

**iP3600 / iP3680
SIMPLIFIED SERVICE MANUAL**

**QY8-13BW-000
Rev. 00: August 2008
Canon Inc.**

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1. LIST OF ERROR DISPLAY / TROUBLESHOOTING

1-1. Operator Call Errors (Alarm LED Lit In Orange)

Errors and warnings are displayed by the following ways:

- Operator call errors are indicated by the Power LED lit and the Alarm LED blinking (the number of blinks differs according to the type of the error).
- Messages are displayed on the printer driver Status Monitor.
- Error codes are printed in the "operator call/service call error record" area in EEPROM information print.

Buttons valid when an operator call error occurs:

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

LED (blinking in orange)	Error	Error code	Solution
2 times	No paper in the rear tray.	[1000]	Set the paper in the rear tray, and press the Resume/Cancel button.
	No paper in the cassette.	[1003]	Set the paper in the cassette, and press the Resume/Cancel button.
3 times	Paper jam.	[1300]	Remove the jammed paper, and press the Resume/Cancel button.
	Paper jam in the cassette.	[1303]	Remove the jammed paper, and press the Resume/Cancel button.
	Paper output tray closed.	[1250]	Open the paper output tray.
4 times	Ink may have run out.	[1600]	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 not installed.	[1660]	Install the applicable ink tank(s) properly, and confirm that the LED's of all the ink tanks light in red.
5 times	Print head not installed, or faulty print head ID.	[1401]	Install the print head properly.
	Print head temperature sensor error.	[1403]	Re-set the print head. If the error is not cleared, the print head may be defective. Replace the print head.
	Print head NVRAM error.	[1405]	Re-set the print head. If the error is not cleared, the print head may be defective. Replace the print head.
7 times	Ink tank in a wrong position.	[1680]	Install the ink tank in the correct position.
	Multiple ink tanks of the same color installed.	[1681]	Confirm that each ink tank is installed in the correct position.
8 times	Warning: The ink absorber becomes almost full.	[1700]	Replace the ink absorber, and reset the ink absorber counter. (See 2-1, "Service Mode.") 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.
		[1701]	
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.

LED (blinking in orange)	Error	Error code	Solution
13 times	The remaining ink amount unknown (raw ink present).	[1683]	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one. Printing with a once-empty ink tank can damage the printer. 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 EEPROM that the function to detect the remaining ink amount was disabled.
14 times	Ink tank not recognized.	[1684]	A non-supported ink tank is installed. Install the supported ink tank.
16 times	No ink (no raw ink).	[1688]	Replace the ink tank. Printing with an empty ink tank can damage the printer. To continue printing without replacing the ink tank, 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 EEPROM that the function to detect the remaining ink amount was disabled.)
19 times	Non-supported hub	[2002]	Remove the applicable USB hub from the PictBridge (USB) port.

1-2. Service Call Error (Cyclic Blinking in Orange (Alarm LED) and Green (Power LED))

Cycles of blinking in orange and green	Error	Error code	Conditions	Solution (Check points and replacement items)
2 times	Carriage error	[5100]	An error occurred in the carriage encoder signal.	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> - Timing slit disk film - Carriage unit - Logic board - Carriage motor
3 times	Line feed error	[6000]	An error occurred in the LF encoder signal.	<ol style="list-style-type: none"> 1) Smearing or scratches on the LF / EJ slit film; clean the LF / EJ slit film. 2) Foreign material or paper debris in the LF drive; remove foreign material. 3) Cable connection 4) Part replacement: <ul style="list-style-type: none"> - LF / EJ slit film - LF / EJ timing sensor unit - Paper feed roller unit - Logic board - Paper feed motor
4 times	PG cam sensor error	[5C00]	An error occurred in the purge unit.	<ol style="list-style-type: none"> 1) Foreign material or paper debris around the purge drive system unit; remove foreign material. 2) Cable connection 3) Part replacement: <ul style="list-style-type: none"> - Purge drive system unit - Logic board
5 times	ASF cam sensor error	[5700]	An error occurred in the ASF cam sensor during paper feeding from the rear tray.	<ol style="list-style-type: none"> 1) Cable connection 2) Part replacement: <ul style="list-style-type: none"> - ASF unit - PE sensor board unit - Logic board
6 times	Internal temperature error	[5400]	The internal temperature is not normal.	<ol style="list-style-type: none"> 1) Cable connection 2) Part replacement: <ul style="list-style-type: none"> - Carriage unit - Logic board - Print head

Cycles of blinking in orange and green	Error	Error code	Conditions	Solution (Check points and replacement items)
7 times	Ink absorber full	Japan: [5B01] Others: [5B00]	The ink absorber is supposed to be full.	1) Ink absorber condition 2) Part replacement: - Ink absorber kit 3) Ink absorber counter value in the EEPROM; reset the ink absorber 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 print head voltage is abnormal.	1) Part replacement: - Print head and logic board (Replace them at the same time.) - Power supply unit
11 times	Carriage lift mechanism error	[5110]	The carriage did not move up or down properly.	1) Foreign material or paper debris that obstructs the carriage movement; remove foreign material. 2) Part replacement: - Switch system unit - Carriage unit
12 times	APP position error	[6A80]	An error occurred in the APP motor.	1) Foreign material or paper debris around the purge drive system unit; remove foreign material. 2) Foreign material or paper debris around the ASF unit; remove foreign material.
14 times	APP sensor error	[6A90]	An error occurred during paper feeding or purging.	3) Cable connection 4) Part replacement: - Purge drive system unit - Logic board
15 times	USB VBUS overcurrent	[9000]	The USB VBUS is overloaded.	1) Part replacement: - Logic board
16 times	Pump roller sensor error	[5C20]	The pump roller position cannot be detected.	1) Cable connection 2) Part replacement: - Purge drive system unit
19 times	Ink tank position sensor error	[6502]	None of the ink tank position is detected.	1) Ink tank position; confirm the ink tank position. 2) Re-set or replacement of ink tanks 3) Cable connection 4) Part replacement: - Spur unit - Logic board
20 times	Other hardware error	[6500]	An unidentified error occurred.	1) Part replacement: - Logic board

Cycles of blinking in orange and green	Error	Error code	Conditions	Solution (Check points and replacement items)
21 times	Drive switch error	[C000]	Drive was not switched properly.	1) Foreign material or paper debris in the drive switch area; remove foreign material. 2) Part replacement: - Purge drive system unit - ASF unit
23 times	Valve cam sensor error	[6C10]	The valve cam sensor was faulty at power-on or when purging was attempted.	1) Foreign material or paper debris around the purge drive system unit; remove foreign material. 2) Cable connection 3) Part replacement: - Purge drive system unit - Logic board

2. ADJUSTMENT / SETTINGS

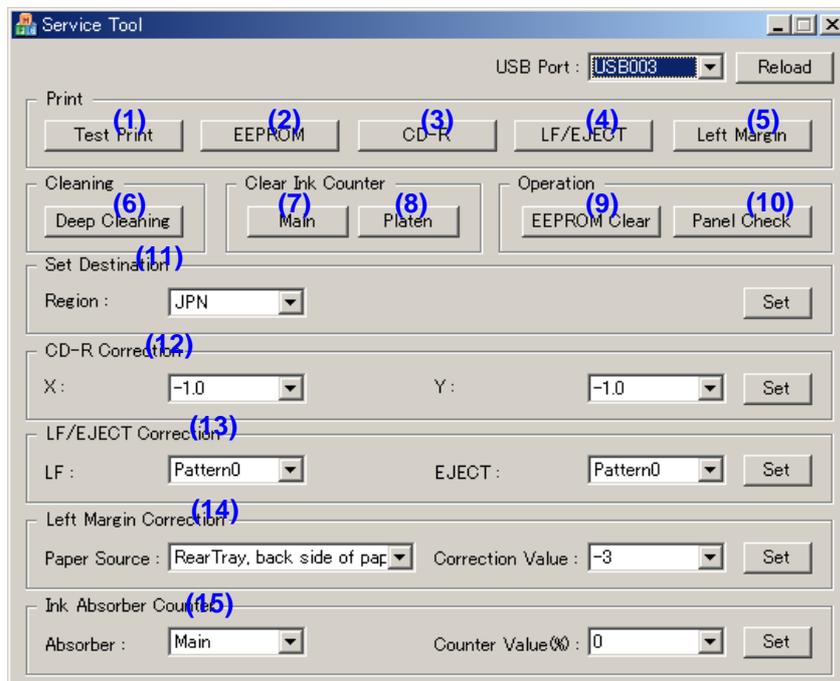
2-1. Service Mode

< 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 green, 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 green, starting with Alarm LED.)
 - iv. When the Power LED lights in greens, the printer is ready for the service mode operation:
- 2) Start the Service Tool on the connected computer, and click the button for a desired function.
 - During operation of the selected function, all the buttons of the Service Tool are dimmed and inactive.
 - When the operation is completed, "A function was finished." is displayed, and another function can be selected.
 - If a non-supported function is selected, "Error!" is displayed. Click **OK** in the error message dialog box to exit the error.

< Service Tool Functions >



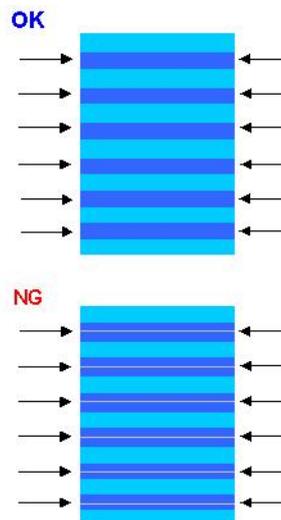
No.	Name	Function	Remarks
(1)	Test Print	Service test print	Paper will feed from the rear tray. Service test print items: - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - USB serial number - Destination - EEPROM information - Barcode (model name + destination), etc.
(2)	EEPROM	EEPROM information print	The dialog box opens to select the paper source. Select Rear tray or Cassette , and click OK . EEPROM information print items: - Model name - ROM version - Ink absorber counter value (ink amount in the ink absorber) - Print information - Error information, etc.
(3)	CD-R	CD-R check pattern print	Not used.
(4)	LF/Eject	LF/Eject correction pattern print	See "LF / Eject correction" below.
(5)	Left Margin	Left margin pattern print	Not used.
(6)	Deep Cleaning	Print head deep cleaning	Cleaning of Black and Color at the same time
(7)	Main	Main ink absorber counter reset	Set a sheet of A4 or Letter sized paper. After the ink absorber counter is reset, the counter value is printed automatically.
(8)	Platen	Platen ink absorber counter reset	Not used.
(9)	EEPROM Clear	EEPROM initialization	The following items are NOT initialized, and the shipment arrival flag is not on: - Destination settings - Ink absorber counter value (ink amount in the ink absorber) - USB serial number - LF / Eject correction value - Record of ink absorber counter resetting and setting - Record of repair at the production site, etc.
(10)	Panel Check	Button and LCD test	Not used.
(11)	Set Destination	Destination settings	Select the destination, and click Set . ASA, AUS, BRA, CHN, CND, EUR, JPN, KOR, LTN, TWN, USA

No.	Name	Function	Remarks
(12)	CD-R Correction	CD / DVD print position correction	Not used.
(13)	LF/EJECT Correction	LF / Eject correction value setting	See "LF / Eject correction" below.
(14)	Left Margin Correction	Left margin correction value setting	Not used.
(15)	Ink Absorber Counter	Ink absorber counter value setting	See "Ink absorber counter setting" below.

< LE / Eject correction >

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

- 1) Print the LF / Eject correction pattern.
Click **LF/EJECT** of the Service Tool on the connected computer, select the paper source and the paper type, and print the pattern. 5 sheets of paper will be used for the pattern printing.
 - Paper source: Select either **Rear tray** or **Cassette**.
 - Media type: Select one from **HR-101**, **GF-500/Office Planner**, **HP Bright White**, and **Canon Extra/STEINBEIS**.
- 2) When printing is finished, the printer returns to be ready for selection of another function.
- 3) In the printout, determine the Pattern No. in which streaks or lines are the least noticeable for the LF check pattern and the Eject check pattern respectively. (LF Pattern No. 0 to 4, Eject Pattern No. 0 to 4)



- 4) In the **LF/EJECT Correction** section of the Service Tool, select the Pattern No. (from 0 to 4) determined in step 3) for **LF** and **EJECT** respectively, and click **Set**.
- 5) The selected LF and Eject correction values are written to the EEPROM, making the E-MIP correction value (which was set at shipment from the production site) invalid.

Note: At the production site, the E-MIP correction, which is equivalent to the LF / Eject correction, is performed using the special tool, and the E-MIP correction value is written to the EEPROM as the valid data.

When LF / Eject correction is performed, the LF / Eject correction values become valid

instead of the E-MIP correction value (thus, in the initial EEPROM information print, "LF = *" and "EJ = *" are printed, but the selected values are printed after the LF / Eject correction).

< 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) Replace the logic board.
- 3) Start the printer in the service mode.
- 4) In the **Ink Absorber Counter** section of the Service Tool, select an appropriate ink absorber type from the **Absorber** pull-down menu.
For the iP3600 / iP3680, select **Main**.
- 5) From the **Counter Value (%)** pull-down menu, select the value which is the closest to the actual counter value confirmed before replacement of the logic board.
- 6) Click **Set**.
- 7) Print EEPROM information to confirm that the value is properly set to the EEPROM.

2-2. User Mode

Function	Procedures	Remarks
Nozzle check pattern printing	Perform from the printer driver Maintenance tab, or see "Standalone printer operation" below.	Set a sheet of plain paper (A4 or Letter) in the cassette.
Print head cleaning	Perform from the printer driver Maintenance tab, or see "Standalone printer operation" below.	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 cleaning is not effective, perform this cleaning. Since the deep cleaning consumes more ink than regular cleaning, it is recommended to perform deep cleaning only when necessary.
Manual print head alignment	Perform from the printer driver Maintenance tab.	Set 3 sheets of plain paper (A4 or Letter) in the cassette.
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 rotate while being pushed to the paper lifting plate. Since the rollers will wear in this cleaning, it is recommended to perform this only when necessary.

Function	Procedures	Remarks
Bottom plate cleaning	Perform from the printer driver Maintenance tab, or see "Standalone printer operation" below.	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.

< 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 green the specified number of times listed in the table below, and release it. The operation starts.

Power LED (blinking in green)	Operation	Remarks
1 time	Manual print head cleaning	
2 times	Nozzle check pattern printing	Set a sheet of plain paper (A4 or Letter) in the cassette.
5 times	Bottom plate cleaning	

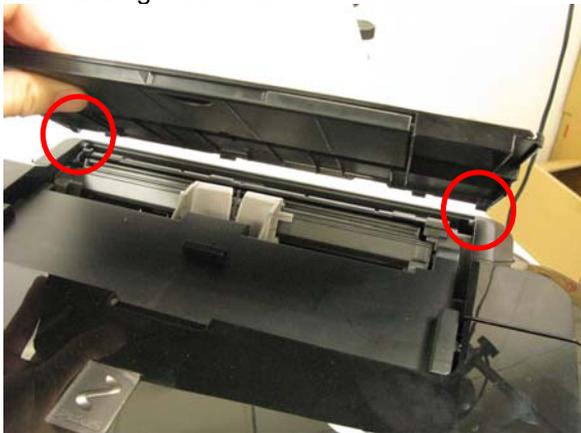
2-3. Special Notes on Assembling

(1) External housing removal

- 1) Remove the cassette.



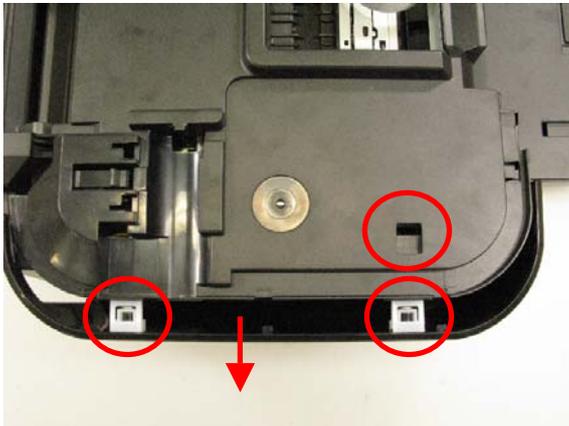
- 2) Remove the paper support unit and the access cover.
<While pushing the both sides of the paper support so that the center will warp slightly, release the left and right bosses. >



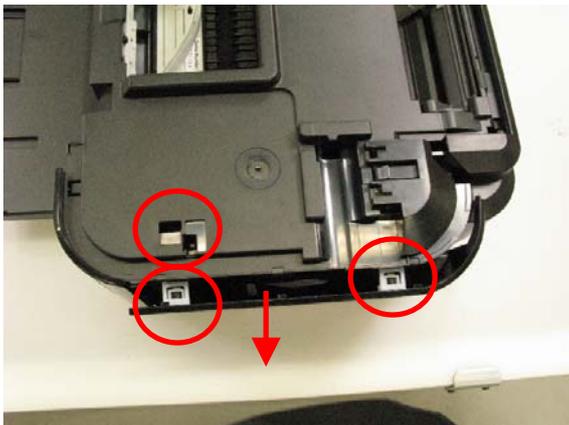
- 3) Remove the main case covers L and R.
< While inserting a flat-blade screwdriver, etc. through into a space under the main case cover; and pressing the claw downward, slide the main case cover toward the front side of the printer. >



- 4) Remove the side cover L.



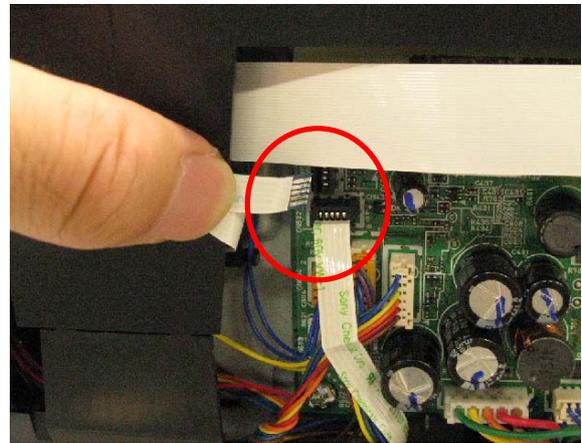
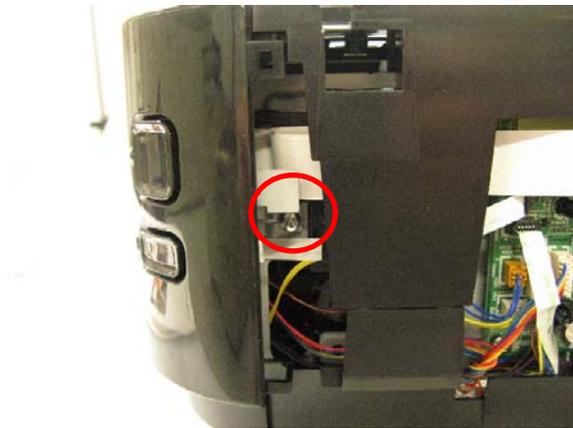
- 5) Remove the side cover R.



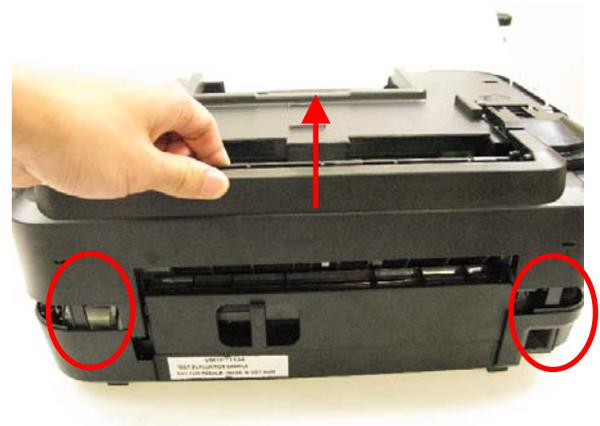
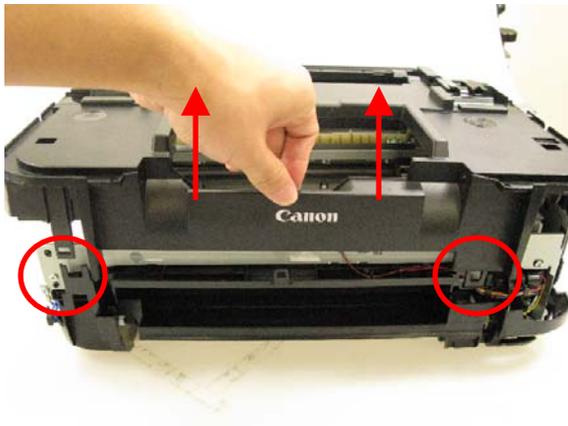
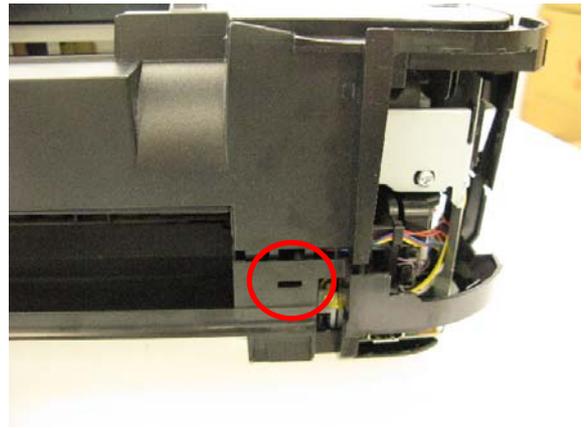
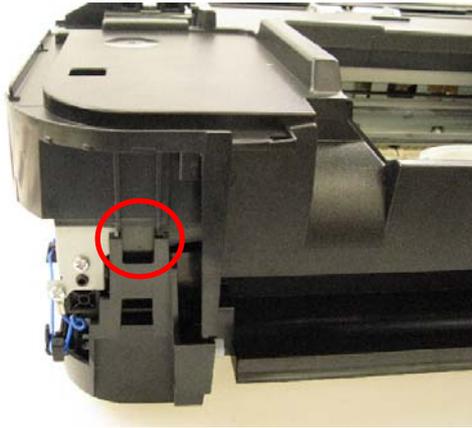
- 6) Remove the front door unit.
< While slightly warping the center of the paper output tray downward, release the left and right bosses. >



- 7) Remove the panel cover unit (1 screw).



8) Remove the main case unit.

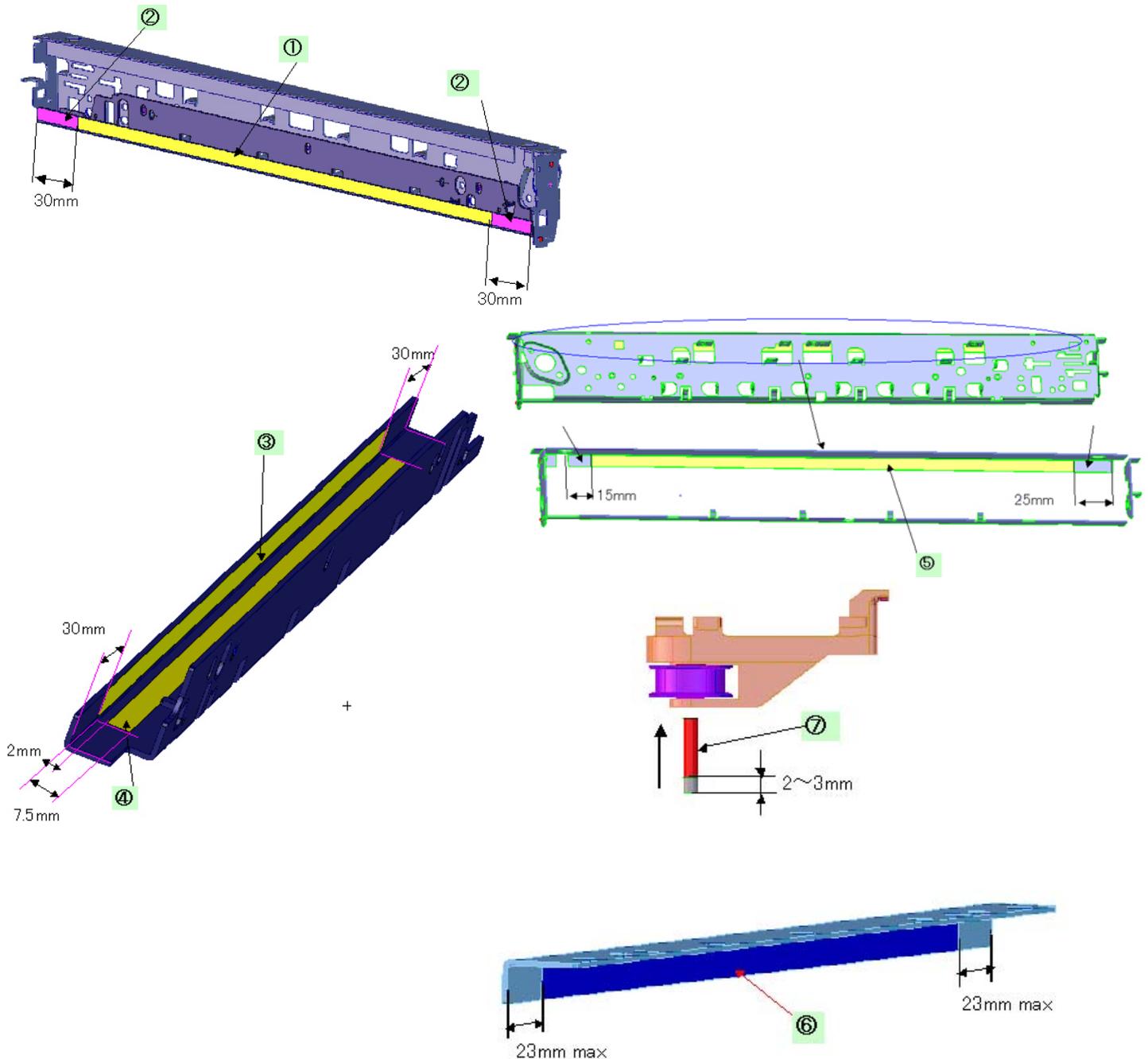


2-4. Grease Application

No.	Part name	Where to apply grease / oil	*1	Grease	Grease amount (mg)	*2
1	Carriage rail	The surface where the carriage unit slides	(1)	Floil KG107A	270 to 330	---
2	Carriage rail	The surface where the carriage unit slides	(2)	Floil KG107A	18 to 36	1 x 2
3	Carriage rail	The vertical surface where the bearing plate slides	(3)	Floil KG107A	360 to 440	---
4	Carriage rail	The bottom surface where the bearing plate slides	(4)	Floil KG107A	360 to 440	---
5	Chassis	The surface where the carriage slides	(5)	Floil KG107A	230 to 290	---
6	Carriage upper rail	The surface where the carriage slider moves	(6)	Floil KG107A	270 to 330	---
7	Parallel pin	The pin surface which contacts the idler pulley hole	(7)	Floil KG107A	9 to 18	1 x 1

*1: Drawing No.

*2: Number of drops (1 drop = 9 to 18 mg) x locations



2-5. Notes on 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 (a) 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 (b) below.

- Caution:
- a. If the print head is removed from the printer and left alone by itself, ink (the pigment-based black ink in particular) is likely to dry. For this reason, keep the print head installed in the printer even during transportation.
 - b. 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.

Note: 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).