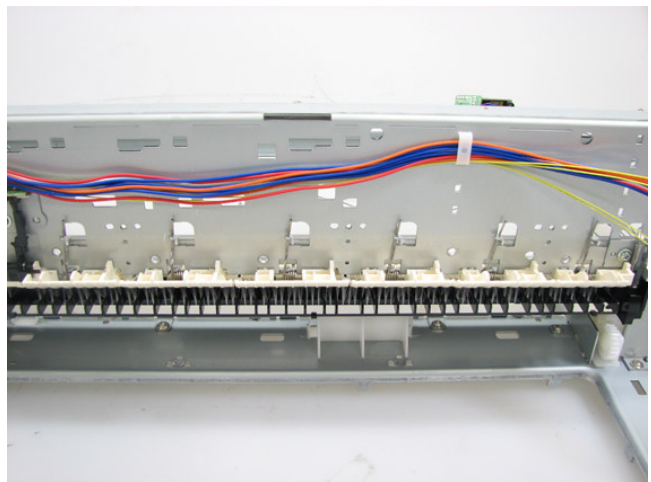
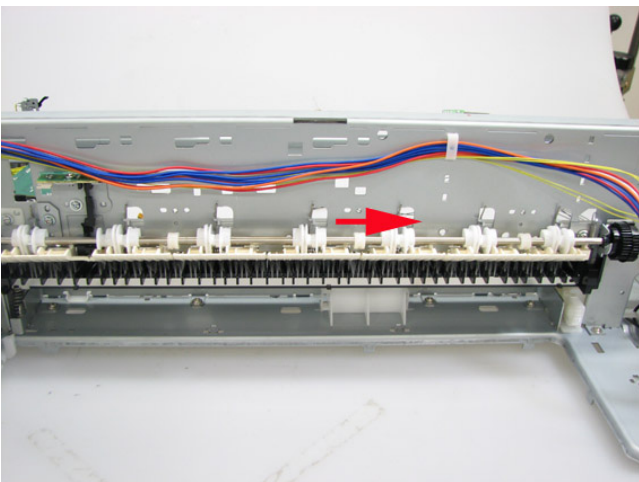


(8) Feed roller removal

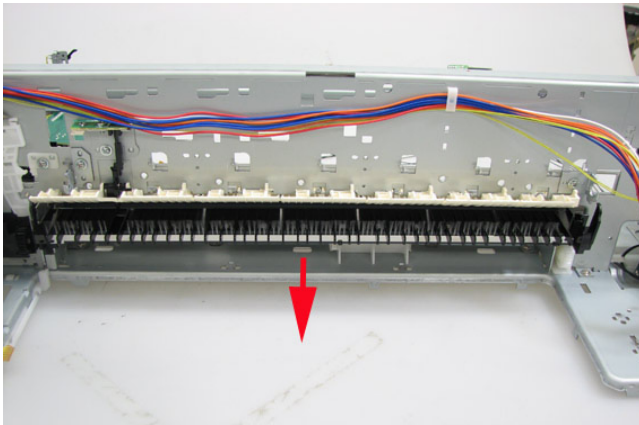
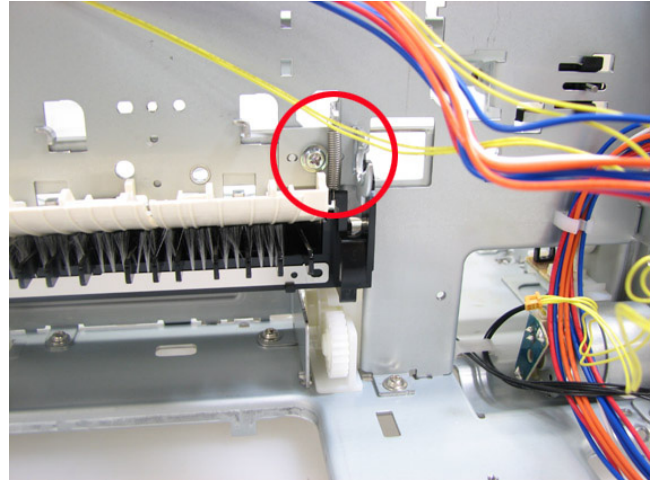
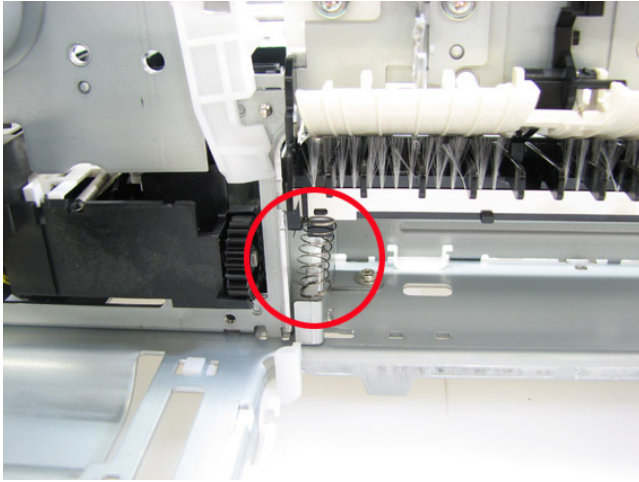
- 1) Disengage the pressure roller spring from the cam, and rest it to the chassis. (7 springs)



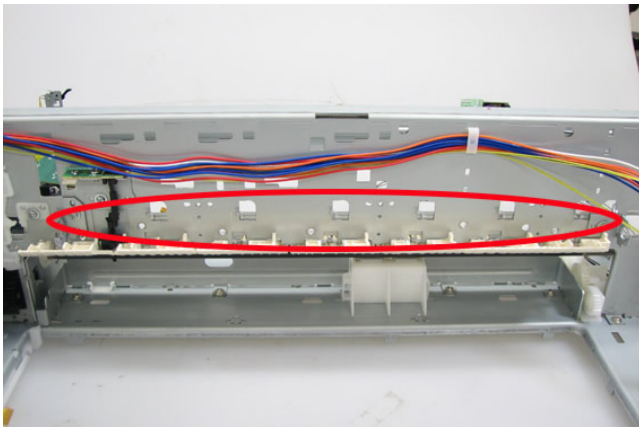
- 2) Slide the PR cam shaft to remove.



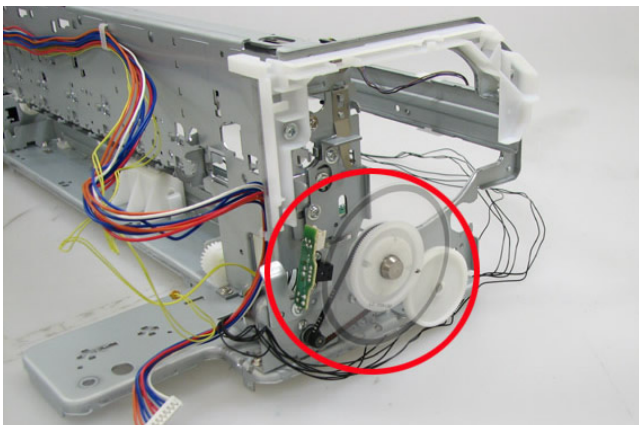
3) Remove the left and right paper guide springs, then pull the paper guide toward you to remove it from the chassis.



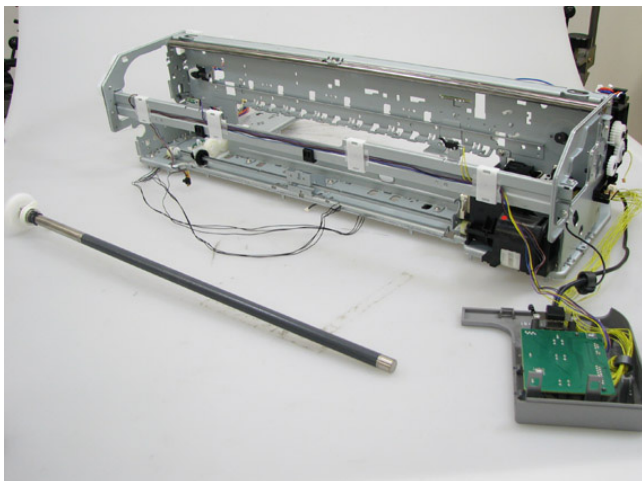
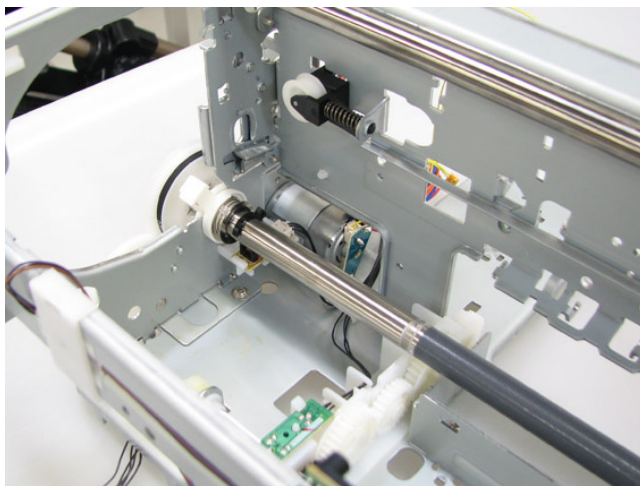
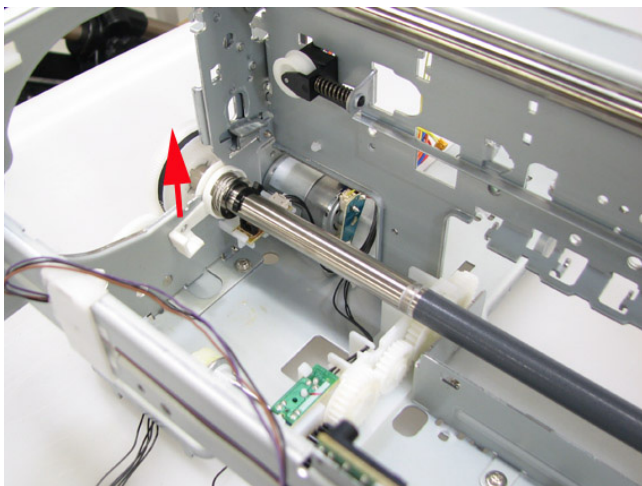
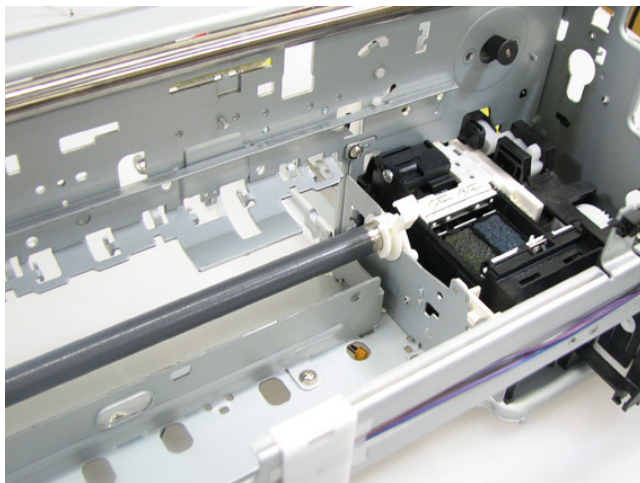
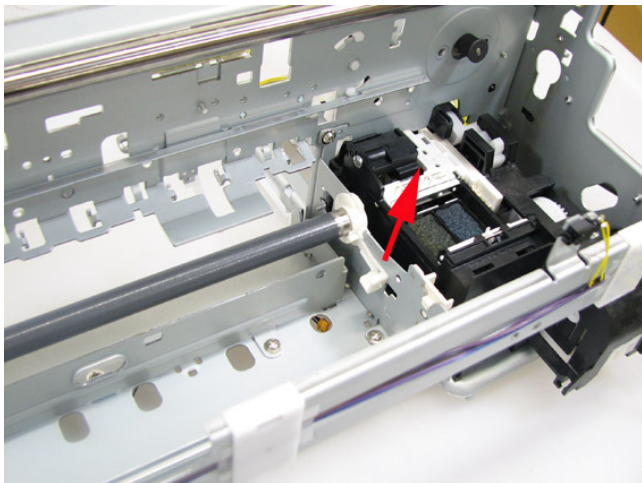
4) Remove the pressure roller springs, then the pressure roller unit.



5) Remove the timing slit disk and belt.



6) On the left and right sides of the chassis, rotate the feed roller bushes to release the roller, then remove it.



◀<3-2. Part Replacement Procedures>▶▶

4. ADJUSTMENT / SETTINGS

4-1. User Mode

User mode functions can be performed via the Resume/Cancel button or from the printer driver Maintenance tab.

<Standalone printer operation>

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

Function	Procedures	Power LED blinking	Remarks
Nozzle check pattern printing	Perform via the Resume/Cancel button, or from the printer driver Maintenance tab.	1 time	Set a sheet of plain paper (A4 or Letter) in the rear tray. (No paper feeding from the front tray)
Print head manual cleaning	- Cleaning of all colors at the same time: Perform via the Resume/Cancel button. - Cleaning of Group-1 and Group-2 separately, or all colors at the same time: Perform from the printer driver Maintenance tab.	2 times	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 from the printer driver Maintenance tab.	---	If print head manual cleaning is not effective, perform this cleaning. Since the deep cleaning consumes more ink than regular cleaning, it is recommended to perform deep cleaning only when necessary.
Automatic print head alignment	Perform via the Resume/Cancel button, or from the printer driver Maintenance tab.	3 times	Set 2 sheets of plain paper (A4 or Letter) in the rear tray. (No paper feeding from the front tray)
Manual print head alignment	Perform from the printer driver Maintenance tab.	---	Set 2 sheets of plain paper (A4 or Letter) in the rear tray. (No paper feeding from the front tray)
Print head alignment value printing	Perform from the printer driver Maintenance tab.	---	Confirmation of the current print head alignment values.
Paper feed roller cleaning	Perform from the printer driver Maintenance tab.	---	The paper feed rollers of the rear tray rotate while being pushed to the paper lifting plate. Since the rollers will wear out in this cleaning, it is

			recommended that you perform this only when necessary.
Bottom plate cleaning	Perform via the Resume/Cancel button, or from the printer driver Maintenance tab.	5 times	Cleaning of the platen ribs when the back side of paper gets smeared. Fold a sheet of plain paper (A4 or Letter) in half crosswise, then unfold and set it in the rear tray with the folded ridge facing down. (No paper feeding from the front tray)
Ink agitation	Perform from the printer driver Maintenance tab (Click Custom Settings , and select "Execute ink quality maintenance automatically.")	---	When "Execute ink quality maintenance automatically" is not selected in Custom Settings , periodic ink agitation is not performed automatically. Perform ink agitation once a week.

4-2. Service Mode

(1) Service mode operation procedures

Use the Service Tool on the connected computer.

1) Start the printer in the service mode.

- i. With the printer power turned off, while pressing the Resume/Cancel button, press and hold the Power button. (DO NOT release the buttons.)
- ii. When the Power LED lights in blue, while holding the Power button, release the Resume/Cancel button. (DO NOT release the Power button.)
- iii. 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 blue, starting with Alarm LED.)
- iv. When the Power LED lights in blue, the printer is ready for the service mode operation.

2) Start the Service Tool on the connected computer.

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

(2) Service Tool functions

Use the Service Tool version 1.030 or later. (The screen below is for Version 1.030.)

No.	Name	Function	Remarks
(1)	Test Print	Service test print	<p>Paper will feed from the rear tray. Paper size: A3 or LDR Service test print:</p> <ul style="list-style-type: none"> - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - USB serial number - Destination - Process inspection information - Ink system function check result - CD / DVD sensor check result
(2)	EEPROM	EEPROM information print	<p>The dialog box opens to select the paper source. Select Rear tray, and click OK.</p> <p>EEPROM information print:</p> <ul style="list-style-type: none"> - Model name - ROM version

			<ul style="list-style-type: none"> - Ink absorber counter value (ink amount in the ink absorber) - Print information - Error information, etc.
(3)	CD-R	CD-R check pattern print	Not used in servicing.
(4)	LF / Eject	LF / Eject correction pattern print and correction	See " LF / Eject Correction " below.
(5)	Left Margin	Left margin pattern print	Not used.
(6)	Deep Cleaning	Print head deep cleaning	Cleaning of all colors at the same time
(7)	Main	Main ink absorber counter resetting	Set a sheet of A4 or Letter sized plain paper. After the ink absorber counter is reset, the counter value is printed automatically.
(8)	Platen	Platen ink absorber counter resetting	Not used.
(9)	EEPROM Clear	EEPROM initialization	<p>The following items are NOT initialized, and the shipment arrival flag is not on:</p> <ul style="list-style-type: none"> - USB serial number - Destination settings - Record of ink absorber counter resetting and setting - Record of repair at the production site - CD / DVD print position correction values - LF / Eject correction values - Production site E-MIP correction value and enabling of it - Record of disabling the function to detect the remaining ink amount - Ink absorber counter value - Wetting liquid counter value
(10)	Panel Check	Button and LCD test	Not used.
(11)	Set Destination	Destination settings	<p>Select the destination, and click Set.</p> <p>ASA, AUS, BRA, CHN, CND, EUR, JPN, KOR, LTN, TWN, USA</p>
(12)	CD-R Correction	CD / DVD print position correction (X and Y direction)	<p>Also for printing of the CD / DVD check pattern in refurbishment operation.</p> <p>The reference center in the X direction and in the Y direction can be adjusted respectively. (Adjustable range between -1.0 mm to +1.0 mm, in 0.1 mm increment)</p>
(13)	LF / EJECT Correction	LF / Eject correction value setting	Not used.
(14)	Left Margin Correction	Left margin correction value setting	Not used.
(15)	Ink Absorber Counter	Ink absorber counter setting	See " Ink Absorber Counter Setting " below.
(16)	Wetting Liquid Counter	Wetting liquid counter setting	See " Wetting Liquid Counter Setting " below.

(3) LF / Eject correction

After replacement of the feed roller, platen unit, or logic board in repair servicing or in refurbishment operation, perform the adjustment to maintain the optimal print image quality. (In platen unit replacement, apply paper debris over the eject rollers before performing LF / Eject correction.)

- 1) Click **LF/EJECT** of the Service Tool on the connected computer, select the paper source, the paper type, and whether to feed blank paper.

- Paper source: Select **Rear tray**.
- Media type: Select **SG-201**.
- Blank paper feed: Select **Yes** when the platen unit is replaced.

Select **No** when the feed roller or logic board is replaced.

When **Blank Paper Feed** is **Yes**, perform steps 2) to 5).

When **Blank Paper Feed** is **No**, perform steps 3) to 5).

- 2) Set the following paper in the rear tray, and click **OK**. The paper will feed.

- Type: Plain paper.
- Size: A4 or LTR
- Qty: 15 sheets

When all sheets (15 sheets) are fed (and the Power LED turns on blue), the printer is ready for printing the LF / Eject correction pattern.

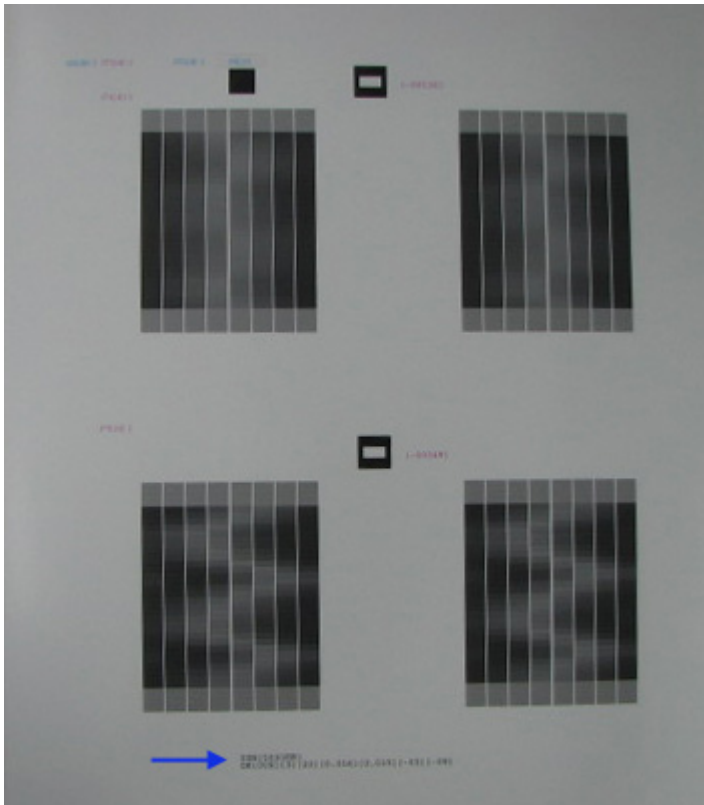
- 3) Set the following paper in the rear tray, and open the front feed support.

- Type: SG-201 (Photo Paper Plus Semi-gloss)
- Size: A3+
- Qty: 1 sheet

- 4) According to the Blank Paper Feed selection, press the Resume/Cancel button or click **OK** in the Service Tool.

- When Blank Paper Feed is **Yes**, press the Resume/Cancel button of the printer.
- When Blank Paper Feed is **No**, click **OK** in the Service Tool.

- 5) The LF / Eject correction pattern as shown below is printed while the correction values are automatically written to the EEPROM. After the pattern is printed, the printer is ready for selection of another function.



Confirm that "OK" is printed at the bottom of the paper (blue arrowed area in the photo above).

If it reads "NG," perform LF / Eject correction again. (Blank paper feeding is not necessary.)

(4) Ink absorber counter setting

Set the ink absorber counter value to a new EEPROM after the logic board is replaced in servicing.

- 1) Before replacement of the logic board, check the ink absorber counter value in EEPROM information print.
- 2) After replacement of the logic board, the ink absorber counter value should be set in the service mode using the Service Tool.

In the **Ink Absorber Counter** section of the Service Tool, select **Main** from the **Absorber** pull-down menu.

From the **Counter Value(%)** pull-down menu, select the value (in 10% increments) which is the closest to the actual counter value confirmed before replacement of the logic board, and click **Set**.

- 3) Print EEPROM information to confirm that the value is properly set to the EEPROM.

(5) Wetting liquid counter setting

Set the wetting liquid counter value to a new EEPROM after the blade cleaner unit or logic board is replaced in servicing.

<When the blade cleaner unit is replaced>

- 1) After replacement of the blade cleaner unit, the wetting liquid counter value should be reset in the service mode using the Service Tool.
In the **Wetting Liquid Counter** section of the Service Tool, select **0** (zero) from the **Counter Value(%)** pull-down menu, and click **Set**.
- 2) Print EEPROM information to confirm that the value is set to "0.00" (W = 0.00).

<When the logic board is replaced>

- 1) Before replacement of the logic board, check the wetting liquid counter value (W = ###) in EEPROM information print.
- 2) After replacement of the logic board, the wetting liquid counter value should be set in the service mode using the Service Tool.
In the **Wetting Liquid Counter** section of the Service Tool, from the **Counter Value(%)** pull-down menu, select the value (in 10% increments) which is the closest to the actual counter value confirmed before replacement of the logic board, and click **Set**.
- 3) Print EEPROM information to confirm that the value (W = ###) is properly set to the EEPROM.

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

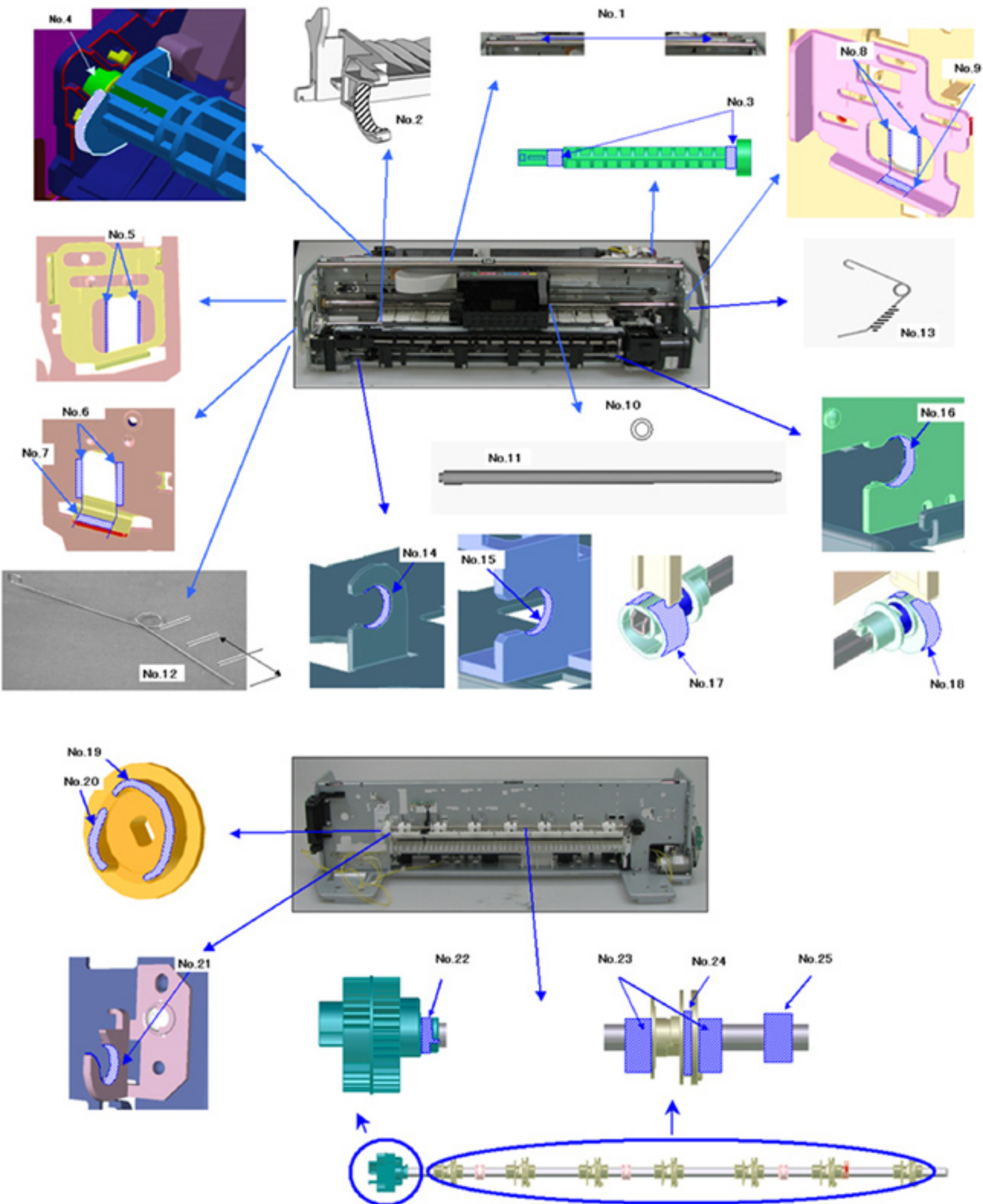
4-3. Grease Application

(1) Printer unit

No	Part name	Where to apply grease / oil	Grease	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	LF 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	AP swing arm lock lever	PG641	9 to 18	1	1

	lock cam	sliding portion				
20	AP swing arm lock cam	AP swing arm lock lever sliding portion	PG641	4.5 to 9	1/2	1
21	PR lift chassis	PR release cam sliding portion	HP-300	27 to 54	3	1
22	PR lift shaft ass'y	PR lift chassis sliding portion	KG107A	9 to 18	1	1
23	PR lift shaft ass'y	PR holder sliding portion	KG107A	9 to 18	1	14
24	PR lift shaft ass'y	PR spring sliding portion	HP-300	9 to 18	1	7
25	PR lift shaft ass'y	PR lift shaft bearing sliding portion	GP-1000R	18 to 36	2	3

* 1 drop = 9 to 18 mg



4-4. Special Notes on Servicing

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

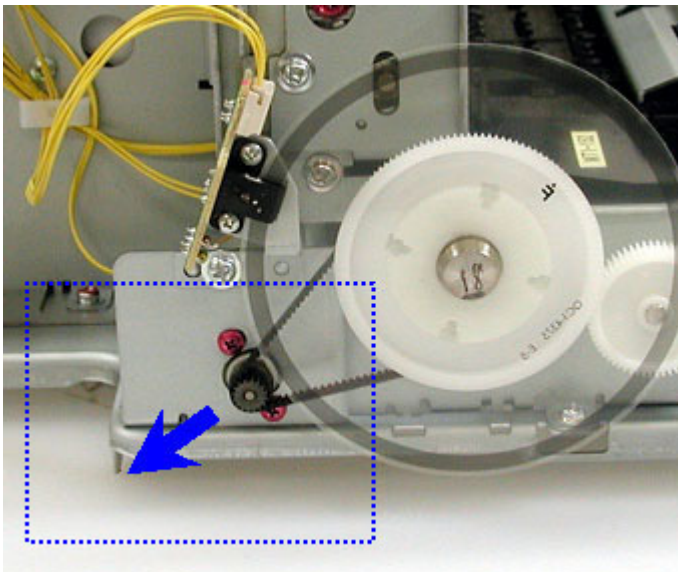
For problems that are supposed to be caused by the print head (smeared printing, uneven printing, or non-ejection of ink, etc.), print the nozzle check pattern in the user mode to determine whether the print head is faulty or not.

< Procedures >

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

(2) Paper feed motor adjustment

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



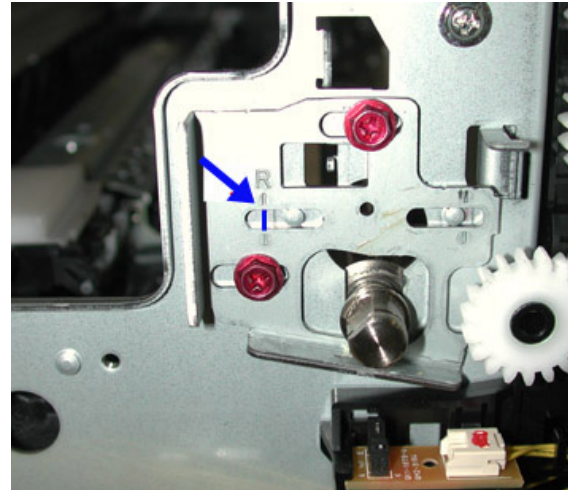
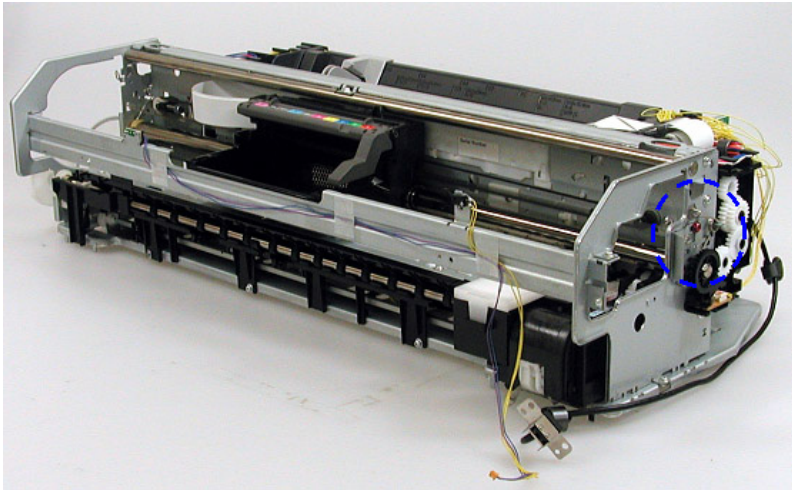
The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(3) Carriage unit replacement

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

Before removing the screws, put a mark on the main chassis to indicate the carriage shaft position. (The screws are either the red ones or the regular ones.)

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

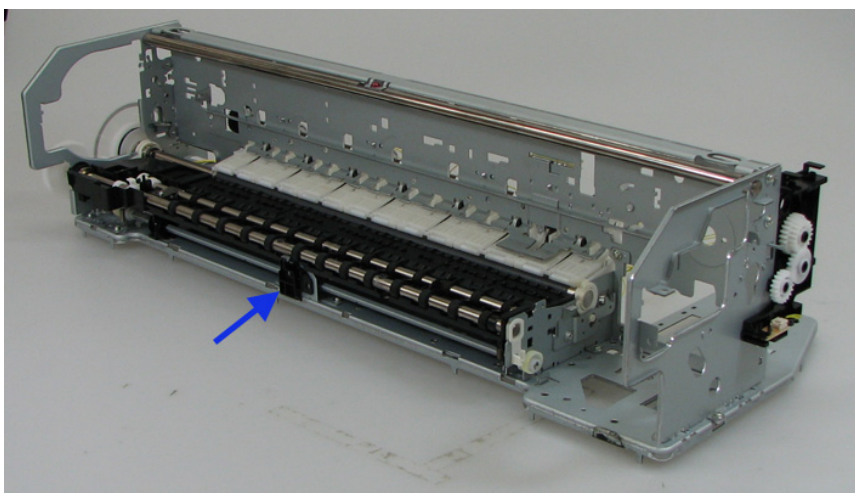


The screws on the carriage shaft adjustment plate may be loosened only at replacement of the carriage unit. DO NOT loosen them in other cases.

(4) Platen unit replacement

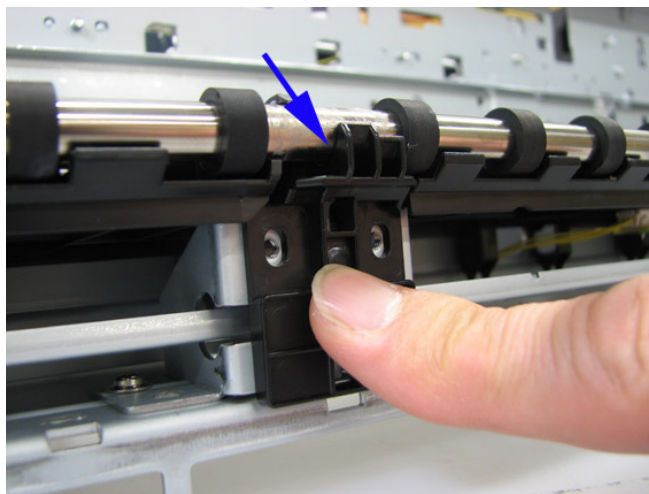
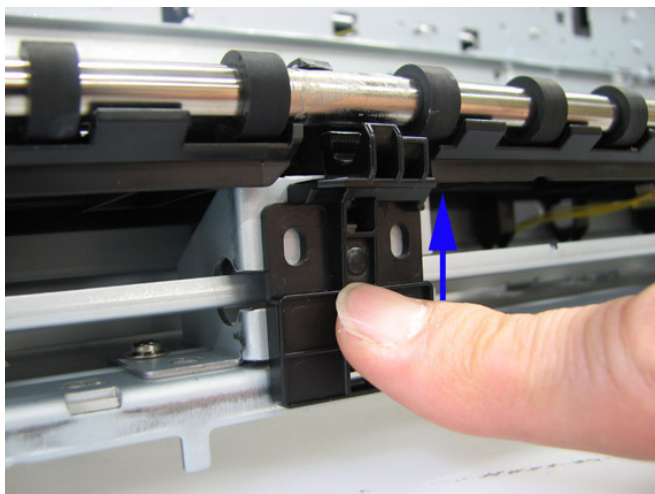
When attaching the platen unit, perform adjustment to protect the eject roller shaft from bending due to weight of the spur unit. (The screws to be removed and re-fastened for adjustment are either the red ones or the regular ones.)

<Adjustment plate>

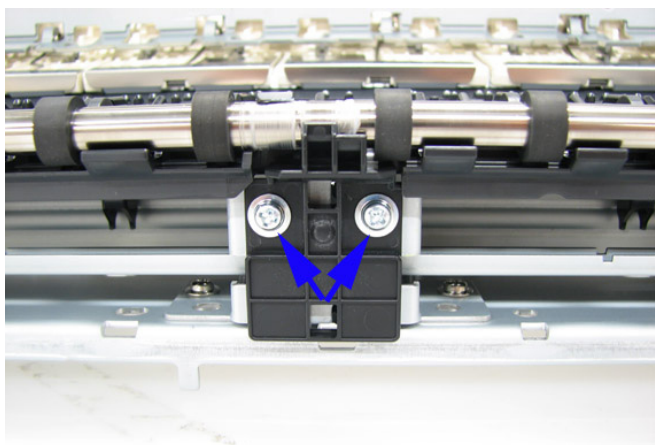


<Adjustment procedures>

- 1) Without the spur unit, slide the adjustment plate upward (as shown in the left photo) until it slightly contacts the eject roller shaft (as shown in the right photo).
Be cautious not to push up the eject roller shaft.



- 2) Fasten the screws to secure the plate in the adjusted position.



- 3) After adjustment, be sure to perform the service test print, and confirm that no strange noise or faulty print operation (uneven printing or print head contacting the paper) occurs.



The screws securing the adjustment plate may be loosened only at replacement of the platen unit. DO NOT loosen them in other cases.

(5) Ink absorber counter setting

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

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

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

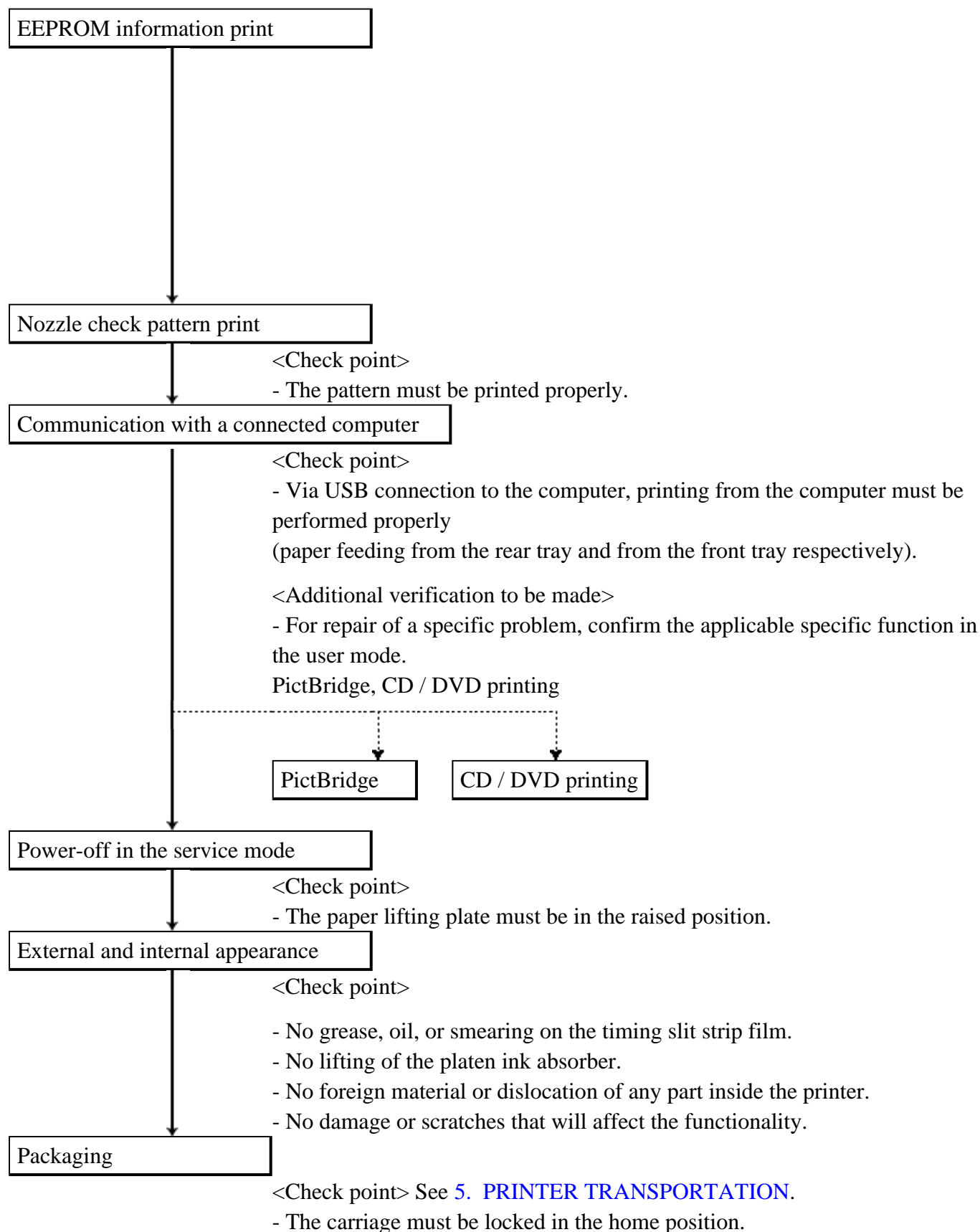
See [4-2. Service Mode](#), [\(4\) Ink absorber counter setting](#).



4-5. Verification After Repair

(1) Standard inspection flow

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



(2) Service test print

<Service test print sample>

Print on A3 or LDR sized paper.



(3) Ink absorber counter value print

<Print sample>

D=000.0



5. 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 rear tray 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.



-
- (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. Make sure that the carriage is locked in place at power-off.
-



- If the print head must be removed from the printer and transported alone, attach the protective cap (used when the packing was opened) to the print head (to protect the print head face from damage due to shocks).
- If the packing material that fixed the carriage from the factory is still available, re-use it to fix the carriage (to prevent the carriage unlocked during transportation).

◀ <5. PRINTER TRANSPORTATION> ▶