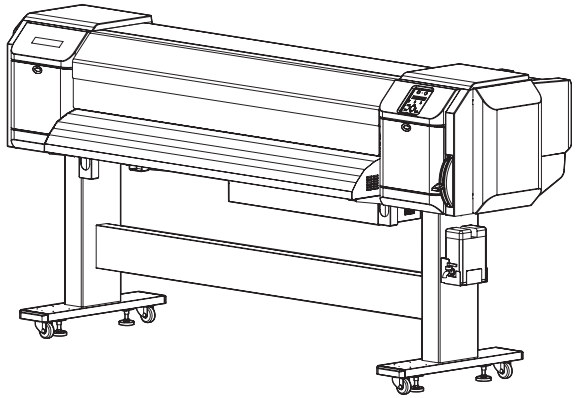
MUTOH

MAINTENANCE MANUAL

Full-Color Inkjet Printer

ValueJet

VJ-1624



VJ1624E-M-03

1 Safety Instruction

2 Troubleshooting

3 Parts Replacement

Important Notice

1. For Users in Europe

Important:
This is a Class A product approved for industrial environments. In a domestic environment this product may cause radio interference in which case you may be required to take adequate measures.

2. For Users in the United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3. Trademark Mentioned in this Manual

- MUTOH, ValueJet, VJ-1624 are registered trademarks or product names of MUTOH INDUSTRIES LTD.
- Windows95, Windows98, Windows98SE, Windows NT4.0, Windows2000, Windows XP, Windows Vista, and MS-DOS are registered trademarks or product names of Microsoft Corporation.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation.
- Other company and product names may be registered trademarks or product names.

Warranty Limitations

1. MUTOH INDUSTRIES LTD. warrants part repair or replacement as a sole measure only if a failure is found in the system or in the materials and workmanship of the product the seller produced.
   However, if the cause of failure is uncertain, decide the action after due mutual consultation.

2. The warranty shall not apply to any direct or indirect loss, or compensation for the loss due to the product that has been subject to misuse, neglect, or improper alternation.

3. The warranty period is described in the warranty certificate.

About this Manual

1. Purpose and Target Readers

   This manual explains preparations needed before maintaining and checking operations for MUTOH Full Color Ink Jet Printer (VJ-1624).

   This manual is prepared for the maintenance personnel of this printer.
   Before using this printer, fully understand the contents and directions in this manual.

2. Manual Configuration

Section	Contents
1 Safety Instructions	Explains types of warnings, cautions and warnings labeled on the printer for the both operators of the printer and maintenance personnel.
2 Troubleshooting	Explains troubles that may occur when using the printer and how to solve them.
3 Parts Replacement	Explains the procedures of replacement and removal of the service parts of the printer.
4 Adjustment	Explains the adjusting procedures of the printer parts.
5 Self-Diagnostic Mode	Explains the self-diagnostic functions of the printer.
6 Maintenance Mode 2	Explains the maintenance mode2 of the printer.
7 Maintenance	Explains daily maintenance of the printer.
8 Product Overview	Explains the features, part names, and functions of the printer.
9 Specifications	Explains the specifications of the printer.
10 Appendix	Explains the maintenance information and the exploded views for this printer.

Use the built-in self-diagnostic program to locate a defective part and adjust/check during maintenance.

3. Manual Notation

The following symbols are used in this manual for easier understanding of the information.

Symbol	Meaning
WARNING	Must be followed carefully to avoid death or serious bodily injury
CAUTION	Must be observed to avoid slight or moderate bodily injury or damage to your equipment
NOTE	Contains important information and useful tips on the operation of the product
TIP	Indicates useful tips for operating or understanding the equipment
☞	Indicates reference pages in this manual

4. Establishment Date of This Document

This document was established on Jan. 30, 2012.

5. Firmware version covered by this document

Firmware version: V.2.00

Revison	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
00	-	-	-	new	-	-	-
01	Revising	All	All	Modified the header and footer.	-	-	-
01	undocumented	2	2.1	Add Errors to “Error with massage”.	P2-3	-	-
01	undocumented	2	2.2	Add “E016 Flash ROM”.	P2-20	-	-
01	undocumented	2	2.2	Add E140,141,142,146,147,176,177,178,179	P2-28~29	-	-
01	Modification	3	3.2.4	Modified the illustration in STEP 2.	P3-10	-	-
01	Modification	3	3.2.6	Modified the illustration in STEP 1.	P3-12	-	-
01	Modification	3	3.2.10	Modified the illustration in STEP 7.	P3-17	-	-
01	Modification	3	3.2.11	Modified the illustration in STEP 5.	P3-20	-	-
01	Modification	3	3.2.12	Modified the procedurs.	P3-21	-	-
01	Modification	3	3.4.12	Modified the illustration in STEP 3.	P3-54	-	-
01	Modification	3	3.4.14	Modified the illustration in STEP 2.	P3-56	-	-
01	Modification	3	3.5.5	Modified the illustration in STEP 7.	P3-75	-	-
01	undocumented	3	3.2.8	Add “Replacing procedure”.	P3-82	-	-
01	undocumented	3	3.2.9	Add “Replacing procedure”.	P3-83	-	-
01	Modification	3	3.6.10	Modified the length of Ink tube.	P3-111	-	-
01	undocumented	3	3.7.6	Add “Replacing procedure”.	P3-127~128	-	-
01	undocumented	3	3.7.7	Add “Replacing procedure”.	P3-129	-	-
01	undocumented	3	3.7.8	Add “Replacing procedure”.	P3-130~131	-	-
01	Modifications	3	3.7.10	Add notification to “NOTE” in STEP16.	P3-140	-	-
01	Modifications	3	3.11	Modified the procedure.	P3-172	-	-
01	Modifications	4	4.8	Modified the “Rear/Edge sensor Adjustment”	P4-15~16	-	-
01	undocumented	4	4.9	Added “Cutter position adjustment”.	P4-17	-	-
01	Modifications	5	5.3.2	Added “S/C Log”	P5-5	-	-
01	Modifications	5	5.5	Added “Exhaust fan” and “S/C Log”.	P5-7	-	-
01	Modifications	5	5.5.10	Added “S/C Log” and “S/C Log Init.”	P5-16	-	-
01	Modifications	5	5.8	Modified “Rear/Edge sensor adjustment”	P5-26~27	-	-

Revison	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
01	Modifications	5	5.8.4	Modified Items of adjustment s.	P5-37	-	-
01	Modifications	5	5.8.5	Added “Bi-D Copy”	P5-44	-	-
01	Modifications	5	5.8.7	Modified “Test Printing Menu”	P5.47	-	-
01	Modifications	5	5.8.8	Modified “Long tore Menu”	P5-48	-	-
01	Modifications	5	5.12	Modified “Servo setting Items”	P5-65	-	-
01	Modifications	7	7.5	Modified “Lubrication List”	P7-8~9	-	-
01	Modifications	8	8.3.3	Added “Length setting”	P8-9	-	-
01	Modifications	Exploded View	XRailAssy1	Modified “AC Inlet”	P4	-	-
01	Modifications	Exploded View	Cursor Assy 1	Modified the length of C-110.	P10	-	-
02	Revising	ALL	Header,Footer	VJ1624E-M-01 → VJ1624E-M-02	-	-	-
02	Omitted	2	2.2	Added E093, E118 to E121	P2-28	-	-
02	Revising	4	4.2	02 or later → 03 or later	P4-2	-	-
02	Revising	4	4.3	02 or later → 03 or later	P4-4	-	-
02	Omitted	5	5.5	Added “S/C LogInit.” to the contents in the “Record”	P5-7	-	-
02	Omitted	5	5.5.2	Added the description to “TIP”	P5-10	-	-
02	Modification	5	5.7.4	Modified the description in STEP 1.	P5-38	-	-
02	Modification	5	5.7.5	Modified speed	P5-40	-	-
02	Omitted	5	5.7.7	Modified the discription in “How to print”	P5-48	-	-
02	Modification	5	5.7.11	Added “Counter for plugging / unplugging 1L adapter”	P5-53	-	-
02	Modification	5	5.10.2	(3) Modified adjusting values of the margin.	P5-64	-	-
02	Modofication	5	5.10.2	(2) Modified Speed	P5-61	-	-
03	Revising	ALL	Header,Footer	VJ1624E-M-02 → VJ1624E-M-03	-	-	-
03	F/W Ver. Up	2	2.2.3	E075 Err Head Cable → Head Temp	P.2-26	-	-
03	F/W Ver. Up	2	2.2.3	E079 Err Commu → Board Commu	P.2-27	-	-
03	Revising	3	ALL	Add Maintenance parts and Jigs	-	-	-

Revison	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
03	Modification	3	3.4.11	Modified the procedures of repalcing MAIN Board Assy	P.3-53	-	-
03	Omitted	3	3.4.6	Added the procedures.	P.3-47	-	-
03	Omitted	3	3.4.7	Added the procedures.	P.3-48	-	-
03	Omitted	3	3.4.12	Added the procedures.	P.3-56	-	-
03	Omitted	3	3.4.13	Added the procedures.	P.3-57	-	-
03	Omitted	3	3.4.14	Added the procedures.	P.3-58	-	-
03	Cacography	3	3.5.10 （VJ1624-M-02)	Deleted the procedure of replacing adsorption fan.	-	-	-
03	Cacography	3	3.6.4	Modified the procedure of replacing T fence.	P.3-110	-	-
03	Cacography	3	3.6.3(VJ1624E-M-02)	Deleted the procedures (CR motor Cable Assy).	-	-	-
03	Cacography	3	3.7.8	Added the procedures.	P.3-141	-	-
03	Cacography	3	3.7.9	Modified the illustrations.	P.3-145	-	-
03	Cacography	3	3.7.14	Modified the procedures of replacing Cariage Assy.	P.3-159	-	-
03	Addition of Maintenance part	3	3.7.15	Added the replacement procedures of Cutter spring.	P.3-163	-	-
03	Cacography	3	3.9.1 （VJ1624-M-02)	Deleted the removement procedure of IH cover U.	-	-	-
03	Cacography	3	3.9.1	Modified the procedures of replacing Cartridge Holder Assy.	P.3-174	-	-
03	Compliant with MSA 3.0.0	4	4.3	Added of the usage of MSA.	P.4-5 ～ P.4-49	-	-
03	Cacography	4	4.7.1	Modified the illustration.	P.4-58	-	-
03	Change of Jig	4	4.9	Modified the adjustment procedure of cutter holder.	P.4-61	-	-
03	F/W Ver. Up	5	5.1	Ver.1.00 → 2.00	P.5-3	-	-
03	F/W Ver. Up	5	5.4	• Modified the message of panel. • Modified NOTE.	P.5-6	-	-
03	Cacography	5	5.5.4	Modified 「Sen.4 : Cover」	P.5-12	-	-
03	F/WVer.Up	5	5.5.7	Modifiied the contents of Effect.	P.5-20	-	-

Revison	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
03	F/W Ver. Up	6	6.1	Ver.1.00 → 2.00	P.6-2	-	-
03	F/W Ver. Up	6	6.3.1	Modified the contents of Effect.	P.6-9	-	-
03	Cacography	10	10.2	DF-49472 → DF-49672 (MAIN-CNT Cable Assy)	P.10-2	-	-
03	Cacography	10	10.2	Vacuum Fan Assy → Vacuum Fan	P.10-2	-	-
03	Not to change	10	10.2	Deleted the manitenance parts （Heater, thermistor and cable) for Platen.	P.10-2	-	-
03	Cacography	10	10.2	Modified the configurations of VJ1624 Cursor Assy.	P.10-5	-	-
03	New	10	10.2	Added Cutter spring.	P.10-6	-	-
03	Cacography	10	10.2	Added VJ1624 Cursor Assy.	P.10-6	-	-
03	Maintenance parts are changed.	10	10.2	Waste Fluid Level Switch Assy → Waste Fluid Level Switch 2 Assy. DG-41091 → DG-43469	P.10-6	-	-
03	-	Exploded View	ALL	• Paper size is changed into A4 from A3. • Rev.A → B、Rev.B → C	-	-	-
03	Cacography	Exploded View	Self Diagnosis function Configuration 3	Modified Controller Menu	P.Ex-2	-	-
03	Cacography	Exploded View	Electric Wiring Diagram	• Modified MAIN Board J32. • Modified Maintenance part number（MAIN-CNT Cable Assy）	P.Ex-3	-	-
03	F/W Ver. Up	Exploded View	Maintenance Mode 2 Diagram	Modified the Effect Menu	P.Ex-2	-	-
03	Cacography	Exploded View	Y Rail Assy	Modified CR motor (Direct Pulley) Assy and CR Return Pulley Assy.	P.Ex-7	-	-
03	Not to change	Exploded View	Platen	Deleted the manitenance parts （Heater, thermistor and cable) for Platen.	P.Ex-8	-	-
03	Omitted	Exploded View	Platen	Added A-158,A-159,A-350.	P.Ex-8	-	-
03	Omitted	Exploded View	Cursor Assy1	• Added VJ tube 2-3. • Modified VJ1624 Cusor Assy	P.Ex-10	-	-
03	Omitted	Exploded View	Cursor Assy2	Added VJ tube 2-3.	P.Ex-11	-	-

Revison	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
03	Change of Maintenance parts	Exploded View	Cursor Assy3	• Solenoid Spring Assy → Strong Solenoid Spring. • Added VJ1624 Cursor Assy. • Added Cutter spring.	P.Ex-12	-	-
03	Omitted	Exploded View	I/HAssy1 (Cartridge)	Listed the length of tube.	P.Ex-14	-	-
03	Omitted	Exploded View	I/HAssy2 (Sub Tank)	Listed the length of tube.	P.Ex-15	-	-
03	Maintenance parts are changed.	Exploded View	Cover Assy（R）	Added H-96, H-97.	P.Ex-17	-	-
03	Change of parts	Exploded View	Roll Media Holder Assy	Changed the configuration of parts.	P.Ex-19	-	-
03	Maintenance parts are changed.	Exploded View	Stand	Waste Fluid Level Switch Assy → Waste Fluid Level Switch 2 Assy. DG-41091 → DG-43469	P.Ex-20	-	-
03	Change of Jig	Exploded View	Other	Modified the illustrations of Cutter adjustment Jig.	P.Ex-21	-	-
03	Omitted	Exploded View	Take Up 1	Added Manitenance parts name.	P.Ex-22	-	-
03	Omitted	Exploded View	Take Up 2	Added Manitenance parts name.	P.Ex-23	-	-
03	Omitted	Exploded View	Folding direction	Added of the Head_FFC.	P.Ex-24	-	-
03	Omitted	Exploded View	Folding direction	Added of the CR_FFC.	P.Ex-25	-	-
03	Omitted	Exploded View	Folding direction	Addedf the Panel _FFC.	P.Ex-26	-	-
03	Omitted	Exploded View	Folding direction	Added of the JUNC_FFC.	P.Ex-27	-	-

1 Safety Instruction

1.1 Introduction

This chapter explains the installation of this printer, the warning terms that operators need to know, the caution items and warning labels on the main unit.

WARNING

Make sure to follow all instructions and warnings on this manual when installing, operating, or maintaining the equipment.

1.2 Types and Meanings of Warnings

Safety terms in this manual and the contents of warning labels attached to the printer are categorized into the following five types depending on the degree of risk (or the scale of the accident).
Make sure to understand the meaning of the following warning terms, and follow the instruction in this manual

Safety terms	Details
WARNING	Must be followed carefully to avoid death or serious bodily injury.
CAUTION	Must be observed to avoid slight or moderate bodily injury or damage to the whole or each part of the product.
NOTE	Contains important information and useful tips on the operation of the product.

1.3 Warning Labels

This section explains the handling of warning label, pasting location and types. Warning labels are attached to parts of the printer that need special caution. Understand the locations and the descriptions of the danger associated with each label before operating the printer.

1.3.1 Handling the Warning Labels

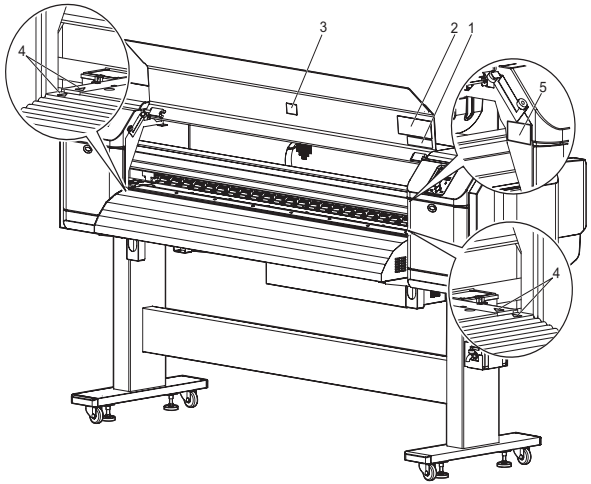
Make sure to note the following when handling the warning labels.

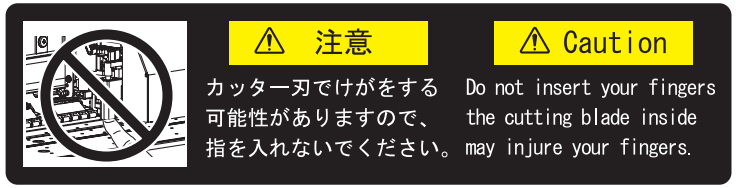
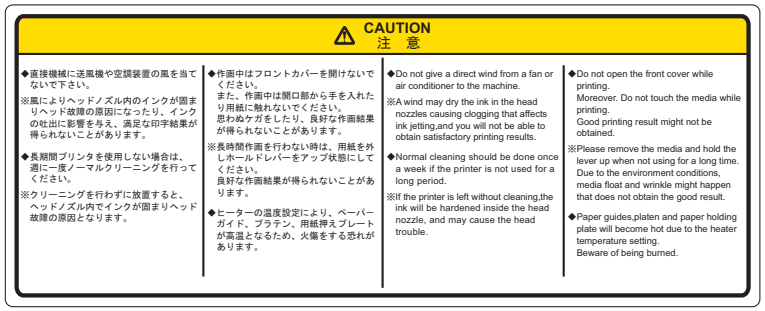
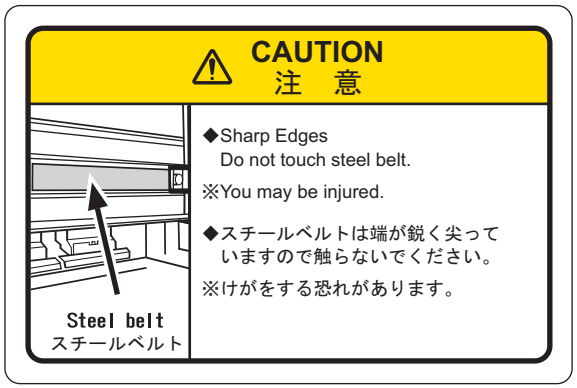
NOTE

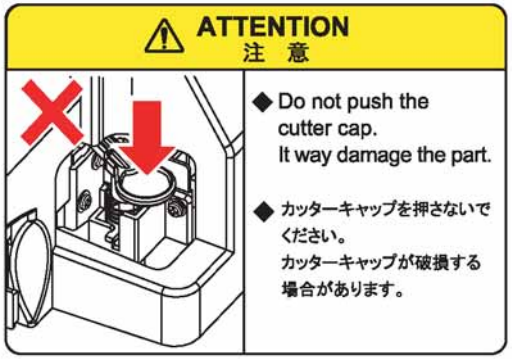
- Make sure that all warning labels can be recognized.If the text or illustrations cannot be seen clearly, clean or replace the label.
- When cleaning warning labels, use a cloth with water or neutral detergent. Do not use a solvent or gasoline.
- If a warning label is damaged, lost, or cannot be recognized, replace the label.

1.3.2 Location and Type of Warning Labels

The locations of warning labels are shown in the following figure.



No.	Types of Warning Labels
1	
2	
3	
4	

No.	Types of Warning Labels
5	

2 Troubleshooting

2.1 Introduction

This chapter provides information on possible causes of machine errors/damage and recovery actions.
If the machine is malfunctioning and an error message is displayed on Operation panel, refer to"2.1.1 Troubleshooting with Error Messages" p.2-7. If the machine is malfunctioning but no error messages are displayed, refer to"2.2 Troubleshooting Without Error Messages" p.2-33If cause of errors/damage and recovery actions are not found in this chapter, or the machine cannot restore to normal status, please contact the distributor you purchased the product from or our customer support center.

Table 2-1 Error type

No.	Trouble	Contents	Reference
1	When the message is displayed	Trouble with an error message displayed on Operation panel when the printer is malfunctioning.	☞"2.1.1 Troubleshooting with Error Messages" p.2-7
2	When the message is not displayed	Trouble without an error message displayed on Operation panel even when the printer is malfunctioning.	☞"2.2 Troubleshooting Without Error Messages" p.2-33

Table 2-2 When the message is displayed

Message type	Contents	Reference
Operation status	Cover open	☞"2.1.2 Operation Status" p.2-7
	Mainte. Cover[*] Open (*L or R)	
	Set media	
	End of Roll	
	No media	
	Smart/C End	

Table 2-2 When the message is displayed (Continued)

Message type	Contents	Reference
Error with message	Undefined Media	☞"2.1.3 Errors with Message" p.2-10
	Media Slant	
	Ink NearEnd	
	Ink End	
	NoCartridges	
	S/C Read Err	
	S/C Ink Err	
	S/C Code Err	
	S/C Col. Err	
	Full wasteInk Tank	
	Media cut Err	
	Broken Chip	
	Check Life [Head]	
	Check Life [Pump]	
	Check Life [CR Motor]	
	Check Life [PF Motor]	
Error requiring restart	E016 Error (CPU errors) [00] - [33]	☞"2.1.4 Errors Requiring Reboot" p.2-17
	E016 Errors (Mechanical errors) [065] - [152]	
Errors while transmitting/ receiving data	Transfer failed ******.	☞"2.1.5 Error Messages During File Transmission" p.2-30
	Boot transfer failed ******.	

Table 2-3 When the message is not displayed

Message type	Contents	Reference
Initial Operation Problems	Printer cannot be turned on	☞"2.2.1 Initial Operation Problems" p.2-33
	LCD display malfunction	
	Initial ink charge does not start	
	Initial ink charge started, but ink does not reach Head	
	Ink does not come out even after initial ink charge is completed	
	The printer does not operate after turned on.	
	The printer does not stop operation even when Front cover or Maintenance cover is opened.	
	After the printer is turned on, "Initializing" is displayed and the printer resets	
	Loading media does not start the initial operation	
	The printer does not operate even when Front cover or Maintenance cover is closed.	
	The printer does not recognize the installed ink cartridges	
	Nothing can be input from Operation panel	☞"2.2.1 Initial Operation Problems" p.2-33
	Printing does not start even after receiving data.	
Media Feed Problems	Media slips during media initialization or printing.	☞"2.2.2 Media Feed Problems" p.2-40
	Media skews or meanders during media initialization or printing.	
	Media wrinkles during media initialization or printing.	
	Media tears during media initialization or printing.	
	Media size is not correctly detected after media initialization.	
	LCD display malfunction	

Table 2-3 When the message is not displayed (Continued)

Message type	Contents	Reference
Printing Problems	The printer does not print continuously.	☞"2.2.3 Printing Problems" p.2-42
	After printing, the printer feeds an extra amount of media.	
	Nozzles are clogged during printing	
	Cleaning does not mend the clogged nozzles or skewed ink discharge.	
	Cannot print at all, a specific color is missing	
	The page is printed all black.	
	The page is printed blocky.	
	Images are printed unevenly.	
	Lines in the CR direction look split.	
	White or black lines appear on printed media	
	The printed borders are blurred.	
	There are unwanted dots (satellites).	
	Characters with jagged edges are printed.	
	Lines are printed blurry (messy printing result)	☞"2.2.3 Printing Problems" p.2-42
	Mixed color lines are not overlapped.	
	The printed results are uneven. (Vertical direction against the printer unit)	
	The printed results are uneven. (Horizontal direction against the printer unit)	
Noise Problems	Abnormal noise is heard when media is sucked	☞"2.2.4 Noise Problems" p.2-55
	Abnormal noise is heard during waiting time	
	Abnormal noise is heard while Head is moving laterally	
	Abnormal noise is heard when feeding media	

Table 2-3 When the message is not displayed (Continued)

Message type	Contents	Reference
Online Function Problems	Other functions do not work correctly	☞"2.2.5 Online Function Problems" p.2-58
	Data or printing is garbled	
	Part of the data is not printed (missing)	
Other Problems	The printer hangs up	☞"2.2.6 Other Problems" p.2-59
	The power is shut down during printing	
	Ink cartridges cannot be inserted	
	Ink spills out of Waste fluid tank	
	Ink spills out of Flushing box	
	Ink spills around X rail	
Problems in Using MUTOH Service Assistance	MUTOH Service Assistance does not start up	☞"2.2.7 Problems in Using MUTOH Service Assistance" p.2-61
	"Transfer failed (Data timeout)" is displayed during transfer.	
	"Main F/W data is invalid" is displayed during firmware transfer.	
	"No compatibility between main F/W data and printer" is displayed during firmware transfer.	
	"F/W version downgrade is not available" is displayed during firmware transfer.	☞"2.2.7 Problems in Using MUTOH Service Assistance" p.2-61
	"Heater controller F/W data is invalid" is displayed during Heater controller firmware transfer.	
	"No compatibility between Heater controller F/W data and printer is displayed during Heater controller firmware transfer.	

2.1.1 Troubleshooting with Error Messages

This section describes the messages displayed in normal operation and upon an error occurrence as well as how to correct the error. The available messages are as follows.

2.1.2 Operation Status

This section describes the message contents, check items, and recovery actions for normal operation.

Table 2-4 Events and Check Items for Operation Status Messages

No.	Message	Event/symptom	Check item	Action	Reference
1	Cover open	Front cover is open.	1. Is Switch board pressing the sensor while Front cover is closed?	Fix Switch board so that it presses the sensor.	☞"(3) Front Cover section" p.3-32
			2. Is Switch board installed facing down?	Reinstall it correctly.	
			3. Is Cover sensor Assy wobbly?	Tighten the screw on Cover sensor Assy.	
			4. Are the cables of F cover R sensor Assy and F cover L sensor Assy securely connected?	Securely connect the cable of F cover R sensor Assy to MAIN board Assy connector and the cable of F cover L sensor Assy to HEATER RELAY board Assy connector. Check if the interlock cable is securely connected to MAIN board Assy	
			5. Are F cover R sensor Assy and F cover L sensor Assy damaged?	Replace F cover R sensor Assy and F cover L sensor Assy.	
			6. Check the operation of Front cover sensor Assy in “Sen 4: Cover” in the self-diagnosis function.	Replace Front cover sensor Assy if it is not working properly.	☞"5.5.4 Sensor Menu" p.5-12 ☞"(3) Front Cover section" p.3-32
			7. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	Mainte. Cover[*] Open Either L or R is indicated in [*].	Maintenance cover is open.	1. Is Maintenance cover sensor wobbly?	Tighten the screw on Maintenance cover sensor Assy.	☞"3.3.3 Replacing Cover switch Assy" p.3-29
			2. Check if the sensor is in the closed status when Maintenance cover is closed.	Adjust the location of the sensor so that the sensor is in the closed status when Maintenance cover is closed.	
			3. Check if the mounting direction of the sensor is inverted.	If the sensor’s open side is not facing the rear side of the printer, reinstall the sensor.	

Table 2-4 Events and Check Items for Operation Status Messages(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
2	Mainte. Cover[*] Open Either L or R is indicated in [*]. (Continued)	Maintenance cover is open.	4. Is the cable of Maintenance cover sensor securely connected?	Securely connect the cable of Maintenance cover R sensor and the cable of Maintenance cover L sensor Assy.	☞"3.3.3 Replacing Cover switch Assy" p.3-29
			5. Is Maintenance cover sensor damaged?	Replace Maintenance cover sensor Assy.	
			6. Is Maintenance cover damaged?	Replace Maintenance cover.	-
			7. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
3	Set media	Media holding lever is raised.	1. Does Pressurizing lever move smoothly?	Lubricate pressure cam.	☞"7.5 Lubrication/Bonding" p.7-8
			2. Is the sensor portion of Lever sensor Assy dirty?	Clean the sensor portion with a cotton swab, etc.	☞"3.5.6 Replacing Lever sensor and Lever sensor Cable" p.3-85
			3. Is Lever sensor Assy securely installed?	Adjust the mounting position of Lever sensor Assy.	
			4. Is the cable of Lever sensor Assy securely connected?	Securely connect Lever sensor cable Assy to MAIN board Assy connector J30.	
			5. Check the operation of Lever sensor in “Sen 7: Lever” in the self-diagnosis function.	Replace Lever sensor Assy if it is not working properly.	☞"5.5.4 Sensor Menu" p.5-12 ☞"3.5.6 Replacing Lever sensor and Lever sensor Cable" p.3-85
			6. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
4	End of Roll	Media has run out.	1. Is the cable of Paper rear sensor Assy placed under Paper guide R securely connected?	Securely connect it.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
			2. Check if there is paper in “Sen 9: PaperRear” in the self-diagnosis function.	If “No media” is displayed even when paper is loaded, check the item 5.	☞"5.5.4 Sensor Menu" p.5-12
			3. Paper rear sensor Assy may need adjustment or it may be damaged.	Adjust Paper rear sensor Assy. If the same error continues to be displayed, replace Paper rear sensor Assy.	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59 ☞"3.5.5 Replacing P_Rear Sensor" p.3-83
			4. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-4 Events and Check Items for Operation Status Messages(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
5	No media	Media is not loaded.	1. Check if there is paper in “Sen. 9 : PaperRear” in the self-diagnosis function.	If “No media” is displayed even when paper is loaded, replace Paper rear sensor Assy.	☞**"4.8 Rear/ Edge Sensor Adjustment" p.4-59** ☞**"3.5.5 Replacing P_Rear Sensor" p.3-83**
			2. Does the media in use have low reflectance?	Instruct the user that media with low reflectance cannot be used.	-
			3. Is the cable of Paper rear sensor Assy placed under Paper guide R securely connected?	Securely connect it.	☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
			4. Paper rear sensor Assy may need adjustment or it may be damaged.	Adjust P_REAR sensor. If the same error continues to be displayed, replace P_REAR sensor.	☞**"4.8 Rear/ Edge Sensor Adjustment" p.4-59** ☞**"3.5.5 Replacing P_Rear Sensor" p.3-83**
			5. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
6	Smart/C End	The remaining amount of ink in the Smart/C is low.	-	-	☞Operation Manual

2.1.3 Errors with Message

This section describes the contents of errors with messages as well as the check items and recovery actions.
These messages are displayed when an abnormal condition occurs while the printer is running.
Upon an occurrence of an error with message, the printer stops its operation at the same time.
The error can be cancelled by removing the error causes. After that, the printer will restart its operation.

Table 2-5 Symptoms and Check Items for Errors with Message

No.	Message	Event/symptom	Check item	Action	Reference
1	Media detection error	Media detection has failed.	1. Is the media loaded outside the printing range (not placed in the center or the width is smaller than the minimum width)?	Instruct the user how to load media.	☞Operation Manual
			2. Is Paper edge sensor Assy securely installed?	Install Paper edge sensor correctly.	☞**"3.7.12 Replacing Paper Edge Sensor Assy" p.3-155**
			3. Is Platen non-reflective tape damaged?	Replace Platen non-reflective tape.	☞**"3.5.10 Replacing Platen Non-Reflecting Tape" p.3-94**
			4. Are there taint or any foreign substances on the surface of Platen and Paper edge sensor?	Remove any taint or foreign substances.	☞Operation Manual
			5. Is Paper edge sensor Assy damaged?	Remove any taint or foreign substances.	☞**"3.7.12 Replacing Paper Edge Sensor Assy" p.3-155**
			6. Is the cable of Paper edge sensor Assy placed on Head securely connected?	Securely connect it to CR board Assy connector	☞**"3.7.4 Replacing CR Board Assy" p.3-134**
			7. Is the cable of Paper rear sensor placed under Paper guide R securely connected?	Securely connect it to MAIN board Assy connector	☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
			8. Check the sensitivity of the sensor in “Sen 8: EdgeAD” in the self-diagnosis function.	• Replace Paper edge sensor Assy.	☞**"4.8 Rear/ Edge Sensor Adjustment" p.4-59** ☞**"3.7.12 Replacing Paper Edge Sensor Assy" p.3-155**
			9. Does the media in use have low reflectance?	• Instruct the user that media with low reflectance cannot be used.	-
			10. Is CR_FFC obliquely inserted?	• Correctly plug the CR_FFC again.	☞**"3.4.11 Replacing MAIN Board Assy" p.3-53** ☞**"3.7.4 Replacing CR Board Assy" p.3-134**
			11. CR_FFC may be damaged.	• Replace CR_FFC.	☞**"3.6.8 Replacing CR_FFC" p.3-117**

Table 2-5 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
1	Media detection error (Continued)	Media detection has failed.	12. CR board Assy may be damaged.	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
			13. MAIN board Assy may be damaged. 14.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	Media skew error	Media is running obliquely.	1. Reload media and check whether the same error occurs.	If the error is due to the way the user loads the media, instruct the user how to load media properly.	-
			2. Does Suction FAN correctly operate in “Test6: Fan” – “Fan1: Vacuum Fan” in the self-diagnosis function?	Check the connection of the connectors of the following MAIN board assemblies. Replace Suction FAN or the cable that is not working properly.	☞"5.5.6 Fan Menu" p.5-16
			3. Is the pressure suitably adjusted for the media?	Adjust the pressure so that there is no skew, horizontal banding, or mark left by pressurizing rollers.	-

Table 2-5 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
3	[*******] Ink End *Up to seven colors are indicated simultaneously in [*] by K,C,M, and Y when no ink is detected. When there is no ink in any of Sub tanks, [ALL] is displayed.	Ink has run out. Printing operation stops immediately.	1. Check the ink in the ink cartridge.	Replace the ink cartridge when there is no ink. If there is sufficient amount of ink, refer to the check item 2.	-
			2. Check the ink cartridge with no ink in “15: Ink END KCMY” in the self-diagnosis function to see if the ink cartridge displayed is the same one with the error.	Insert or remove the cartridge and wait for more than three minutes to see if the same error is still displayed. If the same error continues to be displayed, refer to the check item 3.	☞**"5.5.4 Sensor Menu" p.5-12**
			3. Check the connection of the connectors of Sub tank control relay cable**.** *Check the connection of the connectors on the path.	Correctly plug the following connectors again JUNCTION Board Assy MAINBoardAssy If the same error continues to be displayed even after inserting the above connectors again, Sub tank control relay cable or the cables on the path may be damaged. Replace it. If the same error continues to be displayed after replacing it, refer to the check item 4.	☞**"3.4.20 Replacing JUNCTION Board Assy" p.3-66** ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53** ☞**"3.4.3 Replacing HEATER CONT Board Assy" p.3-42** ☞**"3.9.2 Replacing Ink ID Board Assy" p.3-176**
			4. Is there ink leakage or bleeding around the connection area of Ink tube?	Check the connection of Ink tube.	-
			5. Has the ink cartridge been left removed?	Replace GB connector.	-
			6. Check if Solenoid valve is functioning normally in “Ctrl2 : Test” - “Test2: Sensor" - "Sen.19: TankValve" in the self-diagnosis function. 7. HEATER JUNCTION board may be damaged.	Two-way valve may be damaged. If the same error continues to be displayed after replacing it, MAIN board Assy may be damaged. Replace MAIN board Assy. Replace HEATER JUNCTION board.	☞**"5.5.4 Sensor Menu" p.5-12** ☞**"3.9.6 Replacing Sub Tank Assy" p.3-181** ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53** ☞**"3.4.20 Replacing JUNCTION Board Assy" p.3-66**

Table 2-5 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
4	[*******] No cartridge *Up to seven colors are indicated simultaneously in [*] by K,C,M and Y when no ink is detected. When there is no ink in any of Sub tanks, [ALL] is displayed.	Ink cartridge is not inserted.	1. Are Ink cartridges used dedicated ink cartridges?	Instruct the user to use the dedicated ink cartridges.	-
			2. Is the message displayed after turning off the printer and turning it back on?	When the message is displayed: Refer to the check item 3 for action.	-
			3. Check if there are ink cartridges in ”13:Ink NOT ” in the self-diagnosis function to see if the ink cartridge displayed is the same one with the error.	Insert or remove the cartridge and wait for more than three minutes to see if the same error is still displayed. • If the same error continues to be displayed, adjust the mounting position of Ink bag control cable. • If the same error continues to be displayed after adjustment, check the connection. • If the same error continues to be displayed after checking the connection, Ink bag control cable may be damaged. Replace it. • If the same error continues to be displayed after replacing it, refer to the check item 4.	☞"5.5.4 Sensor Menu" p.5-12 ☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177
			4. Check the connection of the connector of Ink sensor cable. 5. JUNCTION board Assy may be damaged.	Correctly plug the following connectors again. JUNCTION Board Assy MAIN Board Assy If the same error continues to be displayed even after inserting the above connectors again, Ink sensor cable or the cables on the path may be damaged. Replace it. If the same error continues to be displayed after replacing it, MAIN board Assy may be damaged. Replace it. Replace JUNCTION board Assy.	☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.9.2 Replacing Ink ID Board Assy" p.3-176

Table 2-5 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
5	S/C Read Err S/C Ink Err S/CCode Err S/C Col. Err Broken Chip	A dedicated S/C card may be malfunction.	1. Check if the message is displayed after turning off the printer and turning it back on.	When the message is displayed: Refer to the check item 2.	-
			2. Check if the dedicated Smart chip cards are used. 3. Check if the dedicated Smart chip cards are broken or the chip portion is damaged.	Replace with the dedicated Smart chip cards.	☞Operation Manual
			4. Check if ink ID is correctly recognized in the self-diagnosis function.		☞"5.5.4 Sensor Menu" p.5-12
6	Full wasteInkTank	Waste fluid bottle is full.	1. Check if Waste fluid bottle is full.	Dispose of waste fluid.	-
			2. Check the connection of the connector of Waste fluid level switch.	Correctly insert the following connectors again. JUNCTION boardAssy : J12 Connector on the Waste fluid bottle side.	☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66
			3. Waste fluid level switch may be damaged. 4. Check JUNCTION board Assy.	Replace Waste fluid level switch. If the same error continues to be displayed after replacing Waste fluid level switch: JUNCTION board Assy may be damaged. Replace it.	☞"3.10.1 Replacing Waste Fluid Bottle and Waste Fluid Level Switch" p.3-185 ☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66
7	Life Times [Head]	The operational life of Print head has almost expired.	Check the condition of Head.	Replace Head as necessary. Clear the counter after replacing it.	☞"3.7.10 Replacing Print Head" p.3-148 ☞"6.3.2 Counter Initialization Menu" p.6-11
8	Life Times [Pump]	The operational life of Pump has almost expired.	Check the condition of Pump.	Replace Pump as necessary. Clear the counter after replacing it.	☞"3.8.5 Replacing Maintenance Assy" p.3-168 ☞"6.3.2 Counter Initialization Menu" p.6-11
9	Life Times [CR Motor]	The operational life of CR motor has almost expired.	Check the condition of CR motor.	Replace CR motor as necessary. Clear the counter after replacing it.	☞"3.6.2 Replacing CR Motor Assy" p.3-104 ☞"6.3.2 Counter Initialization Menu" p.6-11
10	Life Times [PF Motor]	The operational life of PF motor has almost expired.	Check the condition of PF motor.	Replace PF motor as necessary. Clear the counter after replacing it.	☞"3.5.3 Replacing PF Motor Assy" p.3-77 ☞"6.3.2 Counter Initialization Menu" p.6-11

Table 2-5 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
4	Media cut error	Even though cutting operation is performed, media is not cut off.	1. Does media dust accumulate in cutter groove?	Remove accumulated media dust along groove.	☞Operation Manual
			2. Is cutter cap securely installed?	Reinstall cutter cap securely.	☞Operation Manual
			3. Check cutter sliding up/down operation. 4. When setting cutter, lower cutter with finger and check that cutter rises to upper end only by spring force.	• When it does not rise: Refer to action in check item No. 4. • When it rises: Refer to action in check item No. 5.	—
			5. When setting cutter after removing cutter spring, does cutter lower to lower end by its own weight?	• When it lowers: Cutter spring may be defective. Replace cutter spring referring to exploded views. • When it does not lower: Cutter may be defective. Replace cutter.	☞**"3.7.15 Replacing Cutter Solenoid Assy, Cutter Solenoid Spring Assy" p.3-133**
			6. Check if solenoid goes up/down from "Life: Cutter" of self-diagnosis function. a) Goes up/down: Check the position where cutter goes down to cutter groove.	- • OK: Cutter has reached the end of life or be damaged. Replace cutter with new one. • NG: Adjust cutter holder position.	- ☞Operation Manual ☞**"3.7.15 Replacing Cutter Solenoid Assy, Cutter Solenoid Spring Assy" p.3-133**
			b) Does not go up/down:	Connector may be poorly connected. Check the connection of following connectors.	☞**"3.7.4 Replacing CR Board Assy" p.3-101** ☞**"3.4.4 Replacing MAIN Board Assy" p.3-42**
			7. CR_FFC may be broken, solenoid Assy may be defective, or each board Assy may be defective. a) Replace CR_FFC with new one.	If solenoid goes up/down, replace CR_FFC.	☞**"3.11.3 Replacing CR_FFC" p.3-154**
			b) Replace solenoid Assy with new one. (Check by connecting connectors directly)	If solenoid goes up/down, replace solenoid Assy .	☞**"3.7.15 Replacing Cutter Solenoid Assy, Cutter Solenoid Spring Assy" p.3-133**
			c) Replace CR board Assy .	After replacement, adjust sensor reflection amount from "Sen: Edge AD" of "Test: Sensor" of self-diagnosis function.	☞**"3.7.4 Replacing CR Board Assy" p.3-101**
			d) Replace MAIN board Assy .	Before replacing MAIN board, back up parameters and recover to new MAIN board Assy . Then start operation check.	☞**"3.4.4 Replacing MAIN Board Assy" p.3-42**

NOTE

- The square bracket pair in an error message indicates the applicable ink color.
- If no ink and no cartridge occur at the same time, no cartridge message has priority to be displayed.

2.1.4 Errors Requiring Reboot

This section describes the contents of reboot-requiring errors as well as the check items and recovery actions.
These errors are issued when any of the following critical problems occur.

- Obstacle that prevents the machine's operation
- Damage of electric circuits (Boards, Motors, Sensors)
- Abnormal operation of control programs

When any of the above conditions occur, the machine follows the steps shown below before stopping its operation.

1. Turn OFF the driving system power automatically.
2. Flash all lamps on Operation panel and generate intermittent audible alarm.
3. Display the applicable error message on the LCD.

The error can be cancelled by removing the error causes and restarting the machine.

(1) CPU system serious error

Table 2-6 Symptoms and Check Items for CPU System Serious Errors

No.	Message	Event/symptom	Check item	Action	Reference
1	E016 Error Interrupt［00］	Interruption exception error: An anomaly is detected during interruption process.	1. Check AC power supply and printer peripherals. 2. Check whether the same error occurs. Even when there is no problem, turn off the printer and turn it back on a few times to check. 3. Check if the firmware is the latest one. 4. Check the serial number of the printer. 5. MAIN board Assy may be damaged.	• Contact your local MUTOH dealer. • Replace MAIN board Assy.	☞Operation Manual ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
2	E016 Error TLB Modif［00］	Command border exception/TLB exception (load or command fetch) error: An anomaly is detected in command border. Or TLB exception is detected while loading data or fetching data.			

Table 2-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
3	E016 Error TLB-L/I [02]	Data border exception/ TLB exception error	1. Check AC power supply and printer peripherals. 2. Check whether the same error occurs. Even when there is no problem, turn off the printer and turn it back on a few times to check. 3. Check if the firmware is the latest one. 4. Check the serial number of the printer. 5. MAIN board Assy may be damaged.	• Contact your local MUTOH dealer. • Replace MAIN board Assy.	☞Operation Manual ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
4	E016 Error TLB-S [03]	Data border exception/ TLB exception (store) error: An anomaly is detected in data border. Or TLB exception is detected while storing data.			
5	E016 Error AddErr-L/I [04]	Address exception error (load or command fetch): Address error is detected while loading or fetching command.			
6	E016 Error AddErr-S [05]	Address exception error (store): An address error is detected while escaping.			
7	E016 Error BusErr-I [06]	Pass exception error (command fetch): Address error is detected while loading or storing command.			

Table 2-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
8	E016 Error BusErr-L [07]	Bus exception error (load or store): Bus error is detected while loading or storing command.	1. Check the serial number of the printer. 2. MAIN board Assy may be damaged.	• Contact your local MUTOH dealer • Replace MAIN board Assy.	☞Operation Manual ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
9	E016 Error SystemCall [08]	System call exception error: An anomaly is detected in system call.			
10	E016 Error BreakPoint [09]	Break point exception error: An anomaly is detected in break point.			
11	E016 Error Reserved [10]	Reserved command exception error: An anomaly is detected in reserved command.			
12	E016 Error Copro [11]	Coprocessor disabled exception error: An anomaly is detected in coprocessor .			

Table 2-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
13	E016 Error Overflow [12]	Arithmetic overflow exception error: Overflow is detected.	1. Check AC power supply and printer peripherals. 2. Check whether the same error occurs. Even when there is no problem, turn off the printer and turn it back on a few times to check. 3. Check the serial number of the printer. 4. MAIN board Assy may be damaged.	• Contact your local MUTOH dealer. • Replace MAIN board Assy.	☞Operation Manual ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
14	E016 Error Trap [13]	Arithmetic overflow exception error: Overflow is detected.			
15	E016 Error Floating [15]	Floating decimal point exception error: An anomaly is detected in floating decimal point.			
16	E016 Error Watch [23]	Watch exception error: An anomaly is detected in Watch.			
17	E016 Error WatchDog [32]	Watchdog time-out exception error: A time-out is detected in Watchdog.			
18	E016 Error Abort Err [33]	Abort error: Abort is detected.			
19	E016 Flash Rom[35]	The content of flash ROM may be destroyed.			
20	E016 Exception Err ［XX］ E016 Abort Err ［33］	EXC error (undefined) other than the above has occured. XX stands for a number.			

NOTE

For the PC settings, refer to your PC's operation manual.

(2) Mechanical Serious Errors

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors

No.	Message	Event/symptom	Check item	Action	Reference

1
 	
2
	E 065Err
	PF motor
	
	E 067Err
	PF encoder
		An anomaly is detected in PF motor (X-axis) during printer operation.
		Displayed when there is a big difference between motor command value and feedback from encoder.
			1. Check if the is paper jam around Grid Roller.
			2. Check the error record in “Test 7: Record” in the self-diagnosis function.
			3. Set the endurance time to more than 50 times in “Life2: PF Motor” in the self-diagnosis function to see if any errors related to PF motor such as “PF motor error” occurs.
			4. Check “Encoder: PF” in “Check3: Test” – “Test5: Encoder” in the self-diagnosis function.
			• Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows.
			  • Front feed direction: Increase
			  • Back feed direction: Decrease
			5. Check if DC42V is correctly supplied from Power board Assy, using the tester.
				• Remove paper jam.
				
				Check the connection of the following connectors of MAIN board Assy.
				
				  • PF motor cable Assy connector
				  • PF_ENC Assy connector:
				  • Connector that is connecting PF motor and PF motor relay
				
				If Main power board Assy is damaged, replace it.
					☞"5.5.7 Record Menu" p.5-17
					
					☞"3.4.11 Replacing MAIN Board Assy" p.3-53
					
					☞"5.12 Endurance Running Menu" p.5-69
					
					☞"5.5.5 Encoder Menu" p.5-15
					
					☞"3.4.2 Replacing Power Board Assy" p.3-41

			6. PF encoder may be damaged. 7. Check if PF encoder scale is installed facing the correct direction. 8. Check if PF encoder scale is dirty or misted over. 9. Check if the tension of PF belt is appropriate. 10. PF encoder Assy may be damaged. 11. MAIN board Assy may be damaged.	• Replace PF encoder Assy. • Install PF encoder scale properly. • Adjust PF belt tension. • Replace PF motor Assy. • Replace MAIN board Assy.	☞"3.5.2 Replacing PF Encoder Assy" p.3-75 ☞"3.5.5 Replacing P_Rear Sensor" p.3-83 ☞"4.5 X Speed Reduction Belt Tension Adjustment" p.4-52 ☞"3.5.3 Replacing PF Motor Assy" p.3-77 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference

3	E069 Err
	PF Timeout
		An anomaly is detected in media feed amount (X-axis) during printer operation.
		Displayed when Grid roller has not reached the designated position.
			1. Check the error record in “Test 7: Record” in the self-diagnosis function.
			2. Set the endurance time to more than 50 times in “Life2: PF Motor” in the self-diagnosis function to see if any errors related to PF motor such as “PF motor error” occurs.
			3. Check “Encoder: PF” in “Check3: Test” – “Test5: Encoder” in the self-diagnosis function.
			• Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows.
			  • Front feed direction: Increase
			  • Back feed direction: Decrease
			4. PF encoder Assy may be damaged.
			5. PF encoder Assy may be damaged.
			6. MAIN board Assy may be damaged.
				Check the connection of the following connectors of MAIN board Assy.
				• PF motor cable Assy connector
				• PF_ENC Assy connector:
				• Connector that is connecting PF motor and PF motor relay
				• Replace PF encoder Assy.
				• If Main power board Assy is damaged, replace it.
				• Replace PF motor Assy.
				• Replace MAIN board Assy.
					☞"5.5.7 Record Menu" p.5-17
					☞"3.4.11 Replacing MAIN Board Assy" p.3-53
					☞"5.12 Endurance Running Menu" p.5-69
					☞"5.5.5 Encoder Menu" p.5-15
					☞"3.5.2 Replacing PF Encoder Assy" p.3-75
					☞"3.4.2 Replacing Power Board Assy" p.3-41
					☞"3.5.3 Replacing PF Motor Assy" p.3-77

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference

4
5
	E071 Err
	PF Current
	
	E073 Err
	PF2 Current
		An overload condition is detected in PF motor (X-axis) during printer operation.	1. Is the weight of the media used within the recommended weight?
			2. Is there paper jam around Grid roller?
			3. Check the error record in “Test 7: Record” in the self-diagnosis function.
			4. Set the endurance time to more than 50 times in “Life2: PF Motor” in the self-diagnosis function to see if any errors related to PF motor such as “PF motor error” occurs.
			5. Check “Encoder: PF” in “Check3: Test” – “Test5: Encoder” in the self-diagnosis function.
			• Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows.
			  • Front feed direction: Increase
			  • Back feed direction: Decrease
			6. PF encoder Assy may be damaged.
			7. PF encoder Assy may be damaged.
			8. MAIN board Assy may be damaged.
				• Explain the user about the recommended media weight.
				• Remove paper jam, check if Media holder and Print head are damaged, and check if the same error occurs.
				Check the connection of the following connectors of MAIN board Assy.
				  • PF motor cable Assy connector
				  • PF_ENC Assy connector
				  • Connector that is connecting PF motor and PF motor relay
				• Replace PF encoder Assy.
				• If Main power board Assy is damaged, replace it.
				• Replace PF motor Assy.
				• Replace MAIN board Assy.
					☞"5.5.7 Record Menu" p.5-17
					☞"3.4.11 Replacing MAIN Board Assy" p.3-53
					☞"5.12 Endurance Running Menu" p.5-69
					☞"5.5.5 Encoder Menu" p.5-15
					☞"3.5.2 Replacing PF Encoder Assy" p.3-75
					☞"3.4.2 Replacing Power Board Assy" p.3-41
					☞"3.5.3 Replacing PF Motor Assy" p.3-77

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
6	E066 Err CR Motor	An anomaly is detected in CR motor (Y-axis) during printer operation.	1. Check if there is paper jam around Grid Roller or any foreign substances around the range of CR movement. 2. Check the error record in “Test 7: Record” in the self-diagnosis function. 3. Move Carriage from side to side while the printer is turned off and see if there is anywhere Carriage does not move smoothly. 4. Set the endurance time to more than 50 times in “Life1: CR Motor” in the self-diagnosis function to see if any errors related to PF motor such as “CR motor error” occurs. 5. Check if T fence is dirty or twisted.	• After removing any foreign substances and checking if the printer itself is not damaged, check if the same error still occurs. • Check if T fence is placed between CR encoders. If not, reassemble CR encoder correctly. If T fence is damaged, replace it. • Clean and lubricate CR rail roller guide. • Check the connection of the following connectors. MAIN board Assy: • CR motor Assy connector • CR_FFC connector CR board Assy: • CR_FFC connector • Check the connection to CR motor is appropriate. • Check if the tensions of CR speed reduction belt and Steel belt are appropriate. Replace the following parts: • T fence • CR encoder • CR_FFC • CR motor Assy • CR board Assy • MAIN board Assy	☞"3.7.5 Replacing CR Encoder Assy" p.3-136 ☞"5.5.7 Record Menu" p.5-17 ☞"3.6.4 Replacing T fence" p.3-110 ☞"7.5 Lubrication/Bonding" p.7-8 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"5.12 Endurance Running Menu" p.5-69 ☞"4.4 Steel Belt Tension Adjustment" p.4-50 ☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.6.2 Replacing CR Motor Assy" p.3-104
7	E068 Err CR Encoder	Displayed when there is a big difference between motor command value and feedback from encoder.			☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.6.2 Replacing CR Motor Assy" p.3-104
8	E070 Err CR Timeout	A timeout is detected in the Head shift amount (Y-axis) during printer operation. Displayed when Carriage has not reached the designated position.		• When there is grease or dust on it: Wipe it with a dry cloth. • When there is ink on it: Damp a cloth with mild detergent and lightly wipe off the ink. • When it is too dirty and the adhered substance cannot be removed: Replace T fence.	☞"3.6.4 Replacing T fence" p.3-110

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
8	E070 Err CR Timeout (Continuted)	A timeout is detected in the Head shift amount (Y-axis) during printer operation. Displayed when Carriage has not reached the designated position.	6. Check “Encoder: CR” in “Check3: Test” – “Test5: Encoder” in the self-diagnosis function. • Mover Carriage to see if the values on the panel increases/decreases as follows. • CW direction: Increase • CCW direction: Decrease	When NG: a) Check the cable connection at the following places. • CR board Assy connector b) Replace the following parts. • CR encoder • T fence • CR motor Assy: • CR_FFC • CR board Assy	☞"5.5.5 Encoder Menu" p.5-15 ☞"3.6.2 Replacing CR Motor Assy" p.3-104 ☞"3.7.5 Replacing CR Encoder Assy" p.3-136 ☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.7.4 Replacing CR Board Assy" p.3-134
			7. Check the connection of Cover sensor and Maintenance Cover Sensor. 8. Carriage lock solenoid may be damaged. (Check if “ON” is displayed when Carriage is locked and “OFF” is displayed when Carriage is moved in “Sen.1: CR Origin” in the self-diagnosis function.)	Make sure to connect it securely. When the cables are disconnecting, replace it. When Carriage lock solenoid is malfunctioning, replace it.	☞"3.3.3 Replacing Cover switch Assy" p.3-29
			9. Check the connection of HEATER RELAY board. 10. HEATER RELAY board Assy may be damaged.	Replace HEATER RELAY board Assy.	☞"3.4.4 Replacing HEATER RELAY Board Assy" p.3-44
			11. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
9	E072 Err CR Current	An overload condition is detected in CR motor (Y-axis) during printer operation.			
10	E074 Err CR2 Current				
11	E092 Err CR Overload				

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
12	E081 Err CR Origin	CR_HP cannot be detected.	1. Check CR origin sensor in “Sen.1: CR Origin” in the self-diagnosis function. (Check if “ON” is displayed when Carriage is locked and “OFF” is displayed when Carriage is moved.)	Check connection of CR origin sensor cable Assy connector.	☞"5.5.4 Sensor Menu" p.5-12
			2. CR origin sensor may be damaged.	Replace it.	☞"3.6.5 Replacing CR Origin Sensor" p.3-112
			3. Check the connection of MAIN board Assy .	-	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
			4. MAIN board Assy may be damaged.	Replace it.	
13	E075 Err Head Temp	An anomaly is detected in Pre heater system (Thermistor, Heater).	1. Check the connection of Head FFCs on the CR board Assy side and the head side. • Is Head FFC obliquely inserted?	Correctly insert Head FFC to the connector again.	☞" A necessary jigs and tools are as follows." p.3-153 ☞"3.7.4 Replacing CR Board Assy" p.3-134
			2. Is Head FFC disconnected?	Replace Head FFC.	☞" A necessary jigs and tools are as follows." p.3-153
			3. Head thermistor may be malfunctioning.	Replace Print head.	☞"3.7.10 Replacing Print Head" p.3-148
14	E076 Err Pre heat	An anomaly is detected in Pre heater system (Thermistor, Heater).	Thermistor or Heater’s connector may be disconnected, wiring may be faulty, or Thermistor cable maybe nipped by plates, or Heater may be damaged.	1. Plug Thermistor or Heater’s connector properly. 2. Check the connections of HEATER RELAY board. 3. Replace HEATER RELAY board Assy and HEATER CONT board Assy. 4. Replace Heater.	☞"3.5.7 Replacing Heater, Thermistor" p.3-87 ☞"3.4 Replacing Board Base" p.3-39 ☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42
15	E077 Err Platen heat	An anomaly is detected in Platen heater system (Thermistor, Heater).	Thermistor or Heater’s connector may be disconnected, wiring may be faulty, or Thermistor cable maybe nipped by plates, or Heater may be damaged.	1. Plug Thermistor or Heater’s connector properly. 2. Check the connections of HEATER RELAY board. 3. Replace HEATER RELAY board Assy and HEATER CONT board Assy. 4. Replace Heater.	☞"3.5.7 Replacing Heater, Thermistor" p.3-87 ☞"3.4 Replacing Board Base" p.3-39 ☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
16	E078 Err After Heat	An anomaly is detected in After heater system (Thermistor, Heater).	Thermistor or Heater's connector may be disconnected, wiring may be faulty, or Thermistor cable maybe nipped by plates, or Heater may be damaged.	1. Plug Thermistor or Heater's connector properly. 2. Check the connections of HEATER RELAY board. 3. Replace HEATER RELAY board Assy and HEATER CONT board Assy. 4. Replace Heater.	☞"3.5.7 Replacing Heater, Thermistor" p.3-87 ☞"3.4 Replacing Board Base" p.3-39 ☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42
17	E090 Err Heater Volt.	Displayed when voltage exceeds the threshold level of 200V start up even though the printer was started with the voltage of 100V on HEATER CONTROL board Assy.	Input voltage from AC inlet or HEATER CONTROL board Assy may be malfunctioning.	1. Check the input voltage from AC inlet. 2. Replace HEATER CONTROL board Assy.	☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42
18	E079 Err Board Commu.	An anomaly is detected in the serial communication between MAIN Board Assy and HEATER CONTROL Board Assy during printer operation.	• Communication cable may be malfunctioning. • Firmware on HEATER CONTROL board Assy may be malfunctioning. • MAIN board Assy may be malfunctioning. • HEATER CONTROL board Assy may be malfunctioning. • HEATER JUNCTION board Assy may be malfunctioning.	1. Check the connection between MAIN board Assy and HEATER CONTROL board Assy. 2. Check the connection between HEATER JUNCTION board Assy and HEATER CONTROL board Assy. 3. Check the version of the firmware and install the latest firmware. 4. Replace HEATER CONTROL board Assy or MAIN board Assy. 5. Replace HEATER JUNCTION board Assy.	☞"5.5.2 Version Menu" p.5-10 ☞"4.3 Working with MUTOH Service Assistance Software" p.4-5 ☞"4.3 Working with MUTOH Service Assistance Software" p.4-5 ☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66
19	E082 Err Wiper Sns.	An anomaly is detected in Wiper sensor.	Wiper sensor Assy and MAIN board Assy may be malfunctioning.	1. Replace Wiper unit Assy. 2. Replace MAIN board Assy.	☞"3.8.5 Replacing Maintenance Assy" p.3-168 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
20	E085 Err Head Heat	An anomaly is detected in Head driver.	Head, Head FFC, or CR_FFC may be malfunctioning.	1. Replace Head FFC. 2. Replace CR_FFC. 3. Replace Print head.	☞"3.7.10 Replacing Print Head" p.3-148

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
21	E087 Err H trans Th.	An anomaly is detected in Head transistor.	Head transistor on MAIN board Assy may have temperature anomaly or Thermistor sensor may be malfunctioning.	1. Replace MAIN board Assy. 2. Check the connections of CR_FFC and Head FFC. 3. Replace Print head.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.7.10 Replacing Print Head" p.3-148
22	E093 Err Control Ver.	An anormaly is detected in H_Cont F/W.	the version of H_CONT F/W might not be the latest.	1. Check the F/W version, and install the latest version.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
23	E097 Err NVRAM.	An anomaly is detected in NVRAM.	-	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
24	E118 to E121 SubTank Lo (KCMY)	An anormaly is detected in Subtank sensor L.	Subtank LO sensor, Hi sensor, and/or JUNCTION board may be malfunctioning.	Replace Subtank LO sensor. Replace Subtank. Replace JUNCTION board.	☞"3.9.6 Replacing Sub Tank Assy" p.3-181 ☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66
25	E134 ～ E137 Err SubTank	Subtank status shows that H sensor is detected and Lo sensor is not detected.			
26	E140Err Pre heat Th.	An anomaly is detected in Pre Thermistor.	1. Thermistor connector may be malfunctioning. 2. Thermistor may be disconnecting. 3. HEATER CONT board Assy may be malfunctioning.	1. Make sure to connect thermistor connector securely. 2. Replace Thermistor. 3. Replace HEATER CONT board Assy.	☞"3.4.7 Replacing HEATER CONT Board Assy" p.3-46☞"3.5.6 Replacing Heater Section" p.3-71
27	E141Err Platen heat Th.	An anomaly is detected in Platen Thermistor.			
28	E142Err After heat Th.	An anomaly is detected in After Thermistor.			
29	E144 Err Serial WR	Failure is detected during serial communication writing between MAIN board Assy and CR board Assy.	1. CR FFC's connection may be faulty or it may be damaged. 2. CR board Assy may be malfunctioning. 3. MAIN board Assy may be malfunctioning.	1. Restart the printer to see if the same error still occurs. 2. Check the connection of CR FFC. 3. Replace CR FFC. 4. Replace CR board Assy. 5. Replace MAIN board Assy.	☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
30	E145 Err Serial RD	Failure is detected during serial communication reading between MAIN board Assy and CR board Assy.			

Table 2-7 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
31	E146Err Serial AD Cable1	An anomaly is detected in Serial communication between MAIN board Assy and CR board Assy.	1. CR FFC's connection may be faulty or it may be damaged. 2. CR board Assy may be malfunctioning. 3. MAIN board Assy may be malfunctioning.	1. Restart the printer to see if the same error still occurs. 2. Check the connection of CR FFC. 3. Replace CR FFC. 4. Replace CR board Assy. 5. Replace MAIN board Assy.	☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
32	E147Err Serial AD Cable2				
33	E148 Err Serial Comp	A data read in by serial communication between MAIN board Assy and CR board Assy is different from the required one.	1. CR FFC's connection may be faulty or it may be damaged. 2. CR board Assy may be malfunctioning. 3. MAIN board Assy may be malfunctioning.	1. Restart the printer to see if the same error still occurs 2. Check the connection of CR FFC. 3. Replace CR FFC. 4. Replace CR board Assy. 5. Replace MAIN board Assy.	☞"3.6.8 Replacing CR_FFC" p.3-117 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
34	E152 Err CR Base Fuse	The power-supply from the printer to Colorimeter may be disconnected.	1. The fuse of CR board Assy may be blown.	1. Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
35	E176~E179 Err Subtank Hi	An anomaly is detected in Subtank Hi Sensor.	1. Subtank Hi sensor may be malfunction. 2. 2 way solenoid may be malfunction. 3. JUNCTION boar Assy may be malfunction.	1. Replace Subtank Hi sensor. 2. Replace 2 way solenoid. 3. Replace JUNCTION boar Assy.	☞"3.9.6 Replacing Sub Tank Assy" p.3-181 ☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177 ☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66

2.1.5 Error Messages During File Transmission

This section describes the error messages displayed when sending backup parameters and firmware using dedicated online software, as well as their recovery actions.

Table 2-8 Error Messages During File Transmission

No.	Message	Event/symptom	Check item	Action	Reference
1	Transfer failed Data format error	Firmware data format is wrong.	Check if the transferred firmware was the correct file.	After checking, reinstall the firmware.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
2	Transfer failed Aborted by the HOST	The cancel button on the computer is clicked.	-	Retransfer the firmware.	
3	Transfer failed Data timeout	A communication time-out is detected.	Check the connection between the printer and computer.	After solving the problem, retransfer the firmware.	
4	Transfer failed Check-sum error	File checksum error is detected.	-	1. Retransfer the firmware. 2. If this does not solve the problem, check if the transferred firmware was the correct file.	
5	Transfer failed Wrong size xxxxxxxx	Received wrong-sized data.	Check if the program file is correct.	After checking, retransfer the data.	
6	Transfer failed Incompatible F/W	Incompatible firmware is detected.	Check if the program file is correct.	After checking, reinstall the firmware.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
7	Transfer failed Flash erase error	ROM erase error is detected.	Board may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
8	Transfer failed Flash write error	ROM writing error is detected.	Board may be damaged.		
9	Transfer failed Flash compare error	ROM comparing error is detected.	Board may be damaged.		
10	Transfer failed Unknown Flash size	FROM with unknown written method is detected.	This should not normally happen. FROM may be damaged.		
11	Internal Error Memory Exhausted	No memory area is available.	This should not normally happen. SODIMM may be damaged.	• Replace SODIMM. • Replace MAIN board Assy.	

Table 2-8 Error Messages During File Transmission (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
12	Transfer failed Block replay timeout	Block reply timeout is detected during system code transfer.	Check the connection between HEATER CONTROL board and MAIN board Assy.	• Reconnect HEATER CONTROL board and MAIN board Assy. • Replace the cable connecting HEATER CONTROL board and MAIN board Assy. • Replace HEATER CONTROL board. • Replace MAIN board Assy.	☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
13	Transfer failed Block replay error xx	Received invalid value by block reply during system code transfer.			
14	Transfer failed Final reply timeout	Final reply timeout is detected during system code transfer.			
15	Transfer failed Final reply error xx	Received invalid value by final reply during system code transfer.			
16	Boot Transfer failed Opening seq. failed	Opening sequence of boot code transfer failed.	• Check the connection between HEATER CONTROL board and MAIN board Assy. • Check if the green LED is on HEATER CONTROL board is on. • Check if the red LED is on HEATER CONTROL board is blinking.	• Reconnect HEATER CONTROL board and MAIN board Assy. Or replace the cable connecting HEATER CONTROL board and MAIN board Assy. • If the green LED is still off after turning on the power, replace HEATER CONTROL board Assy. • If the red LED is blinking and there is no problem on the connection between HEATER CONTROL board and MAIN board Assy, reinstall the firmware.	☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"4.3 Working with MUTOH Service Assistance Software" p.4-5

Table 2-8 Error Messages During File Transmission (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
17	Boot Transfer failed 55-AA Timeout	AA did not reply to the boot code transfer procedure 55.	Check the connection between HEATER CONT board Assy and MAIN board Assy.	• Reconnect HEATER CONT board Assy and MAIN board Assy. • Replace the cable connecting HEATER CONT board Assy and MAIN board Assy. • Replace HEATER CONT board Assy. • Replace MAIN board Assy.	☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
18	Boot Transfer failed 55-AA reply error xx	xx replied to the boot code transfer procedure 55.			
19	Boot Transfer failed End code xx	Error (xx) replied to the end of boot code transfer.			
20	Boot Transfer failed Echo timeout	An echo of the boot code transfer procedure did not reply.			
21	Boot Transfer failed Echo error xx	An invalid error (xx) of boot code transfer procedure replied.			
22	Internal error Parameter save error	Parameter writing failed.	This should not normally happen. FROM may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
23	Transfer failed Wrong year xxxx	Received wrong year data. (xxxx).	SODIMM or MAIN board Assy may be damaged.	• Replace SODIMM. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
24	Transfer failed Wrong month xx	Received wrong month data. (xx).			
25	Transfer failed Wrong day xx	Received wrong date data. (xx).			
26	Transfer failed Wrong hour xx	Received wrong time data. (xx).			
27	Transfer failed Wrong min xx	Received wrong minute data. (xx).			
28	Transfer not ready	Transfer is not available.	Check if the LED display on Operation panel is in standby state in Board manager mode.	Press an arbitrary button on Operation panel to set the panel display in the standby state, and then reinstall.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5

2.2 Troubleshooting Without Error Messages

This section describes the symptoms of errors without an error message as well as the check items and recovery actions.

2.2.1 Initial Operation Problems

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems

No.	Symptom	Check item	Action	Reference
1	Printer cannot be turned on	1. Are the cables between Inlet and Power board and Power board and MAIN board securely connected? 2. Is Power cable damaged?	Connect Power cable securely. If it is damaged, replace it.	☞"3.4.2 Replacing Power Board Assy" p.3-41 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		3. Is the fuse blown?	Replace Fuse.	☞"3.4.16 Replacing AC Inlet" p.3-60
		4. Is FFC of Panel unit Assy cut or shorted out?	Replace Panel FFC.	☞"3.3.1 Replacing Panel Unit" p.3-26
		5. Panel unit Assy may be damaged.	Replace Panel unit Assy.	
		6. Inlet Assy may be damaged.	Replace Inlet Assy.	☞"3.4.16 Replacing AC Inlet" p.3-60
		7. Power board Assy may be damaged.	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
		8. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	LCD display malfunction	1. Check the connection of Panel FFC connector area on the Panel unit Assy side and MAIN board Assy side. • Is Panel FFC obliquely inserted?	Correctly plug the following connectors again. • Panel FFC	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		2. Panel FFC may be damaged.	Replace Panel FFC.	☞"3.3.1 Replacing Panel Unit" p.3-26
		3. Is LCD monitor of Panel unit Assy damaged?	Replace Panel unit Assy.	
		4. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		5. Power board Assy may be damaged.	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
3	Initial ink charge does not start	1. Is “Maintenance cover open” displayed on LCD monitor while Maintenance cover is closed?	• MAIN board Assy connector Check the connectors of HEATER RELAY board Assy. • Check if Maintenance cover sensor is broken. • Adjust the mounting position of Maintenance cover sensor. • Replace Maintenance cover sensor.	☞"3.3.3 Replacing Cover switch Assy" p.3-29 ☞" Mainte. Cover[*] Open (*L or R)" p.2-2
		2. Is “Cover open” displayed on LCD monitor while Front cover is closed?	• Adjust the mounting position of Cover sensor. • Replace Cover sensor.	☞"(3) Front Cover section" p.3-32 ☞" Mainte. Cover[*] Open (*L or R)" p.2-2
		3. Is “Lever up” displayed on LCD monitor while Media set lever is lowered?	Check if Lever sensor is correctly operating in “Check3: Test” - “Sen.4: Sensor” – “Test7: Lever” in the self-diagnosis function.	☞"5.5.4 Sensor Menu" p.5-12
		4. Check the connection of Panel FFC connector area on the Panel unit Assy side and MAIN board Assy side. • Is Panel FFC obliquely inserted?	Correctly plug the following connectors again. • MAIN board Assy: • Panel unit Assy	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		5. Check the connection of MAIN board Assy connector.	• MAIN board Assy connector Check the connectors of HEATER RELAY board Assy. • Check if Maintenance cover sensor is broken. • Adjust the mounting position of Maintenance cover sensor. • Replace Maintenance cover sensor.	☞"3.5.6 Replacing Lever sensor and Lever sensor Cable" p.3-85
		6. HEATER RELAY board Assy may be damaged.	Replace HEATER RELAY board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"5.10.2 Parameter Update Menu" p.5-59

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
3	Initial ink charge does not start (Continued)	7. Does the next self-diagnosis function correctly operate while specific ink bags are securely inserted? • Ink detection in "15: Ink END"	• Follow the same procedure as when "[KCMY] Ink END" is displayed to take appropriate measures. • After adjustment and replacement, perform Initial ink charge in "Check3: InkCharg" – "InkCharge1: Normal" in the self-diagnosis function.	☞"2.1.3 Errors with Message" p.2-10 ☞"5.10.2 Parameter Update Menu" p.5-59
		8. Does the dedicated cartridge status properly operate in "16: INK ID" in the self-diagnosis function, while specified ink bags are securely inserted?	• Follow the same procedure as when "[KCMY] Not Original" is displayed to take appropriate measures. • After adjustment and replacement, perform Initial ink charge in "Check3: InkCharg" – "InkCharge1: Normal" in the self-diagnosis function.	☞"2.1.3 Errors with Message" p.2-10 ☞"5.10.2 Parameter Update Menu" p.5-59
		9. MAIN board Assy may be damaged.	• Replace MAIN board Assy. • After replacement, perform Initial ink charge in "Check3: InkCharg" – "InkCharge1: Normal" in the self-diagnosis function.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"5.6 Ink Charging Menu" p.5-25
4	Initial ink charge started, but ink does not reach Head	1. Is Maintenance Assy damaged, or is Tube disconnected from Maintenance Assy? 2. Is two-way valve damaged, or is Tube disconnected from Maintenance Assy? 3. Is Tube at Ink supply area disconnected? 4. Is Pump motor connector securely connected? 5. Solenoid head may be damaged. 6. Replace Print head.	• If Tube is disconnected, connect it again. • Replace Maintenance Assy. • Replace two-way valve. • Connect Pump motor connector securely. • Replace Solenoid head. • Replace Print head.	☞"3.8.5 Replacing Maintenance Assy" p.3-168 ☞"3.8 Replacing Maintenance Section" p.3-164 ☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177 ☞"3.7.9 Replacing Solenoid Head Assy" p.3-143 ☞"3.7.10 Replacing Print Head" p.3-148
5	Ink does not come out even after initial ink charge is completed	1. Is Capping position appropriate?	• Once the ink flow is confirmed, perform initial charge again.	☞"5.6 Ink Charging Menu" p.5-25
		2. Are Solenoid head Assy, Ink tube, and joint screws loose? Is ink bleeding? Is O-ring properly mounted?	• Check Solenoid head Assy • Remove Side covers (L and R) and Cartridge cover and check Ink tube and joint screws of SUS pipe.	☞"3.7.9 Replacing Solenoid Head Assy" p.3-143 ☞"3.2 Removing Covers" p.3-6

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
5	Ink does not come out even after initial ink charge is completed (Continued)	3. Is there air leakage at the sealed part of Solenoid head Assy?	• Replace Solenoid head Assy and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.7.9 Replacing Solenoid Head Assy" p.3-143
		4. Is Ink tube in Maintenance Assy folded?	• Replace Maintenance Assy and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"5.6 Ink Charging Menu" p.5-25
		5. Is Wiper operating properly? (Check On/OFF in “Check3: Test” – “Test4: Sensor” – “Sen.3: Wiper” in the self-diagnosis function.	• Correctly plug the connector of MAIN board Assy again. • Replace Wiper solenoid.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
		6. Is Pump working during cleaning operation?	• Correctly plug the connector of MAIN board Assy again. • Replace Pump. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
		7. Is Ink tube bent, or does it have scratches or air leakage?	• Replace the damaged Ink tube and check if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.6.9 Replacing Ink tube" p.3-121 ☞"5.6 Ink Charging Menu" p.5-25
		8. Check the following points and connections and of Head FFCs on the CR board Assy side and the head side. • Is Head FFC obliquely inserted?	Correctly plug Head FFC to the connector again.	☞" A necessary jigs and tools are as follows." p.3-153 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		9. Is Head FFC disconnected?	Replace Head FFC.	☞" A necessary jigs and tools are as follows." p.3-153 ☞"3.7.4 Replacing CR Board Assy" p.3-134

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
5	Ink does not come out even after initial ink charge is completed (Continued)	10. Is Print head damaged?	Replace Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		11. Is CR board Assy damaged?	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
		12. Check the connections of CR_FFC connector areas on the CR board Assy side and MAIN board Assy side • Is Head FFC obliquely inserted?	Correctly plug the following connectors again. • CR FFC • HeadFFC	☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		13. Is CR_FFC broken?	Replace CR_FFC.	☞"3.6.8 Replacing CR_FFC" p.3-117
		14. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
6	• The printer does not operate after turned on. • The printer does not stop operation even when Front cover or Maintenance cover is opened. • After the printer is turned on, "Initializing" is displayed and the printer resets • Loading media does not start the initial operation • The printer does not operate even when Front cover or Maintenance cover is closed.	1. Is “Cover open” displayed on LCD monitor while Front cover is closed? Does Front cover sensor correctly operate in “Test4: Sensor” – “Sen.4: Cover” in the self-diagnosis function?	• Check the connectors of MAIN board Assy. • Adjust the mounting position of Front cover sensor. • Replace Front cover sensor Assy. • Securely connect HEATER RELAY board Assy .	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"(3) Front Cover section" p.3-32 ☞" Cover open" p.2-7

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
6	• The printer does not operate after turned on. • The printer does not stop operation even when Front cover or Maintenance cover is opened. • After the printer is turned on, "Initializing" is displayed and the printer resets • Loading media does not start the initial operation • The printer does not operate even when Front cover or Maintenance cover is closed. (Continued)	2. Is “Maintenance cover open” displayed on LCD monitor while Maintenance cover is closed? Does Maintenance cover sensor correctly operate in “Sen.5: M. CoverL” – “Sen.6: M. CoverR” in the self-diagnosis function?	• Check MAIN board Assy connector. • Maintenance cover sensor R • Maintenance cover sensor L • Adjust the mounting position of Maintenance cover sensor. • Replace Maintenance cover sensor Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞" Mainte. Cover[*] Open (*L or R)" p.2-2 ☞"3.3.3 Replacing Cover switch Assy" p.3-29
		3. Check the connection of Panel FFC connector areas on the Panel unit Assy side and MAIN board Assy side. • Is Panel FFC obliquely inserted?	Correctly plug the following connectors again. • PanelFFC	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		4. Is “Set media” displayed on LCD with pressure arm lowered?	• Check Lever Sensor board Assy connector. • Replace Lever sensor Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.5.6 Replacing Lever sensor and Lever sensor Cable" p.3-85
		5. Does Paper rear sensor Assy correctly detect in “Test4: Sensor” – “Sen.9: Rear” in the self-diagnosis function	• Check P_REAR Sensor Assy connector . • Replace Paper rear sensor Assy.	☞"5.5.4 Sensor Menu" p.5-12 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.5.5 Replacing P_Rear Sensor" p.3-83
		6. Is DC cable Assy between Power board Assy and MAIN board Assy correctly connected?	• Reconnect DC cable Assy. • Replace DC cable Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
		7. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		8. Power board Assy may be damaged.	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41

Table 2-9 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
7	The printer does not recognize the installed ink cartridges	1. Does the next self-diagnosis function correctly operate while specific ink bags are securely inserted? • Ink detection in “15: Ink END” • Cartridge detection in “14: Ink NOT KCMY”	• Follow the same procedure as when “[KCMY] Ink END” is displayed to take appropriate measures.	☞"2.1.3 Errors with Message" p.2-10 ☞"5.10.2 Parameter Update Menu" p.5-59
		2. Does the dedicated cartridge status properly operate in “Ctrl2: Sensor” – “Sen.4 : etc” – “16: [KCMY] Ink ID” in the self-diagnosis function, while specified ink bags are securely inserted?	• Follow the same procedure as when Error concerning “S/C” is displayed to take appropriate measures.	☞"2.1.3 Errors with Message" p.2-10 ☞"5.10.2 Parameter Update Menu" p.5-59
8	Nothing can be input from Operation panel	1. Is Operation panel cover damaged or defaced?	Replace Operation panel cover.	-
		2. Check the connection of Panel FFC connector area on the Panel unit Assy side and MAIN board Assy side. • Is Panel FFC obliquely inserted? • Panel FFC may be disconnected	Check the connection of the following connectors. • Panel FFC Replace Panel FFC.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		3. Panel unit Assy may be damaged.	Replace Panel unit Assy.	☞"3.3.1 Replacing Panel Unit" p.3-26
		4. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
9	Printing does not start even after receiving data.	-	-	☞"2.2.5 Online Function Problems" p.2-58

2.2.2 Media Feed Problems

Table 2-10 Symptoms, Check Items and Actions for Media Feed Problems

No.	Symptom	Check item	Action	Reference

1	Media slips during media initialization or printing.	1. When using roll media, are Flanges correctly attached?
		2. Does Paper rear sensor Assy correctly detect in “Test4: Sensor” – “Sen.9: Rear” in the self-diagnosis function?
			• Correctly insert Flanges into the media tube of roll media.
			• Check the connection of the following connectors.
			  • MAIN board Assy:
			  • CR board Assy:
			• Replace Paper rear sensor Assy.
				☞Operation Manual
				☞**"3.4.11 Replacing MAIN Board Assy" p.3-53**
				☞**"3.7.4 Replacing CR Board Assy" p.3-134**
				☞**"3.5.5 Replacing P_Rear Sensor" p.3-83**

2	Media skews or meanders during media initialization or printing.	3. Does Suction FAN correctly operate in “Test6: Fan” in the self-diagnosis function?	• Check the connection of the connectors of the following MAIN board assemblies. • Suction FAN relay Assy: • Replace Suction FAN Assy. • Replace the cable of Suction FAN that is not working properly.	-
3	Media wrinkles during media initialization or printing.	4. Is Heater temperature set correctly?	Instruct the user that if the temperature is not set properly, media gets wrinkled or curled.	
4	Media tears during media initialization or printing.	5. Are you using media whose edges are curled up?	Instruct the users to use the recommended media and how to use Media holder.	☞Operation Manual
		6. Are the thickness of the loaded media and the value displayed on Panel the same? 7. Does Pressure roller rotate smoothly while Pressure lever is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	
		8. Is Paper guide greatly distorted, scratched, or containing any foreign substances?	• If there are any foreign substances such as pieces of paper on Paper guide, remove them. • Replace Paper guide.	☞**"3.2.12 Removing Paper Guide R (Upper)" p.3-21** ☞**"3.2.13 Removing Paper guide R (Lower)" p.3-23**
5	Media size is not correctly detected after media initialization.	Are you using the media recommended by MUTOH?	Reload the media recommended by MUTOH, and check again. If the media used is not recommended by MUTOH, Paper sensor may have a reading miss and may not be able to recognize media.	☞Operation Manual

Table 2-10 Symptoms, Check Items and Actions for Media Feed Problems (Continued)

No.	Symptom	Check item	Action	Reference
6	LCD display malfunction	1. Check the connection of Panel FFC connector area on the Panel unit Assy side and MAIN board Assy side. • Is Panel FFC obliquely inserted?	Insert the following connectors again to see if Panel FFC was inserted obliquely. Panel FFC.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		2. Panel FFC may be damaged.	Replace Panel FFC.	☞"3.3.1 Replacing Panel Unit" p.3-26
		3. Is LCD monitor of Panel unit Assy damaged?	Replace Panel unit Assy.	
		4. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		5. Power board Assy may be damaged.	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
7	Initial ink charge does not start	1. Is "Maintenance cover open" displayed on LCD monitor while Maintenance cover is closed?	• Check the connectors of MAIN board Assy and connectors of HEATER RELAY board Assy. • Check if Maintenance cover sensor is broken. • Adjust the mounting position of Maintenance cover sensor. • Replace Maintenance cover sensor.	☞"3.3.3 Replacing Cover switch Assy" p.3-29 ☞" Mainte. Cover[*] Open (*L or R)" p.2-2
		2. Is "Cover open" displayed on LCD monitor while Front cover is closed?	• Adjust the mounting position of Cover sensor. • Replace Cover sensor.	☞"(3) Front Cover section" p.3-32 ☞" Mainte. Cover[*] Open (*L or R)" p.2-2
8	Initial ink charge started, but ink does not reach Head	1. Is Maintenance Assy damaged, or is Tube disconnected from Maintenance Assy?	• If Tube is disconnected, connect it again. • Replace Maintenance Assy. • Replace two-way valve. • Connect Pump motor connector securely. • Replace Valve head. • Replace Print head.	☞"3.8.5 Replacing Maintenance Assy" p.3-168 ☞"3.8 Replacing Maintenance Section" p.3-164
		2. Is two-way valve damaged, or is Tube disconnected from Maintenance Assy?		☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177
		3. Is Tube at Ink supply area disconnected?		
		4. Is Pump motor connector securely connected?		
		5. Solenoid head may be damaged.		☞"3.7.9 Replacing Solenoid Head Assy" p.3-143
		6. Replace Print head.		☞"3.7.10 Replacing Print Head" p.3-148

2.2.3 Printing Problems

Table 2-11 Symptoms, Check Items and Actions for Printing Problems

No.	Symptom	Check item	Action	Reference
1	The printer does not print continuously.	1. Check if you can print with a different data.	Data may be faulty.	-
		2. Firmware on the Main side may be faulty.	Upgrade Firmware on the Main side.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
		3. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	After printing, the printer feeds an extra amount of media.	1. Check if you can print with a different data.	Data may be faulty.	-
		2. Firmware on the Main side may be faulty.	Upgrade Firmware on the Main side.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
		3. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
3	Nozzles are clogged during printing	1. Ask the user if he/she is performing daily maintenance. 2. Is ink accumulated in Flushing box?	If not, instruct him/her to perform daily maintenance. Replace Flushing box.	☞Operation Manual
4	Cleaning does not mend the clogged nozzles or skewed ink discharge.	3. Is cleaning sufficiently done?	Perform cleaning twice in a row.	☞Operation Manual
		4. Is ink adhered on Wiper Assy? 5. Check if Wiper Assy correctly operates in “Sen.3: Wiper” in the self-diagnosis function.	• After wiping the surface of Cleaning wiper with the attached Cleaning stick, perform cleaning twice in a row. • If Cleaning wiper is sticky with ink, replace it with a new one.	☞Operation Manual ☞" A necessary jigs and tools are as follows." p.3-166
		6. Is Ink tube filled with ink?	Perform Little charge.	☞Operation Manual
		7. Print out Nozzle check pattern in “Test 4: Adjustment” – “Adj 2: NozzleChk” in the self-diagnosis function.	If Nozzle check pattern is correctly printed, refer to the check item 4 for action.	☞"5.7.8 Test Printing Menu" p.5-48

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
3	Nozzles are clogged during printing	8. Is Pump rotating during cleaning operation?	• Correctly plug the connectors of MAIN board Assy again. • Replace Pump. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
4	Cleaning does not mend the clogged nozzles or skewed ink discharge. (Continued)	9. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	☞" A necessary jigs and tools are as follows." p.3-166
		10. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	☞"5.10.2 Parameter Update Menu" p.5-59
		11. Is ink adhered on Print head surface or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.9: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in “Update1: Head Rank”. 3. Check the printing status again.	☞"5.7.9 Longstore Menu" p.5-50 ☞"5.10.2 Parameter Update Menu" p.5-59
		12. Is Ink tube folded?	• Replace Ink tube and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.6.9 Replacing Ink tube" p.3-121 ☞"5.6 Ink Charging Menu" p.5-25
		13. Is Print head damaged?	破 Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		14. CR board Assy may be damaged. 15. MAIN board Assy may be damaged.	Replace CR board Assy. Replace MAIN board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
5	Cannot print at all A specific color is missing	1. Check power supply voltage (DC42V).	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
		2. Is CR_FFC obliquely inserted?	Reinsert the connectors of CR_FFC.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		3. CR_FFC may be damaged.	Replace CR_FFC.	☞"3.6.8 Replacing CR_FFC" p.3-117
		4. Are Solenoid head Assy, Ink tube, and joint screws loose? Is O-ring properly mounted?	• Replace Valve head Assy and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.7.2 Removing Carriage Cover" p.3-132 ☞"3.2 Removing Covers" p.3-6
		5. Is there air leakage at the sealed part of Solenoid head?	• Replace Valve head Assy and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.7.9 Replacing Solenoid Head Assy" p.3-143 ☞"5.6 Ink Charging Menu" p.5-25
		6. Is Ink tube bent, or does it have scratches or air leakage?	• Replace Ink tube and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.6.9 Replacing Ink tube" p.3-121 ☞"5.6 Ink Charging Menu" p.5-25
		7. Does the next self-diagnosis function correctly operate while specific cartridges are securely inserted? • Ink detection in “15: Ink END” • Cartridge detection in “14: Ink NOT”	• Follow the same procedure as when “[KCMY] Ink NOT” is displayed to take appropriate measures. • After adjustment and replacement, perform Initial ink charge in “Update1: Head Rank” in the self-diagnosis function.	☞"2.1.3 Errors with Message" p.2-10 ☞"5.10.2 Parameter Update Menu" p.5-59
		8. Is Pump rotating during cleaning operation?	• Correctly plug the connectors of MAIN board Assy again. • Replace Maintenance Assy. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
5	Cannot print at all A specific color is missing (Continued)	9. Check the connections of Head FFCs on the CR board Assy side and the Print head side. • Is Head FFC obliquely inserted?	Correctly plug Head FFC to the connector again.	☞"3.7.10 Replacing Print Head" p.3-148 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		10. Is Print head damaged?	Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		11. CR board Assy may be damaged.	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
		12. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
6	The page is printed all black.	1. Check the connections of Head FFCs on the CR board Assy side and the Print head side. • Is Head FFC inserted obliquely?	Correctly plug Head FFC to the connector again.	☞"3.7.10 Replacing Print Head" p.3-148 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		2. Is CR_FFC obliquely inserted?	Reinsert the connectors of CR_FFC.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		3. CR_FFC may be damaged.	Replace CR_FFC.	☞"3.6.8 Replacing CR_FFC" p.3-117
		4. Head FFC may be damaged.	Replace Head FFC.	☞"3.7.10 Replacing Print Head" p.3-148
		5. Is Print head damaged?	Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		6. CR board Assy may be damaged.	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
		7. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
7	The page is printed blocky.	1. Ask the user of he/she is performing maintenance. 2. Is the printer used in an environment within the range of operating conditions?	If the plotter is used immediately after initial ink replenishment is complete, the following results may occur.	☞"9.5 Choosing a Place for the Printer" p.9-5 ☞Operation Manual
8	Images are printed unevenly.	3. Did you print immediately after initial ink charge?	If the plotter is used immediately after initial ink replenishment is complete, the following results may occur. • Printed lines become blurred. • White lines appear in the printed media. In such cases, perform cleaning two to three times before printing, and then check the printing result. If there is no improvement in the print result even after performing cleaning, leave the plotter unused for an hour or more.	
9	Lines in the CR direction look split.			
10	White or black lines appear on printed media	4. Is the media feed compensation value correct?	Set media feed compensation value to more than 500mm to adjust.	☞"5.13 Media Feed Menu" p.5-78
		5. Is Print head adjusted correctly?	When replacing Print head, adjust it using the self-diagnosis function (Excluding the input of Head rank.)	☞"4.2 Adjustment Item" p.4-3
		6. Are the nozzles of Print head clogged?	Perform cleaning. If the nozzles are still detached, refer to the items 3 and 4 in 9.3.3.	☞"2.2.3 Printing Problems" p.2-42
		7. Is a recommended print mode used? 8. Have the effects been changed?	If the mode was set to Banner mode, instruct the user that it is not guaranteed	☞Operation Manual
		9. Does Suction FAN correctly operate in “Test6: Fan” in the self-diagnosis function?	• Check the connection of the connectors of the following MAIN board assemblies. • Suction FAN relay • Replace the cable of Suction FAN that is not working properly. • Replace Suction FAN Assy.	-
		10. Is the sealing material firmly fixed at the specified position?	Reinstall it to the specified position.	
7	The page is printed blocky. (Continued)	11. If roll media is used, does Roll media holder rotate smoothly?	Adjust the mounting position of Roll media holder Assy. Replace Roll media holder Assy.	☞"3.11 Replacing Roll media holder Assy" p.3-187

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
8	Images are printed unevenly. (Continued)	12. Is the tension of X speed reduction belt adjusted to the specified value?	Adjust X speed reduction belt tension.	☞"4.5 X Speed Reduction Belt Tension Adjustment" p.4-52
9	Lines in the CR direction look split.(Continued)	13. Is Cleaning wiper operating properly? 14. How is the condition of Cleaning wiper?	• Check the operation in Wiper endurance in the self-diagnosis function. Replace Wiper unit if it does not operate properly. • After wiping the surface of Cleaning wiper with the attached Poly-knit wiper, perform cleaning twice in a row. • If Cleaning wiper is sticky with ink, replace it with a new one.	☞"5.12.8 Endurance Running Check Menu" p.5-77 ☞Operation Manual ☞"3.8.5 Replacing Maintenance Assy" p.3-168
10	White or black lines appear on printed media(Continued)	15. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	☞" A necessary jigs and tools are as follows." p.3-166
		16. Is T fence dirty?	• Clean T fence. • If T fence is still dirty after cleaning or damaged, replace it.	☞"3.6.4 Replacing T fence" p.3-110
		17. Does Pressure roller rotate smoothly while Pressure lever is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	☞Operation Manual
		18. Is Pump motor rotating during cleaning operation? Is ink discharged?	• Correctly plug the connector of MAIN board Assy again. • Replace Maintenance Assy. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
		19. Is Ink tube folded?	• Replace Ink tube and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.6.9 Replacing Ink tube" p.3-121
		20. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	☞"5.10.2 Parameter Update Menu" p.5-59

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
7	The page is printed blocky. (Continued)	21. Is ink adhered on the surface of Print head Assy or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.9: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in “Update1: Head Rank”. 3. Check the printing status again.	☞"5.7.9 Longstore Menu" p.5-50 ☞"5.10.2 Parameter Update Menu" p.5-59
8	Images are printed unevenly. (Continued)	22. Is Print head damaged?	Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
9	Lines in the CR direction look split. (Continued)	23. CR board Assy may be damaged.	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
10	White or black lines appear on printed media (Continued)	24. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
11	The printed borders are blurred.	1. Does cleaning remedy the situation?	Perform cleaning twice in a row.	☞Operation Manual
		2. Are you using the media recommended by MUTOH?	Reload the media recommended by MUTOH, and check again.	☞Operation Manual
		3. Is Heater temperature set correctly?	Set it to correctly.	☞Operation Manual
		4. Is Print head correctly adjusted?	Perform the same adjustment as when changing Print head.	☞"4.2 Adjustment Item" p.4-3
		5. CR_FFC may be damaged.	Replace CR_FFC.	☞"3.6.8 Replacing CR_FFC" p.3-117
		6. Is Print head damaged?	Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		7. CR board Assy may be damaged.	Replace CR board Assy.	☞"3.7.4 Replacing CR Board Assy" p.3-134
		8. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
12	There are unwanted dots (satellites). Lines are printed blurry (messy printing result)	1. Is the printer used in an environment within the range of operating conditions?	Use the printer under the operating conditions.	☞"9.5 Choosing a Place for the Printer" p.9-5
		2. Is there sufficient amount of ink left in the ink cartridges?	Replace with the new ink cartridge.	☞Operation Manual
		3. Perform cleaning three times in a row.	Print again.	☞Operation Manual
		4. Is the PG height compensation value set too large? Is PG set too high?	Adjust the head height.	☞"4.7 Head Height Adjustment" p.4-58
		5. Head rank may be malfunctioning.	Check Head rank in the self-diagnosis function.	☞"(2) Head Rank" p.5-60
		6. Is Print head adjusted correctly?	Perform the same adjustment as when changing Print head.	☞"4.2 Adjustment Item" p.4-3
		7. Perform test printing.	Nozzle check pattern is correctly printed, refer to the check item 6.	
		8. Did you print immediately after initial ink charge?	After the initial ink charge, wait for more than six hours before printing. Print quality cannot be guaranteed until ink charge is stabilized.	☞Operation Manual
		9. Check if CR encoder Assy and T fence are touching each other.	• If they are touching, adjust the mounting positions of CR encoder Assy and T fence. • If the situation is not improved after adjustment, replace CR board Assy and T fence.	☞"3.7.5 Replacing CR Encoder Assy" p.3-136 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.6.4 Replacing T fence" p.3-110
		10. Is Cleaning wiper operating properly? 11. How is the condition of Cleaning wiper?	• Check the operation in Wiper endurance in the self-diagnosis function. Replace Wiper unit if it does not operate properly. • Damp the attached Cleaning wiper cleaning cloth with the specialized cleaning fluid and wipe off the surface of Cleaning wiper. After wiping off the surface of Cleaning wiper, perform cleaning twice in a row. • If Cleaning wiper is sticky with ink, replace it with a new one.	☞"5.12 Endurance Running Menu" p.5-69 ☞Operation Manual ☞" A necessary jigs and tools are as follows." p.3-166

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
12	There are unwanted dots (satellites). Lines are printed blurry (messy printing result) (Continued)	12. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	☞" A necessary jigs and tools are as follows." p.3-166
		13. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	☞"3.6.4 Replacing T fence" p.3-110
		14. Is Pump rotating during cleaning operation?	• Correctly plug the connector of MAIN board Assy again. • Replace Pump. • Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
		15. Is Ink tube folded?	• Replace Ink tube and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again.	☞"3.6.9 Replacing Ink tube" p.3-121 ☞"5.6 Ink Charging Menu" p.5-25
		16. Is ink adhered on the surface of Print head Assy or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.9: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in “Update1: Head Rank”. 3. Check the printing status again.	☞"5.7.9 Longstore Menu" p.5-50 ☞"(2) Head Rank" p.5-60
		17. Is Print head damaged?	Replace the damaged Print head.	☞"3.7.10 Replacing Print Head" p.3-148
		18. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
13	Mixed color lines are not overlapped.	1. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	☞"5.10.2 Parameter Update Menu" p.5-59
		2. Is there a problem with Head alignment? Is there a problem with Head height adjustment?	Adjust Head alignment and Head height.	☞"4.7 Head Height Adjustment" p.4-58 ☞"4.6 Head Accuracy Adjustment" p.4-54
		3. Is there a problem with CW adjustment?	Perform CW Alignment.	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
		4. Is there a problem with bi-directional print alignment?	Adjust bi-directional print alignment.	
		5. Check if CR encoder Assy and T fence are touching each other.	• If they are touching, adjust the mounting positions of CR encoder Assy and T fence. • If the situation is not improved after adjustment, replace CR board Assy and T fence.	☞"3.7.5 Replacing CR Encoder Assy" p.3-136 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.6.4 Replacing T fence" p.3-110

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
14	The printed results are uneven. (Vertical direction against the printer unit)	1. Is the printer used in an environment within the range of operating conditions?	Use the printer under the operating conditions.	☞"9.5 Choosing a Place for the Printer" p.9-5
		2. Is T fence dirty?	• Clean T fence. • If T fence is still dirty after cleaning or damaged, replace it.	☞"3.6.4 Replacing T fence" p.3-110
		3. The internal processing of MAIN board Assy may be faulty.	Initialize parameters, re-input or readjust it, and then check the operation again.	☞"5.7.13 Solid Print Menu" p.5-54
15	The printed results are uneven. (Horizontal direction against the printer unit)	1. Does Suction FAN correctly operate in “Test6: Fan” in the self-diagnosis function?	• Check the connection of the connectors of the following MAIN board assemblies. • Suction FAN relay Assy • Replace the cable of Suction FAN that is not working properly. • Replace Suction FAN Assy. •	-
		2. Is PF driving pulley loose?	Replace PF motor Assy.	☞"3.5.3 Replacing PF Motor Assy" p.3-77
		3. Is the tension of X speed reduction belt adjusted to the specified value?	Adjust X speed reduction belt tension.	☞"4.5 X Speed Reduction Belt Tension Adjustment" p.4-52
		4. If roll media is used, does Scroller rotate smoothly?	• Adjust the mounting position of Roll media holder Assy. • Replace Roll media holder Assy.	☞"3.11 Replacing Roll media holder Assy" p.3-187
		5. Does Pressure roller rotate smoothly while Pressure lever is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	☞Operation Manual

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
16	The printed results are uneven. (Vertical direction against the printer unit)	1. Is the printer used in an environment within the range of operating conditions?	Use the printer under the operating conditions.	☞"9.5 Choosing a Place for the Printer" p.9-5
		2. Is the media feed compensation value correct?	Set media feed compensation value to more than 500mm to adjust.	☞Operation Manual
		3. Is PF driving pulley loose?	Replace PF motor Assy.	☞"3.5.3 Replacing PF Motor Assy" p.3-77
		4. Is the tension of X speed reduction belt adjusted to the specified value?	Adjust X speed reduction belt tension.	☞"4.5 X Speed Reduction Belt Tension Adjustment" p.4-52
		5. Does Pressure roller rotate smoothly while Pressure lever is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	☞Operation Manual
		6. Is the rough area on the surface of Grid roller partially pealed off?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	☞Operation Manual
		7. Is Grid roller rotating heavily? Or does any part of Grid roller rumble when rotated?	Clean the area other than the painted portion of Grid roller.	
		8. If roll media is used, does Scroller rotate smoothly?	Adjust the mounting position of Roll media holder Assy. Replace Roll media holder Assy. Change the media.	☞"3.11 Replacing Roll media holder Assy" p.3-187

Table 2-11 Symptoms, Check Items and Actions for Printing Problems (Continued)

No.	Symptom	Check item	Action	Reference
17	The printed results are uneven. (Horizontal direction against the printer unit)	1. Is there a problem with Head alignment?	Adjust the head alignment.	☞"4.6 Head Accuracy Adjustment" p.4-54
		2. Is there a problem with bi-directional print alignment?	Adjust bi-directional print alignment.	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
		3. Is T fence dirty?	Clean T fence. If T fence is still dirty after cleaning or damaged, replace it.	☞"3.6.4 Replacing T fence" p.3-110
		4. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	☞"5.10.2 Parameter Update Menu" p.5-59
		5. Check if the vertical lines printed in “Adj.2: NozzleChk” in the self-diagnosis function are connected, while the nozzle check pattern printed in “Adj.3: HeadSlant” shows it is properly adjusted.	Replace Steel bearer.	☞"3.6.7 Replacing Steel Bare" p.3-115
		6. Is Carriage Assy wobbly?	Replace Carriage Assy.	☞"3.7.14 Replacing Carriage Assy" p.3-159
		7. Are the thickness of the loaded media and the value displayed on Panel the same? 8. Does Pressure roller rotate smoothly while Pressure lever is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	

2.2.4 Noise Problems

Table 2-12 Symptoms, Check Items, and Actions for Noise Problems

No.	Symptom	Check item	Action	Reference
1	Abnormal noise is heard when media is sucked	1. Are there any contact substances or foreign substances around the rotating fin of Suction FAN Assy?	Check the damage of the cable and connection of the connector.	-
		2. Check the damage of the cable and connection of the connector.	If damaged, replace the part.	-
		3. Suction FAN Assy itself may be faulty.	Replace Suction FAN Assy.	-
		4. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
		5. Power board Assy may be damaged.	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
2	Abnormal noise is heard during waiting time	1. Are there any contact substances or foreign substances at the area where noise is coming from?	Remove any contact substances or foreign substances.	-
		2. Is the noise coming from Board Assy?	• ・If it is microvibration noise (which sounds like tinnitus) during standby, tell the user that it is the specification. • If the above does not apply, replace the following part(s): • Power board Assy • MAIN board Assy • CR board Assy • Print head Assy • HEATER RELAY board Assy • HEATER CONT board Assy JUNCTION board Assy	☞"3.4.2 Replacing Power Board Assy" p.3-41 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.7.10 Replacing Print Head" p.3-148 ☞"3.4.4 Replacing HEATER RELAY Board Assy" p.3-44 ☞"3.4.3 Replacing HEATER CONT Board Assy" p.3-42 ☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66

Table 2-12 Symptoms, Check Items, and Actions for Noise Problems (Continued)

No.	Symptom	Check item	Action	Reference
3	Abnormal noise is heard while Head is moving laterally	1. Is the noise the sound generated by ink discharging during printing?	Explain the specifications.	-
		2. Is the traveling surface of Cursor rail roller dirty?	• Clean Cursor rail roller with a dry cloth. • Remove any foreign substances on Carriage bearing and Roller guide. • When cleaning Roller guide, make sure to camp a cloth with Sumigrease spray to apply to the surface of Roller guide.	-
		3. Does Bearing have any foreign substances on it?		-
		4. Is the cause of the noise loose screw(s) on a cover?	Retighten the screw(s).	☞"3.2 Removing Covers" p.3-6
		5. Does Carriage portion make clattery noise when moved from side to side?	• Remove any foreign substances on Carriage bearing and Roller guide. • When cleaning Roller guide, make sure to camp a cloth with Sumigrease spray to apply to the surface of Roller guide.	-
		6. Is CR_FFC making noise?	• Straighten and fix it. • If the noise is coming from between Steel bearer and Tube guide, replace Tube guide.	☞"3.2 Removing Covers" p.3-6
		7. Is the cable connected to CR board Assy on Carriage touching CR board cover?	• If it is touching, adjust the mounting position of the relevant part. • If the situation is not improved after adjustment, replace the relevant part.	☞"3.6.8 Replacing CR_FFC" p.3-117
		8. Is the noise coming from Bearing of CR following movement pulley?	Replace CR following movement pulley.	☞"3.6.3 Replacing CR Return Pulley Assy" p.3-108
		9. Is the noise coming from CR motor Assy?	Replace CR motor Assy.	☞"3.6.2 Replacing CR Motor Assy" p.3-104

Table 2-12 Symptoms, Check Items, and Actions for Noise Problems (Continued)

No.	Symptom	Check item	Action	Reference
4	Abnormal noise is heard when feeding media	1. Is the gear jumping between speed reduction pulleys?	Replace X speed reduction belt. Check Speed reduction belt tension.	☞"3.5.1 Replacing X Speed Reduction Belt" p.3-72
		2. Is the noise coming from PF motor Assy?	Replace PF motor Assy.	
		3. Is the rough area on the surface of Grid roller partially pealed off?	If there is paper dust or pieces of paper on Grid roller, clean it with a nylon brush	☞Operation Manual
		4. Is Grid roller rotating heavily?Or does any part of Grid roller rumble when rotated?		
		5. Is PF scale dirty?	Apply a damp and tightly squeezed soft cloth to wipe it off.	-
		6. Is the mounting position of PF encoder correct?	Install PF encoder properly.	☞"3.5.2 Replacing PF Encoder Assy" p.3-75

2.2.5 Online Function Problems

Table 2-13 Symptoms, Check Items, and Actions for Online Function Problems

No.	Symptom	Check item	Action	Reference
1	Other functions do not work correctly	1. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	Printing position is incorrect	1. Is there a problem with CW adjustment?	Perform adjustment.	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
		2. Is there a problem with Paper edge sensor adjustment?	Perform adjustment.	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
		3. Is Paper edge sensor correctly connected?	Connect it securely.	☞"3.7.12 Replacing Paper Edge Sensor Assy" p.3-155
		4. Paper edge sensor may be damaged.	Replace P_Edge sensor.	
		5. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
3	Data or printing is garbled	1. Firmware on the Main side may be faulty.	Upgrade Firmware on the Main side.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
4	Part of the data is not printed (missing)	2. Check if T fence is dirty or twisted.	• When there is grease or dust on it: Wipe it with a dry cloth. • When there is ink on it: Damp a cloth with mild detergent and lightly wipe off the ink. • When it is too dirty and the adhered substance cannot be removed: Replace T fence.	☞"3.6.4 Replacing T fence" p.3-110
		3. Check “Encoder: CR” in “Check3: Test” – “Test5: Encoder” in the self-diagnosis function.	• If NG, check the connection of the connector of CR board Assy. • Replace T fence. • Replace CR motor Assy. • Replace CR board Assy • Replace CR_FFC.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.6.4 Replacing T fence" p.3-110 ☞"3.6.2 Replacing CR Motor Assy" p.3-104 ☞"3.7.4 Replacing CR Board Assy" p.3-134 ☞"3.6.8 Replacing CR_FFC" p.3-117
		4. Main board Assy may be malfunctioned.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

2.2.6 Other Problems

Table 2-14 Symptoms, Check Items, and Actions

No.	Symptom	Check item	Action	Reference
1	The printer hangs up	1. The internal processing of MAIN board Assy may be faulty.	Initialize parameters, re-input or readjust it, and then check the operation again.	☞"5.10.1 Parameter Initialization Menu" p.5-57 ☞"5.10.2 Parameter Update Menu" p.5-59
		2. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53
2	The power is shut down during printing	1. Is Power cable short circuited?	Check it with a tester.	-
		2. Is there electrical leakage?	Check if the cable film is peeling and touching the chassis.	-
		3. Check power supply voltage (DC24V).	Replace Power board Assy.	☞"3.4.2 Replacing Power Board Assy" p.3-41
		4. Power board Assy may be damaged.		
3	Ink cartridges cannot be inserted	1. Is it installed correctly?	Install it correctly.	☞Operation Manual
		2. Are Ink bags used dedicated ink bags?	Instruct the user to use the dedicated ink bags.	
4	Ink spills out of Waste fluid tank	1. Check the operation of Waste fluid level switch in “Test 4: Sensor” – “Sen.2: WasteTank” in the self-diagnosis function.	If Waste fluid level switch is damaged, replace it.	☞"3.10.1 Replacing Waste Fluid Bottle and Waste Fluid Level Switch" p.3-185
		2. Waste fluid level switch or Waste fluid bottle may be damaged.	Replace Waste fluid level switch or Waste fluid bottle.	☞"3.10.1 Replacing Waste Fluid Bottle and Waste Fluid Level Switch" p.3-185
5	Ink spills out of Flushing box	1. Are there any foreign substances or ink accumulated in Flushing box?	• Remove the foreign substances. • Replace Flushing box Assy.	☞"3.8.2 Replacing Flushing Box Assy" p.3-165
		2. Flushing-box sponge may not be able to absorb ink.	Replace Flushing-box sponge.	☞"3.5.12 Replacing Flushing Sponge（L side）" p.3-96

Table 2-14 Symptoms, Check Items, and Actions (Continued)

No.	Symptom	Check item	Action	Reference
6	Ink spills around X rail	1. Tubes of Flushing box or Maintenance Assy may be disengaged.	• Check if Tubes of Flushing box or Maintenance Assy are disengaged. • Replace Maintenance Assy. • Replace Flushing box Assy.	☞"3.8.2 Replacing Flushing Box Assy" p.3-165 ☞"3.8.5 Replacing Maintenance Assy" p.3-168
		2. Is Waste fluid tube bent?	Make sure that about 160mm of Waste fluid tube comes out downward from Leg holder base (exploded view A-1).	-
		3. Is Waste fluid tube clogged?	Replace Waste fluid tube.	-
		4. Ink tube may be disconnected	Replace Ink tube.	☞"3.6.9 Replacing Ink tube" p.3-121
		5. Sub tank or Two-way valve may be damaged.	Replace Sub tank or Two-way valve.	☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177 ☞"3.9.6 Replacing Sub Tank Assy" p.3-181
		6. Print head, MAIN board Assy, or CR board Assy may be damaged.	After removing Ink cartridges, check if each Board is normal.	☞"3.7.10 Replacing Print Head" p.3-148 ☞"3.4.11 Replacing MAIN Board Assy" p.3-53 ☞"3.7.4 Replacing CR Board Assy" p.3-134
		7. MAIN board Assy may be damaged.	Replace MAIN board Assy.	☞"3.4.11 Replacing MAIN Board Assy" p.3-53

2.2.7 Problems in Using MUTOH Service Assistance

Table 2-15 Problems in Using Dedicated Network Software

No.	Symptom	Check item	Action	Reference
1	MUTOH Service Assistance does not start up	-	Reinstall and perform initial settings.	☞Network administration Manual
2	"Transfer failed (Data timeout)" is displayed during transfer.	1. Are the printer and computer correctly connected with a LAN cable (when directly connected, use a cross cable and when connected via a hub, use a straight cable)?	Yes: Proceed to (2). No: Connect the printer and computer correctly.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
		2. Is the computer's IP address correct?	Yes: Proceed to (3). No: From the computer's network connection settings, use the property of local area connection to adjust the properties of TCP/IP. The computer and printer must have the same sub net addresses (such as 192.168.1.1/24 and 192.168.1.253, etc).	
		3. Does the device connected to the hub have the same IP address as the computer or printer?	Yes: Remove the relevant device from LAN. No: Proceed to (4).	-
		4. Was the printer started in Board manager mode and only Power LED is lit?	Yes: Proceed to (5). No: Start in Board manager mode. If there is nothing displayed on LCD monitor, MAIN board maybe faulty or firmware is not installed (including a power shutdown due to power outage during installation).	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
		5. Is the computer's IP address correct?	Yes : Proceed to (6). No: MAIN board Assy may be faulty.	
		6. Can the computer communicate with other devices via LAN?	Yes: Connect the computer with other devices via LAN cable and check with ping command, etc. No: The computer or MAIN board may be faulty.	–
3	"The main F/W data is incorrect." is displayed during firmware transfer.	Is the firmware data (*.jfl) to be transferred correct?	Transfer the correct firmware data again.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
4	"The main F/W data is incompatible with the printer." is displayed during firmware transfer.	Does the firmware data (*.jfl) to be transferred match the printer model?	Transfer the firmware date (*.jfl) that matches the printer model again.	

Table 2-15 Problems in Using Dedicated Network Software (Continued)

No.	Symptom	Check item	Action	Reference
5	"The F/W version cannot be downgraded to the older version." is displayed during firmware transfer.	Is the version of the firmware data (*.jfl) to be transferred older than that of the printer?	Make sure that the version of the firmware data (*.jfl) is newer than that of the printer and transfer it again.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
6	"The heater controller F/W data is incorrect." is displayed during Heater controller firmware transfer.	Is the Heater controller firmware data (*.mfl) to be transferred correct?	Transfer the correct Heater controller firmware data (*.mfl) again.	
7	"The heater controller F/W data is incompatible with the heater controller of the printer." is displayed during Heater controller firmware transfer.	Does the firmware data (*.mfl) to be transferred match the printer model?	Transfer Heater controller firmware data (*.mfl) that matches the printer model again.	

3 Parts Replacement

3.1 Introduction

This chapter provides information on removal and replacement of service parts.

WARNING

- Before starting part replacement, always perform the following operations.
- Turn OFF machine power.
- Remove Power plug from outlet.
  Otherwise, you may suffer electric shock or system circuit may be damaged.
- Remove any Cables connected to the printer.
  Otherwise, the printer may be damaged.

CAUTION

Components in the printer can be disassembled only if so instructed in this manual. Do not disassemble frame components and other components that are not instructed to disassemble in the manual.

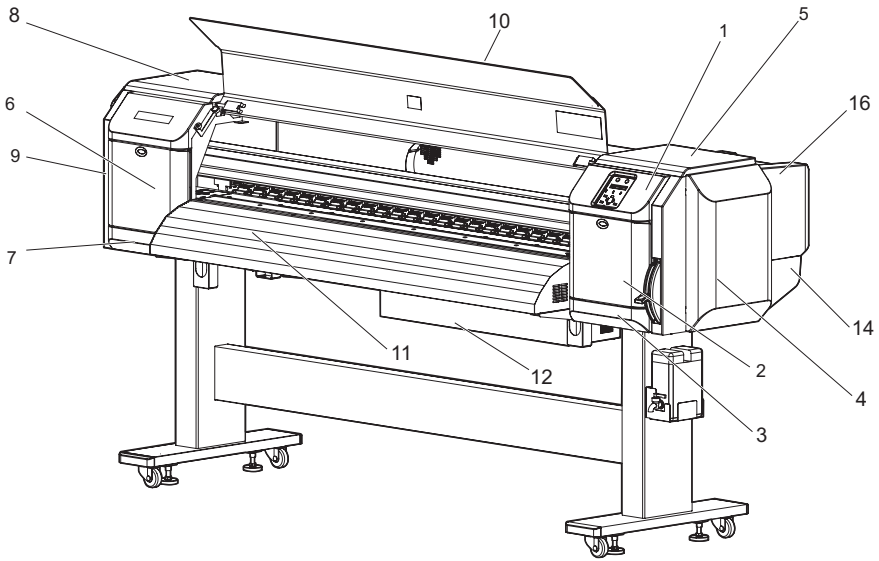
The printer has been assembled in MUTOH factory with extremely high precision up to 1/100mm. If disassembled inappropriately, it may not restore its normal functionality.

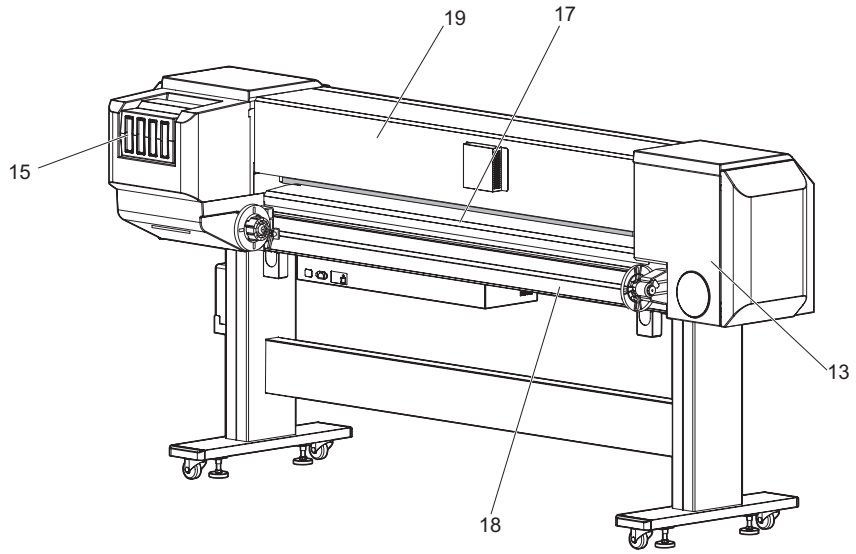
NOTE

- After replacing any service parts, perform necessary lubrication and bonding the following instructions in section **"7.5 Lubrication/Bonding" p.7-8**.
- The pictures and illustrations of the disassembly procedure are still under development
  The specification of the parts that are not directly related to the procedure may not be up-to-date.

3.2 Removing Covers

This section describes the procedures to replace Covers.
Followings describe the list of Cover parts.





No.	Part name
1	Panel cover
2	Maintenance cover R
3	Maintenance cover U_R
4	Side maintenance cover R
5	Side top cover R
6	Maintenance cover L
7	Maintenance cover U_L
8	Side top cover L
9	Side maintenance cover L
10	Front cover
11	Paper guideF (Upper)
12	Board Box
13	Rear side cover
14	Sub Tank cover R
15	Cartridge Cover
16	IH cover
17	Paper guide R(Upeer)
18	Paper guide R (lower)
19	Top cover

3.2.1 Removing Maintenance Cover

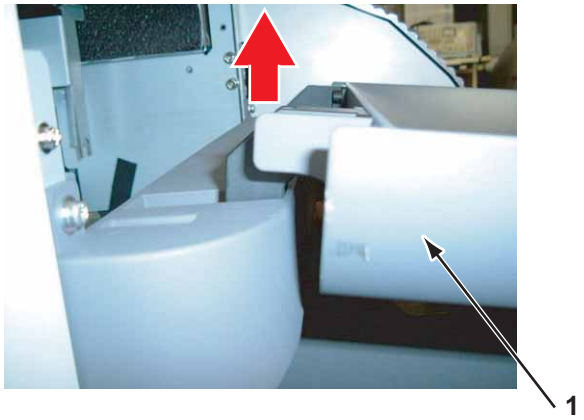
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

NOTE

The procedure to remove Maintenance cover R is the same as that of Maintenance cover L.
The pictures used here are of Maintenance cover R.

1. Open Maintenance cover.
2. Lift Maintenance cover in a direction of the red arrow to remove it



No.	Part name
1	Maintenance cover

3. To reassemble unit, reverse the removal procedure.

3.2.2 Removing Maintenance Cover U

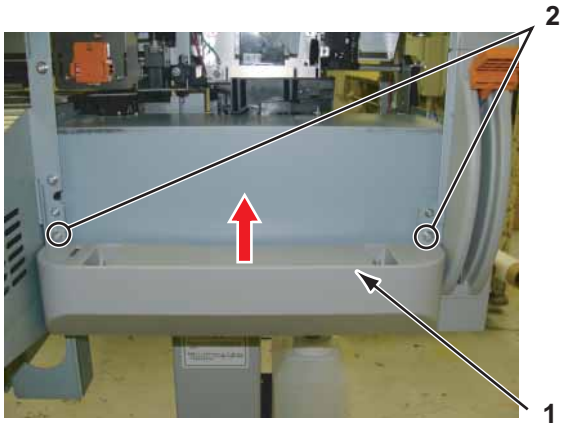
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

NOTE

The procedure to remove Maintenance cover U_R is the same as that of Maintenance cover U_L.
The pictures used here are of Maintenance cover U_R.

1. Remove Maintenance cover.
☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove the screws (2 pieces) retaining Maintenance cover U.



No.	Part name
1	Maintenance cover U
2	Pan-head screw with spring washer and flat washer M4 × 8

3. Remove Maintenance cover U in a direction of the red arrow (above figure).
4. To reassemble unit, reverse the removal procedure.

3.2.3 Removing Side Maintenance Cover

A necessary jigs and tools are as follows.

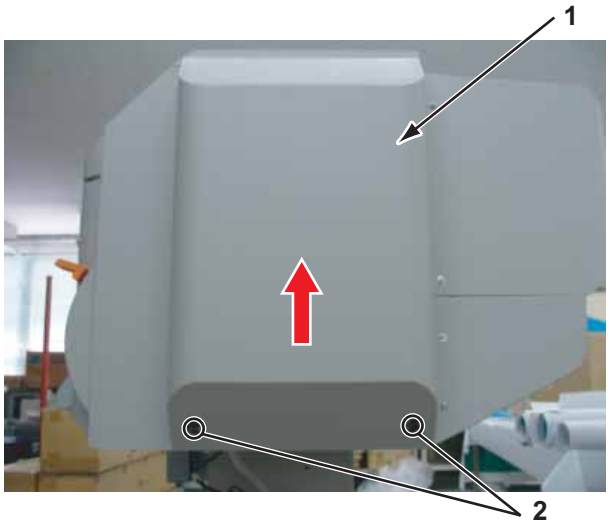
Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

NOTE

The procedure to remove Side maintenance cover R is the same as that of Side maintenance cover L.

The pictures used here are of Maintenance cover R.

1. Remove screws (2 pieces) retaining Side maintenance cover.



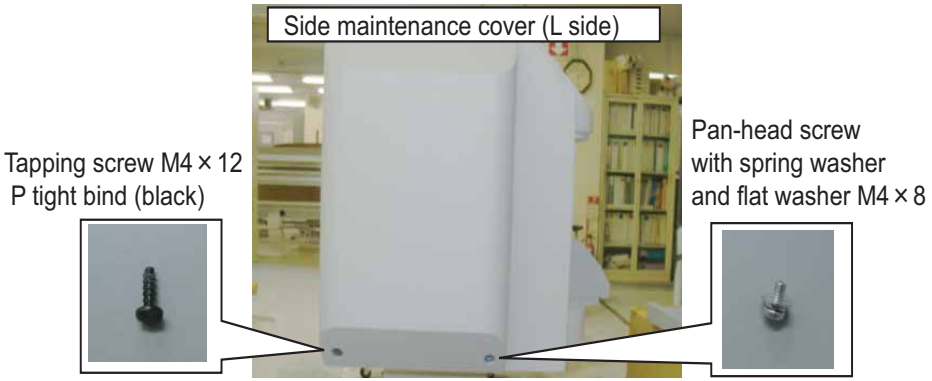
No.	Part name
1	Side maintenance cover
2	Pan-head screw with spring washer and flat washer M4 × 8

2. Remove Side maintenance cover in a direction of the red arrow (above figure).

3. To reassemble unit, reverse the removal procedure.

NOTE

There are different types of screws on Side maintenance cover on L side.



3.2.4 Removing Side Top Cover

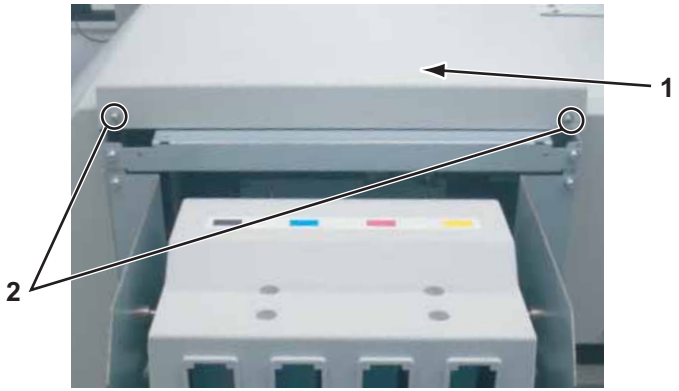
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

NOTE

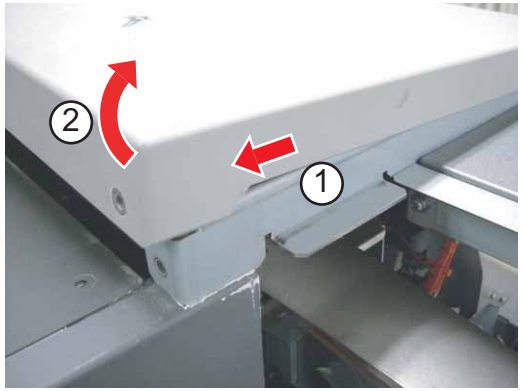
- The procedure to remove Side top cover R is the same as that of Side top cover L. The pictures used here are of Side top cover R

1. Remove IH cover.
☞"3.2.6 Removing IH Cover" p.3-12
2. Remove the screws (2 pieces) retaining Side top cover.



No.	Part name
1	Side top cover
2	Pan-head screw with spring washer and flat washer M4 × 10

3. Remove Side top cover in the direction of the arrow.



4. To reassemble unit, reverse the removal procedure.

3.2.5 Removing Rear side cover

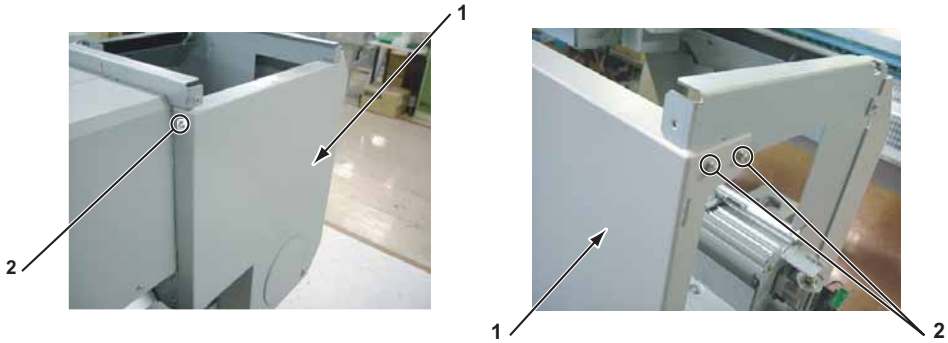
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove Side maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove the screws (2 pieces) retainingRear side cover (lower).

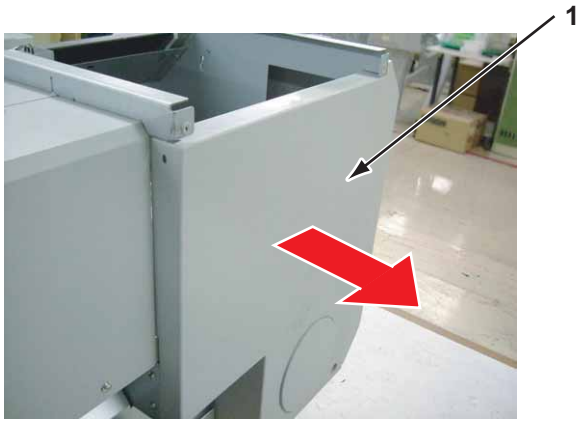
No.	Part name
1	Rear side cover
2	Pan-head screw with spring washer and flat washer M4 × 10

3. Remove the screws (3 pieces) retainingRear side cover.



No.	Part name
1	Rear side cover
2	Pan-head screw with spring washer and flat washer M4 × 10

4. Remove Rear side cover .



No.	Part name
1	Rear side cover

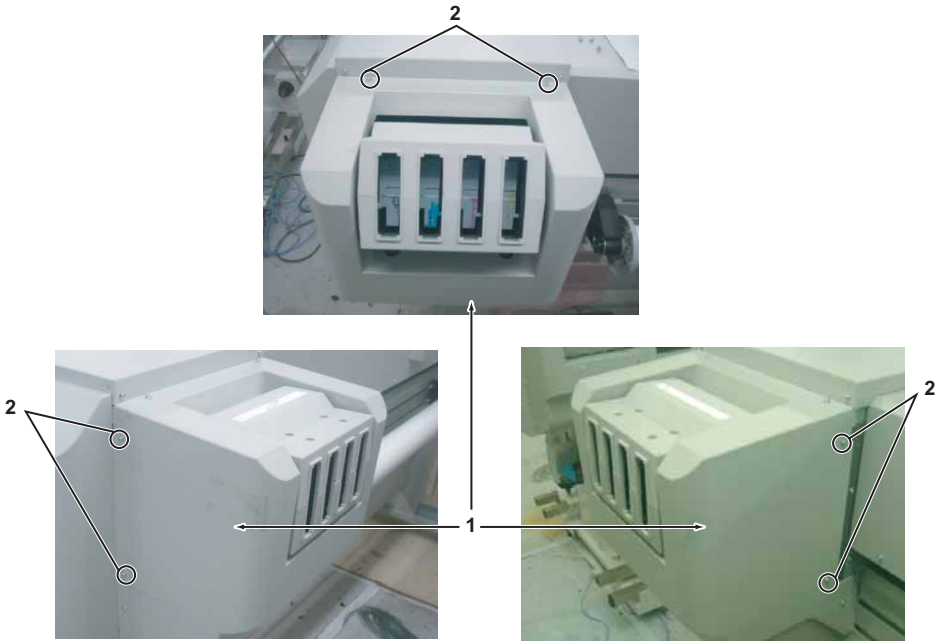
5. To reassemble unit, reverse the removal procedure.

3.2.6 Removing IH Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove the screws (6 pieces) retaining left and right of IH cover.



No.	Part name
1	IH cover
2	Pan-head screw with spring washer and flat washer M4 × 8

2. Remove IH cover.

NOTE

Tilt Cartridge cover and remove IH cover.

No.	Part name
1	Cartridge cover

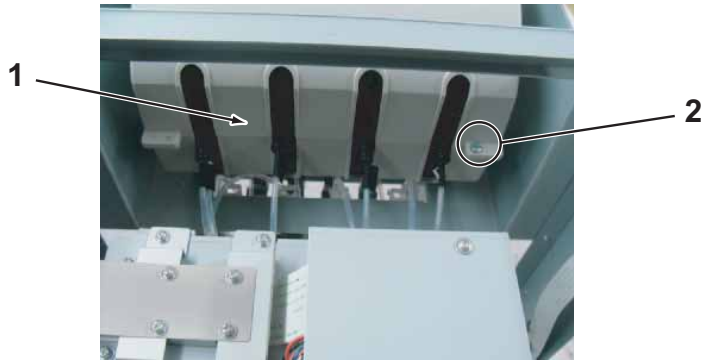
3. To reassemble unit, reverse the removal procedure.

3.2.7 Removing Cartridge cover

A necessary jigs and tools are as follows.

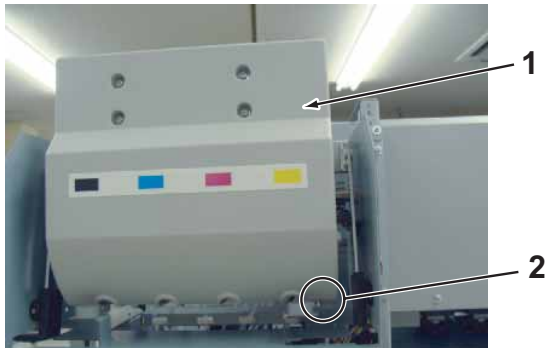
Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove Side maintenance cover R.
☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover.
☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
☞"3.2.6 Removing IH Cover" p.3-12
4. Remove the screws (4 pieces) retaining Cartridge cover.



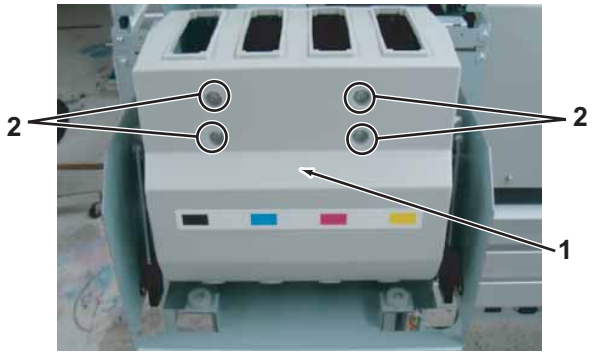
No.	Part name
1	Cartridge cover
2	Tapping screw M4 × 8 P tight bind

5. Put the Cartridge cover longways.
6. Remove the screws (2 pieces) retaining Cartridge cover.



No.	Part name
1	Cartridge cover
2	Tapping screw M4 × 8 P tight bind

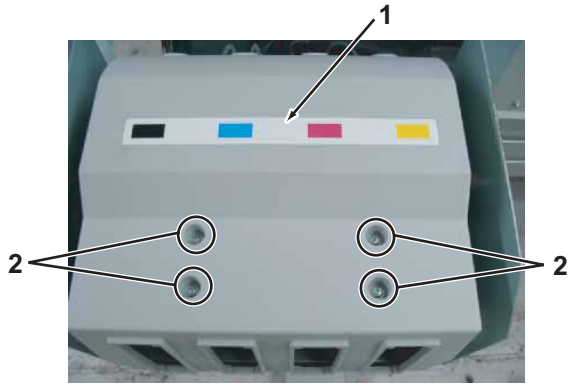
7. Remove the screws (4 pieces) retaining Cartridge cover（lower）.



No.	Part name
1	Cartridge cover
2	Tapping screw M4 × 8 S tight bind

8. Remove Cartridge cover（lower）.
9. Put the Cartridge cover sideways.

10. Remove the screws (4 pieces) retaining Cartridge cover（upper）.



No.	Name
1	Cartridge cover
2	Tappinng screwM4 × 8　Stight bind

11. Remove Cartridge cover（upper）.
12. To reassemble unit, reverse the removal procedure.

NOTE

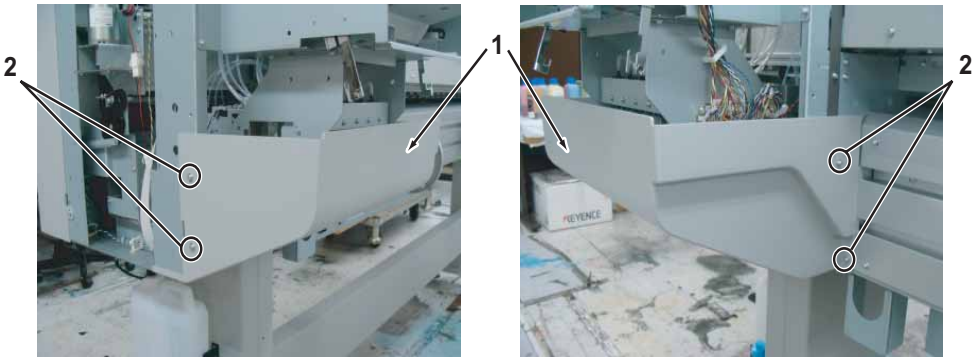
- Upper and lower side of Cartridge cover are the same shape, but check the direction of the stickers so that they are installed correctly.
- Make sure that Ink tube is not nipped. If it is nipped, ink may leak.

3.2.8 Removing Sub Tank Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove Side maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove IH cover .
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove the screws (4 pieces) retaining Sub Tank cover .



No.	Part name
1	Sub Tank cover
2	Pan-head screw with spring washer and flat washer M4 × 8

4. Remove Sub Tank cover R.
5. To reassemble unit, reverse the removal procedure.

3.2.9 Removing Front Cover

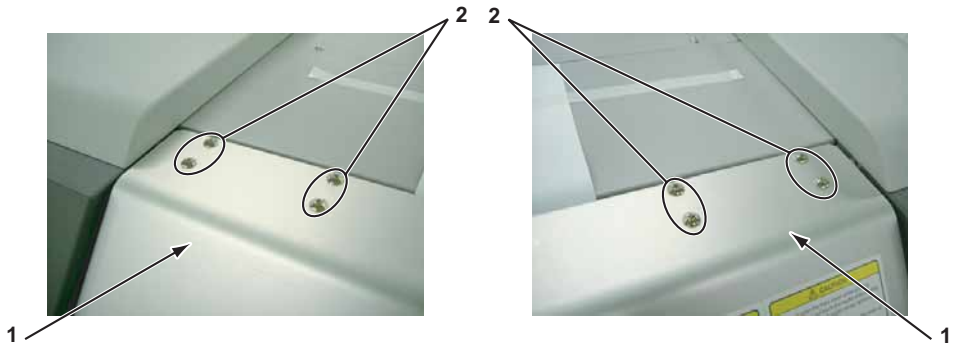
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

CAUTION

Front cover removal must be done by two or more persons.

1. Remove the screws retaining left and right side of Front cover (4 pieces each).



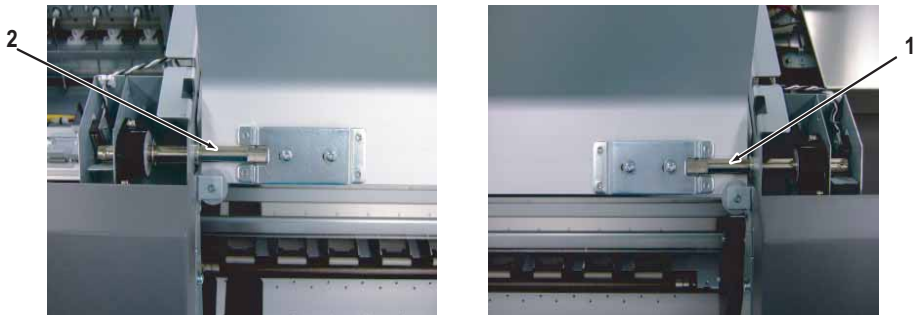
No.	Part name
1	Front cover
2	Trusco screw M4 × 6

2. Remove Front cover.
3. To reassemble unit, reverse the removal procedure.

NOTE

Before reassembling Front cover, make sure to follow the instructions below to reassemble Front cover axis.

- Front cover axis (origin side): Move to left side
- Front cover axis (opposite side of the origin): Move to right side



No.	Part name
1	Front cover axis (origin side)
2	Front cover axis (opposite side of the origin)

3.2.10 Removing Top Cover

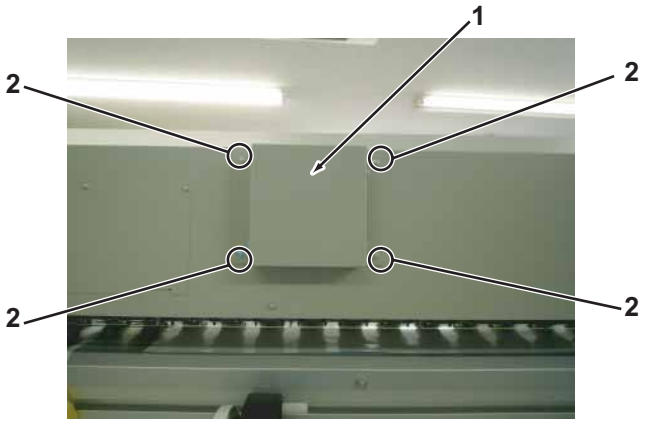
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

CAUTION

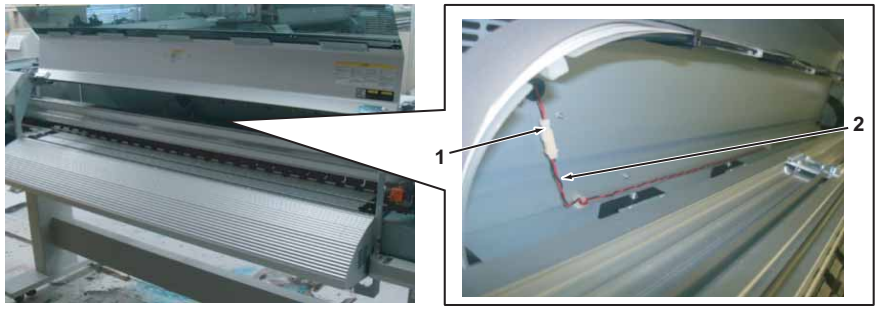
Top cover removal must be done by two or more persons.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove IH cover R.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Rear side coverRemove Rear s ide cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
5. Remove the screws （4pieces) retaining Exhaust fan cover.



No.	Part name
1	Exhaust fan cover
2	Pan-head screw with spring washer and flat washer M4 × 8

6. Open Front cover.
7. Remove the cable of Exhaust fan from the Exaust fan cable.

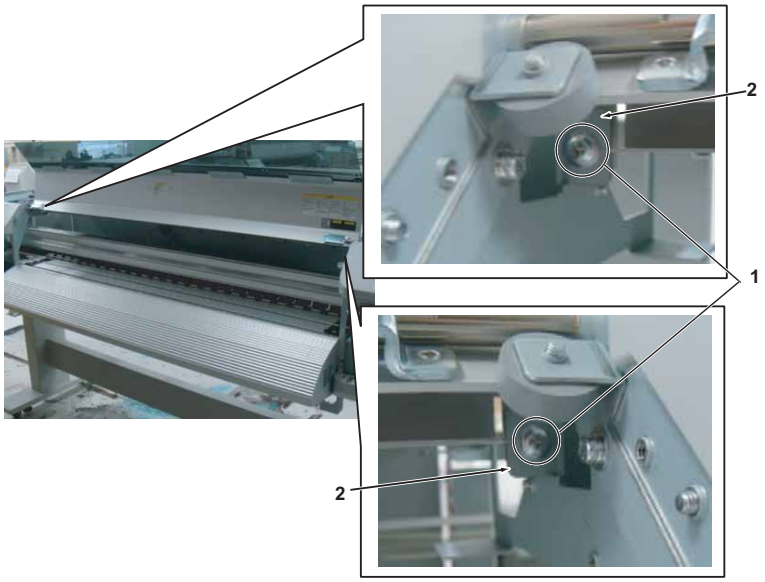


No.	Part name
1	Exhaust fan
2	Exhaust fan cable

NOTE

Do not touch T fence.
If it has dust or scratches, it may affect print quality.

8. Remove the screws (2 pieces) retaining the front side of Top cover.



No.	Part name
1	Tappinng screwM4 × 6 Stight cup
2	Top cover

9. Remove the screws (5 pieces) retaining the back of Rear top cover.

No.	Part name
1	Top cover
2	Pan-head screw with spring washer and flat washer M4 × 8

10. Remove Top cover.
11. To reassemble unit, reverse the removal procedure.

3.2.11 Removing Paper Guide F (Upper)

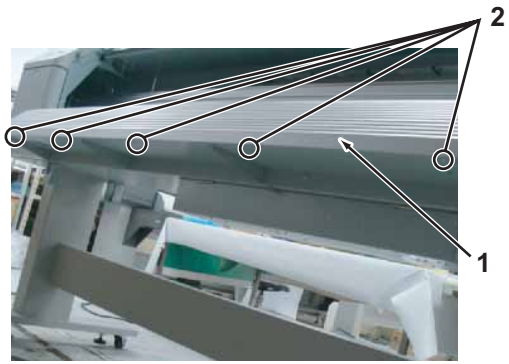
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

CAUTION

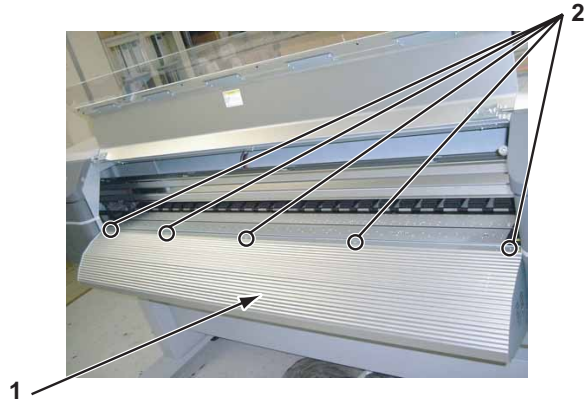
- Before removing Paper Guide F(upper), make sure to unplug Power cable.There may be a risk of electric shock by residual electrical charge.
- Paper guide F (upper) removal must be done by two or more persons

1. Remove the screws (5 pieces) retaining the bottom of Paper guide F (upper).



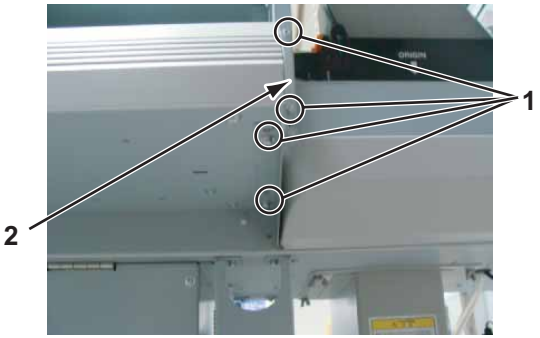
No.	Part name
1	Paper guide F (upper)
2	Pan-head screw with spring washer and flat washer M4 × 8

2. Remove the screws (5 pieces) retaining Paper guide F (upper).



No.	Part name
1	Paper guide F (upper)
2	Cup screw M3 × 6

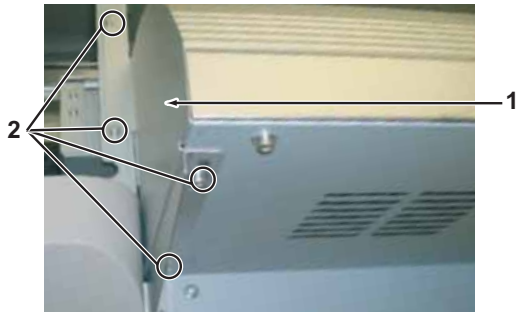
3. Remove the screws (4 pieces) retaining PGF cover R.



No.	Part name
1	PGF cover R
2	Pan-head screw with spring washer and flat washer M4 × 8

4. Remove PGF cover R.

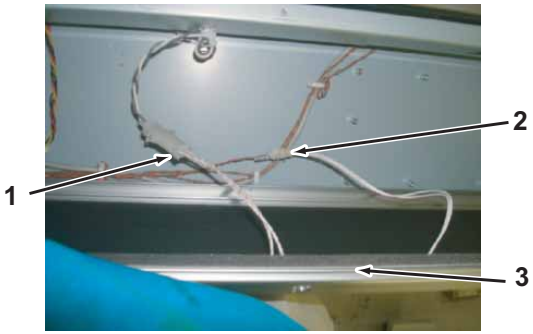
5. Remove the screws (4 pieces) retaining PGF cover L.



No.	Part name
1	PGF cover L
2	Pan-head screw with spring washer and flat washer M4 × 8

6. Remove PGF cover L.
7. Lift up Media guide F (upper) in the direction of the red arrow 1.
8. Move Media guide F (upper) in the direction of the red arrow 2 and turn it over.

9. Remove After Heater connectors (2 pieces) and After-thermistor connectors (2 pieces) located inside of Paper guide F (upper).



No.	Part name
1	After Heater connectors
2	After-thermistor connector
3	Paper guide F (upper)

10. Remove Paper guide F (upper).
11. To reassemble unit, reverse the removal procedure.

NOTE

When reassembling Paper guide F (upper), make sure not to nip Cables.
Doing so may cause disconnecting.

3.2.12 Removing Paper Guide R (Upper)

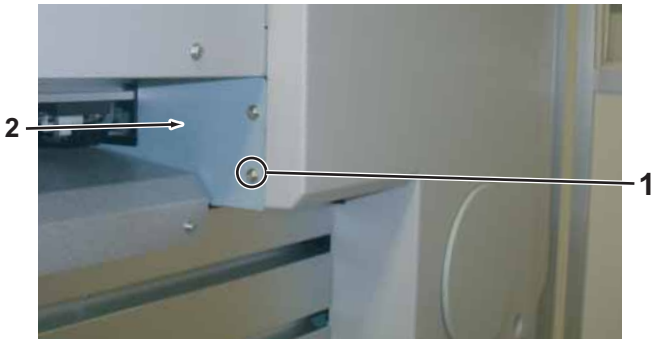
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

CAUTION

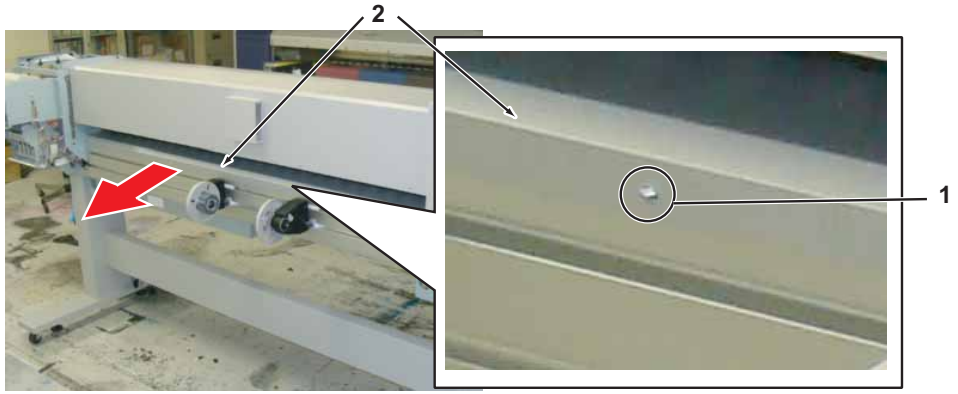
- Before removing Paper guide R（Upper), make sure to unplug Power cable. There may be a risk of electric shock by residual electrical charge.
- Media guide R (upper) removal must be done by two or more persons.

1. Remove media.
2. Remove IH cover .
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove screw (1 piece) retaining Rear side cover3.



No.	Name
1	P tight cup M4 × 6
2	Rear side cover 3

4. Remove the screws (4 pieces) retaining Paper guide R (upper).
5. Push backward Paper guide R (upper).

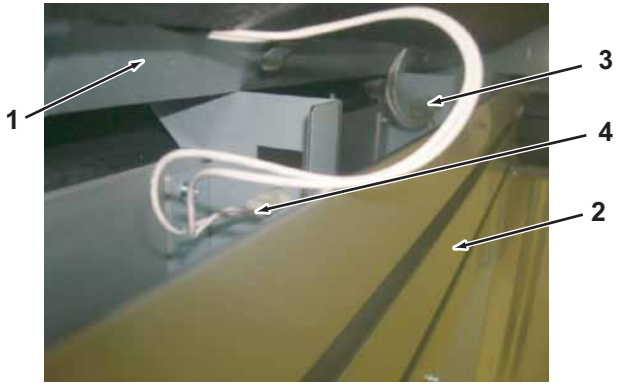


No.	Name
1	Paper guide R (upper)
2	Pan-head screw with spring washer and flat washer M4 × 8

NOTE

Cable is connected behind Media guide R (upper). Pull it out carefully so that it does not get disconnected.

6. Remove Pre-heater connectors (2 pieces) and Pre-thermistor connectors (2 pieces) located inside of Paper guide R (upper).



No.	Part name
1	Paper guide R (upper)
2	Paper guide R (lower)
3	Pre-heater connector
4	Pre-thermistor connector

7. Remove Paper guide R (upper).
8. To reassemble unit, reverse the removal procedure.

NOTE

When reassembling Paper guide R (upper), make sure not nip Cables.
When Cable is installed while being nipped, it may cause disconnecting.

3.2.13 Removing Paper guide R (Lower)

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

CAUTION

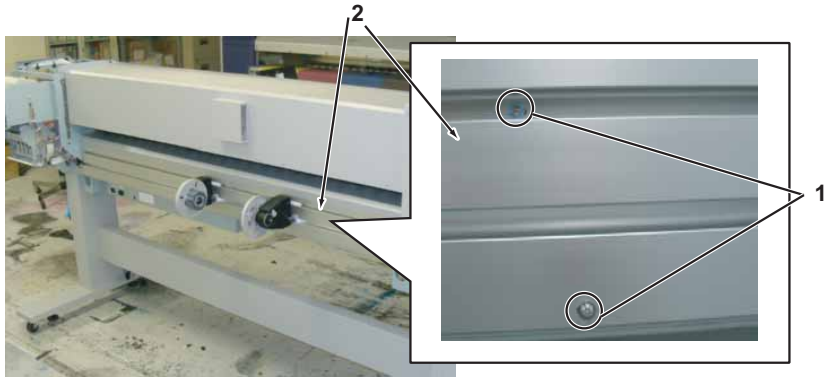
- Before removing Paper guide R (lower), make sure to unplug Power cable. There may be a risk of electric shock by residual electrical charge.
- Paper guide R (lower) removal must be done by two or more persons.

1. Remove media.
2. Remove IH cover .
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Sub tank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
4. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21

NOTE

- If roll media holder overlaps screw holes, displace Roll media holder.
- If you remove screws, Paper guide R (lower) detach because of its weight. Remove the last screw while holding Paper guide R (lower) down. Be careful not to get injured.

5. Remove the screws (4 pieces) retaining the middle of Paper guide R (lower).
6. Remove the screws (4 pieces) retaining the bottom of Paper guide R (lower).



No.	Part name
1	Paper guide R (lower)
2	Pan-head screw with spring washer and flat washer M4 × 8
3	Pan-head screw with spring washer and flat washer M4 × 8

7. Remove Paper guide R (lower).
8. To reassemble unit, reverse the removal procedure.

NOTE

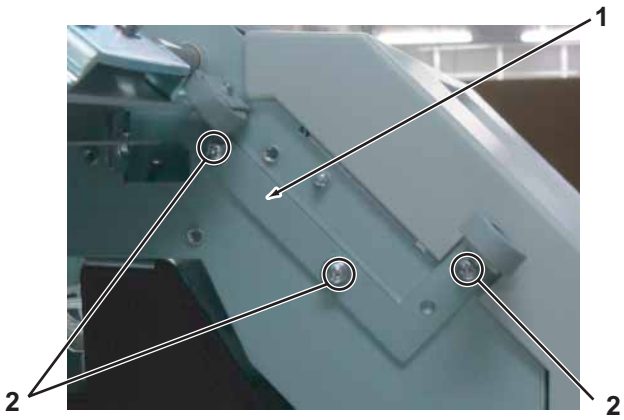
When reassembling Paper guide R (lower), make sure not nip Cables.
Doing so may cause disconnecting.

3.2.14 Removing Panel Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Open Front cover.
2. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
3. Remove side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove the screws (3 pieces) retaining Stopper mounting plate R.

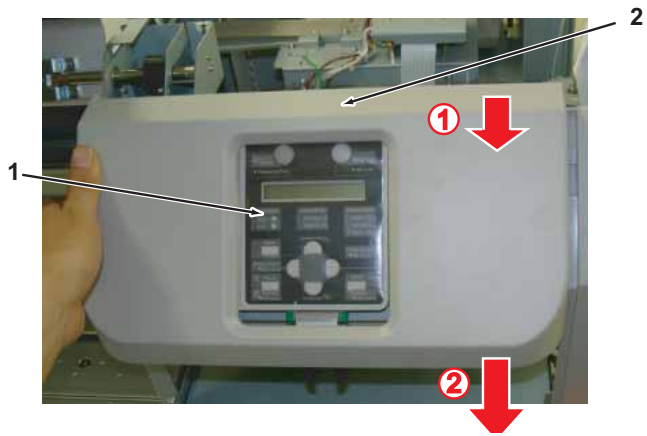


No.	Part name
1	Stopper mounting plate R
2	Pan-head screw with spring washer and flat washer M4 × 8

5. Remove Stopper mounting plate R.
6. Remove the screws (2 pieces) retaining Panel cover.

No.	Part name
1	Panel cover
2	Pan-head screw with spring washer and flat washer M4 × 8

7. Remove Panel cover in the direction of the red arrow.
   First pull Panel cover in the direction of the red arrow 1 and remove top part of Panel unit, and slide it in the direction of the red arrow 2 to remove it.

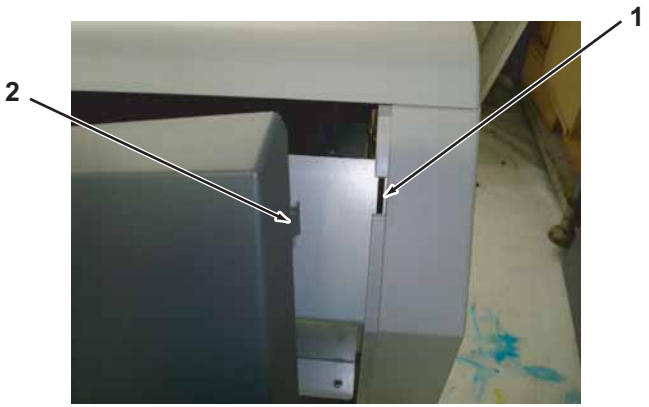


No.	Part name
1	Panel cover
2	Top part of Panel unit

8. To reassemble unit, reverse the removal procedure.

NOTE

When reassembling Panel cover, slide it after inserting the tab on a right edge of Panel cover in the slit on Panel stay side.



No.	Part name
1	Tab on the right side of Panel cover
2	Slit on Panel stay side

3.3 Replacing Cover Peripherals

This section describes the procedures to replace cover peripherals.

3.3.1 Replacing Panel Unit

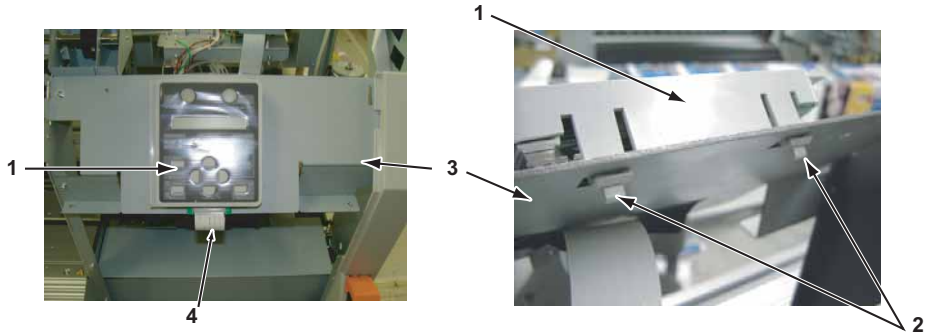
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Pnael Unit Assy	DG-42984	☞" Exploded View Cover Assy2(Rside)" p.11-17
+ Driver No.2	Generic products	-

CAUTION

- Before replacing panel unit, make sure to unplug Power cable.
  There may be a risk of electric shock by residual electrical charge.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely.
  If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Open Front cover.
2. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
3. Remove Panel cover.
   ☞"3.2.14 Removing Panel Cover" p.3-24
4. Remove Panel FFC from Panel unit.
5. Release Panel unit back tabs (4 pieces) from Panel stay.



No.	Part name
1	Panel unit
2	Panel unit tab
3	Panel stay
4	Panel FFC

6. Remove Panel unit.
7. Replace Panel unit.
8. To reassemble unit, reverse the removal procedure.

3.3.2 Replacing Panel FFC (Panel tape wires)

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Pnael FFC Assy	DG-42994	☞" Exploded View Cover Assy2(Rside)" p.11-17
+ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Panel FFC Assy.

In this section, it is referred to as Panel FFC.

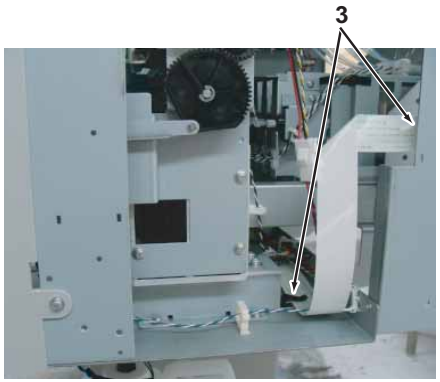
- Before replacing panel FFC, make sure to unplug Power cable.
  There may be a risk of electric shock by residual electrical charge.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely.
  If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector.
- After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

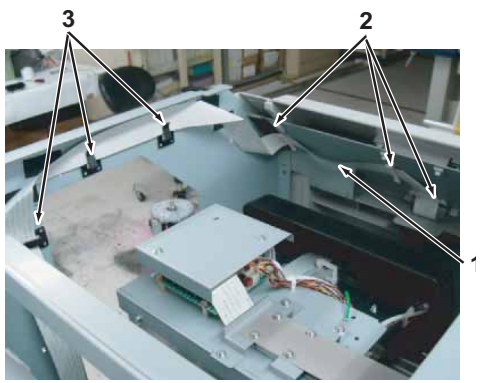
1. Open Front cover.
2. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Panel cover.
   ☞"3.2.14 Removing Panel Cover" p.3-24
5. Remove Panel FFC from Panel unit.

No.	Part name
1	Panel FFC

6. Remove Side maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
7. Remove IH cover .
   ☞"3.2.6 Removing IH Cover" p.3-12
8. Remove Sub Tank cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
9. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
10. Remove Rear side cover.
    ☞"3.2.5 Removing Rear side cover" p.3-11
11. Remove Paper guide R (upper).
    ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
12. Remove Paper guide R (lower).
    ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
13. Open Board box.
    ☞"3.4.1 Opening Board box" p.3-40

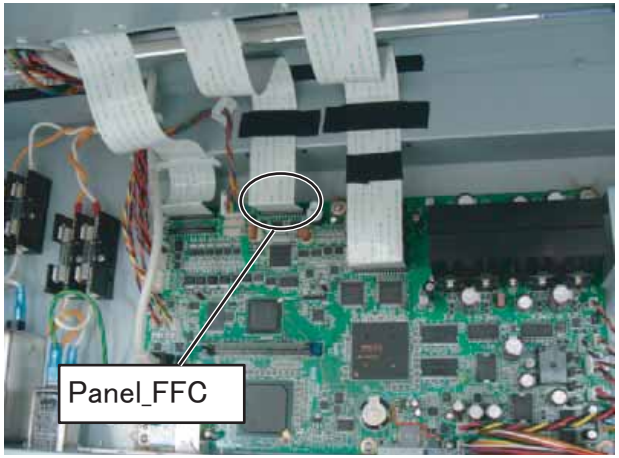
14. Remove Panel FFC from clamps on the path.





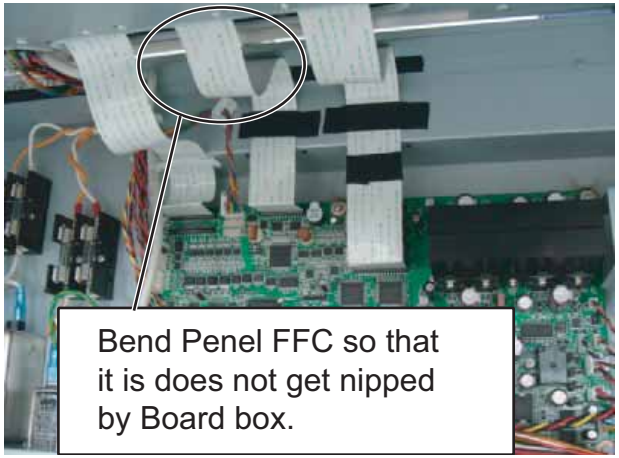
No.	Part name
1	Panel FFC
2	Flat clamp FCR35
3	Flat cable clip

15. Remove Panel FFC (J21) from MAIN board Assy.



16. Replace Panel FFC.

17. Make sure that Panel FFC does not get nipped by Board box.



18. To reassemble unit, reverse the removal procedure.

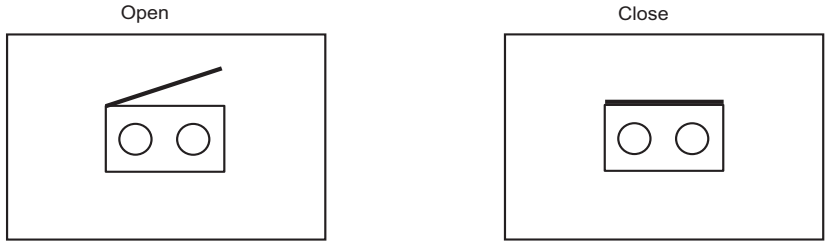
3.3.3 Replacing Cover switch Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cover Switch Assy	DG-42956	☞" Exploded View Cover Assy2(Rside)" p.11-17 ☞" Exploded View Cover Assy3(L side))" p.11-18
+ Driver No.2	Generic products	-

NOTE

Cover switch Assy looks like the following.

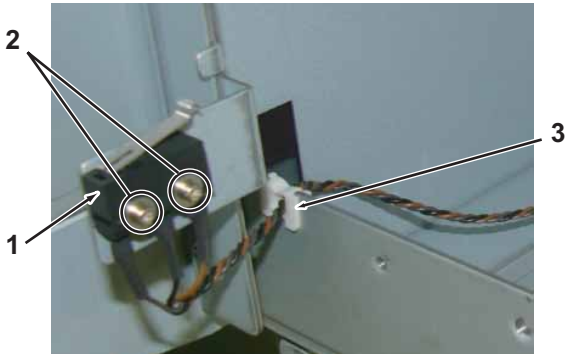


(1) Maintenance Cover (R) section

1. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Mainternance cover U_R.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
3. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove Maintenance inner cover.
   ☞"3.8.1 Removing Maintenance Inner Cover" p.3-164
5. Remove Cover R cable Assy from Cover switch Assy.

No.	Part name
1	Cover switch Assy
2	Cover R cable Assy

6. RemoveCover switch Assy cable from clamps.
7. Remove the screws (2 pieces) retaining Cover switch Assy.



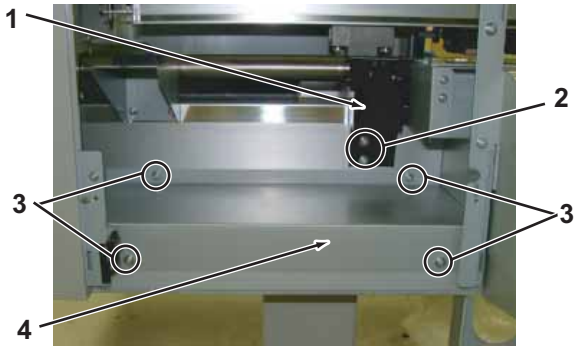
No.	Part name
1	Cover switch Assy
2	Pan-head screw with spring washer and flat washer M2 × 12
3	clamp

8. Replace Cover switch Assy.
9. To reassemble unit, reverse the removal procedure.

When closing Maintenance cover, confirm that the sensor indicates closed status in self-diagnosis function of [Check2:Test]-[Test4:Sensor]-[Sen 6:M.cover R].
☞"5.5.4 Sensor Menu" p.5-12

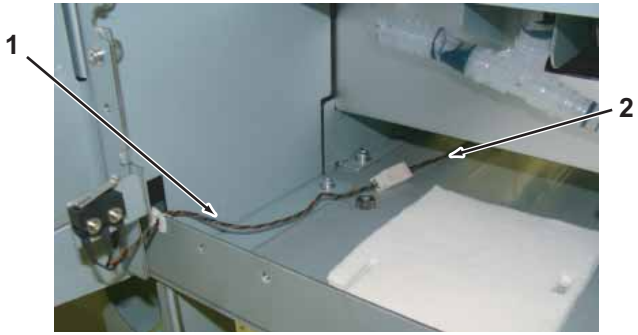
(2) Maintenance Cover (L) section

1. Remove media.
2. Remove Side maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
4. Remove Maintenance cover U_L.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
5. Remove flushing box (oposite side of origin).
6. Remove the screws (4 pieces) retaining Pan holder.



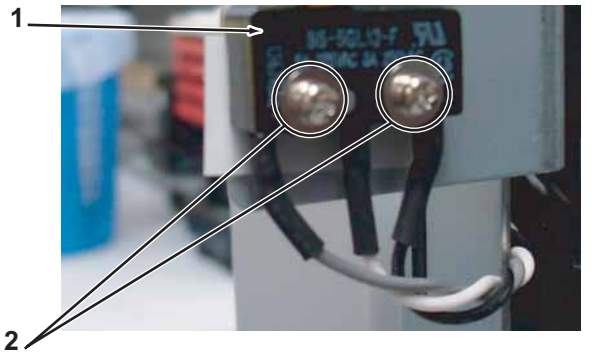
No.	Name
1	Flushing Box
2	Pan-head screw with spring washer and flat washer M4 × 8
3	Pan-head screw with spring washer and flat washer M4 × 8
4	Pan holder

7. Remove Pan holder.
8. Remove Cover L cable Assy from Cover switch Assy.



No.	Part name
1	Cover switch Assy
2	Cover L cable Assy

9. Remove the screws (2 pieces) retaining Cover switch Assy.



No.	Part name
1	Maintenance cover L sensor Assy
2	Pan-head screw with spring washer and flat washer M2 ×12

10. Replace Cover switch Assy.
11. To reassemble unit, reverse the removal procedure.
12. Perform various adjustment.
    ☞"4.2 Adjustment Item" p.4-3

(3) Front Cover section

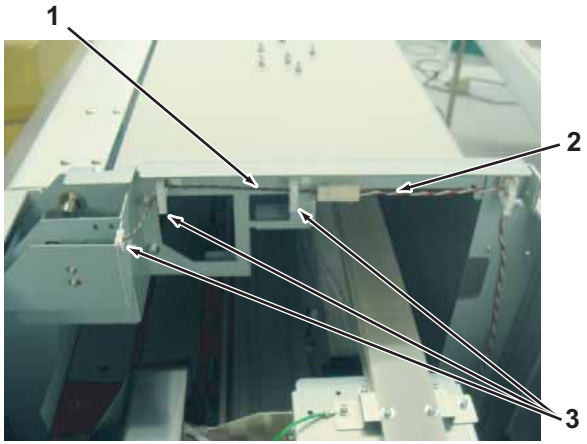
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cover Switch Assy	DG-42956	☞" Exploded View Cover Assy1(Front)" p.11-16
+ Driver No.2	Generic products	-

TIP

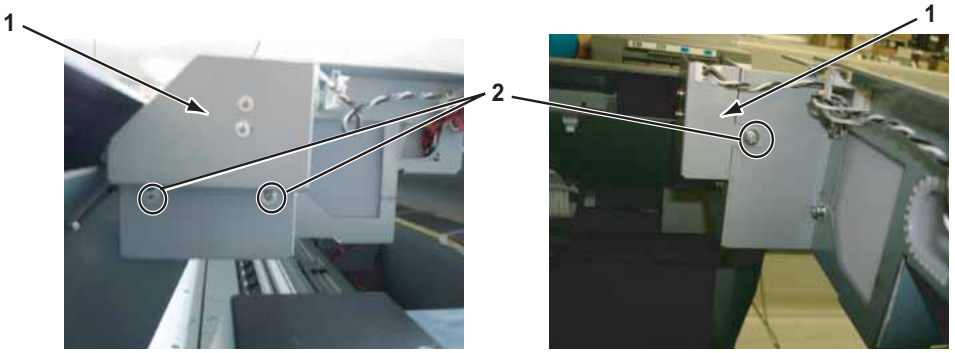
The procedure to remove Cover switch Assy for Front cover is the same for both R and L.
This section describes the procedure to replace R.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Cover R cable Assy from Cover switch Assy.
3. Remove Cable of Cover switch Assy from clamps.



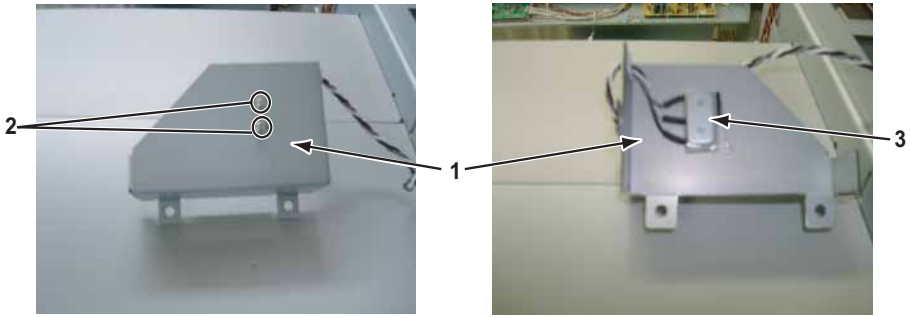
No.	Part name
1	Cover switch Assy
2	Cover R cable Assy

4. Remove the screws (3 pieces) retaining Switch cover R.



No.	Part name
1	Switch cover R
2	Pan-head screw with spring washer and flat washer M3 × 8

5. Remove Switch cover R.
6. Remove the screws (2 pieces) retaining Cover switch Assy.



No.	Name
1	Switch cover R
2	Pan-head screw with spring washer and flat washer M2 × 12
3	Square nut

7. Replace Cover switch Assy.

NOTE

When reassembling Cover switch Assy, make sure to place it in the appropriate direction.
Cover open error is displayed when reassembling to the opposite direction.

8. To reassemble unit, reverse the removal procedure.
9. Perform various adjustment.
☞"4.2 Adjustment Item" p.4-3

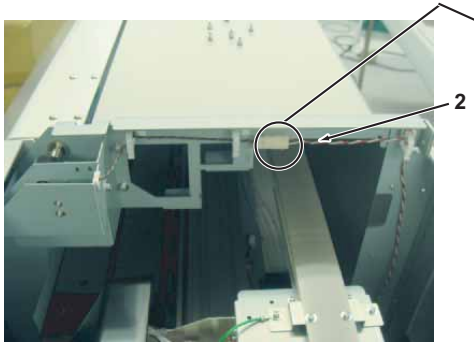
3.3.4 Replacing Cover R cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cover R Cable Assy	DG-42956	☞" Exploded View Cover Assy2(Rside)" p.11-17
+ Driver No.2	Generic products	-

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
4. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
5. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
6. Remove Cover R cable Assyfrom Cover switch Assy.

For Front Cover



For Maintenance Cover R

No.	Name
1	Connector

No.	Name
2	Cover R cable Assy

7. Remove Cover R cable Assy from MAIN Board Assy（J13）.

No.	Name
1	Cover R cable Assy
2	MAIN Board Assy

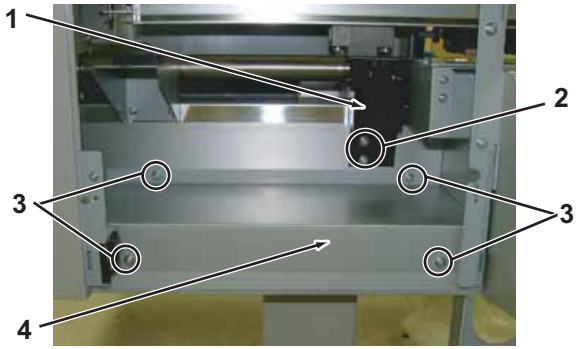
8. Remove Cable of Cover R cable Assy from the clamps on the path.
9. Replace Cover R cable Assy.
10. To reassemble unit, reverse the removal procedure.
11. Perform various adjustment.
    ☞"4.2 Adjustment Item" p.4-3

3.3.5 Replacing Cover L cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cover L Cable Assy	DG-43033	☞" Exploded View Cover Assy3(L side))" p.11-18
+ Driver No.2	Generic products	-

1. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Flushing box (opposite side of the origin).
3. Remove the screws (4 pieces) retaining Pan holder.



No.	Name
1	Flushing Box
2	Pan-head screw with spring washer and flat washer M4 × 8
3	Pan-head screw with spring washer and flat washer M4 × 8
4	Pan holder

4. Remove Pan holder.
5. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
6. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
7. Remove Cover L cable Assy from Cover switch Assy（Front cover sensor,Maintenance cover L sensor.
   ☞"3.3.3 Replacing Cover switch Assy" p.3-29
8. Remove Cover L cable Assy from MAIN Board Assy（J14）.

No.	Name
1	Cover R cable Assy
2	MAIN Board Assy

9. Remove Cable of Cover L cable Assy from clamps on the path.
10. Replace Cover L cable Assy.
11. To reassemble unit, reverse the removal procedure.

3.3.6 Replacing Exhaust fan

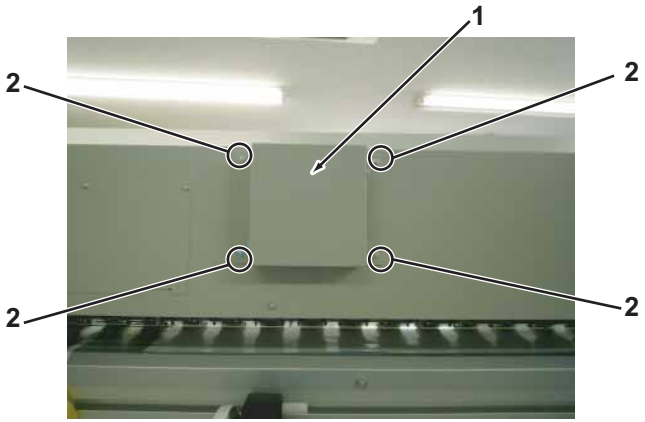
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Vacuum Fan	DG-40311	☞" Exploded View Cover Assy1(Front)" p.11-16
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Vacuum Fan.
In this section, it is referred to as Exhaust fan.

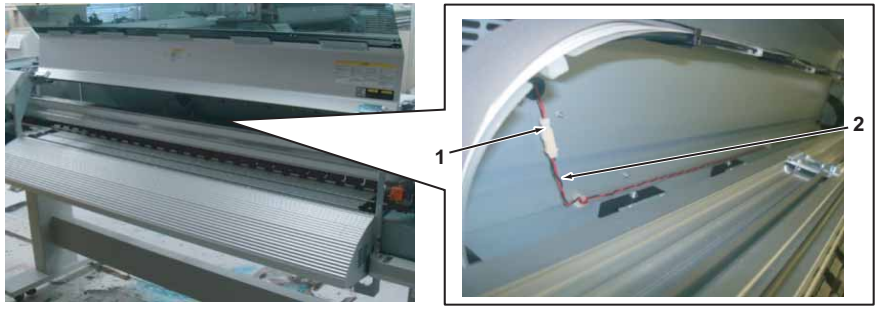
1. Remove the screws (4 pieces) retaining Exhaust fan cover.



No.	Name
1	Exhaust fan cover
2	Pan-head screw with spring washer and flat washer M4 × 8

2. Open front cover.

3. Remove Exhaust fan from Exhaust fan cable.



No.	Name
1	Exhaust fan
2	Exhaust fan cable

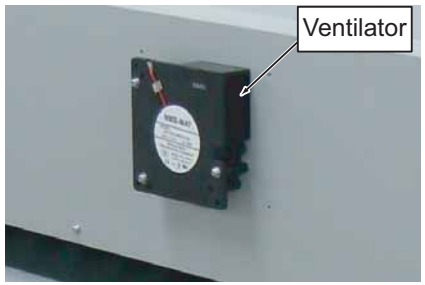
4. Remove the screws (2 pieces) retaining the Exhaust fan.

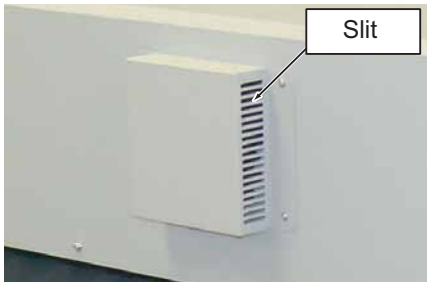
No.	Name
1	Exhaust fan
2	Pan-head screw with spring washer and flat washer 4 × 40

5. Replace Exhaust fan.

NOTE

Install Exhaust fan so that the ventilator faces the slit (gap) of Exhaust fan cover.





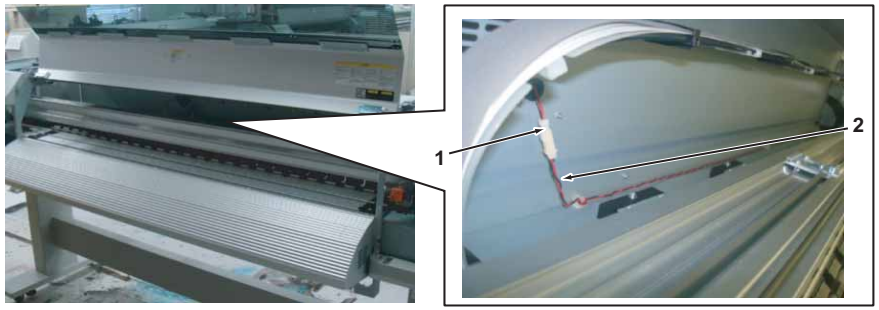
6. To reassemble unit, reverse the removal procedure.

3.3.7 Replacing Exhaust fan cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Exhaust Fan Cable Assy	DG-43032	☞" Exploded View Cover Assy1(Front)" p.11-16
+ Driver No.2	Generic products	-

1. Remove Top cover.
   ☞"3.2.10 Removing Top Cover" p.3-17
2. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
5. Remove cable of Exhaust fan from Exhaust fan cable Assy.

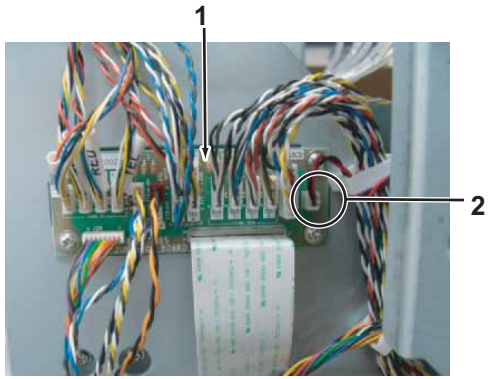


No.	Name
1	Exhaust fan
2	Exhaust fan cable Assy

NOTE

Do not touch T fence.
If it has dust or scratches, it may affect print quality.

6. Remove Exhaust fan cable Assy from clamps on the path.
7. Remove Exhaust fan cable Assy from JUNCTION Board Assy（J2).



No.	Name
1	JUNCTION Board Assy
2	Connector of Exhaust fan cable Assy

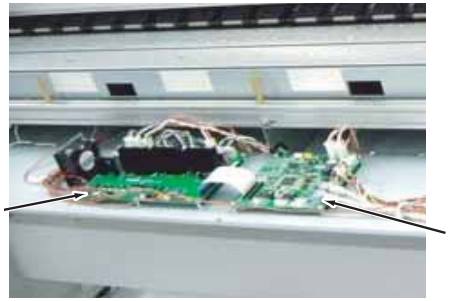
8. Replace Exhaust fan cable Assy.
9. To reassemble unit, reverse the removal procedure.

3.4 Replacing Board Base

This section describes the procedure to replace Power supply, Board, etc.

Boards are arranged as follows.

Inside of media guide F (upper)



Inside of board box

No.	Name
1	HEATER RELAY Board Assy
2	HEATER CONT Board Assy
3	Power Board Assy
4	MAIN Board Assy

3.4.1 Opening Board box

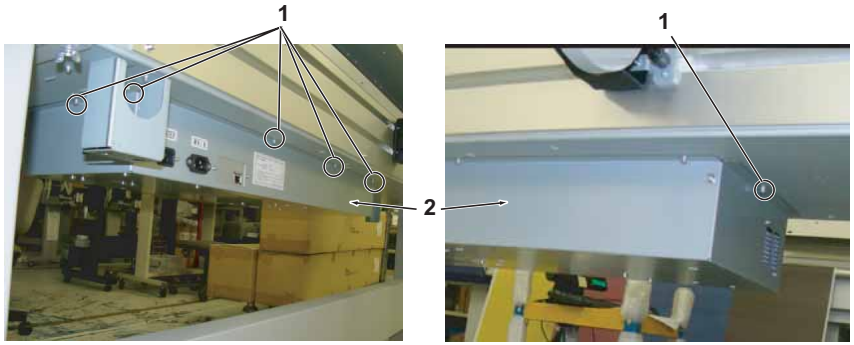
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove AC Cables from the printer.
2. Remove the screws (6 pieces) retaining Board box.

CAUTION

If you remove the screws retaining Board box, box opens downwards because of its weight. Remove last screw while holding box by hand, or you may get injured.



No.	Name
1	Pan-head screw with spring washer and flat washer M4 × 8
2	Board box

3. Open Board box downwards.
4. To close unit, reverse opening procedure.

3.4.2 Replacing Power Board Assy

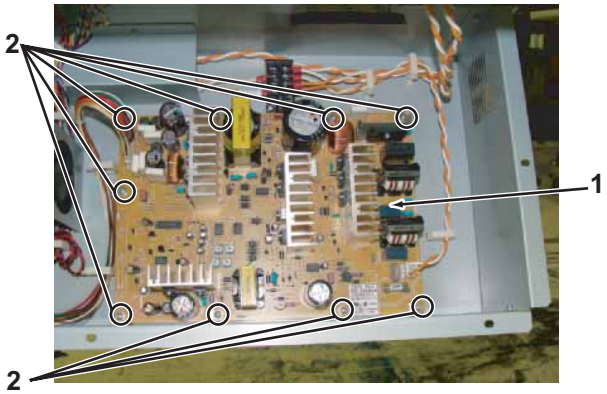
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Power Board Assy	DG-43172	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

CAUTION

If Power board Assy needs to be removed, remove Power cable and wait for 5 minutes or more before dismounting the Assy; this will discharge the residual electrical charge of the electrolytic capacitor.
Touching Board before capacitor discharges may cause electric shock.

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove connectors that are connected to Power board Assy.
3. Remove the screws (9 pieces) retaining Power board Assy.



No.	Name
1	Power Board Assy
2	Cup screw M3 × 6

4. Remove Power board Assy.
5. Replace Power board Assy.
6. To reassemble unit, reverse the removal procedure.

3.4.3 Replacing HEATER CONT Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
HEATER CONT Board 2 Assy	DG-41105	☞" Exploded View X Rail Assy 5" p.11-9
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, HEATER CONT Board 2Assy.

In this section, it is referred to as HEATER CONT Board Assy.

CAUTION

- Before replacing Board Assy and pulling or pushing the FFC type cables, pull out Power cable and leave it for a while.
  If Power cable is not pulled out before operation, it may cause an electric shock or damage to the board due to residual electrical charge.
- When you handle Circuit board, do not touch any elements on it with bare hands. Doing so may cause electrostatic discharge and damage elements.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely.
  If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove following connectors from HEATER CONT Board Assy.

No.	Connector No.	# of Pins	Color	Connect to	Remark
1	J1	-	-	Config CN	Not in use
2	J2	-	-	FEED-M	Unpopulated
3	J3	-	-	FEED-S	Unpopulated
4	J4	-	-	WIND-M	Unpopulated
5	J5	-	-	WIND-S	Unpopulated
6	J6	-	-	HEATER RELAY Board Assy (J3)	FFC
7	J7	-	-	-	FFC
8	J8	4	White	-	-
9	J9	8	Gray	-	Not in use
10	J10	8	Gray	MAIN Board Assy(J6)	-
11	J11	-	-	-	Unpopulated
12	J12	-	-	-	Unpopulated
13	J13	-	-		Unpopulated
14	J14	-	-		Unpopulated
15	J15	-	-		Unpopulated
16	J16	-	-		Unpopulated
17	J17	-	-		Unpopulated
18	J18	-	-		Unpopulated
19	J19	8	White	MAIN Board Assy(J34)	-
20	J20	-	-	-	Unpopulated
21	J21	-	-	-	Unpopulated
22	J22	2	White	Terminal Stand	-
23	J23	2	White	HEATER RELAY Board Assy (J1)	-

3. Remove the screws (4 pieces) retaining HEATER CONT Board Assy.

No.	Name
1	HEATER CONT Board Assy
2	Cup screwM3 × 6

4. Remove HEATER CONT Board Assy.
5. Replace HEATER CONT Board Assy.
6. To reassemble unit, reverse the removal procedure.
7. Perform various adjustments.
☞"4.2 Adjustment Item" p.4-3
8. Install the latest firmware on HEATER CONT Board Assy.
☞"4.3 Working with MUTOH Service Assistance Software" p.4-5

3.4.4 Replacing HEATER RELAY Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
HEATER RELAY 3 Board Assy	DG-43169	☞" Exploded View X Rail Assy 5" p.11-9
+ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, HEATER RELAY 3 Board Assy.

In this section, it is referred to as HEATER RELAY Board Assy.

CAUTION

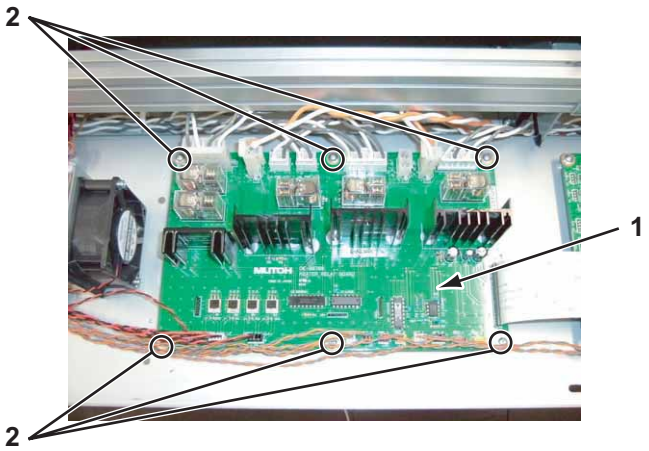
- Before replacing Board Assy and pulling or pushing the FFC type cables, pull out Power cable and leave it for a while.
  If Power cable is not pulled out before operation, it may cause an electric shock or damage to the board due to residual electrical charge.
- When you handle Circuit board, do not touch any elements on it with bare hands. Doing so may cause electrostatic discharge and damage elements.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely.
  If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove following connectors from HEATER RELAY Board Assy.

No.	Connector No.	# of Pins	Color	Connect to	Remark
1	J1	2	White	HEATER CONT Board Assy (J23)	-
2	J2	4	White	Plt_Heat 1	Platen heater (the origin side)
3	J3	40	Black	HEATER CONT Board Assy(J6)	FFC
4	J4	2	White	-	Not in Use
5	J5	4	White	Plt_Heat 2	Platen heater (opposite side of the origin)
6	J6	2	White	AC Inlet	-
7	J7	2	White	Pre_Heat 1	Pre-heater
8	J8	2	White	Pre_Heat 2	Pre Heater
9	J9	4	White	Aft_Heat	After Heater
10	J10	2	Blue	Cooling FAN	-
11	J11	-	-	-	-
12	J12	2	White	Platen_Thrm 1	Thermistor for Platen heater (the origin side)
13	J13	2	Black	Platen_Thrm 2	Thermistor for Platen heater (opposite side of the origin)
14	J14	-	-	-	-
15	J15	2	Red	Pre_Thrm 1	Thermistor for pre-heater (the origin side)
16	J16	2	Yellow	Pre_Thrm 2	Thermistor for pre-heater (opposite side of the origin)
17	J17	3	White	Aft_Thrm 1	Thermistor for After Heater (the origin side)

No.	Connector No.	# of Pins	Color	Connect to	Remark
18	J18	3	Black	Aft_Thrm 2	Thermistor for After Heater (opposite side of the origin)
19	J19	3	Red	Rev 1_Thrm	Unpopulated
20	J20	3	Yellow	Rev 2_Thrm	Unpopulated

3. Remove Hexagonal spacers (6 pieces) retaining HEATER RELAY Board Assy.



No.	Name
1	HEATER RELAY Board Assy
2	Cup screwM3 × 6

4. Remove HEATER RELAY Board Assy.
5. Replace HEATER RELAY Board Assy.
6. To reassemble unit, reverse the removal procedure.

3.4.5 Replacing CNT-relay FFC

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CNT-relay FFC1(VJ26)	DG-40321	☞" Exploded View X Rail Assy 5" p.11-9
＋ Driver No.2	Generic products	-

TIP

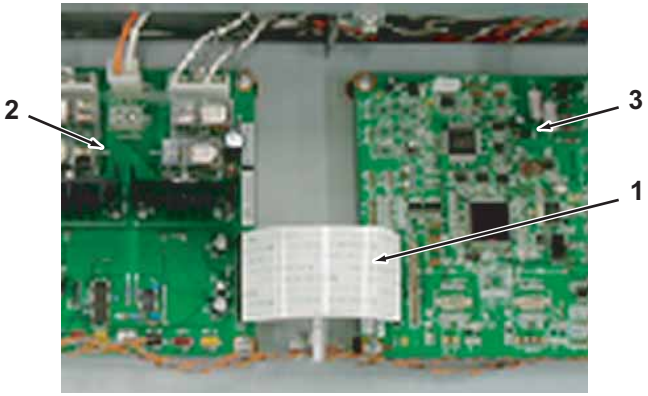
This section describes the procedure to replace the maintenance part, CNT-relay FFC1 (VJ26).

In this section, it is referred to as CNT-relay FFC.

CAUTION

- Before replacing FFC, unplug Power cable and leave it for a while. If Power cable is not pulled out before operation, it may cause an electric shock or damaged to Board due to residual electrical charge.
- When handling Board, do not touch on-board devices with bare hands. The element might be destroyed by static electricity.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely. If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove Paper guide F (upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove CNT-relay FFC.



No.	Name
1	CNT-relay FFC
2	HEATER RELAY Board Assy
3	HEATER CONT Board Assy

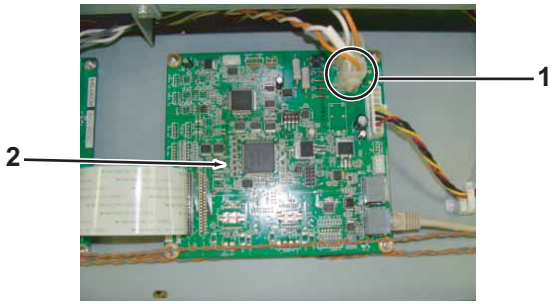
3. Replace CNT-relay FFC.
4. To reassemble unit, reverse the removal procedure.

3.4.6 Replacing CNT_PS Cable Assy

A necessary maintenance part, jigs and tools are as follows.

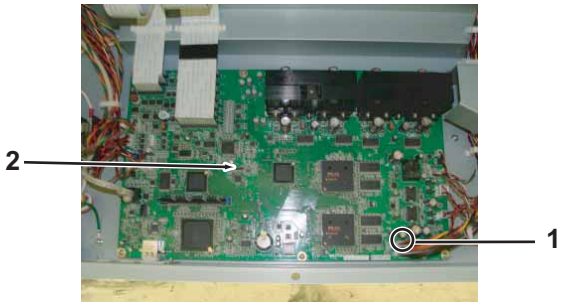
Name	Maintenance Part No.	Remarks
CNT_PS Cable Assy	DG-43035	☞" Exploded View X Rail Assy 5" p.11-9 ☞" Electric Wiring Diagram" p.11-3
+ Driver No.2	Generic products	-

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side Maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
4. Remove Subtank cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Side Maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
6. Remove rear side cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
7. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
8. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
9. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
10. Remove CNT_PS Cable Assy from HEATER CONT board Assy.



No.	Name
1	CNT_PS Cable Assy
2	HEATER CONT board

11. Remove CNT_PS Cable Assy from clamps on the path.
12. Remove CNT_PS Cable Assy from MAIN board Assy.



No.	Name
1	CNT_PS Cable Assy
2	MAIN board Assy

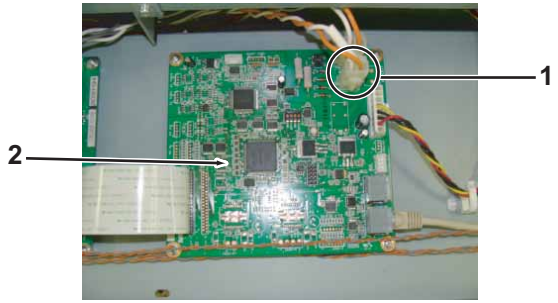
13. Replace CNT_PS Cable Assy.
14. To reassemble unit, reverse the removal procedure.

3.4.7 Replacing Terminal Block_CNT Cable Assy

A necessary maintenance part, jigs and tools are as follows.

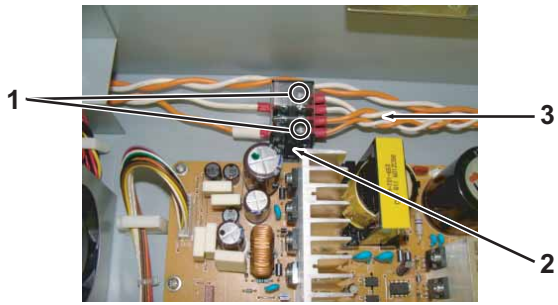
Name	Maintenance Part No.	Remarks
Terminal_Block_CNT Cable Assy	DG-43029	☞" Exploded View X Rail Assy 5" p.11-9 ☞" Electric Wiring Diagram" p.11-3
+ Driver No.2	Generic products	-

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side Maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
4. Remove Subtank cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Side Maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
6. Remove rear side cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
7. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
8. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
9. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
10. Remove Terminal Block_CNT Cable Assy from HEATER CONT board Assy.



No.	Name
1	Terminal_Block_CNT Cable Assy
2	HEATER CONT board

11. Remove Terminal_Block_CNT Cable Assy from clamps on the path.
12. Remove the screws (2 pieces) retaining terminal block_CNT Cable Assy to terminal block.



No.	Name
1	Screw
2	Terminal Block
3	Terminal_Block_CNT Cable Assy

13. Replace Terminal_Block_CNT Cable Assy.
14. To reassemble unit, reverse the removal procedure.

3.4.8 Replacing Cooling FAN(For MAIN Board Assy)

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cooling Fan 24V Assy	DG-42943	☞" Exploded View Board Box" p.11-4
＋ Driver No.2	Generic products	-

TIP

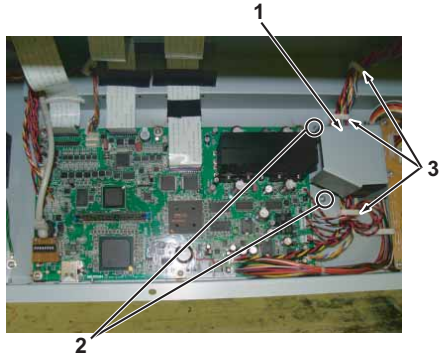
This section describes the procedure to replace the maintenance part, Cooling FAN (24V) Assy.

In this section, it is referred to as Cooling FAN.

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove connector of Cooling FAN from MAIN Board Assy（J30).

No.	Name
1	Connector of Cooling FAN
2	MAIN Board Assy

3. Remove Cable of Cooling FAN from clamps.
4. Remove screws (2 pieces) retaining Cooling FAN Bracket.



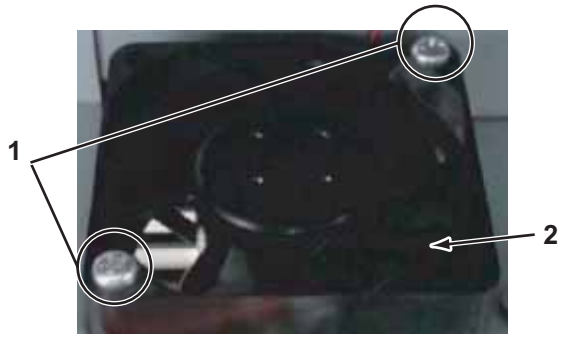
No.	Name
1	Cooling FAN Bracket
2	Pan-head screw with spring washer and flat washer M3 × 8
3	Clamps
4	Cable of Cooling FAN

5. Remove Cooling FAN bracket.

NOTE

There is Cable inside Cooling FAN bracket. Do not pull it hard and disconnect it.

6. Remove the screws (2 pieces) retaining Cooling FAN.



No.	Name
1	Cooling FAN
2	Pan-head screw with spring washer and flat washer M3 × 30
3	Cooling FAN bracket

7. Replace Cooling FAN.
8. To reassemble unit, reverse the removal procedure.

NOTE

- When reassembling Cooling FAN, note the direction of label attached to Fan.
  If it is reassembled on the opposite direction (inside/outside), the direction of ventilation reverses
- Make sure that Cable does not get nipped.

3.4.9 Replacing Cooling FAN{in Paper guide F (Upper)}

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cooling Fan 24V Assy	DF-49022	☞" Exploded View X Rail Assy 5" p.11-9
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Cooling FAN (24V) Assy.

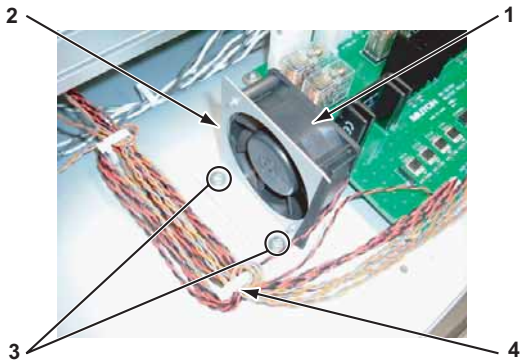
In this section, it is referred to as Cooling FAN.

1. Remove Paper guide F(Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove connector of Cooling FAN from HEATER RELAY 3 Board（J10).

NOTE

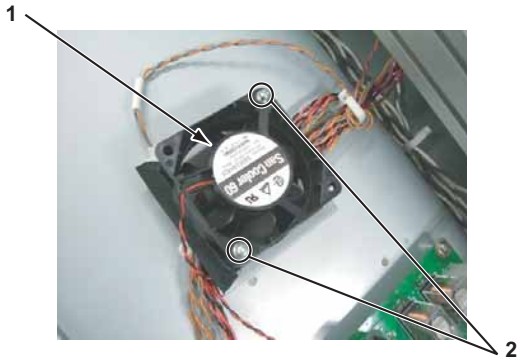
Cable of Cooling FAN is a stranded wire of red and black.

3. Remove the screws (2 pieces) retaining Cooling FAN mounting plate.



No.	Name
1	Cooling FAN
2	Cooling FAN mounting plate
3	Pan-head screw with spring washer and flat washer M4 × 6

4. Remove Cooling FAN bracket.
5. Remove the screws (2 pieces) retaining Cooling FAN.



No.	Name
1	Cooling FAN
2	Pan-head screw with spring washer and flat washer M3 × 30

6. Replace Cooling.
7. To reassemble unit, reverse the removal procedure.

NOTE

When reassembling Cooling FAN, note the direction of label attached to Fan.
If it is reassembled on the opposite direction (inside/outside), the direction of ventilation reverses.

3.4.10 Replacing SODIMM

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
SODIMM128M Assy	DF-49715	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, SODIMM 128M Assy.

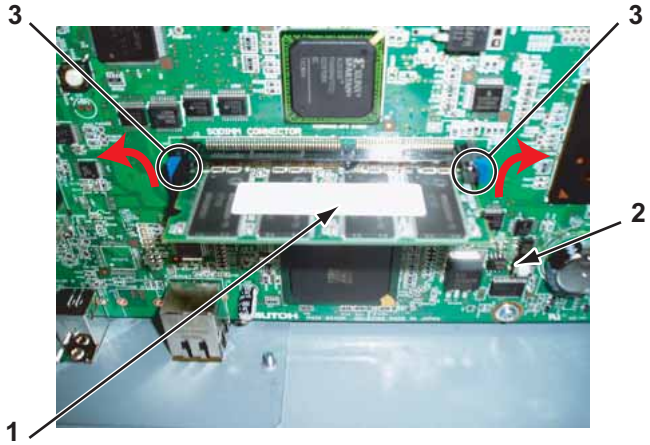
In this section, it is referred to as SODIMM.

CAUTION

When handling Board, do not touch on-board devices with bare hands. The element might be destroyed by static electricity.

1. Open Board box.
☞"3.4.1 Opening Board box" p.3-40

2. Open blue lock where both side of SODIMM to both sides



No.	Name
1	SODIMM
2	MAIN Board Assy
3	Lock retaining the SODIMM

3. Remove SODIMM.
4. Replace SODIMM.

NOTE

Push in the SODIMM following notches until it clicks.

5. To reassemble unit, reverse the removal procedure.

3.4.11 Replacing MAIN Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
MAIN Board Assy	DG-42958	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

CAUTION

- Before replacing Board Assy and pulling or pushing FFC type cables, unplug Power cable and leave it for a while.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by residual electric charge.
- When you handle Circuit board, do not touch any elements on it with bare hands. Doing so may cause electrostatic discharge and damage the elements.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely. If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.
- Risk of explosion if battery is replaced by an incorrect type.Dispose of used batteries according to the instructions.

NOTE

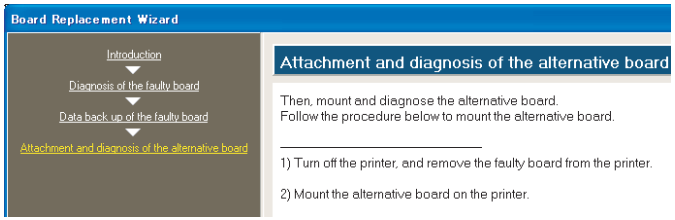
To replace MAIN Board Assy, MSA (MUTOH Service Assistance) which is compatible with VJ1624 is required.

- **When replacing MAIN board Assy, Be sure you are using MSA (MUTOH Service Assistance) software and follow the board replacement wizard.**

☞"4.3 Working with MUTOH Service Assistance Software" p.4-5

1. Excecute the MSA.
2. Change MSA to Technician mode.
☞"(11) Switching to Technician Mode" p.4-14
3. Select “Board replacement wizard“ on the main window of MSA.
☞"4.3.10 Board Replacement Wizard" p.4-25

Follow the “Board Replacement Wizard“ afterwards.
Proceed Step 4 when “Attachment and Diagnosis of the alternative board“ window is displayed.



4. Open Board box.
☞"3.4.1 Opening Board box" p.3-40
5. Remove SODIMM.
☞"3.4.10 Replacing SODIMM" p.3-52

NOTE

Make sure not to lose removed SODIMM that will be mounted to replaced MAIN board Assy.

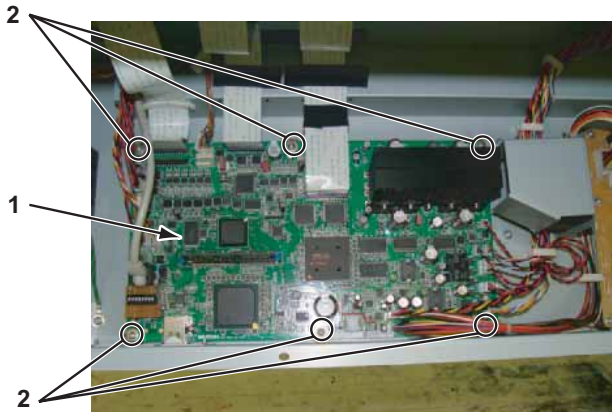
6. Remove the following connectors from the MAIN Board Assy.

Connector No.	# of Pins	Color	Connect to	Remark
J1	14	White	Power Supply	Not in Use
J2	6	Black	System Fpga Config_CN	Not in Use
J3	144	Black	128MB SODIMM	-
J4	6	Black	CLKDV JTAG	Not in Use
J5	28	Black	Panel unit (J1)	FFC
J6	8	Silver	LAN	-
J7	-	-	Option_IF	Unpopulated

Connect or No.	# of Pins	Color	Connect to	Remark
J8	-	-	Option_IF	Unpopulated
J9	30	Black	CR BoardAssy (J203)	FFC
J10	30	Black	CR BoardAssy (J202)	FFC
J11	30	Black	CR BoardAssy (J201)	FFC
J12	4	White	PFencoderAssy	-
J13	-	-	USB	Not in Use
J20	2	White	PF Motor	-
J21	3	White	CR Motor Assy	-
J22	4	White	Wiper Solenoid	Not in Use
J23	2	White	Ink Pump Motor	-
J24	3	White	CR origin sensor（Photo interrupter）	-
J25	2	White	Vacuum Fan Assy1	-
J26	2	White	Vacuum Fan Assy2	-
J27	3	Black	Wiper origin sensor	-
J28	2	Red	Vacuum Fan Assy3	-
J29	2	Yellow	Vacuum Fan Assy4	-
J30	3	Blue	Lever sensor	-
J32	2	White	Cooling FAN_1 (5V)	Not in Use
J33	3	Red	Waste Fluid Switch	-
J36	2	Red	Cooling FAN 2 (24V)	-
J37	-	-	-	Unpopulated
J38	3	White	F Cover R sensor Assy	-
J39	-	-	-	Unpopulated
J40	3	Blue	Inter lock CableAssy	-
J41	5	Black	Debug CN	Not in Use
J42	4	Black	P_REAR sensor Assy	-
J43	8	Silver	LDVS → [HEATER CONT Board 2 Assy (J10)]	LAN

Connect or No.	# of Pins	Color	Connect to	Remark
J44	8	Black	ISP JTAG	Not in Use
J45	-	-	POW	Unpopulated
J46	4	White	HEATER CONT Board 2Assy(J19)	-
J47	20		Power Board Assy[CN301]	-
J48	30	Black	CR BoardAssy (J215)	FFC
J49	-	-	USB（Colorimeter）	Not in Use
J50	-	-	-	Unpopulated
J51	-	-	-	Unpopulated
J52	-	-	-	Unpopulated
J53	-	-	-	Unpopulated
J54	3	Black	Maintenance R sensor	-
J55	3	Red	Maintenance L sensor	-
J56	-	-	Motor driver IF	Unpopulated
J57	-	-	-	Unpopulated
J58	-	-	-	Unpopulated

7. Remove the screws (6 pieces) retaining MAIN board Assy.



No.	Name
1	MAIN Board Assy
2	Cup screw M3 × 6

8. Remove MAIN Board Assy.
9. To reassemble unit, reverse the removal procedure.

The window returns to Board Replacement Wizard. Follow the instructions displayed on the "Attachment and Diagnosis of the alternative board".
☞"4.3.10 Board Replacement Wizard" p.4-25
When "Termination" window is displayed, the wizard ends.

10. Set the various settings.
    Make the settings according to the board replacement pattern.

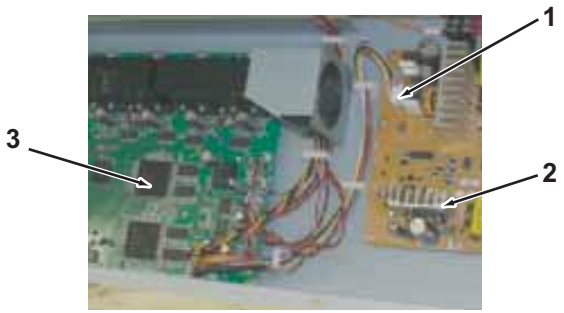
☞"(2) List of adjustment operations after replacing the board for each board replacement pattern" p.4-27

3.4.12 Replacing MAIN_DC Cable Assy

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
MAIN_DC Cable Assy	DG-42993	☞" Exploded View Board Box" p.11-4
＋ Driver No.2	Generic products	-

1. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove MAIN_DC Cable Assy from MAIN board and Power board.



No.	Name
1	MAIN_DC Cable Assy
2	Power board
3	MAIN board

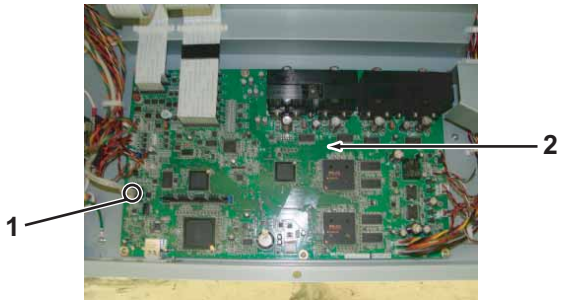
3. Remove MAIN_DC Cable Assy from clamps on the path.
4. Replace MAIN_DC Cable Assy.
5. To reassemble unit, reverse the removal procedure.

3.4.13 Replacing MAIN-CNT Cable Assy

A necessary maintenance part, jigs and tools are as follows.

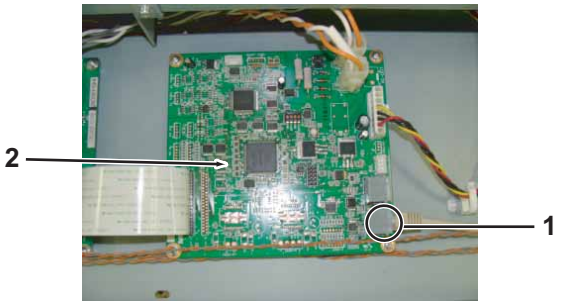
Name	Maintenance Part No.	Remarks
MAIN-CNT Cable Assy	DF-49672	☞" Exploded View Board Box" p.11-4 ☞" Electric Wiring Diagram" p.11-3
+ Driver No.2	Generic products	-

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side Maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
4. Remove Subtank cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Side Maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
6. Remove rear side cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
7. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
8. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
9. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
10. Remove MAIN-CNT Cable Assy from clamps on the path.



No.	Name
1	MAIN-CNT Cable Assy
2	MAIN board

11. Remove MAIN-CNT Cable Assy from clamps on the path.
12. Remove MAIN-CNT Cable Assy from HEATER CONT board.



No.	Name
1	HEATER CONT board
2	MAIN-CNT Cable Assy

13. Replace MAIN-CNT Cable Assy.
14. To reassemble unit, reverse the removal procedure.

3.4.14 Replacing FUSE (H side)-RLY AC Cable Assy

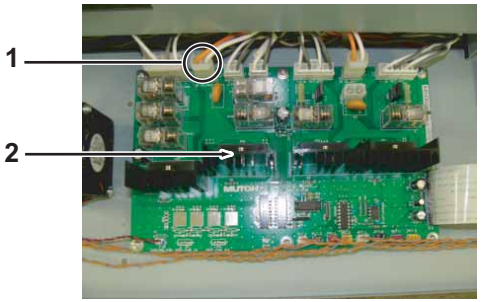
A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
FUSE (H side) - RLY AC Cable Assy	DG-43040	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

1. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side Maintenance cover R.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
4. Remove Subtank cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Side Maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
6. Remove rear side cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
7. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
8. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
9. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
10. Remove the screws (2 pieces) retaining FUSE (H side) - RLY AC Cable Assy

No.	Name
1	FUSE (H side) - RLY AC Cable Assy
2	Screw (for retaining)

11. Remove FUSE (H side) - RLY AC Cable Assy from clamps on the path.
12. Remove FUSE (H side) - RLY AC Cable Assy from HEATER RELAY board.



No.	Name
1	HEATER RELAY board
2	FUSE (H side) - RLY AC Cable Assy

13. Replace FUSE (H side) - RLY AC Cable Assy
14. To reassemble unit, reverse the removal procedure.

NOTE

Do not insert Cable into a wrong outlet.

3.4.15 Replacing Fuse

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Fuse	DF-49683	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

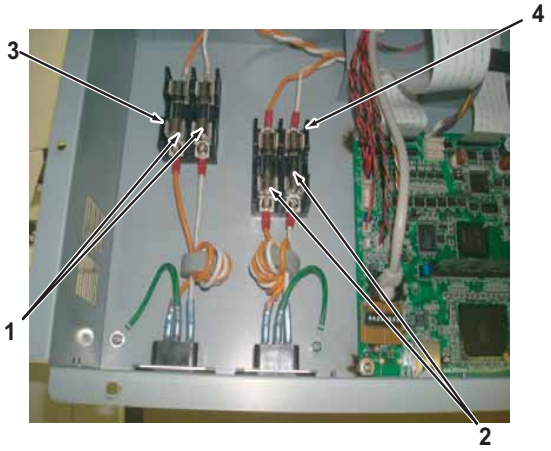
CAUTION

- Before replacing the fuse, make sure to unplug Power cable.
  There is a possibility of receiving an electric shock by residual electric charge.
- When replacing fuses, install the fuse which conforms to the specifications (250V-15A, ϕ10.31 mm x 38.1 mm).
- There are fuses on the Live path and Neutral path behind AC inlet.

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Replace the blown fuses.

CAUTION

Don't touch Cap of a fuse with bare hands.



No.	Name
1	Fuse (MAIN side)
2	Fuse (HEATER side)
3	Fuse holder (MAIN side)
4	Fuse holder (HEATER side)

3. Replace the blown fuses.
   - There are 2 fuses per power source (4 in total).
4. To reassemble unit, reverse the removal procedure.

TIP

The fuses are called F1, F2, F3, and F4 from the left. Their functions are as follows.

No.	役割
F1	MAIN LIVE
F2	MAIN NEUTRAL
F3	HEATER 1 LIVE
F4	HEATER 1 NEUTRAL

3.4.16 Replacing AC Inlet

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
AC Inlet Assy	DG-43177	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

CAUTION

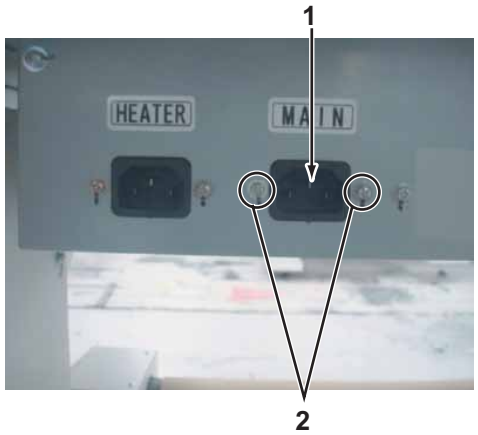
Before replacing AC inlet, make sure to unplug Power cable.
There may be a risk of electric shock by residual electrical charge.

(1) Replacing AC Inlet （For MAIN Board Assy）

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove connectors (3 pieces).

No.	Name
1	AC Inlet
2	Connector

3. Remove the screws (2 pieces) retaining AC inlet.



No.	Name
1	AC Inlet
2	Countersunk head screw M3 × 6

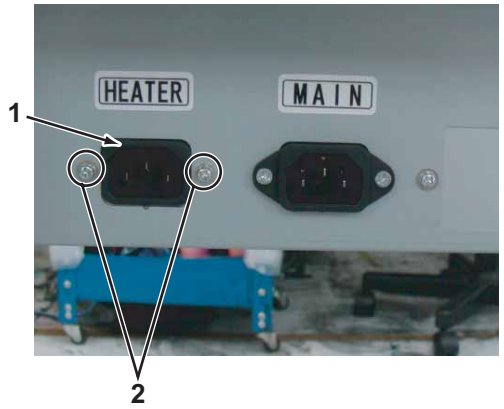
4. Remove AC inlet from outside.
5. Replace AC inlet .
6. To reassemble unit, reverse the removal procedure.

(2) Replacing AC Inlet (For Heater)

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove connectors (3 pieces).

No.	Name
1	AC Inlet
2	Connector

3. Remove the screws (2 pieces) retaining AC inlet.



No.	Name
1	AC Inlet
2	Pan-head screw with spring washer and flat washer M3 × 8

4. Remove AC inlet from inside.
5. Replace AC inlet.
6. To reassemble unit, reverse the removal procedure.

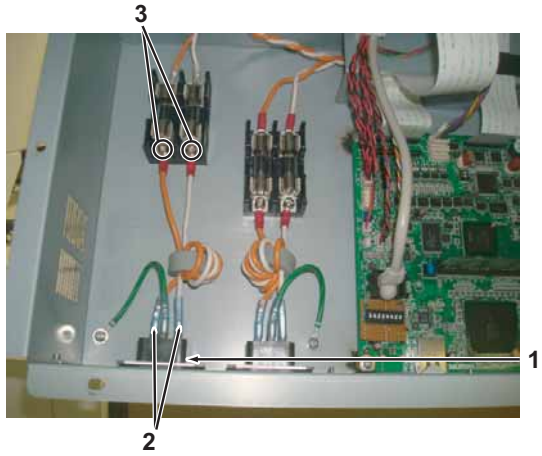
3.4.17 AC Inlet (MAIN side)-Fuse Box Cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
AC Inlet (MAIN side)-Fuse Box Cable Assy	DG-43039	☞" Exploded View Board Box" p.11-4
＋ Driver No.2	Generic products	-

(1) AC Inlet (Heater side)

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove Connectors （2 pieces）.
3. Loosen the screws (2 pieces) retaining Cables.



No.	Name
1	AC Inlet
2	Connector
3	screw (for retaining)

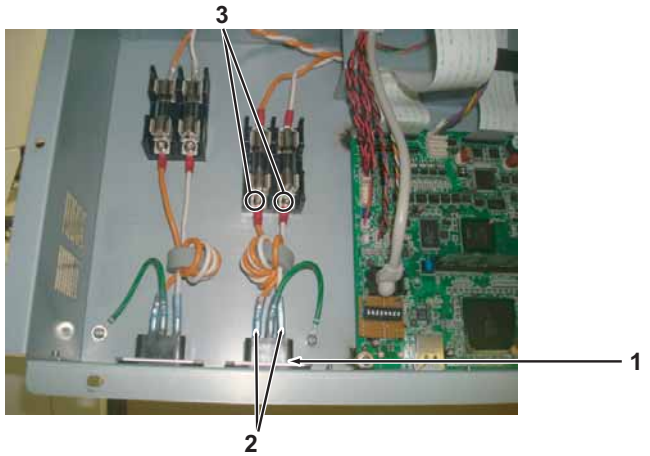
4. Replace AC Inlet (MAIN side)-Fuse Box Cable Assy.

NOTE

Do not insert Cable into a wrong outlet.

(2) AC Inlet (MAIN side)

1. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove Connector (2 pieces).
3. Loosen the screws (2 pieces) retaining Cables.



No.	Name
1	AC Inlet
2	Connector
3	screw (for retaining)

4. Replace AC Inlet (MAIN side)-Fuse Box Cable Assy.

NOTE

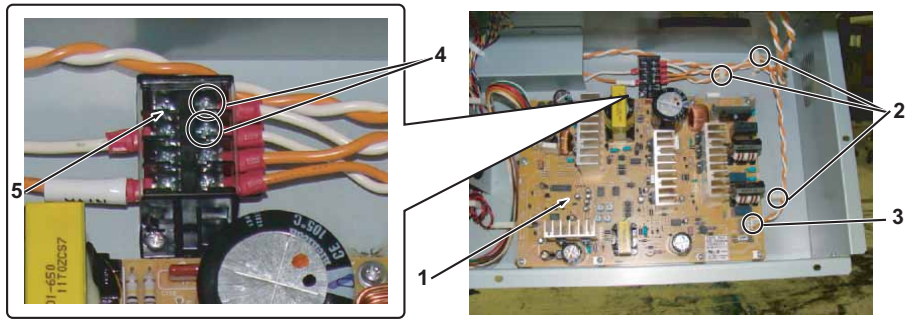
Do not insert Cable into a wrong outlet.

3.4.18 Terminal Block-Power Cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Terminal Block - Power Cable Assy	DG-43030	☞" Exploded View Board Box" p.11-4
＋ Driver No.2	Generic products	-

1. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove Connector of Terminal Block-Power Cable Assy from Power Board（CN001).
3. Remove Termimnal Block-Power Cable Assy from clamps.
4. Remove Connectors (2 pieces).
5. Loosen the screws (2 pieces) retaining Cables.



No.	Name
1	Power Board Assy
2	Clamps
3	Terminal Block － Power Cable Assy
4	Screw (for retaining)
5	Terminal Block

6. Replace Terminal Block-Power Cable Assy.
7. To reassemble unit, reverse the removal procedure.

NOTE

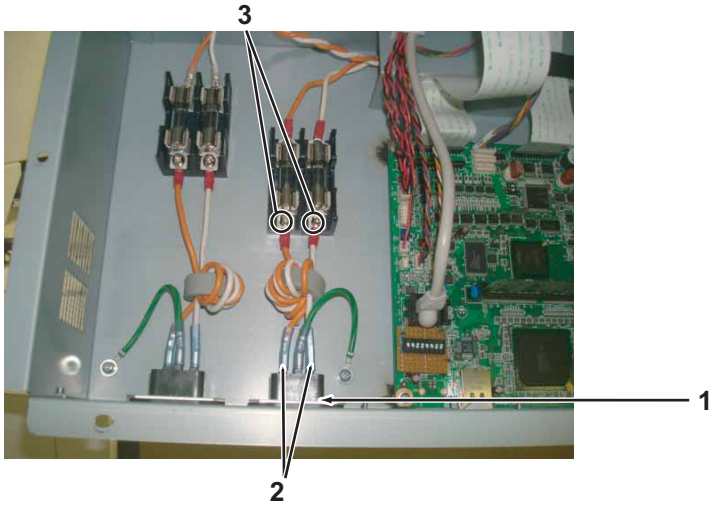
Do not insert Cable into a wrong outlet.

3.4.19 Fuse-Terminal Block Cable Assy

A necessary jigs and tools are as follows.

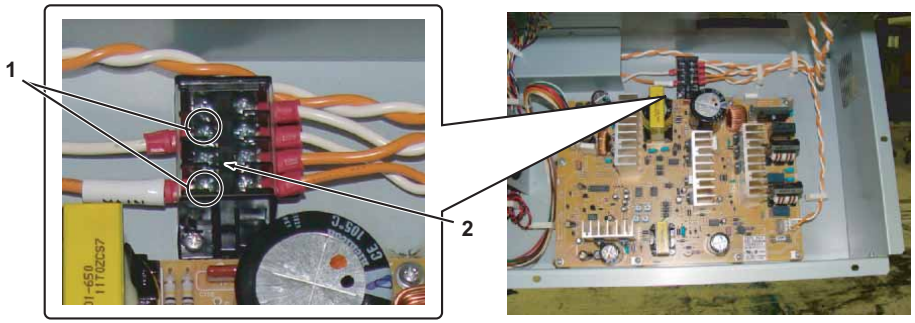
Name	Maintenance Part No.	Remarks
Fuse-Terminal Block Cable Assy	DG-43025	☞" Exploded View Board Box" p.11-4
+ Driver No.2	Generic products	-

1. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Loosen the screws (2 pieces) retaining Cables.



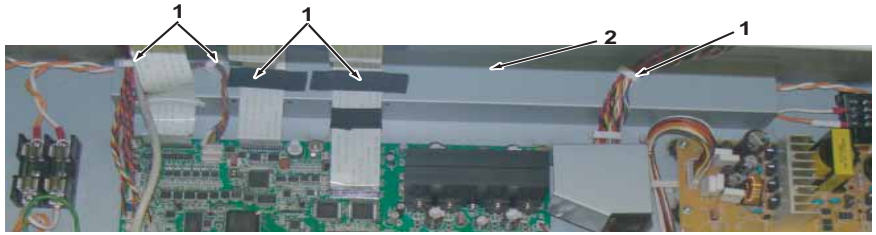
No.	Name
1	Fuse-Terminal Block Cable Assy
2	Screw (for retaining)

3. Remove Fuse-Terminal Block Cable Assy.
4. Loosen the screws (2 pieces) retaining Cables.



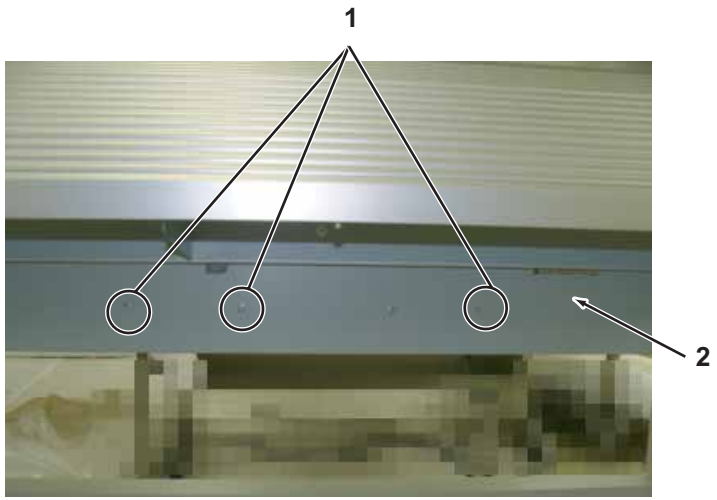
No.	Name
1	Screw (for retaining)
2	Terminal Block

5. Remove Cables from clamps on Cable protecting plate.



No.	Name
1	Clamps
2	Cable protecting plate

6. Remove the screws (3 pieces) retaining Cable protector on the side surface of Board box (on the front side).



No.	Name
1	Tappinng screwM3 × 6　Stight cup
2	Cable protecting Plate

7. Remove Fuse-Terminal Block Cable Assy from clamps on the path.
8. Replace Fuse-Terminal Block Cable Assy.
9. To reassemble unit, reverse the removal procedure.

NOTE

Remove the screws (4 pieces) retaining Cable protector on the side surface of Board box (on the front side).

3.4.20 Replacing JUNCTION Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
JUNCTION Board Assy	DG-42966	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
＋ Driver No.2	Generic products	-

⚠ CAUTION

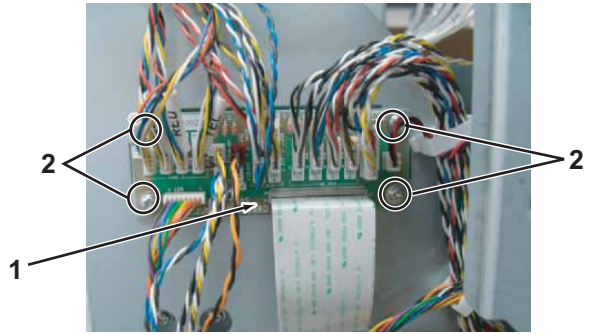
- Before replacing Board Assy and pulling or pushing FFC type cables, unplug Power cable and leave it for a while.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by residual electric charge.
- When you handle Circuit board, do not touch any elements on it with bare hands. Doing so may cause electrostatic discharge and damage the elements.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely. If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
2. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
3. Remove connector connects to JUNCTION Board Assy.

No.	Connector No.	# of Pins	Colors	Connect to	Remark
1	J1	30	-	MAIN Board Assy	JUNC_FFC
2	J2	2	White	Exhaust FAN	-
3	J3	8	White	2 way solenoid	-
4	J4	6	White	Sub Tank H/L sensor（K）	-
5	J5	6	White	SubtankH/L sensor（C）	-
6	J6	6	White	SubtankH/L sensor（M）	-
7	J7	6	White	SubtankH/L sensor（Y）	-
8	J8	4	White	INK SLOT1 （K）	Cartridge NOT/END sensor
9	J9	4	White	INK_SLOT2（C）	Cartridge NOT/END sensor
10	J10	4	White	INK_SLOT3（M）	Cartridge NOT/END sensor
11	J11	4	White	INK_SLOT4（Y）	Cartridge NOT/END sensor
12	J12	3	Red	Waste fluid sensor	-
13	J13	3	White	Wiper sensor	-
14	J14	3	White	CR origin sensor	-
15	J15	3	White	Lever sensor	-
16	J16	5	White	INK ID Board（K）	-
17	J17	5	White	INK ID Board（C）	-
18	J18	5	White	INK ID Board（M）	-

No.	Connector No.	# of Pins	Colors	Connect to	Remark
19	J19	5	White	INK ID Board（Y)	-
20	J20	8	White	MAIN Board Assy	JUNC_ID Cable Assy

4. Remove the screws (4 pieces) retaining JUNCTIONBoard Assy.



No.	Name
1	JUNCTION Board Assy
2	Cup screwM3 × 6

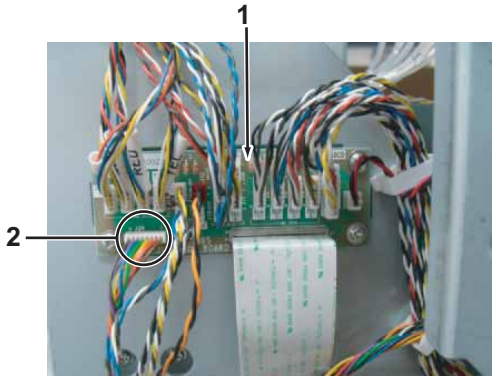
5. Replace JUNCTION Board Assy.
6. To reassemble unit, reverse the removal procedure.

3.4.21 Replacing JUNC_ID Cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
JUNC_ID Cable Assy	DG-43009	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
＋ Driver No.2	Generic products	-

1. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
2. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
3. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
4. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
5. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
6. Remove JUNC_ID Cable Assy from JUNCTION Board Assy.



No.	Name
1	JUNCTION Board Assy
2	JUNC_ID Cable Assy (J20)

7. Remove JUNC_ID Cable Assy from clamps on the path.
8. Remove JUNC_IDCableAssy（J21) from MAIN board Assy.
9. Replace JUNC_ID Cable Assy.
10. To reassemble unit, reverse the removal procedure.

3.4.22 Replacing JUNC_FFC Assy

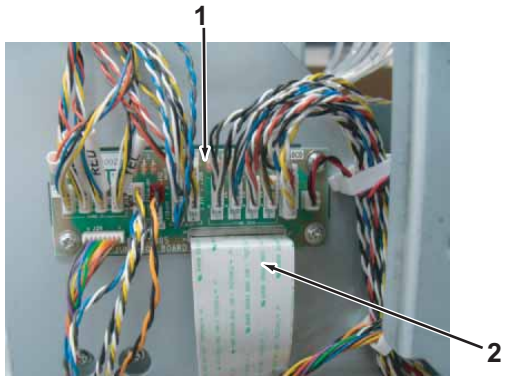
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
JUNC_FFC Assy	DG-43037	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15 ☞" JUNC_FFC Folding instruction" p.11-27
+ Driver No.2	Generic products	-

⚠ CAUTION

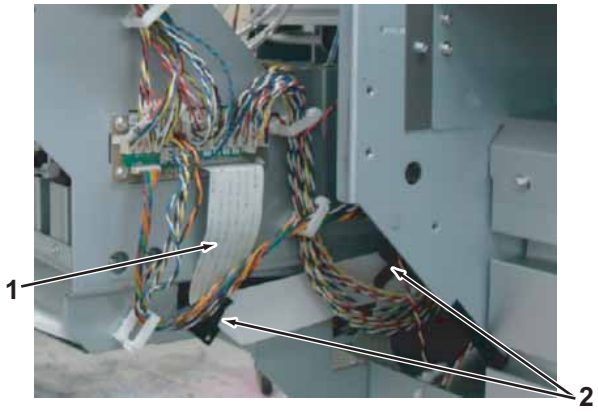
- Before replacing Board Assy and pulling or pushing FFC type cables, unplug Power cable and leave it for a while.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by residual electric charge.
- When you handle Circuit board, do not touch any elements on it with bare hands. Doing so may cause electrostatic discharge and damage the elements.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely. If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
2. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
3. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
4. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
5. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
6. Remove JUNC_FFC Assy (J1)from JUNCTION Board Assy.



No.	Name
1	JUNCTION Board Assy
2	JUNC_FFCAssy

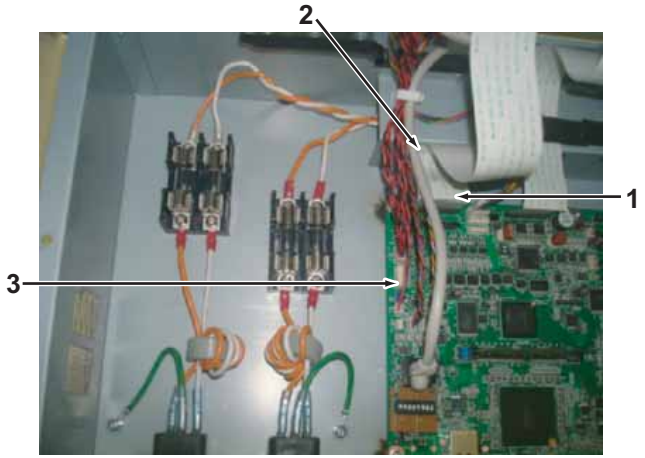
7. Remove JUNC_FFC Assy from Flat Cable clip（2 pieces）.



No.	Name
1	JUNC_FFC Assy
2	Flat Cable clip

8. Remove JUNC_FFCAssy from Clamps on the path.

9. Remove JUNC_FFC Assy（J19) from MAIN board Assy.



No.	Name
1	JUNC_ID CableAssy
2	Clamps
3	MAIN Board Assy

10. Replace JUNC_FFC Assy.
☞" JUNC_FFC Folding instruction" p.11-27

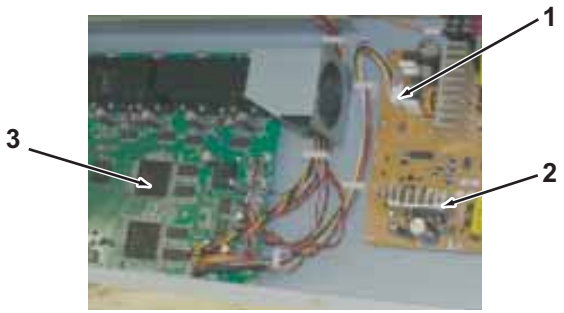
11. To reassemble unit, reverse the removal procedure.

3.4.23 Replacing MAIN_DC Cable Assy

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
MAIN_DC Cable Assy	DG-42993	☞" Exploded View Board BOX" p.Ex-4
＋ Driver No.2	Generic products	-

1. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
2. Remove MAIN_DC Cable Assy from MAIN board and Power board.



No.	Name
1	MAIN_DC Cable Assy
2	Power board
3	MAIN board

3. Remove MAIN_DC Cable Assy from clamps on the path.
4. Replace MAIN_DC Cable Assy.
5. To reassemble unit, reverse the removal procedure.

3.5 Replacing X Rail Section

This section describes the procedure to replace X rail section.

3.5.1 Replacing X Speed Reduction Belt

A necessary jigs and tools are as follows.

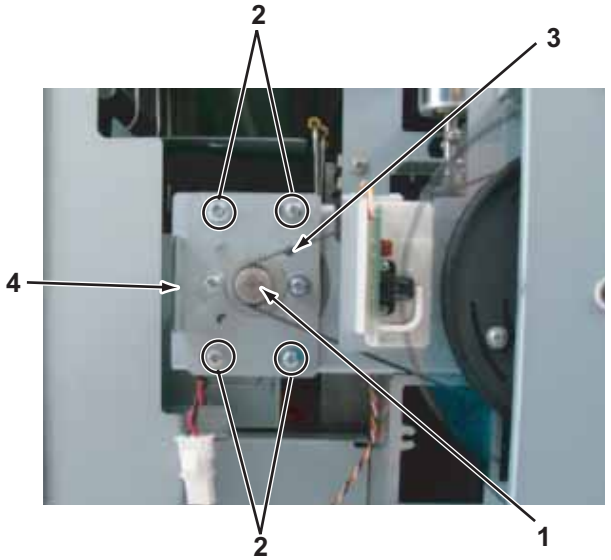
Name	Maintenance Part No.	Remarks
X speed Reduction Belt	DG-43883	☞" Exploded View X Rail Assy 3(PF Section)" p.11-6
＋ Driver No.2	Generic products	-
Tension gauge	Generic products	Max:40N(4,080gf)

⚠ CAUTION

After printing for a long period of time, do NOT touch Motor.
Motor is hot and you may burn yourself.

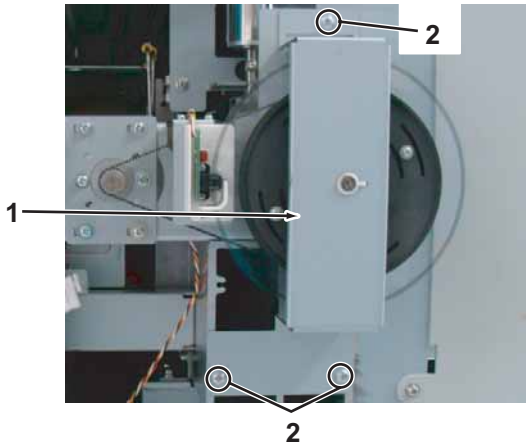
1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9

2. Loosen the screws (4 pieces) retaining PF Motor Mounting Plate to remove X Speed Reduction Belt from PF Motor.



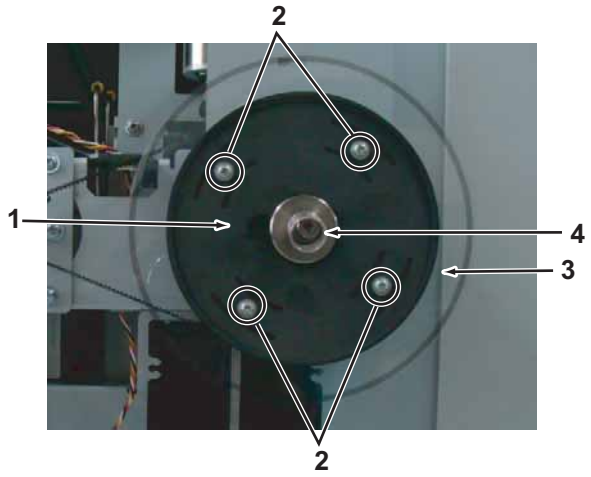
No.	Name
1	PF Motor
2	Pan-head screw with spring washer and flat washer M4 × 8
3	X speed reduction belt
4	PF Motor mounting plate

3. Remove the screws(3 pieces) retaining Grid Roller Presser.



No.	Name
1	Grid Roller Presser
2	Tappinng screwM4 × 8

4. Remove Grid Roller Presser.
5. PF Thrust Spring.
6. Remove the screws（4pieces）retaining PF Scale Presser.



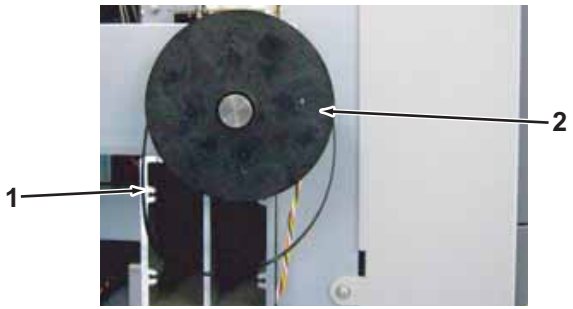
No.	Name
1	PF Scale Presser
2	Tappinng screwM3 × 8
3	PF encoder scale
4	PF Thrust spring

7. Remove PF Scale Presser.
8. Remove PF Encoder Scale.

NOTE

- When removing peripherals of PF encoder scale, do not deform PF encoder scale. Doing so may affect print result.
- When removing Encoder scale holder and PF encoder scale, wear gloves. Do not damage Encoder scale.

9. Replace X speed reduction belt.

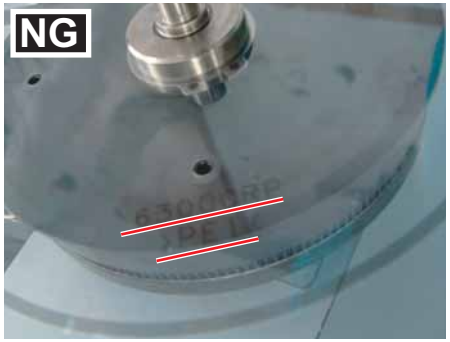


No.	Name
1	X speed reduction belt

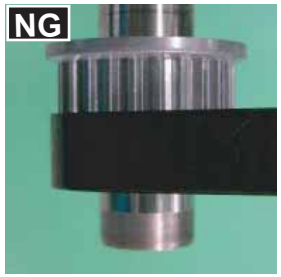
10. Reassemble PF encoder scale.

NOTE

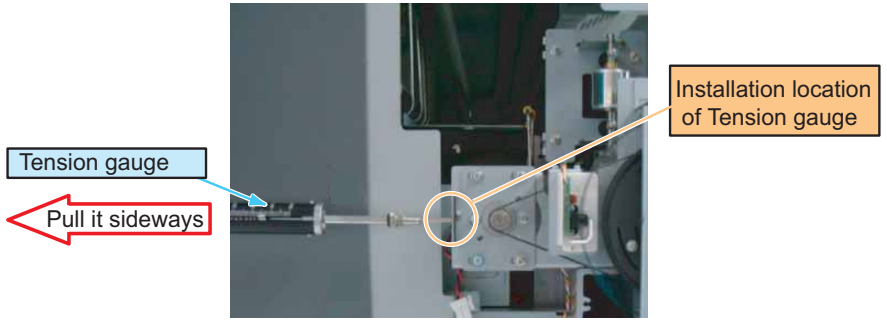
When reassembling PF encoder scale, make sure that characters printed to PF encoder scale reverse.
If the characters are read ordinary, there may be a risk of reducing readout accuracy of PF encoder.



11. Reassemble PF Scale presser.
12. Reassemble PF thrust spring.
13. Assemble X speed reduction belt to PF Motor Assy.
14. Check if X speed reduction belt is put around correctly.



15. To adjust X speed Reduction Belt, refer to the following procedure.
    - Hook Tension Gauge on PF Mounting Plate.（See the figure below.）
    - Pull Tension Gauge horizontally.Fully tighten the screws(4 pieces) which were lightly tighten in the step 10 at **34.3N ± 3.4N（3500 g ± 350 g）** indicated on the scale.



NOTE

Do NOT hook Tension Gauge directly on PF Motor. Doing so may damage PF Motor.

16. From this point on, reverse the removal procedure.

3.5.2 Replacing PF Encoder Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
PF Encoder Assy	DG-43011	☞" Exploded View X Rail Assy 3(PF Section)" p.11-6
+ Driver No.2	Generic products	-
+ Driver No.1	Generic products	For M2.6 screw

TIP

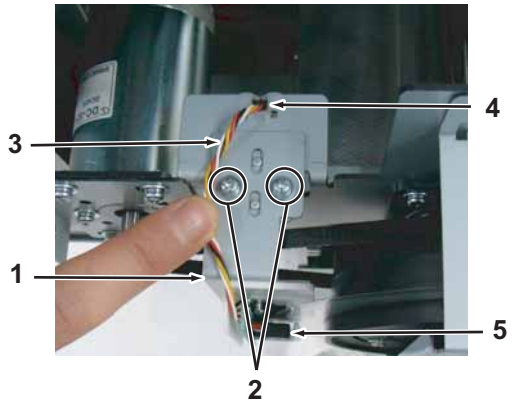
This section describes the procedure to replace the maintenance part, PF Encoder Assy.

In this section, it is referred to as PF Encoder.

CAUTION

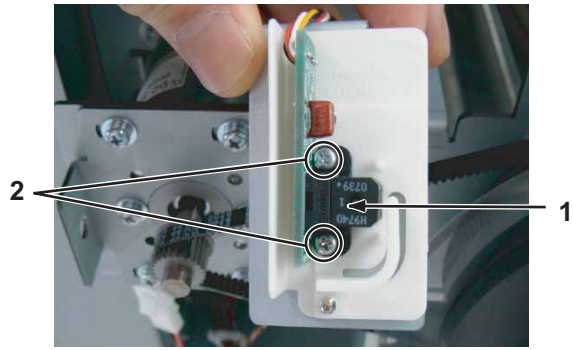
After printing for a period of time, the motor gets very hot. DO not touch the motor to avoid burning yourself.

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Rear s ide cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
3. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
4. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
5. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
6. Remove the screws (2 pieces) retaining PF Encoder Mounting Plate.
7. Remove PF Encoder Cable from the clamp.



No.	Name
1	PF Encoder Mounting Plate
2	Pan-head screw with spring washer and flat washer M3 × 8
3	Cable of PF Encoder
4	Clamps
5	PF Encoder

8. Remove the screws(2 pieces） retaining PF Encoder.



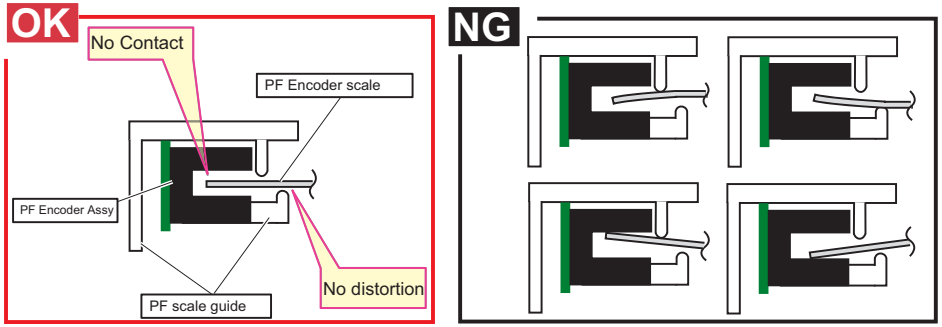
No.	Name
1	PF encoder
2	Tappinng screw M2.6 × 6

9. Remove PF Encoder Assy Cable from the clamp on the path.
10. Remove PF Encoder Assy Connector from MAIN Board Assy(J24).
11. Replace PF encoder Assy.
12. To reassemble unit, reverse the removal procedure.

NOTE

Pay attention to the following points when installing PF Encoder Mounting Plate.

- PF Encoder Scale is placed near the center of PF Encoder.
- PF Encoder Scale is not in contact with PF Encoder.
- PF Scale Guide is not deforming PF Encoder Scale.
- PF Encoder Scale is not in contact with PF Encoder even when rotating Grid Roller.



- If the installed PF Encoder Mounting Plate looks like one of the “NG” examples above, adjust its installation position.
- After replacing PF encoder Assy, rotate Grid roller several times to check if Encoder scale is not distorted.If it is distorted, reinstall PF encoder Assy.

3.5.3 Replacing PF Motor Assy

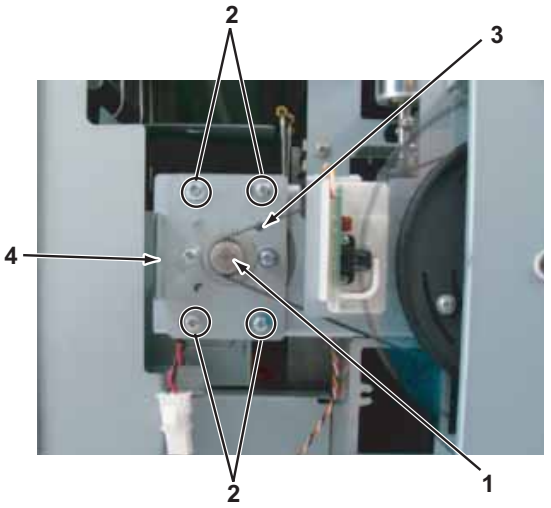
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
PF Motor Assy	DF-49020	☞" Exploded View X Rail Assy 3(PF Section)" p.11-6
＋ Driver No.2	Generic products	-
Tension gauge	Generic products	Max:40N(4,080gf)

⚠ CAUTION

After printing for a long period of time, the motor gets very hot.
Do not touch the motor to avoid burning yourself.

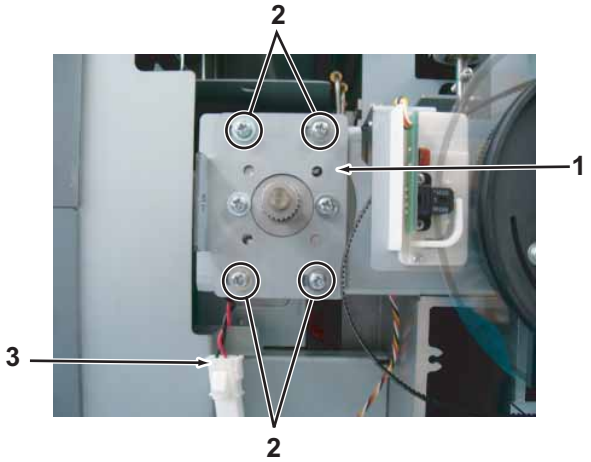
1. Initialize PF Motor counter.
☞"5.10.1 Parameter Initialization Menu" p.5-57
2. Remove Side Maintenance cover.
☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Loosen the screws (4 pieces) retaining PF Motor Mounting Plate to remove X Speed Reduction Belt from PF Motor.



No.	Name
1	PF Motor Assy
2	Pan-head screw with spring washer and flat washer M4 × 8
3	X speed reduction belt
4	PF motor mounting plate

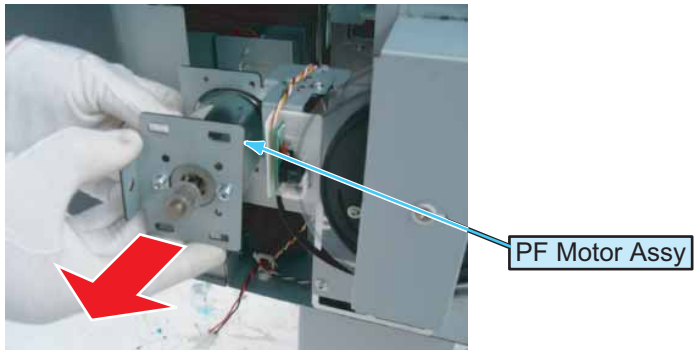
4. Remove the screws (4pieces) retaining PF Motor Mounting Plate.

5. Remove PF Motor Assy Connector.



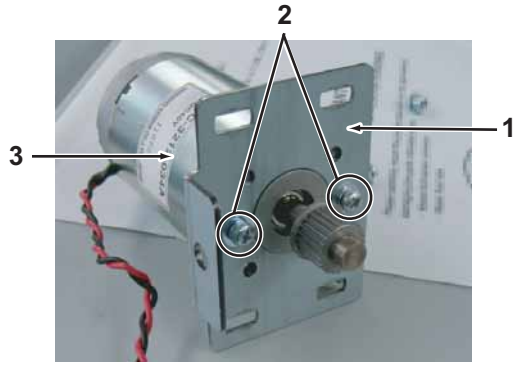
No.	Name
1	PF motor mounting plate
2	Pan-head screw with spring washer and flat washer M4 × 8
3	PF motor Assy connector

6. Remove PF Motor Assy (with PF Motor Mounting Plate still fixed).



7. Remove the screws (2 pieces）retaining PF Motor Mounting Plate.

8. Replace PF Motor Assy.

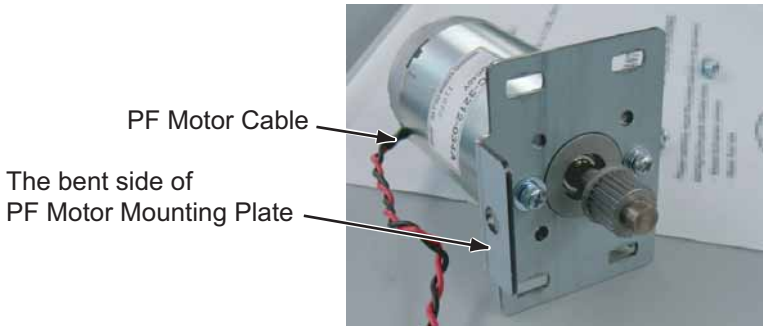


No.	Name
1	PF motor mounting plate
2	Pan-head screw with spring washer and flat washer M4 × 8
3	PF Motor Assy

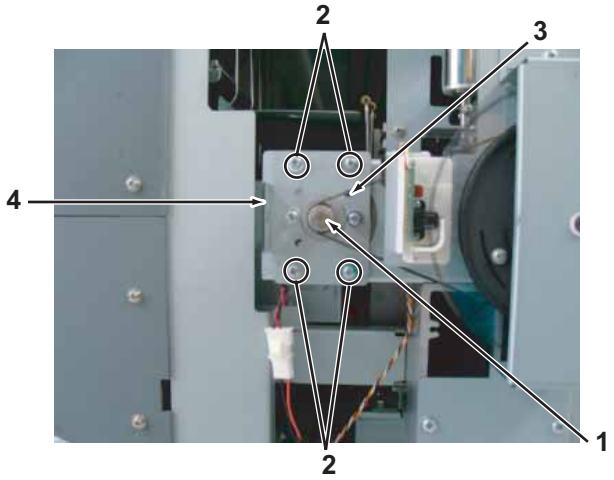
9. Fix PF Motor to PF Motor Mounting Plate.

NOTE

Before fixing PF Motor Assy, make sure that PF Motor Cable and the bent side of PF Motor Mounting Plate are on the same side.（See the figure below.）

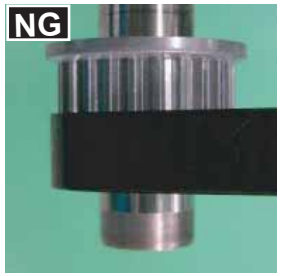


10. Lightly tighten the screws (4 pieces) retaining PF Motor Mounting Plate to install X Speed Reduction Belt is correctly installed on PF Motor Assy.

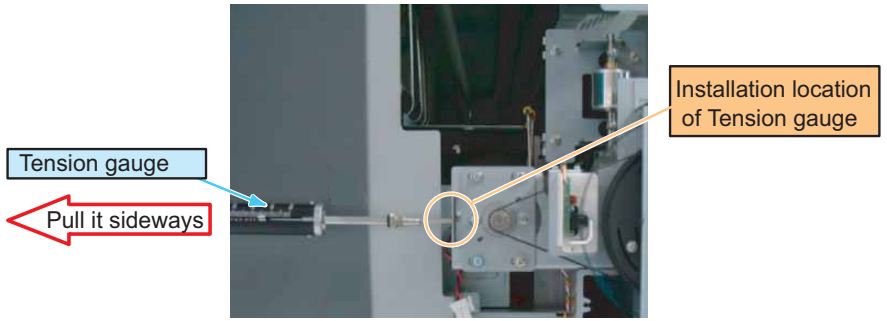


No.	Name
1	PF Motor Assy
2	Pan-head screw with spring washer and flat washer M4 × 8
3	X speed reduction belt
4	PF motor mounting plate

11. Make sure that X Speed Reduction Belt, refer to the following procedure.



12. To adjust X speed Reduction Belt, refer to the following procedure.
    - Hook Tension Gauge on PF Mounting Plate.（See the figure below.）
    - Pull Tension Gauge horizontally.Fully tighten the screws(4 pieces) which were lightly tighten in the step 11 at **34.3N ± 3.4N（3500 g ± 350 g）** indicated on the scale.



NOTE

Do NOT hook Tension Gauge directly on PF Motor. Doing so may damage PF Motor.

13. From this point on, reverse the removal procedure.

3.5.4 Replacing PF Encoder Scale, PF Speed Reduction Pulley

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
PF-ENC Scale	DG-43020	☞" Exploded View X Rail Assy 3(PF Section)" p.11-6
PF speed reduction pulley Assy	DG-42991	☞" Exploded View X Rail Assy 3(PF Section)" p.11-6
＋ Driver No.2	Generic products	-
Tension gauge	Generic products	Max:40N(4,080gf)

TIP

This section describes the procedure to replace the maintenance parts, PF-ENC scale and X Speed Reduction Pulley.

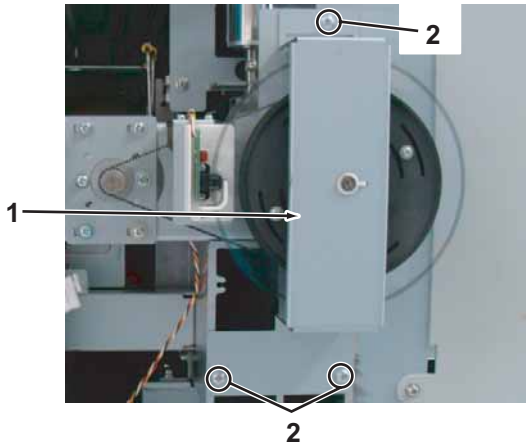
In this section, they are referred to as PF Encoder Scale and PF Speed Reduction Pulley.

⚠ CAUTION

After printing for a long period of time, do NOT touch Motor.

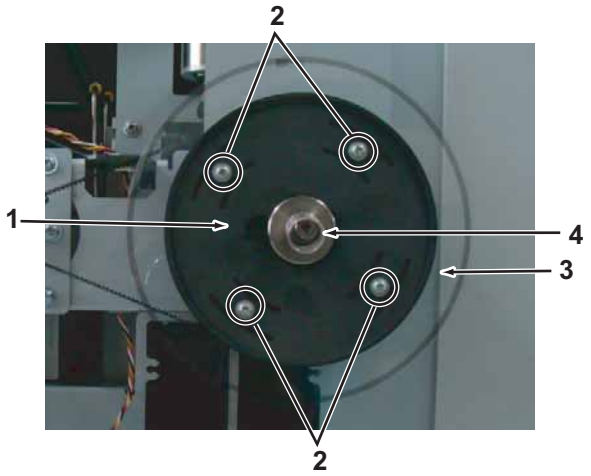
Motor is hot and you may burn yourself.

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove the screws(3 pieces） retaining Grid Roller Presser.



No.	Name
1	Grid roller presser
2	Tappinng screwM4 × 8

3. Remove Grid Roller Presser.
4. PF Thrust Spring.
5. Remove the screws（4pieces） retaining PF Scale Presser.



No.	Name
1	PF scale presser
2	Tappinng screwM3 × 8
3	PF encoder scale
4	PF thrust spring

6. Remove PF Scale Presser.
7. Remove PF Encoder Scale.

TIP

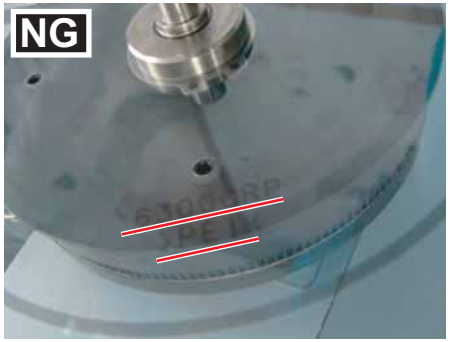
When replacing PF speed reduction pulley, refer to the step 11 onward.

8. Attach the new PF Encoder Scale.

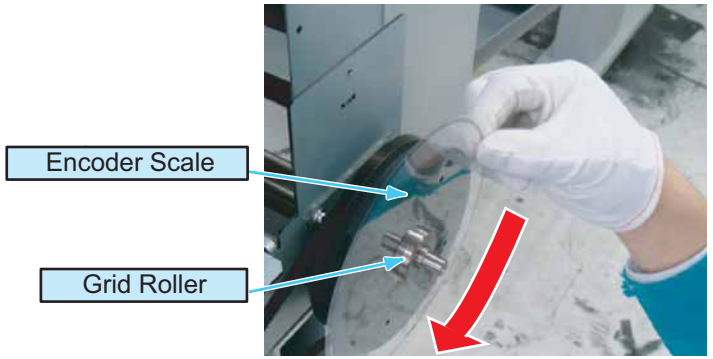
NOTE

Pay attention to the following points when installing PF Encoder Scale.

- Make sure that the printed letters on PF Encoder Scale are inverted.
  If PF Encoder Scale is installed incorrectly as shown in the “NG” sample below, the reading accuracy of PF Encoder may be reduced.



- After installing, rotate PF Encoder Scale a few times to fit it to Grid Roller.

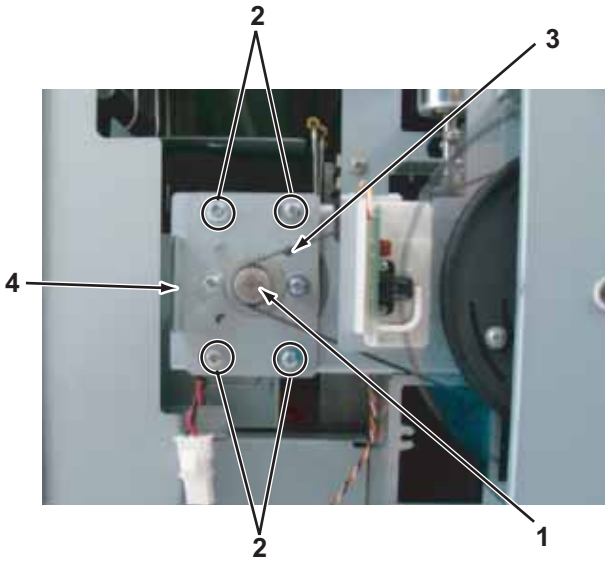


9. Install PF Scale Presser.When installing PF Scale Presser, make sure that the engraved side is facing outward.
10. From this point on, reverse the removal procedure.

NOTE

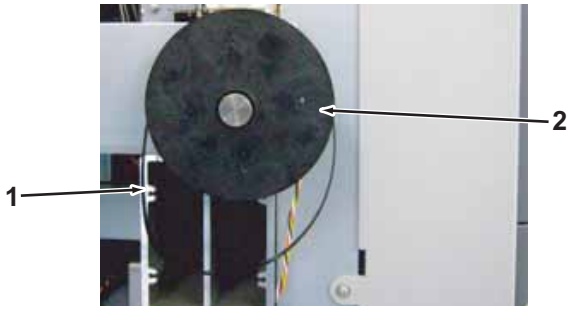
After fixing PF Scale presser, Rotate Grid Roller a few times to make sure that Encoder Scale is not distorted.
If Encoder Scale is distorted, reinstall PF Encoder Scale.

11. Loosen the screws (4 pieces) retaining PF Motor Mounting Plate to remove X Speed Reduction Belt from PF Motor.



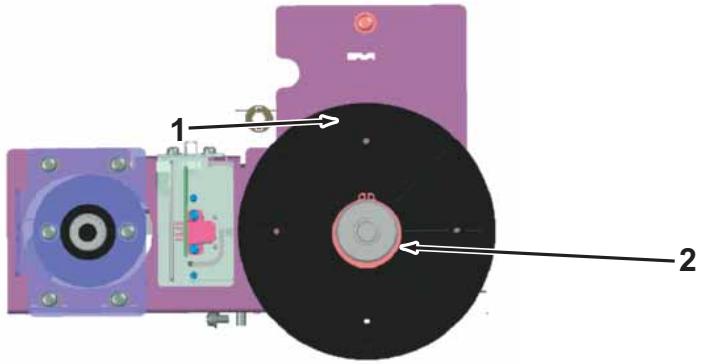
No.	Name
1	PF motor Assy
2	Pan-head screw with spring washer and flat washer M4 × 8
3	X speed reduction belt
4	PF Motor mounting plate

12. Remove X speed reduction belt from PF speed reduction pulley.



No.	Name
1	X speed reduction belt
2	PF speed reduction pulley

13. Remove C ring.
14. Replace PF speed reduction pulley.



No.	Name
1	C ring
2	PF speed reduction pulley

15. Fronm this point on ,to reassemble unit, reverse the removal procedure.
16. Perform various adjustment.☞"4.2 Adjustment Item" p.4-3

3.5.5 Replacing P_Rear Sensor

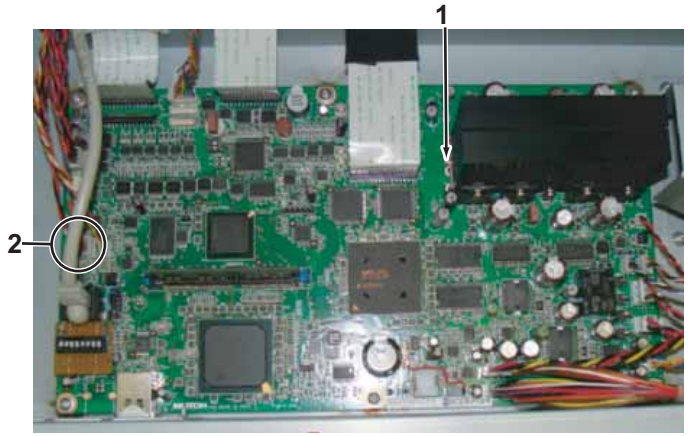
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
P_REAR Sensor Assy	DG-43010	☞" Exploded View X Rail Assy 5" p.11-9
+ Driver No.2	Generic products	-
+ Driver No.1	Generic products	For M2 screw

TIP

- This section describes the procedure to replace the maintenance part, P_REAR Sensor Assy.
- In this section, it is referred to as P_Rear Sensor.
- P_RAER sensor Assy is located near the center of X rail.(Paintless part of Grid roller)

1. Remove media.
2. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
3. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
4. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
5. Remove connector of P_ Rear Sensor from MAIN Board Assy.



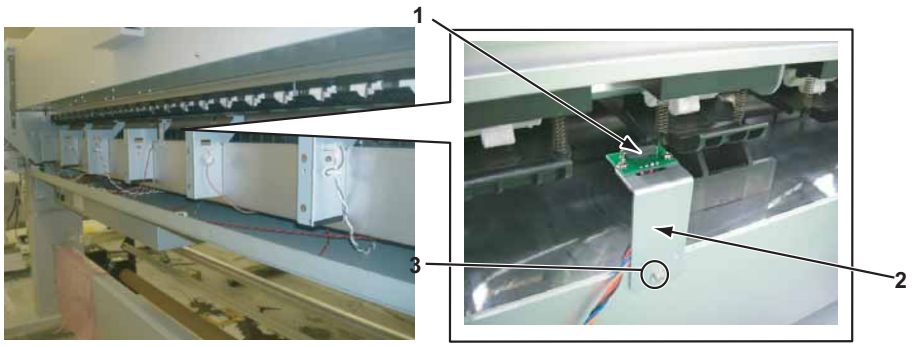
No.	Name
1	Connector of P_Rear Sensor
2	MAIN Board Assy

TIP

Cable of P_Rear Sensor Assy is a stranded wire of Red, Black, blue, orange.

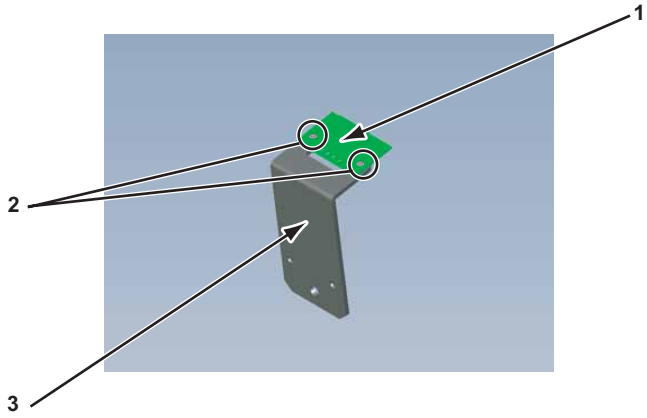
6. Remove P_Rear Sensor from the clamps on the path.

7. Remove the screw (1 piece) retaining R sensor bracket.



No.	Name
1	P_Rear Sensor
2	R sensor bracket
3	Pan-head screw with spring washer and flat washer M3 × 8

8. Remove the screws (2 pieces) retaining P_Rear Sensor to R sensor bracket.



No.	Name
1	P_Rear Sensor
2	Cup screwM2 × 5
3	R sensor bracket

9. Replace P_Rear Sensor.
10. To reassemble unit, reverse the removal procedure.
11. Perform various adjustment.☞"4.2 Adjustment Item" p.4-3

3.5.6 Replacing Lever sensor and Lever sensor Cable

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR_HP Sensor, Lever Sensor	DF-49471	☞" Exploded View X Rail Assy2" p.11-5
Lever Sensor Cable Assy	DG-43026	☞" Exploded View X Rail Assy2" p.11-5
+ Driver No.2	Generic products	-
+ Driver No.1	Generic products	For M2 screw

TIP

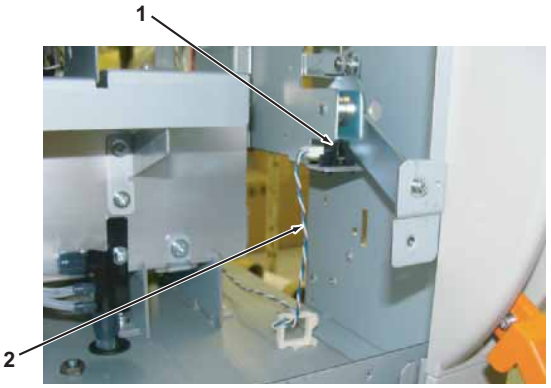
This section describes the procedure to replace the maintenance parts, CR_HP Sensor and Lever Sensor.

In this section, they are referred to as Lever Sensor.

This section describes the procedure to replace the maintenance parts, Lever sensor cable Assy.

In this section, they are referred to as Lever Sensor cable.

1. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Maintenance cover (inner).
   ☞"3.8.1 Removing Maintenance Inner Cover" p.3-164
5. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
6. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
7. Lower Pressure lever down.
8. Remove Lever sensor Cablefrom Lever sensor.

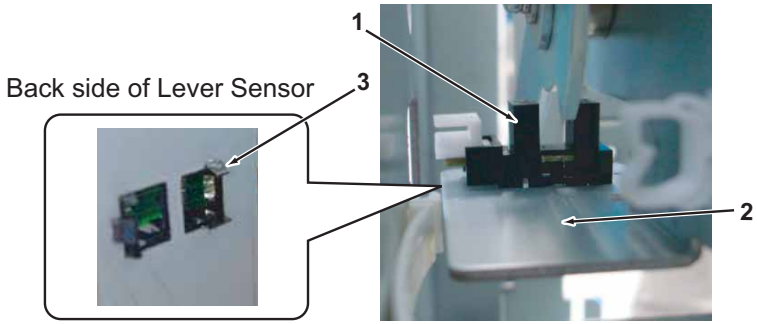


No.	Name
1	Lever sensor
2	Lever sensor Cable

TIP

When replacing Lever sensor Cable, refer to the step 12 onward.

9. Remove Lever sensor tab from rear side of Pressure lever bracket and remove Lever sensor from Pressure lever bracket.



No.	Name
1	Lever sensor
2	Pressure lever bracket

No.	Name
3	tab

NOTE

Lever sensor and Pressure lever bracket are bonded with screw locker. Make sure not to damage Lever sensor when removing them.

10. Replace lever sensor.

NOTE

Apply screw locker to new Lever sensor, and bond to Pressure lever bracket firmly.

11. To reassemble unit, reverse the removal procedure.
12. Remove Lever sensor Cable from clamps on the path.
13. Remove Lever sensor Cable Assy from JUNCTION Board Assy.

No.	Name
1	JUNCTION Board Assy
2	Lever sensor Cable（J15)

14. Replace Lever sensor Cable.
15. To reassemble unit, reverse the removal procedure.
16. Perform various adjustment.
☞"4.2 Adjustment Item" p.4-3

3.5.7 Replacing Heater, Thermistor

NOTE

Set Heater to the original position without bending. The surface temperature of media changes and printing quality becomes poor if heater Assy position is set insufficiently.

(1) Replacing Pre-heater, Pre-thermistor

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ16 Pre Heater Assy	DG-40351	☞" Exploded View X Rail Assy 5" p.11-9
Termistor Assy	DG-43001	☞" Exploded View X Rail Assy 5" p.11-9
+ Driver No.2	Generic products	-

TIP

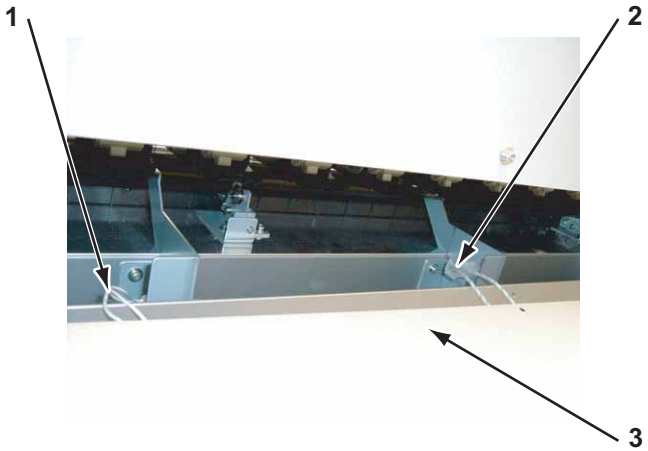
This section describes the procedure to replace the maintenance parts, VJ16 Pre Heater Assy and Thermistor Assy.

In this section, they are referred to as Pre-heater and Pre-Thermistor.

NOTE

Pre-heater and Pre-heater insulator are affixed to the backside of Paper guide R (upper) using double-faced tape.

1. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Rear s ide cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
5. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
6. Remove Paper guide R (Upper) and reverse.
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
7. Detach connectors (2 pieces) to Pre-thermistor and connectors (2 pieces) to Pre-heater.



No.	Name
1	Connectors of Pre-thermistor
2	Connectors of Pre-heater
3	Paper guide R (upper)

8. Remove Pre-heater heat insulator applied over the broken Pre-heater (and Pre-thermistor).

TIP

Pre-heater heat insulator and Pre-heater are affixed using double-faced tape.

9. Mark the location of broken Pre-heater (and Pre-thermistor).

NOTE

Make sure to affix pre-heater (and Pre-thermistor) to correct position.

If not, Media guide R doesn't become an appropriate temperature and image quality may be affected.

10. Remove broken Pre-heater.

No.	Name
1	Paper guide R (upper)
2	Pre-heater
3	Pre-heater heat insulator

11. Replace Pre-heater.

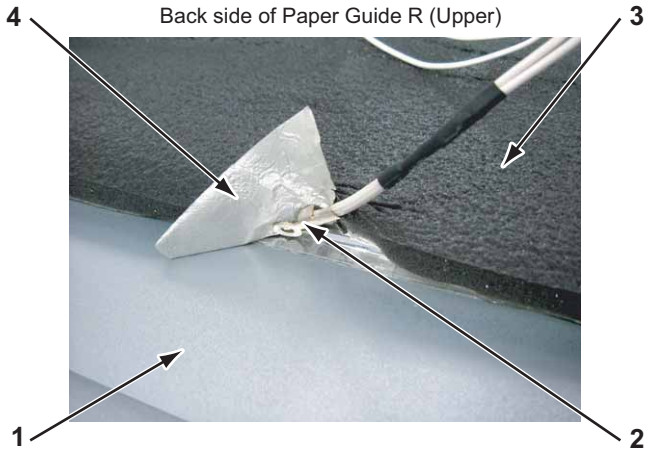
NOTE

Before affixing Pre-heater, remove grease from adhered surface. The grease weakens the adhesive force of Pre-heater and may peel off.

12. Remove Thermistor film.
13. Remove Pre-thermistor.

TIP

Pre-thermistor is affixed using Thermistor film.



No.	Name
1	Paper guide R (upper)
2	Pre-thermistor
3	Pre-heater heat insulator
4	Thermistor film

14. Replace Pre-thermistor.

NOTE

- Do not tear Thermistor film when affixing it.
- Note the side of Pre-thermistor and affix it. The larger area of Pre-thermistor should be affixed to Media guide R (upper).

15. To reassemble unit, reverse the removal procedure.

(2) Replacing After Heater, After-Thermistor

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ16 After Heater Assy	DG-40350	☞" Exploded View X Rail Assy 5" p.11-9
Termistor Assy	DG-43001	☞" Exploded View X Rail Assy 5" p.11-9
+ Driver No.2	Generic products	-

TIP

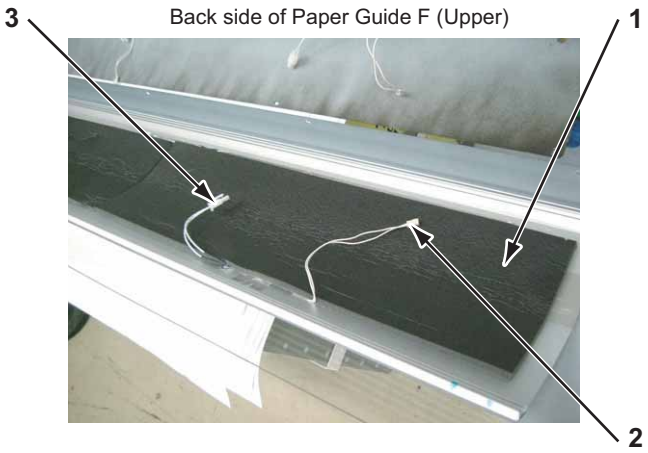
This section describes the procedure to replace the maintenance parts, VJ16 After Heater Assy and Thermistor Assy.

In this section, they are referred to as After-Heater and After-Thermistor.

NOTE

After Heater and After Heater insulator are affixed to the backside of Paper guide F (upper) using double-faced tape.

1. Remove Paper guide F (Upper) and reverse.
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
2. Detach connectors (2 pieces) to After Heater and connectors (2 pieces) to after-thermistor inside Media guide F (upper).



No.	Name
1	After Heater heat insulator
2	Connectors to after-thermistor
3	Connectors to After Heater

3. Remove After Heater insulator affixed over broken After Heater (and after-thermistor).

TIP

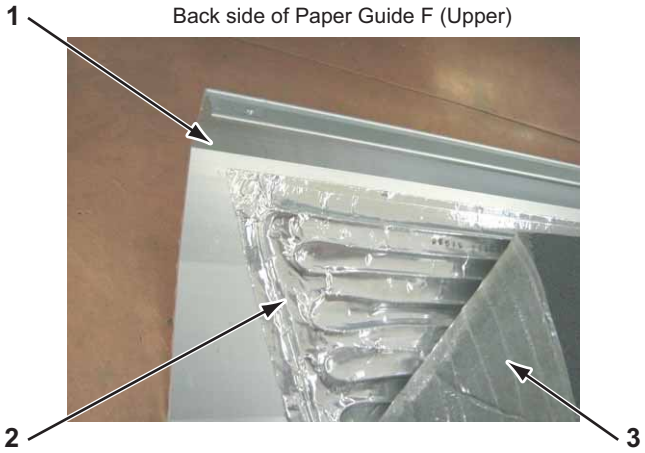
After Heater and After Heater insulator are affixed using double-faced tape.

4. Mark the location of broken After Heater (and After-thermistor).

NOTE

Affix After Heater to correct position.
If not, Media guide F doesn't become an appropriate temperature and image quality may be affected.

5. Remove broken After Heater , After Heater heat insulator.



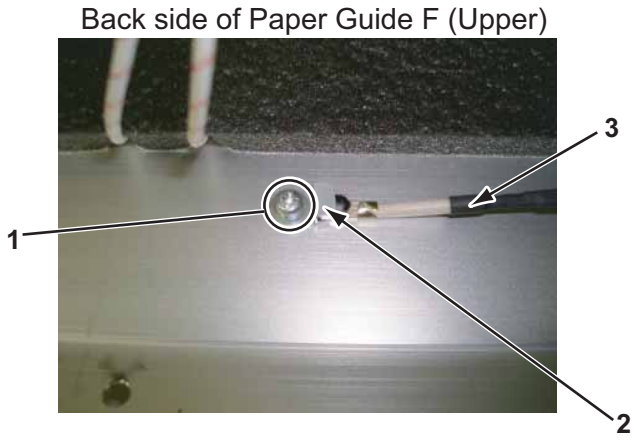
No.	Name
1	Paper guide F (upper)
2	After Heater
3	After Heater insulator

6. Replace After Heater , After Heater insulator.

NOTE

Before affixing Platen heater, remove grease from adhered surface.
The grease weakens the adhesive force of Platen heater and may peel off.

7. Remove the screw (1 piece) retaining Thermistor holder.



No.	Name
1	Binding small screw M3 × 6
2	Thermistor holder
3	After thermistor

8. Remove Thermistor holder
9. Remove After-thermistor.
10. Replace After-thermistor.
11. To reassemble unit, reverse the removal procedure.

3.5.8 Replacing After Heater relay Assy、After thermistor relay Assy

A necessary jigs and tools are as follows.

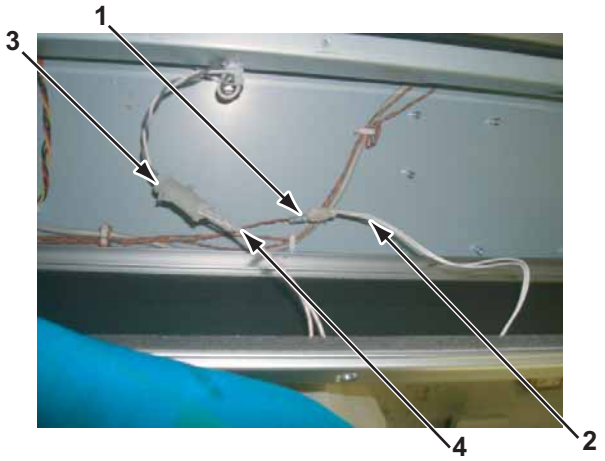
Name	Maintenance Part No.	Remarks
AFT_T1 Relay Assy	DG-43018	☞" Exploded View X Rail Assy 5" p.11-9
AFT_T2 Relay Assy	DG-43019	
AFT_H Relay Assy	DG-43017	
＋ Driver No.2	Generic products	-

TIP

- This section describes the procedure to replace the maintenance parts, AFT_H relay Assy. In this section, they are referred to as After-Heater relay Assy.
- This section describes the procedure to replace the maintenance parts, AFT_T2 relay Assy and AFT_T1 relay Assy. In this section, they are referred to as After-Thermistor relay Assy.
- The seal is stuck on the connector of the relay Assy.

Connected to (Maintenance part name)	Seal
Origin side (AFT_H relay Assy)	AF1A
the opposite side of origin (AFT_H relay Assy)	AF1B
Orihin side (AFT_T1 relay Assy)	ATTH1
the opposite side of origin (AFT_T2 relay Assy)	ATTH2

1. Remove Maintenance Cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Maintenance cover U_R.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
3. Remove Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
4. Remove Maintenance cover U_L.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
5. Remove Paper guide F(upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
6. Remove After Heater connector (2 pieces) and After thermistor connector (2 pieces).



No.	Name
1	After Thermistor relay Assy
2	After Thermistor connector
3	After Heater relay Assy
4	After Heater connector

7. Remove After Heater relay Assy and After Thermistor relay Assy from clamps on the path.
8. Remove After Heater relay Assy and After Thermistor relay Assy from HEATER RELAY board Assy, then replace them.
   ☞"3.4.4 Replacing HEATER RELAY Board Assy" p.3-44
9. To reassemble unit, reverse the removal procedure.

3.5.9 Replacing Pre Heater relay Assy,Pre Thermistor relay Assy

A necessary jigs and tools are as follows.

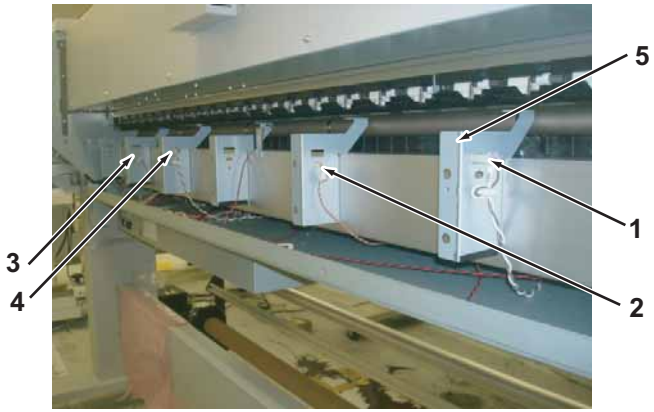
Name	Maintenance Part No.	Remarks
PRE_T1 Relay Assy	DG-43022	☞" Exploded View X Rail Assy 5" p.11-9
PRE_T2 Relay Assy	DG-43023	
PRE_H1 Relay Assy	DG-43020	
PRE_H2 Cable Assy	DG-43021	
＋ Driver No.2	Generic products	-

TIP

- This section describes the procedure to replace the maintenance parts, PRE_H1 relay Assy and PRE_H2 cable Assy..
  In this section, they are referred to as PRE Heater relay Assy.
- This section describes the procedure to replace the maintenance parts, PRE_T2 relay Assy and PRE_T1 relay Assy.
  In this section, they are referred to as PRE Thermistor relay Assy.
- The seal is stuck on the connector of the relay Assy.

Connected to (Maintenance part name)	Seal
Origin side (PRE_H1 relay Assy)	PR1
the opposite side of origin (PRE_H2 cable Assy)	PR2
Orihin side (PRE_T1 relay Assy)	PRTH1
the opposite side of origin (PRE_T2 relay Assy)	PRTH2

1. Remove Side top cover L.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
2. Remove Rear side cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Sub tank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
6. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
7. Remove Maintenance cover R,L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
8. Remove Paper guide F (Upper).
   ☞"3.2.11 Removing Paper Guide F (Upper)" p.3-19
9. Remove PRE Heater relay Assy or PRE Thermistor relay Assy from stay.



No.	Name
1	Pre Heater relay Assy (the oposite side of origin) connector
2	Pre Thermistor relay Assy (the opposite side of origin) connector
3	Pre Thermistor relay Assy (origin side) connector
4	Pre Heater relay Assy (originside) connector
5	stay

10. Remove Pre Heater relay Assy and Pre Thermistor relay Assy from clamps on the path.
11. Remove Pre Heater relay Assy and Pre Thermistor relay Assy from HEATER RELAY board Assy.
☞"3.4.4 Replacing HEATER RELAY Board Assy" p.3-44
12. Replace Pre Heater relay Assy and Pre Thermistor relay Assy .
13. To reassemble unit, reverse the removal procedure.

3.5.10 Replacing Platen Non-Reflecting Tape

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Platen Non-Reflecting Tape(9mm)	DG-42222	☞" Exploded View X Rail Assy 4(Platen)" p.11-8
+ Driver No.2	Generic products	-

TIP

- This section describes the procedure to replace the maintenance parts, Platen Non-reflecting tape (9mm).
  In this section, they are referred to as Platen Non-reflecting tape.

1. Open front cover.
2. Open Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
3. Strip Platen non-reflective tape.

No.	Name
1	Platen
2	Platen non-reflecting tape

NOTE

Once Platen non-reflecting tape is stripped, it must not be reused.

4. Replace Platen Non-reflecting tape.

3.5.11 Replacing Media Holder 2 Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Media Holder 2 Assy	DG-43181	☞" Exploded View X Rail Assy 4(Platen)" p.11-8
+ Driver No.2	Generic products	-

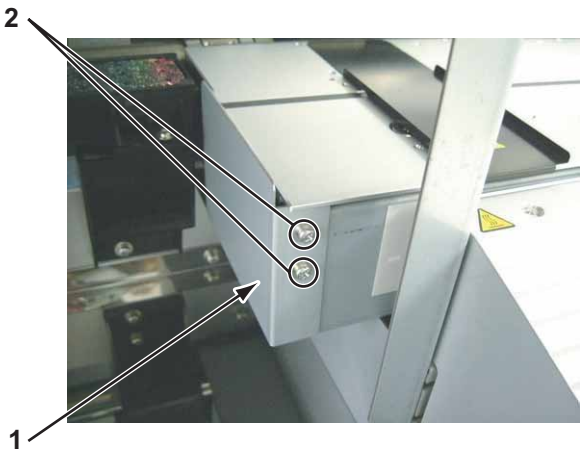
1. Open front cover.
2. Open Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7

NOTE

If Flushing box on the opposite side of the origin point is contaminated with ink, remove Flushing box. If the new Media holder to be installed is contaminated, media may be contaminated.

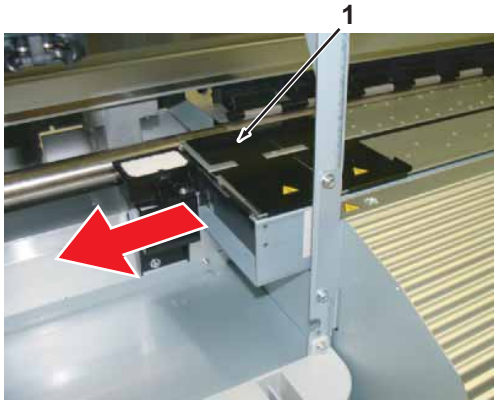
☞"3.8.2 Replacing Flushing Box Assy" p.3-165

3. Remove the screws (2 pieces) retaining Media holder stopper.



No.	Name
1	Media holder stopper
2	Pan-head screw with spring washer and flat washer M3 × 8

4. Remove Media holder stopper.
5. Pull out Media holder in the direction of the red arrow.



No.	Name
1	Media Holder 2 Assy

6. Replace Media Holder 2 Assy.
7. To reassemble unit, reverse the removal procedure.

3.5.12 Replacing Flushing Sponge（L side）

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Flushing Sponge	DG-40318	☞" Exploded View X Rail Assy2" p.11-5
＋ Driver No.2	Generic products	-

Flushing Sponge is arranged as follows.

No.	Name
1	Flushing SpongeR
2	Flushing SpongeL

⚠ CAUTION

- Wear latex gloves when replacing Flushing sponge.
- Ink may leak from the removed flushing frame, etc. Place a waste cloth or media on the floor when replacing Flushing absorber.

1. Open Maintenance cover L.
2. Lift up Flushing frame hook.

No.	Name
1	Flushing Sponge
2	Flushing frame
3	Flushing frame hook

3. Replace Flushing frame (and Flushing Sponge).
4. To reassemble unit, reverse the removal procedure.

3.6 Replacing Y Rail section

This section describes the procedure to replace Y rail section.

3.6.1 Replacing Steel belt

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ1624 CR Belt Assy	DG-43002	☞" Exploded View Y Rail Assy" p.11-7
Steel belt Tension Attachment	DG-43197	
＋ Driver No.2	Generic products	-
Thread Locker	-	Threee bond 1401
Measure	Generic products	Measurable up to 2m
Acetate Tape	Generic product	-
Tension gauge	Generic product	Max:2N(204gf)

TIP

This section describes the procedure to replace the maintenance part, VJ1624 CR Belt Assy.

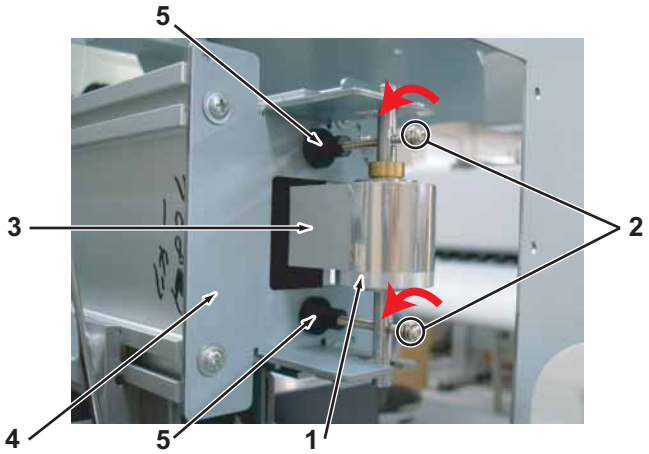
In this section, it is referred to as Steel belt.

CAUTION

- When replacing Steel belt, make sure to wear gloves. Prevent belt from bending or contaminating them with foreign objects. Doing so may cause Seel belt breakage.
- Be careful not to cut your hands with Steel belt.
- Steel belt replacement must be done by two or more persons.

1. Remove Side Maintenance Covers R and L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side Top Covers R and L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove Side Maintenance Covers R and L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
4. Open front cover.
5. Move Carriage to the left (opposite side of the Origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
6. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132

7. Loosen Steel belt adjustment screws (2 pieces).



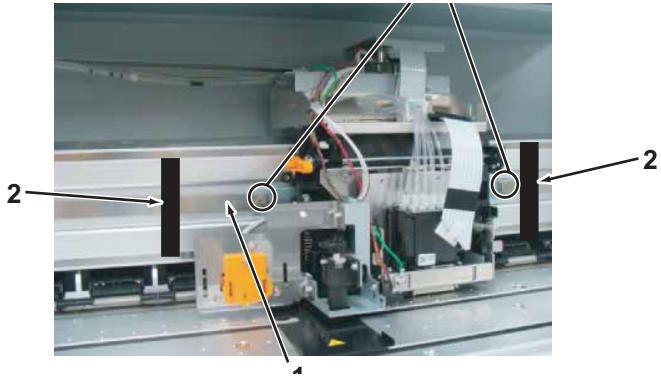
No.	Name
1	CR Return pulley
2	Steel belt adjustment screws（Pan-head screw with spring washer and flat washer M3 × 40）
3	Steel belt
4	Return pulley mounting plate
5	Screw cap

CAUTION

- When you loosen Steel belt adjustment screw, loosen upper and lower screws only for the same amount. This makes the adjustment easy after replacing Steel belt .
- Loosen Steel belt adjustment screws properly (about 5 times). If it is not enough, Steel belt is dragged by and may cause damage when retaining Steel belt to Carriage.

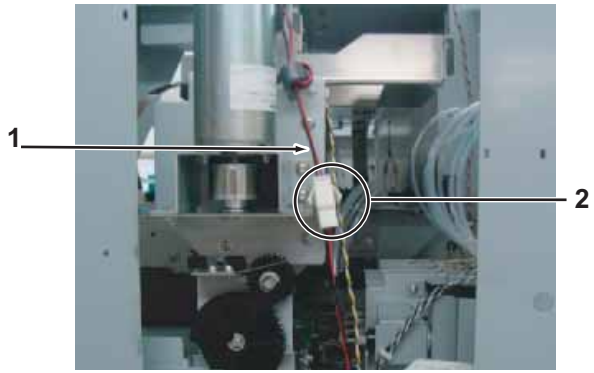
8. In order to prevent Steel belt from falling, both sides of Steel belt are fixed to Y rail with acetate tape sideward ofCarriage.

9. Remove the screws (2 pieces) that retain Belt.



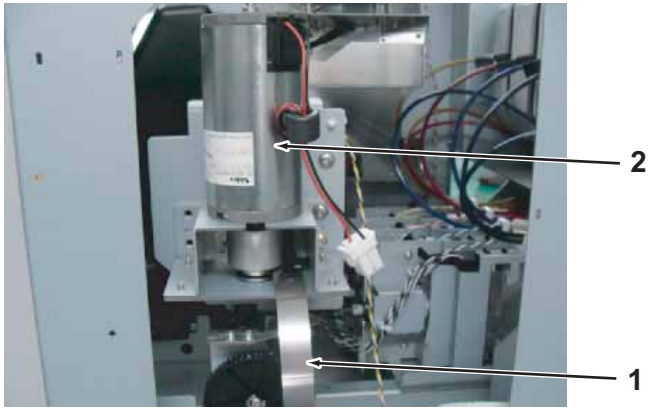
No.	Name
1	Acetate tape
2	Steel belt
3	Screws fixing Belt

10. Remove CR Motor Assy from Connector of CR Motor Cable Assy.



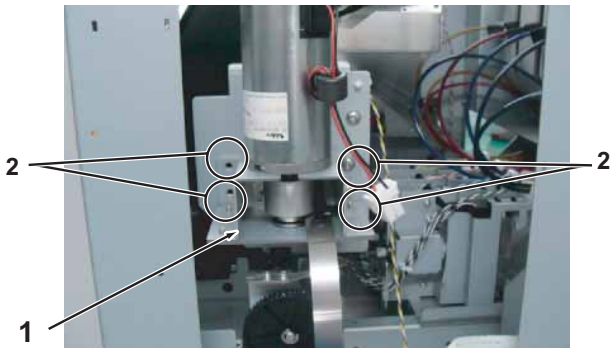
No.	Name
1	CR Motor Assy
2	Connector of CR Motor CableAssy

11. Make sure that Steel belt on the right side of Carriage looks like the picture shown below.



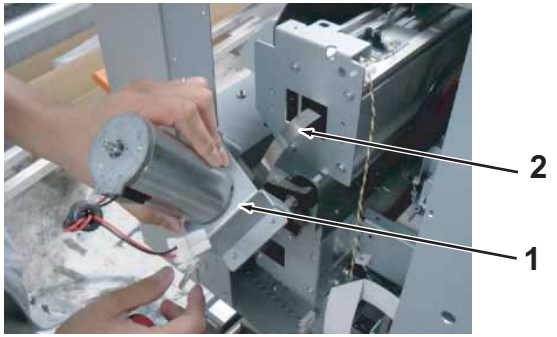
No.	Name
1	Steel belt
2	CR Motor Assy

12. Remove screws (4pieces) retaining Motor Bracket.



No.	Name
1	Motor Bracket
2	Tappinng screwM4 × 6　Stight cup

13. Remove Motor bracket (with CR motor Assy still assembled) from the printer.

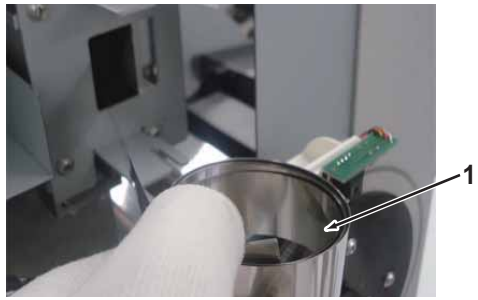


No.	Name
1	Motor Bracket
2	Steel belt

⚠ CAUTION

Be careful not to damage Steel belt.

14. Pull off Steel belt while winding-up.



No.	Name
1	Steel belt

CAUTION

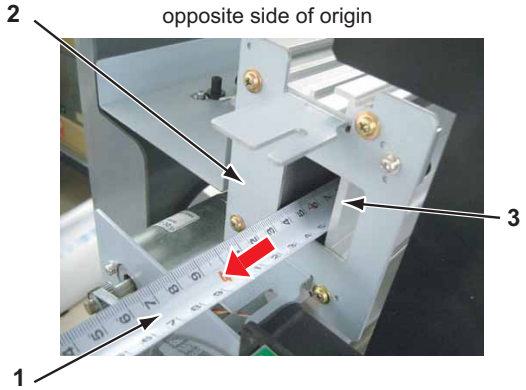
When handling Steel belt and CR following movement belt pulley assemble, make sure to wear gloves.

15. Remove CR Return Pulley Assy.

No.	Name
1	CR Return pulley Assy

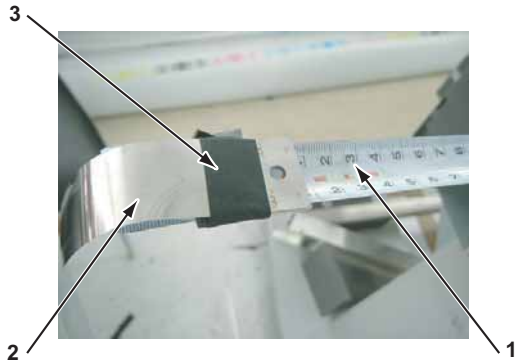
16. Insert measure through the hole of Y drive base to inside of Y rail.

17. Pull out measure from the hole of return pulley mounting plate. Insert measure in the direction of the red arrow.



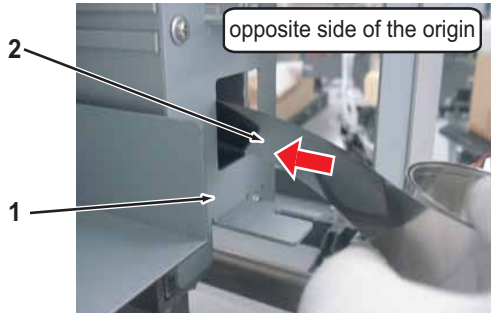
No.	Name
1	Measure
2	Return pulley mountingplate
3	Y Rail

18. AffixSteel belt to the tip of measure using tape.



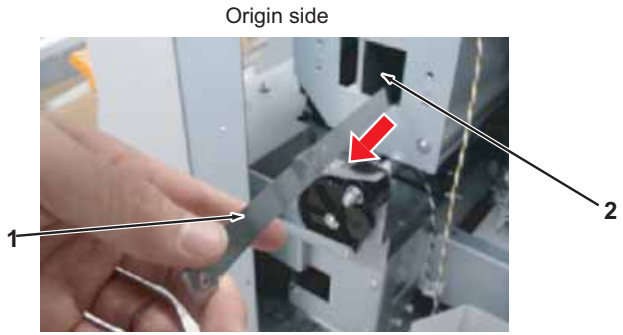
No.	Name
1	Measure
2	Steel belt
3	Tape

19. Slowly rewind the measure retaining Steel belt and put Steel belt through inside Y rail.



No.	Name
1	Y Rail
2	Steel belt

20. Detach Steel belt from measure after the tip of Measure comes out from the hole of Y drive base(origin side).

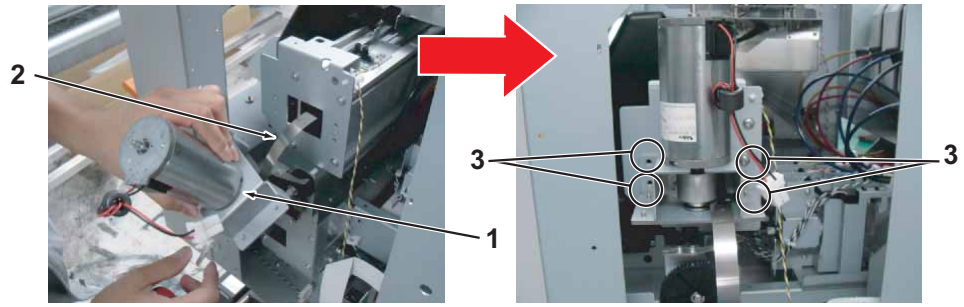


No.	Name
1	Steel belt
2	Hole of Ydrive base

CAUTION

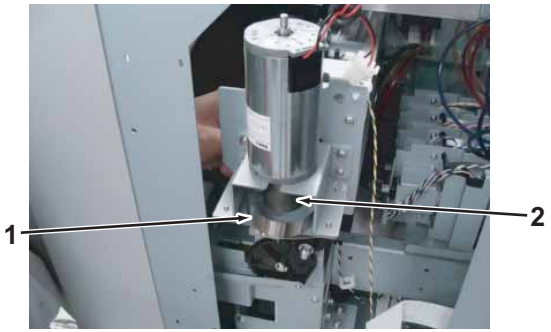
Make sure Steel belt is not twisted inside of Y rail.

21. Assemble CR Motor Assy（Motor Bracket）.



No.	Name
1	CR Motor Assy（Motor Bracket）
2	Steel belt
3	Tappinng screwM4 × 6 Stight cup

22. Install Steel belt to CR drive pulley.



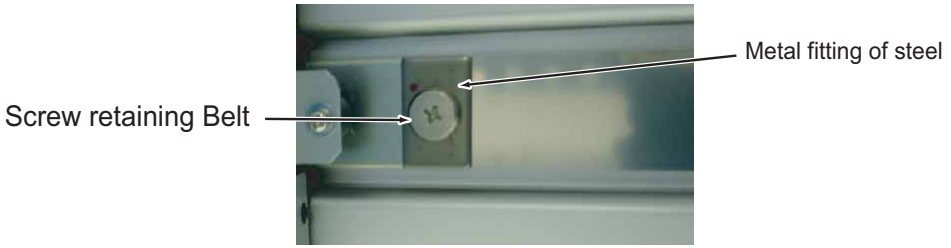
No.	Name
1	Steel belt
2	CR drive pulley

23. Move Carriage to the origin side, and Retain Steel belt to the left side of Carriage.

No.	Name
1	Screws retaining belt
2	Steel belt

CAUTION

- Apply Threadlock to thread of screws retaining Belt.
- Install Steel belt with the metal fittings outside.

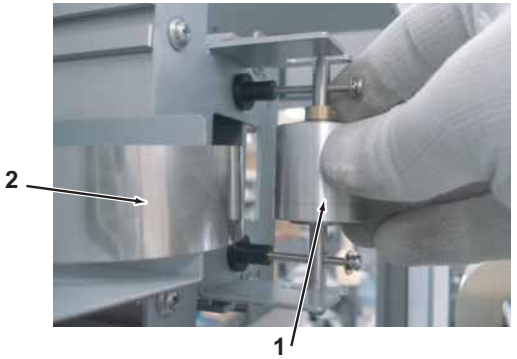


24. Move carriage to left (oppoisite side of origin).

NOTE

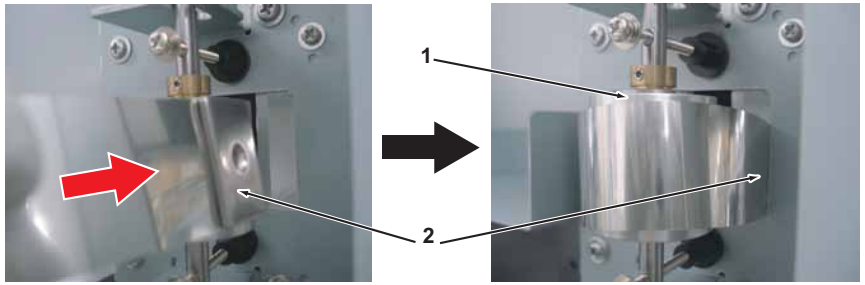
In order to prevent Steel belt from falling, when moving carriage to the left (opposite side of the origin), fix Steel belt with acetate tape.

25. Assemble CR Return Pulley Assy.



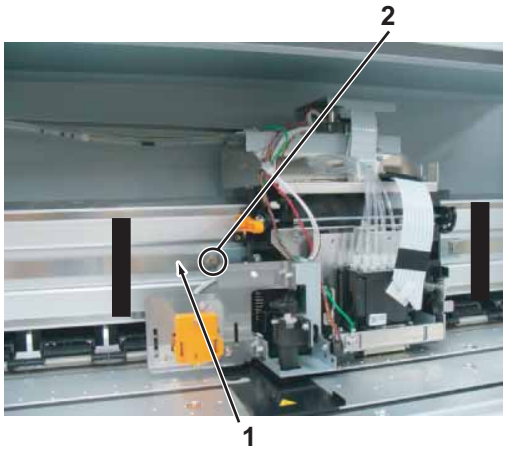
No.	Name
1	CR Return pulley Assy
2	Steel belt

26. Reassemble Steel belt to CR Return pulley Assy.



No.	Name
1	CR Return pulley Assy
2	Steel belt

27. Retain Steel belt to the left side of Carriage.

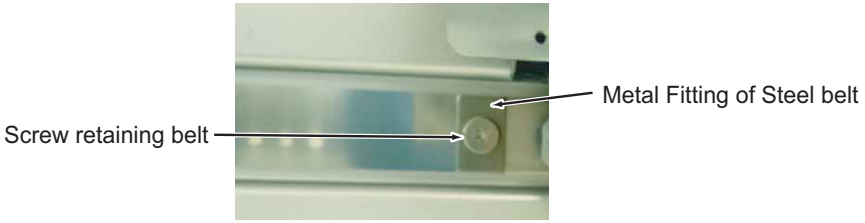


No.	Name
1	Steel belt
2	Screws retaining Belt

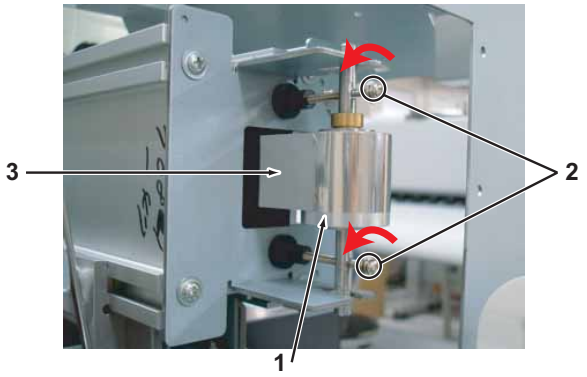
CAUTION

When reassembling Steel belt make sure to follow the procedure below.

- Apply Threadlock to thread of screws retaining Belt.
- Make sure Steel belt is not twisted inside of Y rail.
- Make sure to retain the appropriate side of Steel belt to Carriage. Install Steel belt with the metal fittings outside.



28. Reassemble Steel belt adjustment screws (2 pieces) loosened in the step 9.



No.	Name
1	CR Return Pulley Assy
2	Steel belt adjustment screw
3	Steel belt

29. Make carriage go back and forth, and confirm Steel belt doesn't run over CR Return pulley .

30. Adjust Steel belt tension.
☞"4.4 Steel Belt Tension Adjustment" p.4-50

31. To reassemble unit, reverse the removal procedure.

3.6.2 Replacing CR Motor Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR Motor (Direct Pulley) Assy	DG-43182	☞" Exploded View Y Rail Assy" p.11-7
＋ Driver No.2	Generic products	-
Hex wrench (3mm)	Generic products	-
Tension gauge	Generic product	Max:2N(204gf)

TIP

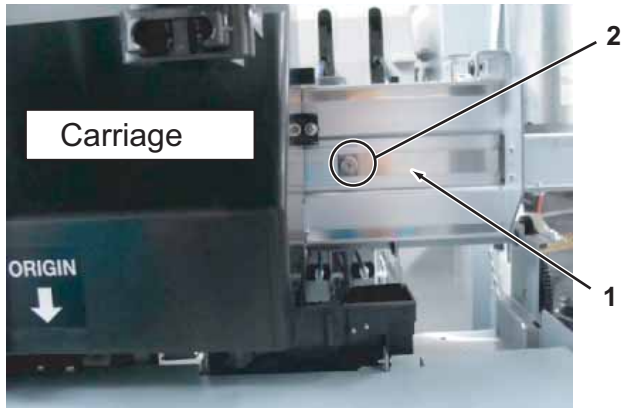
This section describes the procedure to replace the maintenance part, CR Motor (Direct Pulley) Assy.

In this section, it is referred to as CR Motor Assy.

CAUTION

- When handling Steel belt , make sure to wear gloves. Prevent belt from bending or contaminating them with foreign objects. Doing so may cause Seel belt breakage.
- Be careful not to cut your hands with Steel belt .

1. Open Maintenance cover R.
2. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove the screw (1 piece) retaining Steel belt at the right side of Carriage.

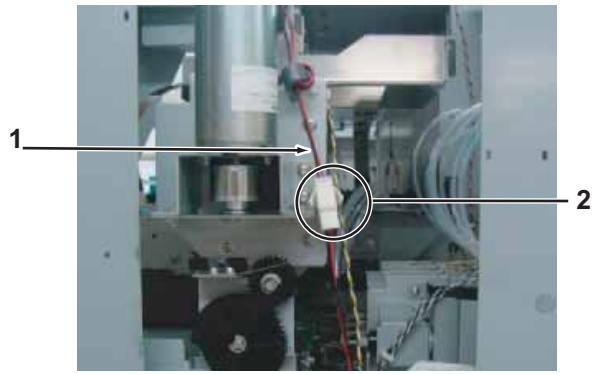


No.	Name
1	Steel belt
2	Screw retaining Steel belt

5. Remove Steel belt （right side of Carriage only).

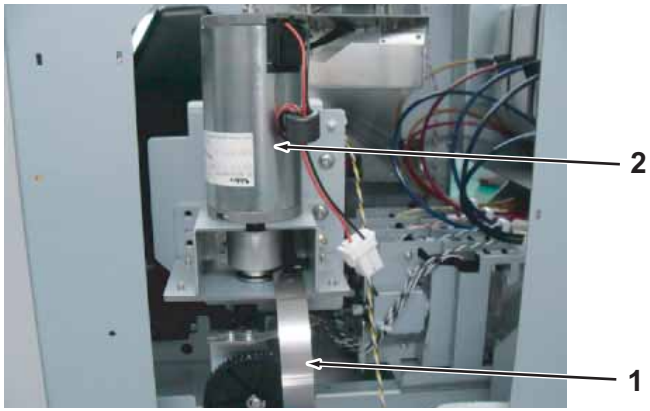
No.	Name
1	Removed Steel belt

6. Remove CR Motor Assy from Connector of CR Motor Cable Assy.



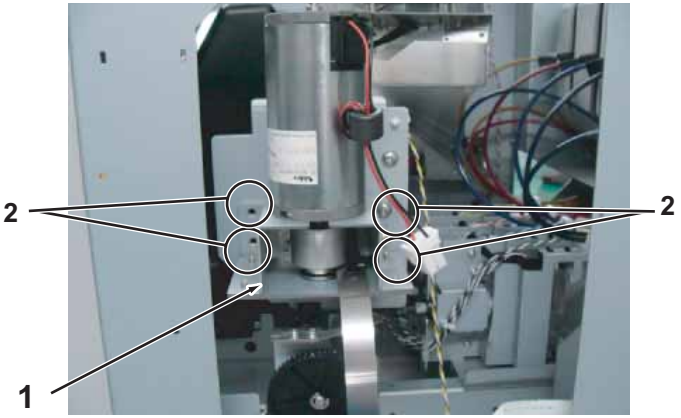
No.	Name
1	CR Motor Assy
2	Connector of CR Motor Cable Assy

7. Make sure that Steel belt looks like the picture shown below.



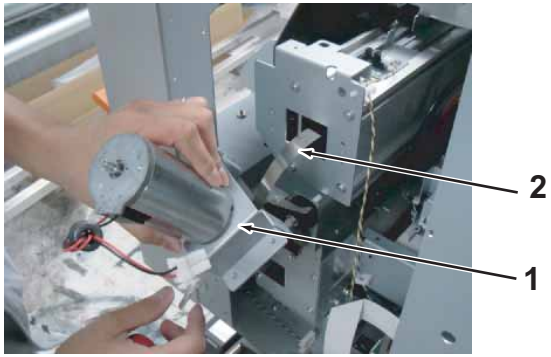
No.	Name
1	Steel belt
2	CR Motor Assy

8. Remove the screws (4 pieces) retaining Motor Bracket .



No.	Name
1	Motor Bracket
2	Tappinng screwM4 × 6　Stight cup

9. Remove Motor bracket (With CR Motor Assy mounted) from the Printer body.

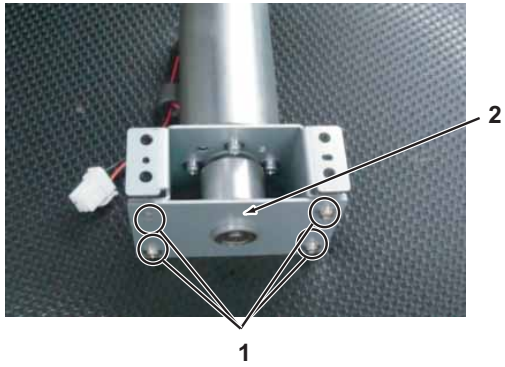


No.	Name
1	Motor bracket
2	Steel belt

CAUTION

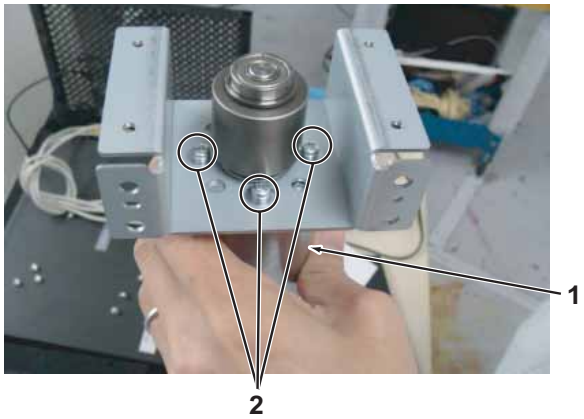
Be careful not to damage Steel belt.

10. Remove the screws (4 pieces) retaining bearing bracket.



No.	Name
1	Tappinng screwM4 × 6 Stight cup
2	Bearing bracket

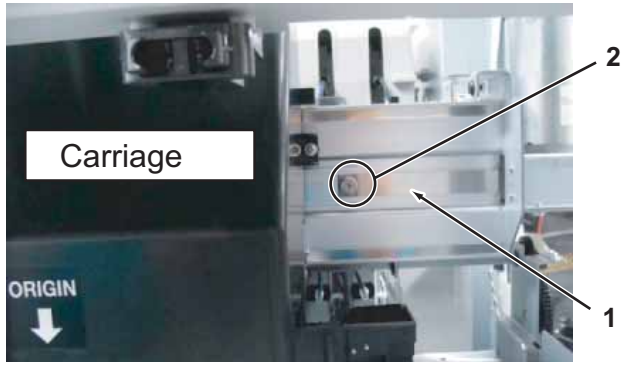
11. Remove bearing bracket.
12. Remove screws (3 pieces) retaining CR Motor Assy.



No.	Name
1	CR Motor Assy
2	Pan-head screw with spring washer and flat washer M4 × 8

13. Repalce CR Motor Assy.
14. Reverse the removal procedure and install CR motor Cable Assy.

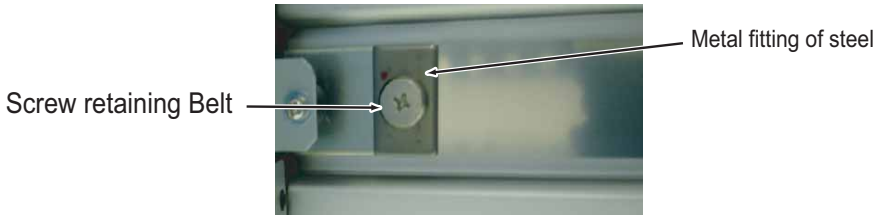
15. Retain Steel belt with the Screw retaining Steel belt .



No.	Name
1	Screw retaining Steel belt
2	Steel belt

CAUTION

- Apply Threadlock to thread of screws retaining Belt.
- Make sure Steel belt is not twisted inside of Y rail.
- Make sure to retain the appropriate side of Steel belt to Carriage.
  Install Steel belt with the metal fittings outside.



16. Make carriage go back and forth, and confirm Steel belt doesn't run over CR Return pulley Assy.
17. Adjust Steel belt tension.
☞"4.4 Steel Belt Tension Adjustment" p.4-50
18. To reassemble unit, reverse the removal procedure.

3.6.3 Replacing CR Return Pulley Assy

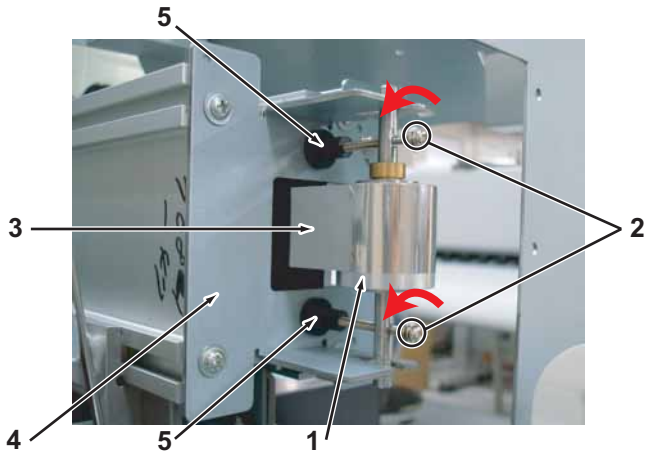
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR Return Pulley Assy	DF-43868	☞" Exploded View Y Rail Assy" p.11-7
Steel belt Tension Attachment	DG-43197	☞" Exploded View Other" p.11-21
＋ Driver No.2	Generic products	-
Thread Locker	-	Three bond 1401
Acetate Tape	Generic products	-
Tension gauge	Generic product	Max:2N(204gf)

NOTE

When reassembling CR Return pulley, ensure that Steel belt is evenly guided along the center part of CR Return pulley Assy by moving Carriage by hand.

1. Open Maintenance cover R.
2. Open Maintenance cover L.
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
5. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
6. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
7. Remove Steel belt adjustment screws (2 pieces).
8. Remove screw cap (2 pieces).



No.	Name
1	CR Return Pulley Assy
2	Adjustment Screw (Pan-head screw with spring washer and flat washer M3 × 40)
3	Steel belt
4	Return Pulley mounting Plate
5	Screw Cap

9. Remove Steel belt.
   ☞"3.6.1 Replacing Steel belt" p.3-97
10. CR Return Pulley Assy.

NOTE

For the composition of CR Following Movement Belt Pulley, refer to the exploded view.

11. Replace CR Return Pulley Assy.
12. Reassemble Steel belt.
    ☞"3.6.1 Replacing Steel belt" p.3-97
13. Perform Steel Belt tension adjustments.
    ☞"4.4 Steel Belt Tension Adjustment" p.4-50

14. To reassemble unit, reverse the removal procedure.
15. Perform various adjustments.

☞"4.2 Adjustment Item" p.4-3

3.6.4 Replacing T fence

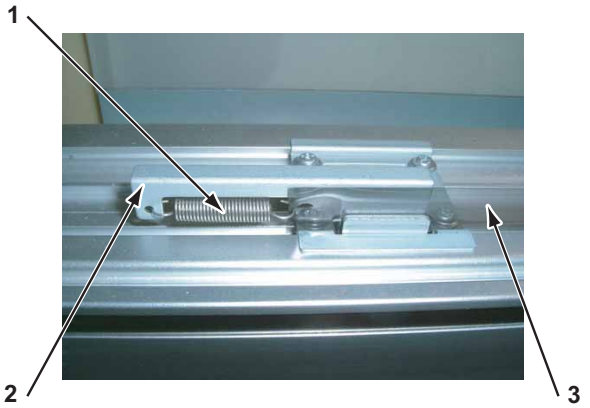
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
T Fence (64)	DF-43901	☞" Exploded View Y Rail Assy" p.11-7
+ Driver No.2	Generic products	-

CAUTION

When replacing T fence , make sure to wear gloves.
If T fence is contaminated with foreign objects and damaged, print quality may be affected.

1. Open Maintenance cover R.
2. Open Maintenance cover L.
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
5. Open front cover.
6. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
7. Remove T fence spring from T fence .



No.	Name
1	T fence spring
2	T fence spring hook
3	T fence spring hook

8. Remove T fence from T fence clamping plate (3 plates).

No.	Name
1	T fence clamping plate
2	Tapping screw M3 × 6S tight cup

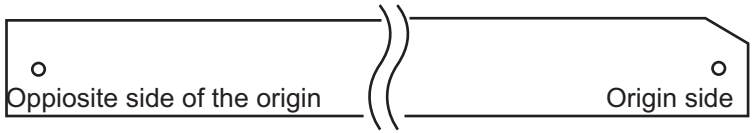
NOTE

When removing T fence from T fence clamping plate, remove from the origin side of T fence clamping plate in order.

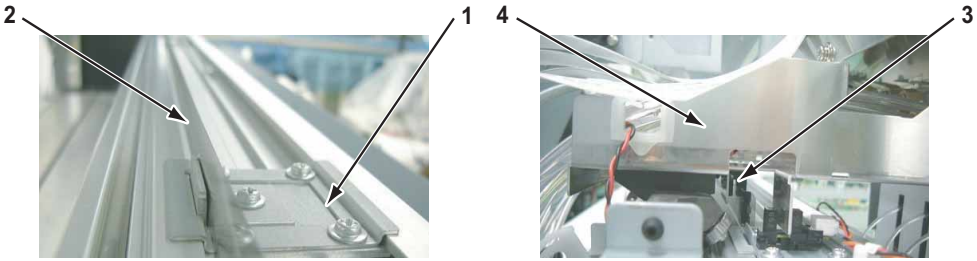
9. Replace T fence .

NOTE

- If T fence is coated with protective film, remove film and attach T fence correctly.
- T fence (64) shapes differ depending on the place to install. Refer to the following figure and correctly attach them.



- Refer to the step 9 and correctly attach T fence to ORG sensor mounting plate hook.
- Allow a margin between the T fence and hook ofClamping plate.
- When retaining T fence clamping plate with screws, allow a margin so that T fence can slightly move.
- Refer to the following figures and insert T fence in T fence clamping plate and CR encoder Assy.



No.	Name
1	T fence clamping plate
2	T fence
3	CR encoder Assy
4	Carriage

10. To reassemble unit, reverse the removal procedure.

NOTE

When retaining ORG sensor fixing plate, press plate to the Y drive base side and retain with screws.

If ORG sensor fixing plate is assembled incorrectly, CR origin sensor may develop a creep and result in high possibility of CR over current.

11. Perform various adjustments.

☞"4.2 Adjustment Item" p.4-3

3.6.5 Replacing CR Origin Sensor

A necessary jigs and tools are as follows.

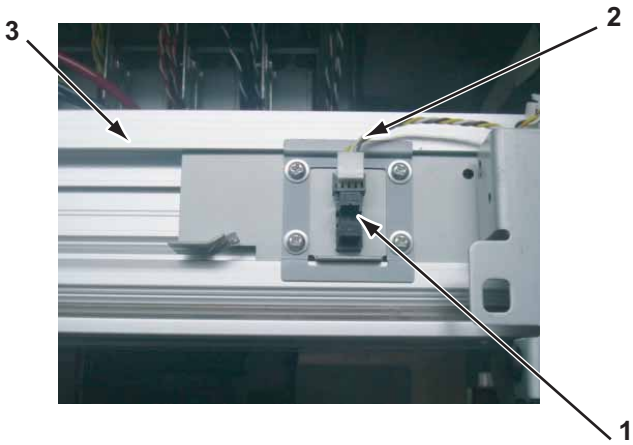
Name	Maintenance Part No.	Remarks
CR_HP Sensor,Lever Sensor	DF-49471	☞" Exploded View Y Rail Assy" p.11-7
＋ Driver No.2	Generic products	-
Thread Locker	-	Three bond 1401

TIP

This section describes the procedure to replace the maintenance parts, CR_HP Sensor and Lever Sensor.

In this section, they are referred to as CR Origin Sensor.

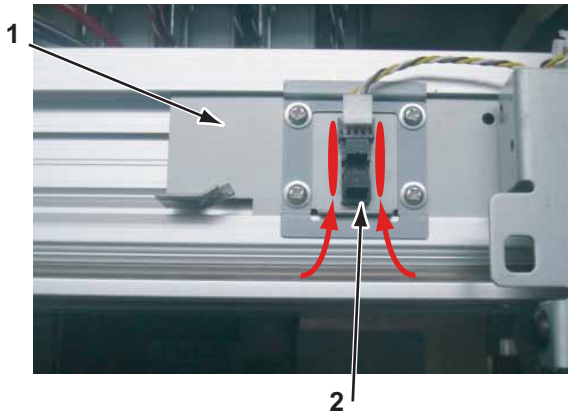
1. Open Maintenance cover R.
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove CR_Origin Sensor Cable Assyy from CR origin sensor.
5. Remove CR Origin Sensor Cable Assy.



No.	Name
1	CR Origin Sensor
2	CR Origin Sensor Cable Assy
3	Y Rail

6. Replace CR Origin Sensor .

7. Apply screw locker. Apply material between ORG sensor mounting plate and CR origin sensor.
(in the direction of the red arrow area)



No.	Name
1	ORG sensor mounting plate
2	CR origin sensor

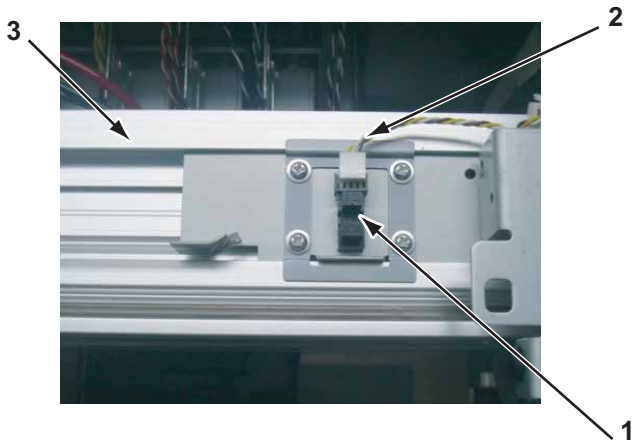
8. To reassemble unit, reverse the removal procedure.

3.6.6 Replace CR Origin Sensor Cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR Origin Sensor Cable Assy	DG-43004	☞" Exploded View Y Rail Assy" p.11-7
+ Driver No.2	Generic products	-

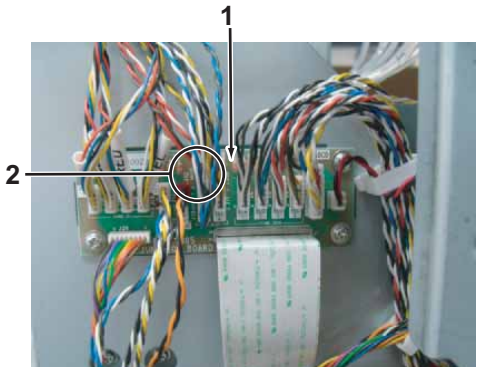
1. Open Maintenance cover R.
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Move carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
6. Remove CR Origin Sensor Cable Assy from CR Orign sensor.



No.	Name
1	CR Orign sensor

No.	Name
2	CR Orign sensor CableAssy
3	Y Rail

7. Remove CR Orign sensor CableAssy from clamps on the path.
8. Remove Connector of CR Orign sensor Cable Assy from JUNCTION Board Assy（J14).



No.	Name
1	JUNCTION Board Assy
2	CR Orign sensor Cable Assy

9. Replace CR Orign sensor CableAssy.
10. To reassemble unit, reverse the removal procedure.

3.6.7 Replacing Steel Bare

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Steel Bare Assy(VJ-1604)	DG-41917	☞" Exploded View Y Rail Assy" p.11-7
+ Driver No.2	Generic products	-

TIP

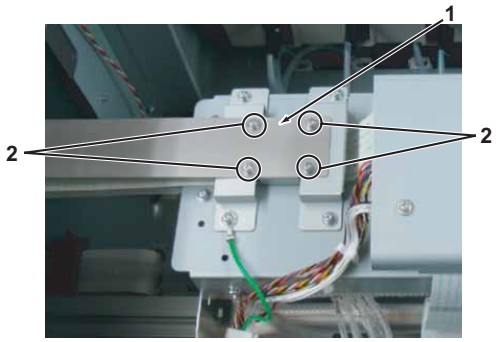
This section describes the procedure to replace the maintenance part, Steel Bare Assy (VJ-1604).
In this section, it is referred to as Steel Bare.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove Top cover.
   ☞"3.2.10 Removing Top Cover" p.3-17

⚠ CAUTION

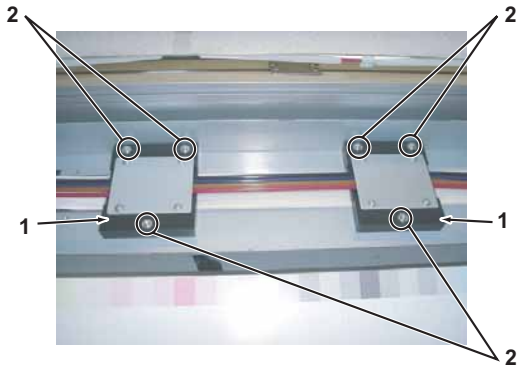
Make sure to work with two or more persons when removing Rear top cover.

4. Remove the screws (4 pieces) retaining Steel Bare .



No.	Name
1	Steel Bare
2	Pan-head screw with spring washer and flat washer M3 × 6

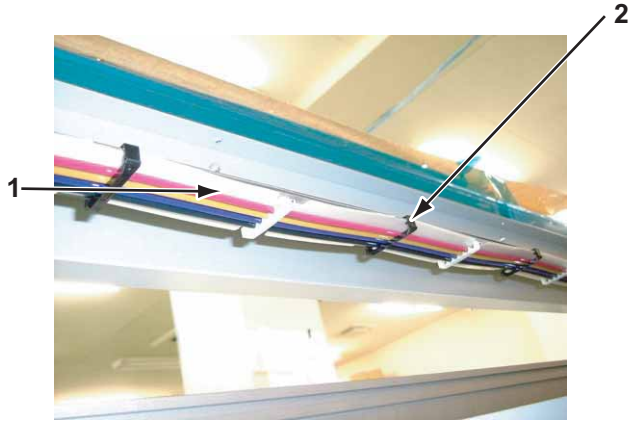
5. Remove the screws (3 pieces each) retaining Cable holders (2 pieces).



No.	Name
1	Cable holder
2	Pan-head screw with spring washer and flat washer M3 × 18

6. Remove Cable holders (2 pieces).

7. Remove Film FFC fixation .



No.	Name
1	Steel Bare
2	Film FFC fixation

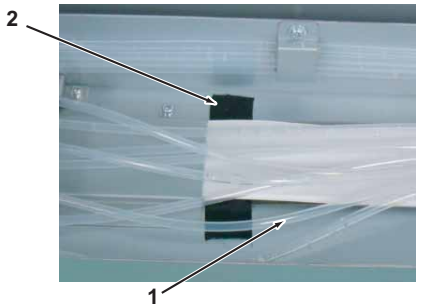
8. Refer to the following figure and open Steel Bare .

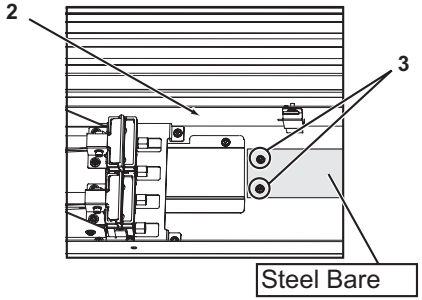
TIP

The screws (2 pieces) retaining Steel Bare Assy(VJ-1604) and Cable guide are protected by the acetate tape.

9. Lift up Ink tube（4 pieces）、CR_FFC Assy（4 pieces）then peel off the acetate tape retaining Steel Bara Assy.

10. Remove the screws (2 pieces) retaining Steel Bare to Cable guide.





No.	Name
1	Acetate tape
2	Steel Bare
3	Pan-head screw with spring washer and flat washer M3 × 5
4	Cable guide

11. Replace Steel Bare .

12. To reassemble unit, reverse the removal procedure.

CAUTION

Be sure to make Cursor go back and forth to opposite side of the origin several times manually before turn on the power, and confirm Steel Bare and Cover stay(Exploded View Cover Assy:H-3,H-5) doesn't interfere after replacing Steel bearer.

3.6.8 Replacing CR_FFC

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR_FFC Assy	DG-42992	☞" Exploded View Y Rail Assy" p.11-7 ☞" CR_FFC Folding instruction" p.11-25
+ Driver No.2	Generic products	-

TIP

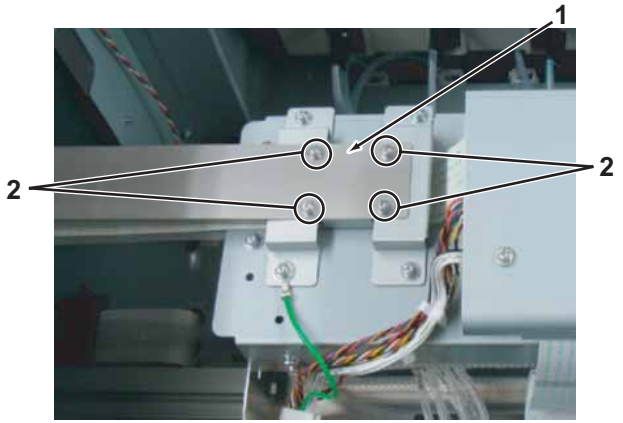
This section describes the procedure to replace the maintenance part,CR_FFC Assy.

In this section, it is referred to as CR_FFC.

⚠ CAUTION

- When replacing Board or plugging/unplugging FFC, unplug Power cable and leave it for a while before operation.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by residual electric charge.
- When handling Board, do not touch the on-board devices with bare hands. The element might be destroyed by static electricity.
- Before plugging FFC, check the condition of FFC terminals (that the corners of the terminals are not crooked and reinforcing plate is not peeled).
- Plug/unplug FFC perpendicularly to the connector. Never plug/unplug it obliquely. If plugged obliquely, it may damage/shorten/break terminals in connectors, causing a breakdown of on-board devices.
- Make sure to plug FFC all the way in the connector. After plugging it, make sure that FFC and the connector terminals are not misaligned sideways and that FFC is not plugged obliquely.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove Top cover.
   ☞"3.2.10 Removing Top Cover" p.3-17
4. Remove Paper guide R (upper).
   ☞"3.2.12 Removing Paper Guide R (Upper)" p.3-21
5. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
6. Open Board box.
   ☞"3.4.1 Opening Board box" p.3-40
7. Remove CR Board cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
8. Remove the screws (4 pieces) retaining Cable hoding plate.



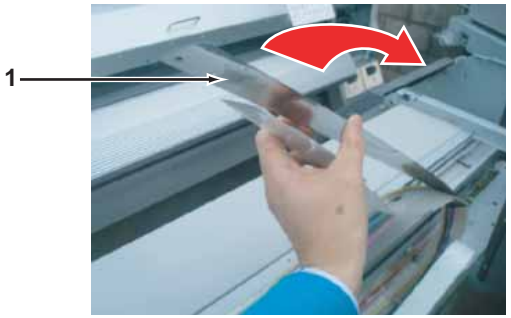
No.	Name
1	Cable holding plate
2	Pan-head screw with spring washer and flat washer M3 × 8

9. Remove Cable holding plate with Steel Bare mounted.

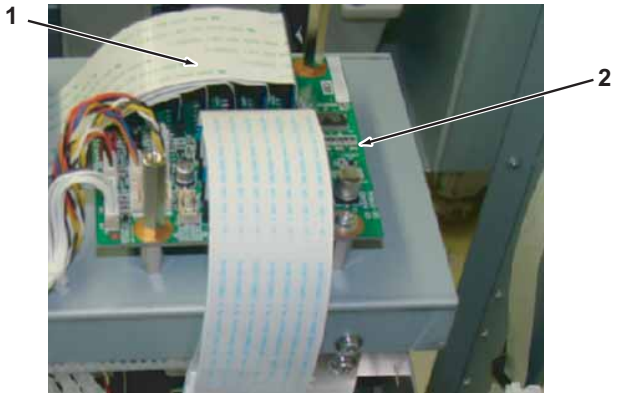
10. Remove Tube clamps and FFC fixation FilmFFC（6 pieces each）.

No.	Name
1	CR_FFC
2	Tube Clamps
3	Film FFC Fixation

11. Refer to the following figure and open Steel Bare .

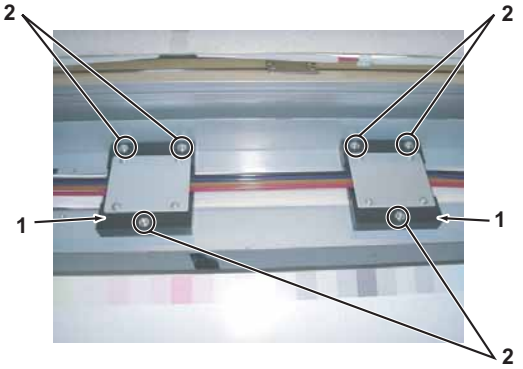


12. Remove CR_FFC (5 pieces) from CR Board Assy.



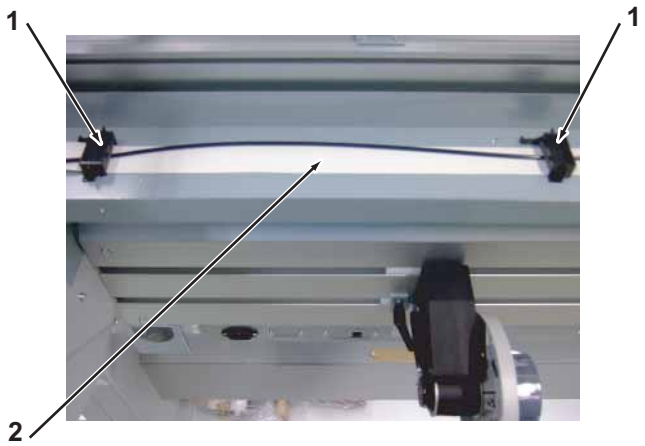
No.	Name
1	CR_FFC
2	CR Board Assy

13. Remove the screws (3 pieces each) retaining Cable holders (2 pieces).



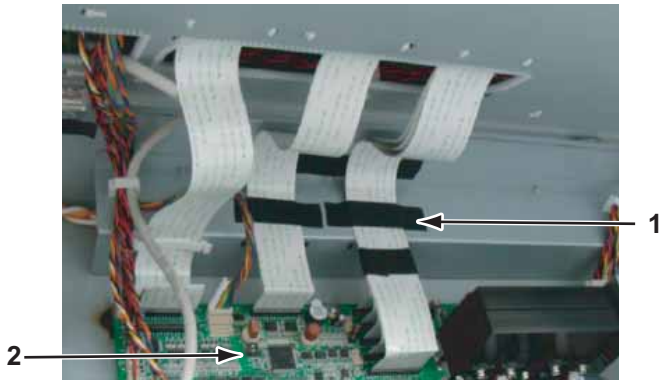
No.	Name
1	Cable holder
2	Pan-head screw with spring washer and flat washer M3 × 18

14. Remove Cable holder (2 pieces）.
15. Remove FT guide material.



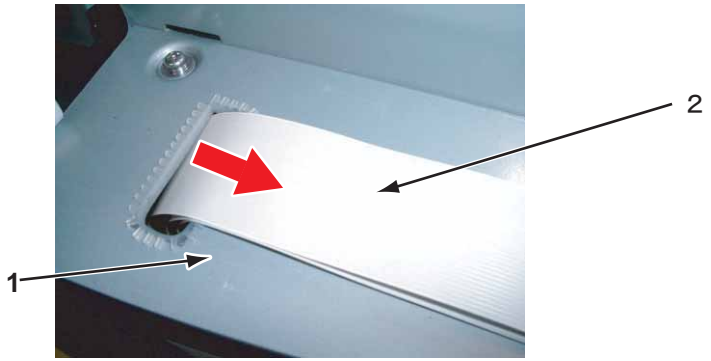
No.	Name
1	FT guide material
2	CR_FFC

16. Remove CR_FFC from clamps on the path.
17. Remove CR_FFC from MAIN Board Assy.



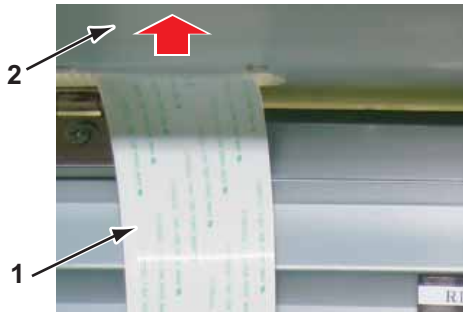
No.	Name
1	Acetate Tape
2	MAIN Board Assy

18. Pull out CR_FFC from hole of Cable guide(origin side).



No.	Name
1	CR_FFC Assy
2	Cable guide

19. Pull out CR_FFC from hole of Leg holder base.



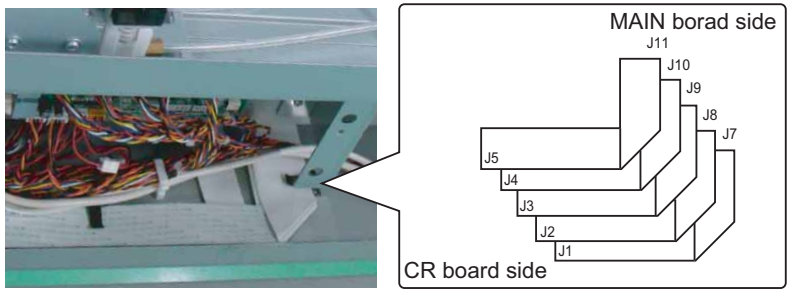
Inside Board Box

No.	Name
1	Leg holder base
2	CR_FFC Assy

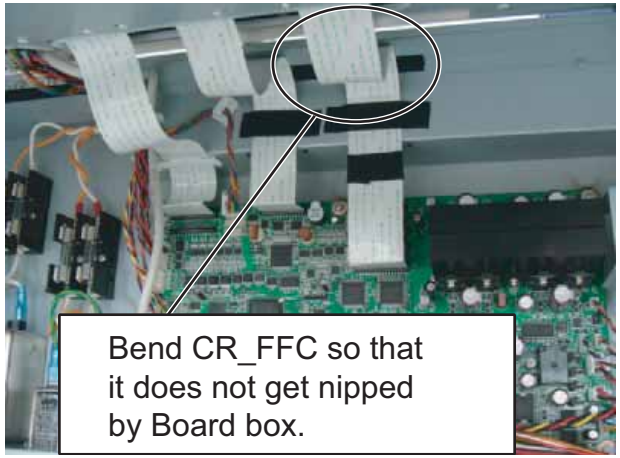
20. CR_FFC Assy
21. Connect CR_FFC Assy (5pieces) to CR Board Assy.
22. Draw CR_FFC_Assy through the same path as above.
23. To reassemble unit, reverse the removal procedure.
24. Connect CR_FFC Assy (5 pieces) to MAIN Board Assy.

NOTE

- Make sure not to make a mistake in the connection destination referring to the following.
  （After each FFC is bent, pile up the bent FFCs.）



- Make sure that CR_FFC does not get nipped by Board box.



25. From this point on, To reassemble unit, reverse the removal procedure.

3.6.9 Replacing Ink tube

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ tube 3-4 (3m)	DG-42724	☞" Exploded View Other" p.11-21
VJ tube 3-4(1m)	DG-42722	
VJ tube 2-3(1m)	DG-42725	
＋ Driver No.2	Generic products	-
Tube cutter	Generic products	-

TIP

This section describes the procedure to replace the maintenance parts, VJ-Tube 2-3 (1m), VJ Tube 3-4 (1m), and VJ Tube (3m).

In this section, they are referred to as Ink tube.

Length of Ink tube

No.	Section	Q'ty	Length(cm)	size
1	Ink Cartridge － 2 Way Solenoid（Sub Tank）	4Pieces	39 each	3 φ
2	Subtank － I-type fitting	4pieces	K:49cm C:47cm M:45cm Y:40cm	3 φ
3	I-type fitting - Y-type fitting	4pieces	230 each	3 φ
4	Y-type fitting － Print head	8pieces	18 each	2 φ

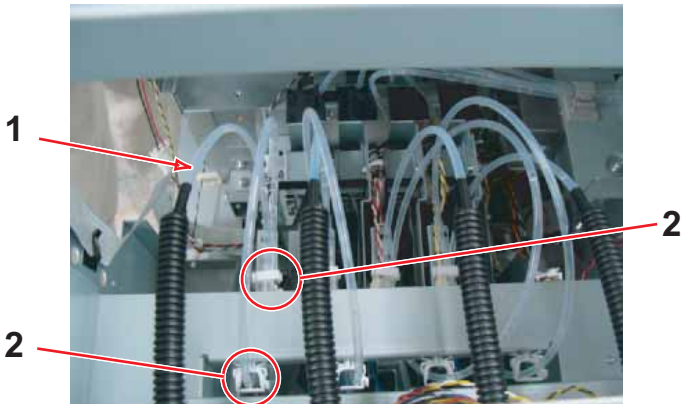
NOTE

Cut Ink tube at an appropriate length to use. When cutting it, use a tube cutter so that the cut surface is even. If it is not cut evenly, ink may leak.

(1) Ink Cartridge － 2 Way Solenoid（Sub Tank）

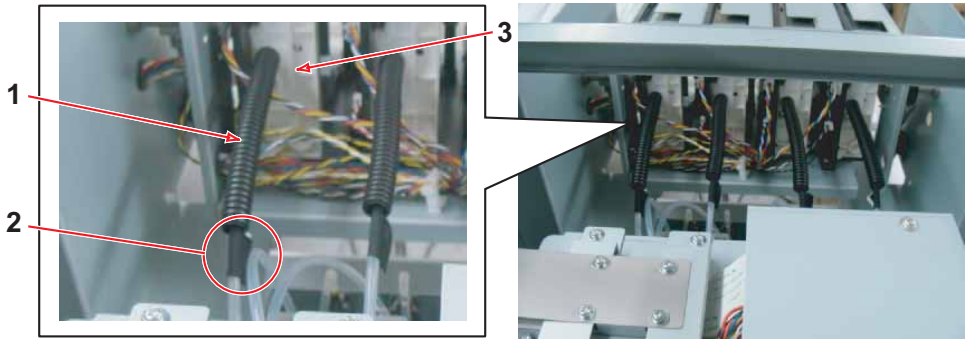
1. Perform ink discharge operation to discharge ink entirely from ink path.
☞"5.10.1 Parameter Initialization Menu" p.5-57
2. Remove Side Maintenance cover.
☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove IH cover.
☞"3.2.6 Removing IH Cover" p.3-12
5. Remove Subtank cover.
☞"3.2.8 Removing Sub Tank Cover" p.3-15
6. Remove Cartridge cover.
☞"3.2.7 Removing Cartridge cover" p.3-13

7. Remove Inku tube from Clamps.



No.	Name
1	Ink tube
2	Clamps

8. Remove Corrugated tube from Flame Assembly.

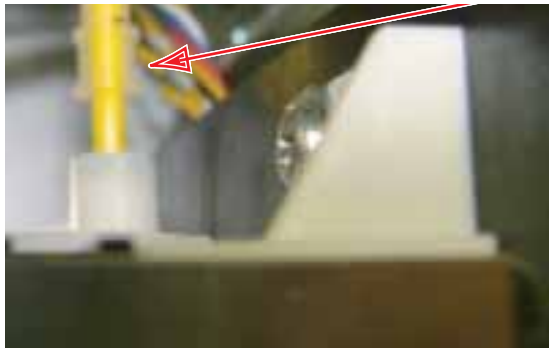


No.	Name
1	Corrugated tube
2	Acetate tape
3	flame Assembly

NOTE

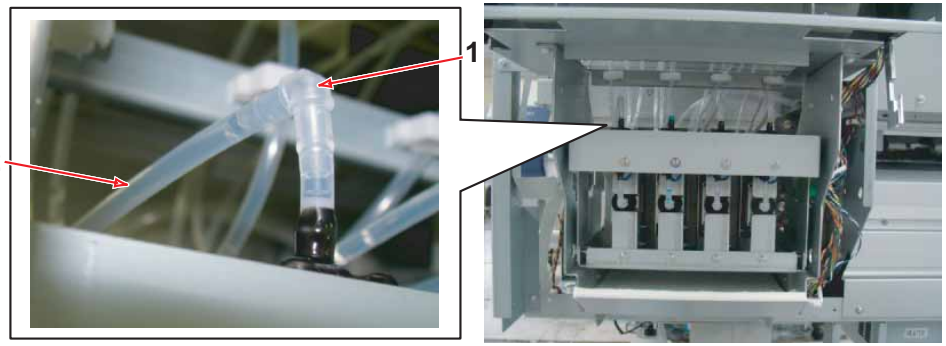
- Corrugated tube will be used again.

9. Remove Ink tube from I-type fitting (connected to Frame assembly).



No.	Name
1	I-type fitting
2	Ink tube

10. Remove Ink tube from L-type fitting (connected to 2 way solenoid).

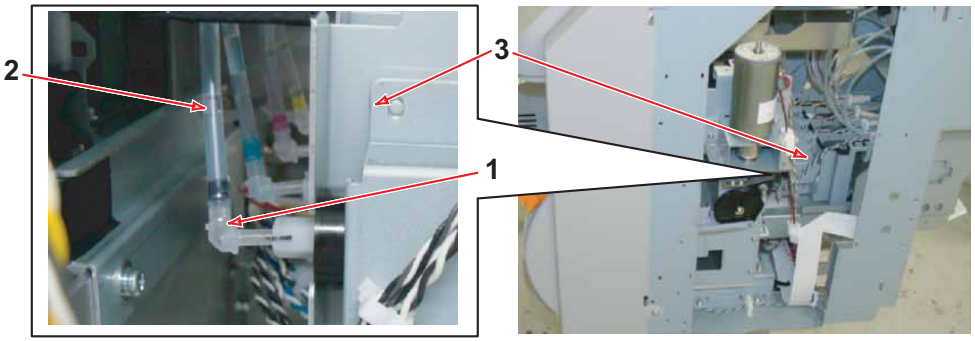


No.	Name
1	L-type fitting
2	Ink tube

11. Replace Ink tube.
12. To reassemble unit, reverse the removal procedure.
13. Charge ink.
    ☞ "5.6 Ink Charging Menu" p.5-25

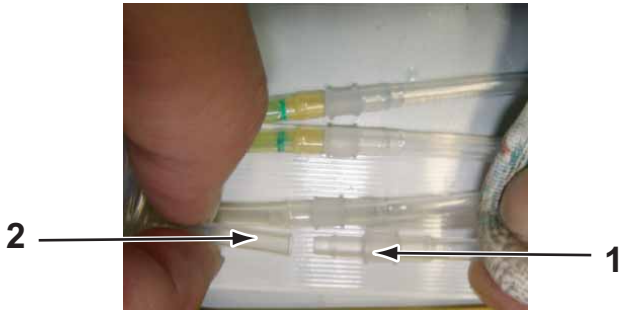
(2) Subtank ― I-type fitting

1. Perform ink discharge operation to discharge ink entirely from ink path.
   ☞"5.10.1 Parameter Initialization Menu" p.5-57
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
5. Remove Rear s ide cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
6. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
7. Remove Top cover.
   ☞"3.2.10 Removing Top Cover" p.3-17
8. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
9. Remove Ink tube from L fitting (connected to Subtank).



No.	Name
1	L fitting
2	Ink tube
3	Subtank

10. Remove Ink tube from Clamps.
11. Remove Ink tube from I-type fitting.

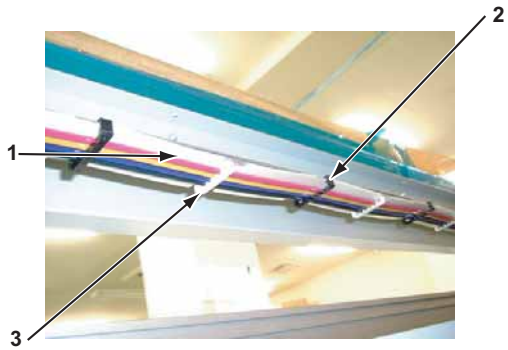


No.	Name
1	I-type fitting
2	Ink tube

12. Replace Ink tube.
13. To reassemble unit, reverse the removal procedure.
14. Charge ink.
    ☞ "5.6 Ink Charging Menu" p.5-25

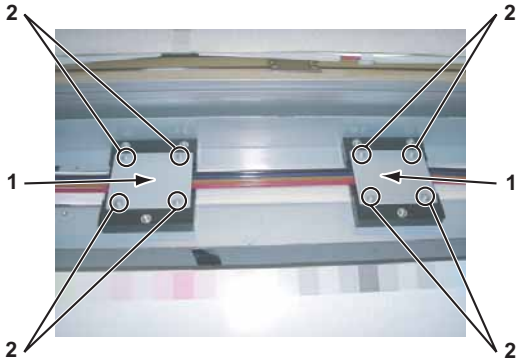
(3) I-type fitting - Y-type fitting

1. Perform ink discharge operation to discharge ink entirely from ink path.
   ☞"5.10.1 Parameter Initialization Menu" p.5-57
2. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
5. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
6. Remove Rear s ide cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
7. Remove Rear top cover.
   ☞"3.2.10 Removing Top Cover" p.3-17
8. Remove Tube Clamps and Film FFC fixations.（6pieces each）from Ink tubes.



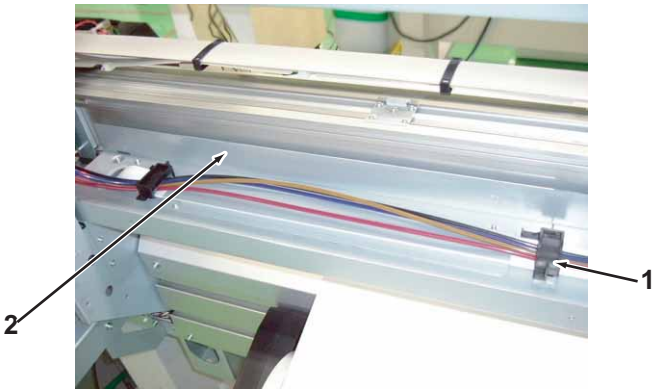
No.	Name
1	Ink tube
2	Tube Clamp
3	Film FFC fixation

9. Remove the screws retaining Tube holding plates（4 pieces each）.



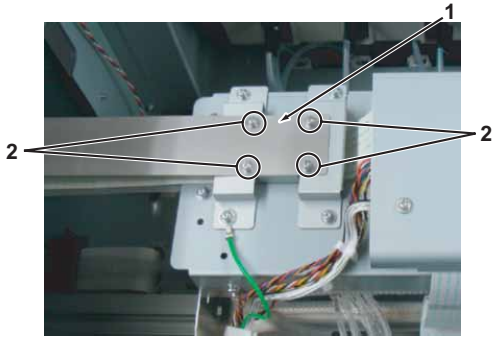
No.	Name
1	Tube holding plate
2	P tight cupM3 × 8

10. Remove Tube holding plates （2 pieces）.
11. Remove FT guide（1 piece、opposite side of origin）を取外します。



No.	Name
1	FT guide
2	Cable guide

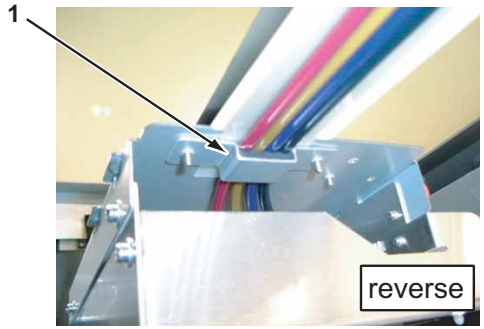
12. Remove the screws (4 pieces) retaining Cable presser plate.

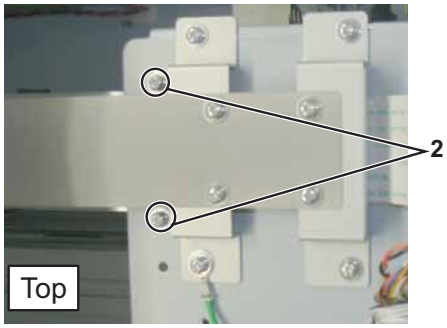


No.	Name
1	Cable presser plate
2	Pan-head screw with spring washer and flat washer M3 × 8

13. Remove Cable retainer plate with Steel bearer still attached.
14. Unfold Steel bearer referring to the following illustrations.

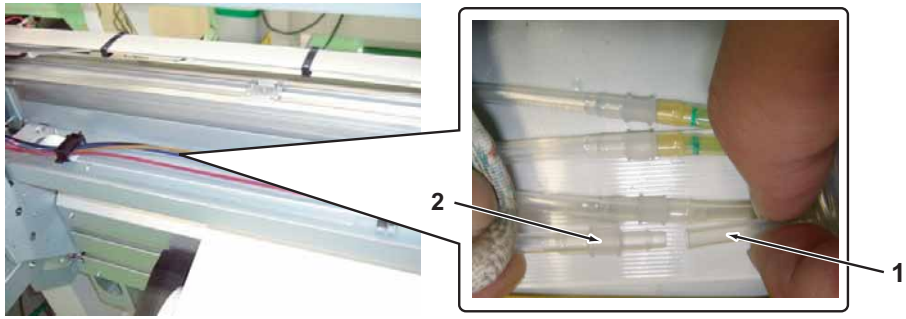
15. Remove the screws (2 pieces) retaining Tube holding plate.





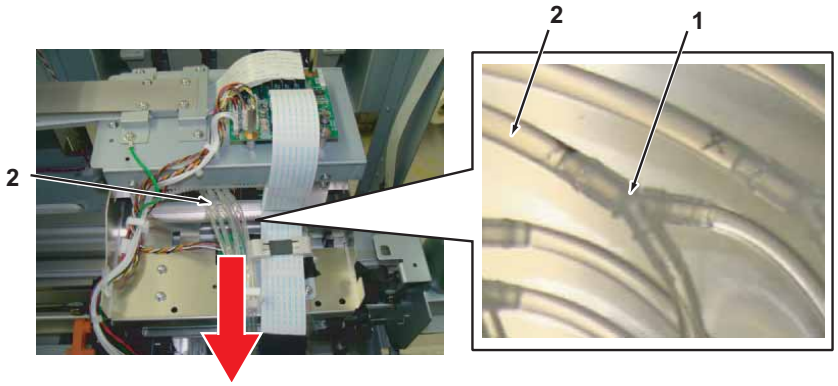
No.	Name
1	Tube holding plate
2	Pan-head screw with spring washer and flat washer M3 × 8

16. Remove Tube holding plate.
17. Remove Ink tube from I-type fitting on the Cable guide.



No.	Name
1	Cable guide
2	I-type fitting

18. Pull out the Ink tube to be replaced and remove it from Y-type fitting.



No.	Name
1	Y-type fitting
2	Ink tube

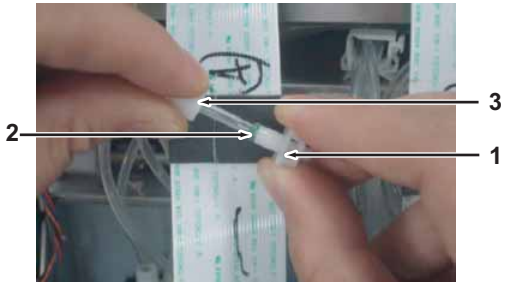
19. Replace Ink tube.
20. To reassemble unit, reverse the removal procedure.
21. Charge ink.
☞ **"5.6 Ink Charging Menu" p.5-25**

(4) Y -type fitting ― Print head

1. Perform ink discharge operation to discharge ink entirely from ink path.
☞"5.10.1 Parameter Initialization Menu" p.5-57
2. Remove Side Maintenance cover.
☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
☞"3.2.4 Removing Side Top Cover" p.3-10
4. Turn Connector Solenoid heads (8 pieces) 45 degrees (clockwise) and remove them vertically.

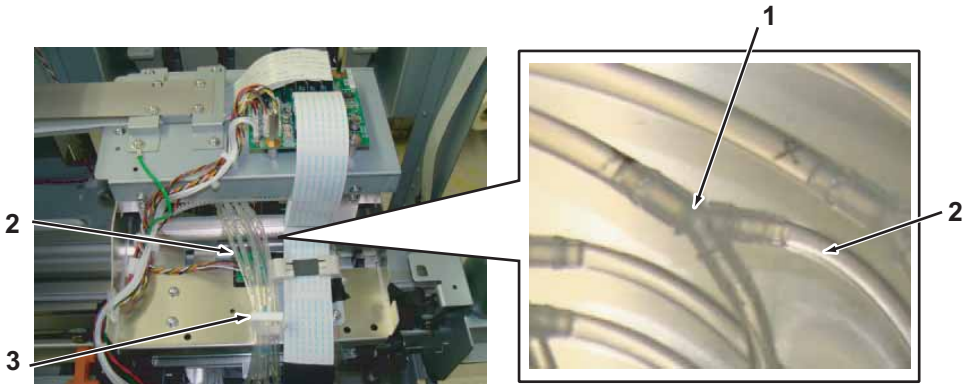
No.	Name
1	Connector Solenoid head

5. Remove Joint screw (1 piece), O ring (1 piece), and Connector Solenoid head (1 piece) from Ink tube.



No.	Name
1	Connector Solenoid head
2	O ring （M6）
3	Joint screw （M6）

6. Remove Ink tube from Clamps.
7. Remove Ink tube from Y-type fitting.



No.	Name
1	Y-type fitting
2	Ink tube
3	Clamps

8. Replace Ink tube.

NOTE

Not to reuse O ring, Change new one.

9. To reassemble unit, reverse the removal procedure.
10. Charge ink.

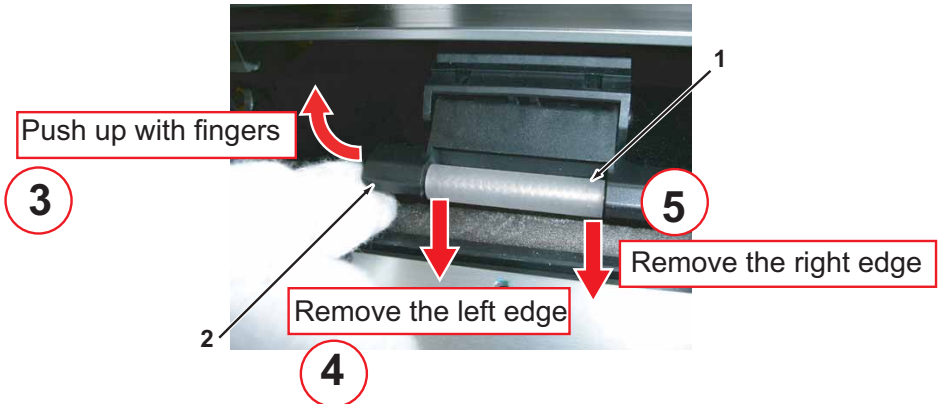
☞ **"5.6 Ink Charging Menu" p.5-25**

3.6.10 Replacing Pressure Roller

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Pressure Roller	DF-46666	☞" Exploded View Y Rail Assy" p.11-7
+ Driver No.2	Generic products	-

1. Open front cover.
2. Lift up Pressure lever.
3. Lightly push up the left edge of Pressure arm with fingers to hold it.
4. Push the left edge of Pressure arm downward.
5. Push the right edge of Pressure arm downward.
6. Replace Pressure arm.



No.	Name
1	Pressure Roller
2	Pressure Arm

7. Lower Pressure Lever.
8. Close Front cover.

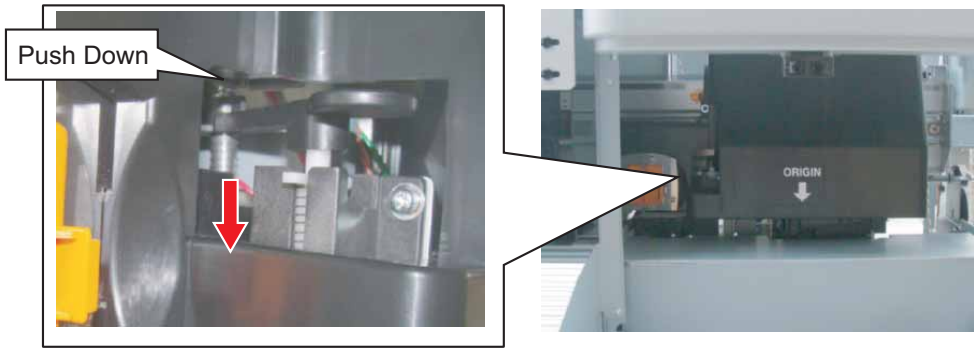
3.7 Replacing Cursor Section

This section describes the procedure to replace Cursor section.

3.7.1 Releasing Carriage Lock

When Carriage lock is released on software, Carriage moves to the origin position after power is turned off. This section describes the procedure to release Carriage lock with power turned off.

1. Open Maintenance cover R.
2. Push down the cap on the left side of Carriage (at the back of Carriage cover).

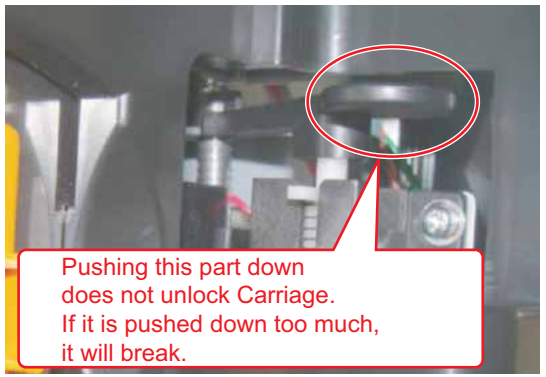


3. Move Carriage to left (opposite side of the origin).

NOTE

- Insert your fingers all the way through the gap of Carriage cover and push it down.
- When locking Head again, you do not need to push down the cap. Shift Carriage till you hear a clicking sound and Carriage is fixed.

CAUTION



NOTE

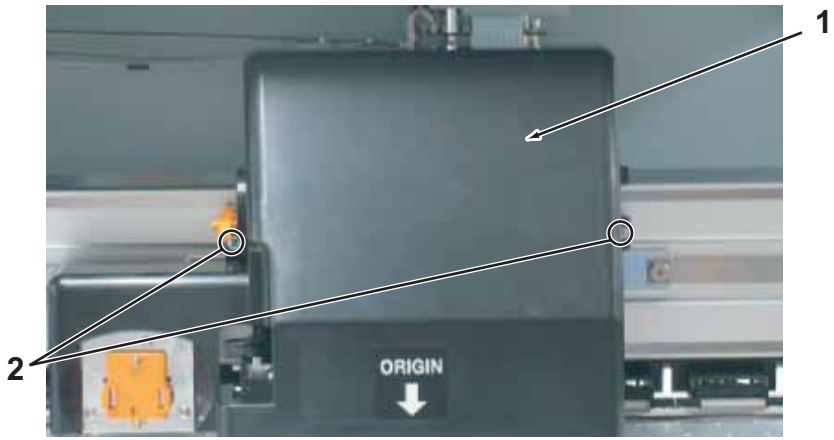
For enabling Head lock again, Carriage lock does not need to be moved. Move Carriage towards the origin until Carriage is fixed with a sound.

3.7.2 Removing Carriage Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Move Carriage to the center of the platen.
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
2. Remove screws (4 pieces) retaining Carriage cover.



No.	Name
1	Carriage cover
2	Pan-head screw with spring washer and flat washer M3 × 8

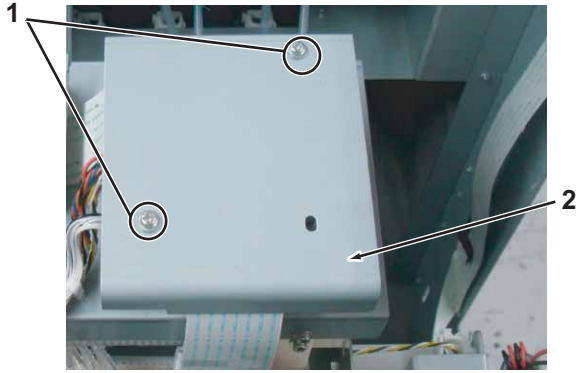
3. Remove carriage cover.
4. To reassemble unit, reverse the removal procedure.

3.7.3 Removing CR Board Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove the screws (4 pieces) retaining CR Board Cover.



No.	Name
1	CR Board Cover
2	Cup screwM3 × 6 Zn-CM2

3. Remove CR Board Cover.
4. To reassemble unit, reverse the removal procedure.

3.7.4 Replacing CR Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR Board Assy	DG-42959	-
+ Driver No.2	Generic products	-

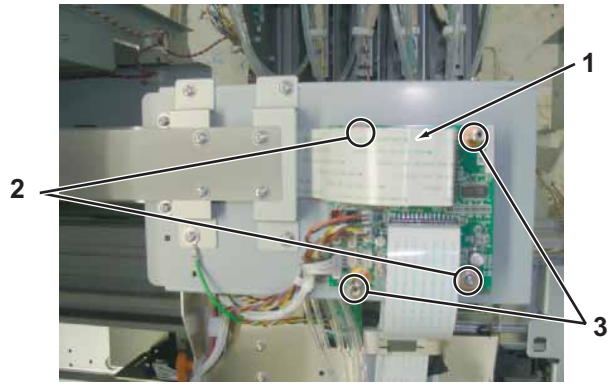
CAUTION

- Before replacing the board or plugging/unplugging FFC, unplug Power cable and leave it for a while. If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- When handling board, do not touch on-board devices with bare hands.
- Before plugging FFC, check FFC terminal (to see the corner of the terminal is not crooked and reinforcement is not peeled off).
- When plugging/unplugging FFC, do it vertically to the connector.
  If plugged/unplugged obliquely, it may damage, shunt, or disconnect the terminals inside the connector, and may damage the elements on the board.
- Make sure to plug FFC all the way. After plugging, make sure that FFC and connector terminal are aligned and that FFC is not plugged obliquely.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove CR Board Cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
3. Detach connectors to CR board Assy listed below.

Numbers of pins	color	Connect to	Remark	No.
J1	-	Black	MAIN	FFC
J2	-	Black	MAIN	FFC
J3	-	Black	MAIN	FFC
J4	-	Black	MAIN	FFC
J5	-	Black	MAIN	FFC
J7	-	Black	Head	FFC
J8	-	Black	Head	FFC
J9	-	Black	Head	FFC
J10	-	Black	Head	FFC
J12	3	White		
J15	2	White	C_SOL	-
J16	5	White		-
J17	4	White	CR_ENC	-
J18	10	White	Spectrovue	-

4. Remove screws (2 pieces) and Hexagon spacers (2 pieces) retaining CR Board Assy.



No.	Name
1	CR Board Assy
2	Cup screwM3 × 6
3	Hexagon spacer

5. Remove CR Board Assy.
6. Replace CR Board Assy.
7. To reassemble unit, reverse the removal procedure.

3.7.5 Replacing CR Encoder Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
CR Encoder Assy	DG-42947	-
+ Driver No.2	Generic products	-
+ Driver No.1	Generic Product	For M2 screw axis length is over 15cm

TIP

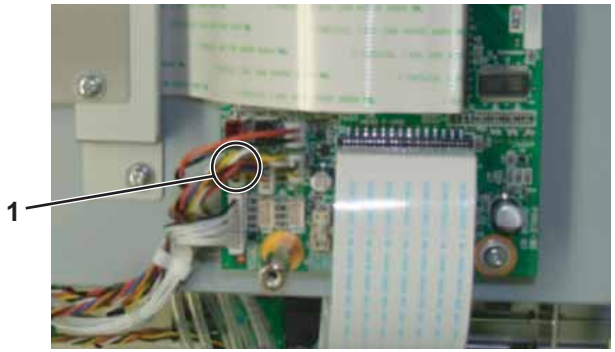
This section describes the procedure to replace the maintenance part, CR_ENC Assy.

In this section, it is referred to as CR Encoder Assy.

NOTE

When removing CR encoder Assy, pay attention to avoid nicking T fence.

1. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
2. Remove Rear s ide cover.
   ☞"3.2.5 Removing Rear side cover" p.3-11
3. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Move Carriage to the opposite side of origin.
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
5. Remove CR Board Cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
6. Remove CR encoder Assy connector (J17) from CR board Assy.

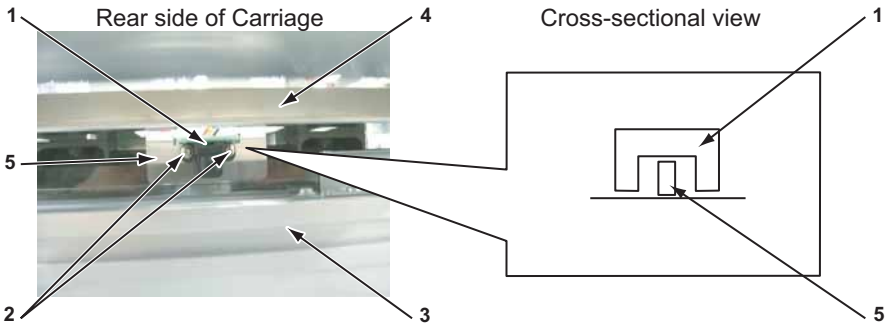


No.	Name
1	Connector of CR Encoder Assy

NOTE

CR Encoder Assy cable is made of a stranded wire of black, yellow, red and white.

7. Remove the screws (2 pieces) retaining CR encoder Assy.

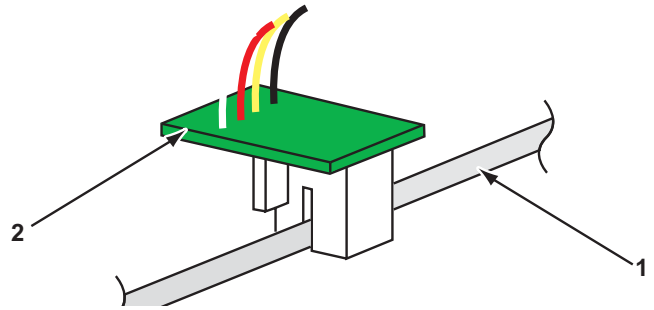


No.	Name
1	CR Encoder Assy
2	Pan-head screw with spring washer and flat washer M 2 × 5
3	Y Rail
4	CR Board mounting base
5	T fence

8. Replace CR Encoder Assy.

NOTE

When reassembling CR encoder Assy, refer to the following figure and make sure that T fence goes through CR encoder Assy sensor.



No.	Name
1	CR Encoder Assy
2	T fence

9. To reassemble unit, reverse the removal procedure.

3.7.6 Replacing Photometer Junction Board Assy (VJ1624) （Removing Bracket）

A necessary jigs and tools are as follows.

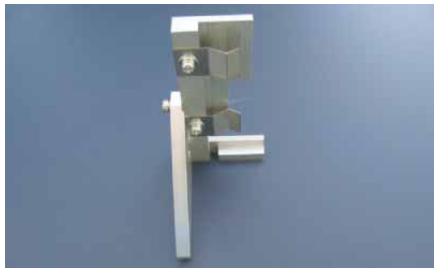
Name	Maintenance Part No.	Remarks
Photometer JUNCTION Board Assy(VJ1624)	DG-43038	-
Colorimeter Bracket adjustment Jig	DG-43195	-
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part,Photometer Junction Board Assy (VJ1624).
(Removing Bracket)
In this section, it is referred to as Photometer Junction Board Assy.

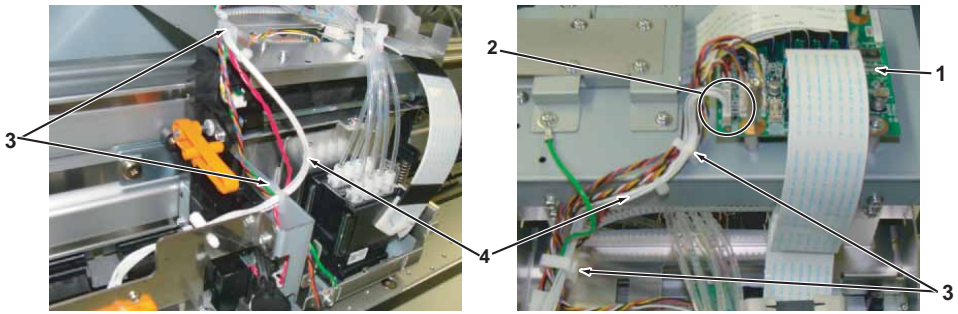
NOTE

Using dedicated Jig to assemble Photometer JUNCTION board Assy.



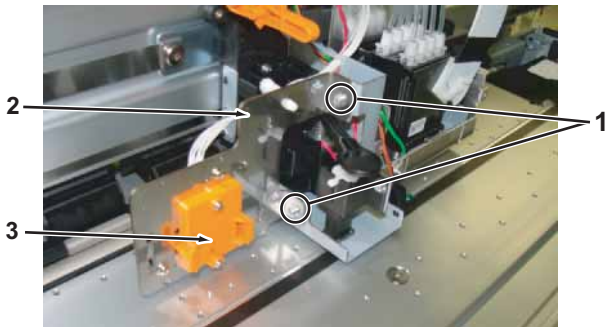
Colorimeter Bracket Adjustment Jig

1. Remove Side top cover R.
☞"3.2.8 Removing Sub Tank Cover" p.3-15
2. Remove CR board cover.
☞"3.7.3 Removing CR Board Cover" p.3-133
3. Remove Carriage cover.
☞"3.7.2 Removing Carriage Cover" p.3-132
4. Remove the connector of Photometer Junction board Assy from CR board Assy.
5. Remove Photometer Junction Board Assy cable from clamps on tne path.



No.	Name
1	CR board Assy
2	the connector of Photometer Junction board Assy
3	Clamp
4	Photometer Junction board Assy cable（white）

6. Remove the screws (2 pieces) retaining Photometer Junction board Assy.

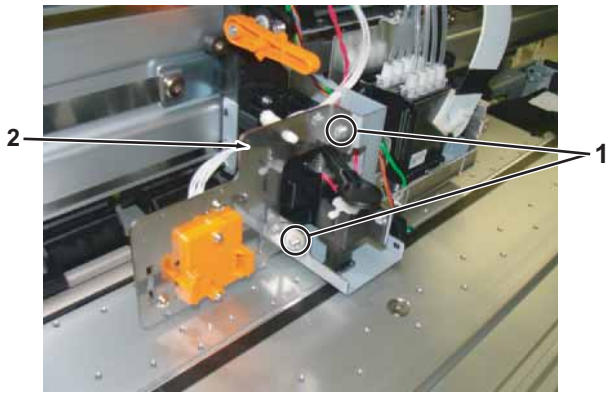


No.	Name
1	Pan head screw with spring washer and flat washerM3 × 8
2	Photometer Junction board Assy
3	Photometer cap

TIP

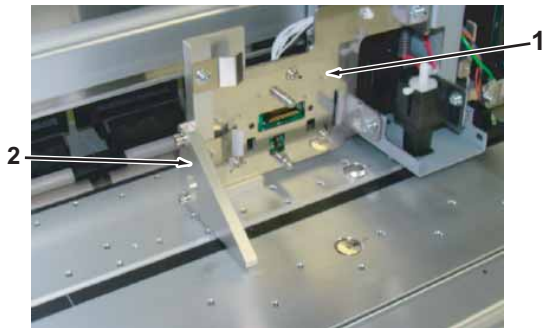
When removing screw uneasily, remove Photometer cap.

8. Replace Photometer Junction board Assy, then retain the photometer Junction board Assy temporariry by screws (2pieces).



No.	Name
1	Pan head screw with spring washer and flat washerM3 × 8
2	Photometer Junction board Assy

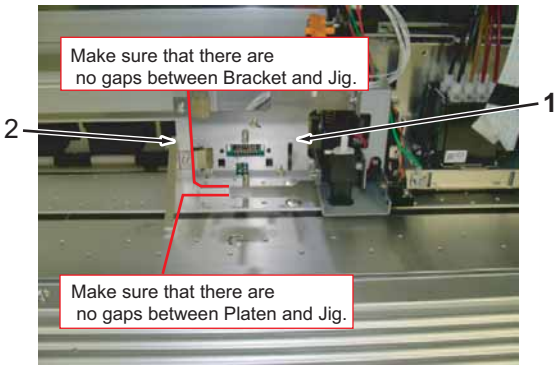
10. Set dedicated Jig.



No.	Name
1	Photometer Junction board Assy（Bracket）
2	Dedicated Jig

NOTE

After setting, confirm gap between jig and platen or Bracket.



No.	Name
1	Photometer Junction board Assy
2	Dedicated Jig

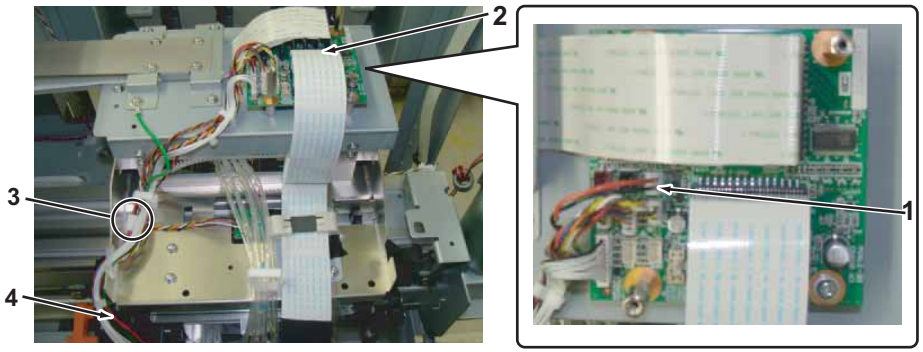
13. Fix Bracket with screws (2pieces).
14. Remove dedicated jig.
15. To reassemble unit, reverse the removal procedure.

3.7.7 Replacing Cutter Solenoid Cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cutter Solenoid Spring Assy	DG-43024	☞" Explded View Cursor Assy3" p.11-12
＋ Driver No.2	Generic products	-

1. Remove side top cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
2. Remove CR board cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
3. Remove Cutter Solenoid cable Assy from Cutter Solenoid Assy connector.
4. Remove Cutter solenoid cable Assy from CR board Assy.



No.	Name
1	Cutter Solenoid cable Assy
2	CR board Assy
3	Connector
4	Cutter Solenoid Assy cable（Red）

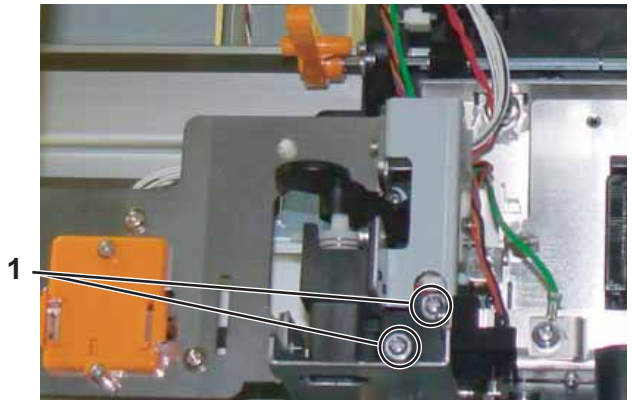
5. Remove Cutter Solenoid Cable Assy from clamps on the path.
6. Replace Cutter solenoid cable Assy.
7. To reassemble unit, reverse the removal procedure.

3.7.8 Replacing Cutter Solenoid Assy and Solenoid Spring Assy

A necessary jigs and tools are as follows.

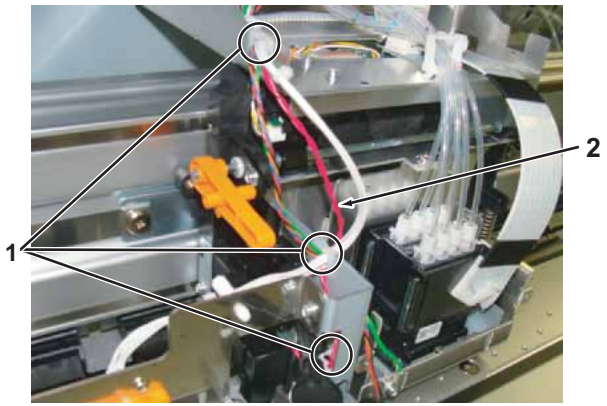
Name	Maintenance Part No.	Remarks
Cutter Solenoid Assy	DF-42234	☞" Explded View Cursor Assy3" p.11-12
Strong Solenoid Spring Assy	DG-43292	
＋ Driver No.2	Generic products	-
slotted screwdriver（precision）	Generic products	Using two drivers.

1. Remove side top cover R.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
2. Remove CR board cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
3. Remove Carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
4. Remove Cutter Solenoid cable Assy from Cutter Solenoid Assy.
   ☞"3.7.7 Replacing Cutter Solenoid Cable Assy" p.3-140
5. Remove the screws (2pieces) retaining Cutter solenoid Assy.



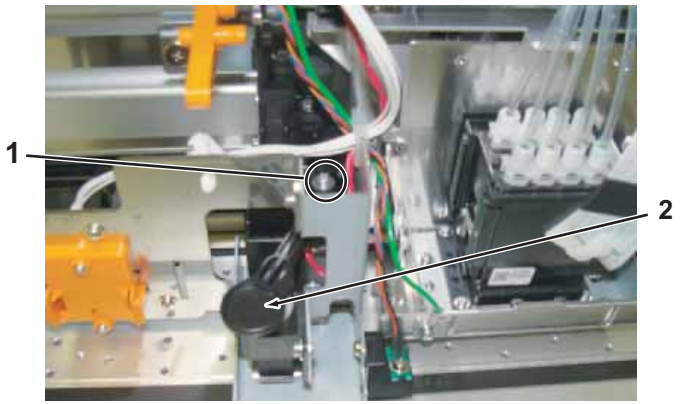
No.	Name
1	Cup screw M3 × 4 Zn-CM2

6. Remove Cutter Solenoid Cable Assy from clamps on the path.



No.	Name
1	Clamp
2	Cutter Solenoid Assy cable（Red）

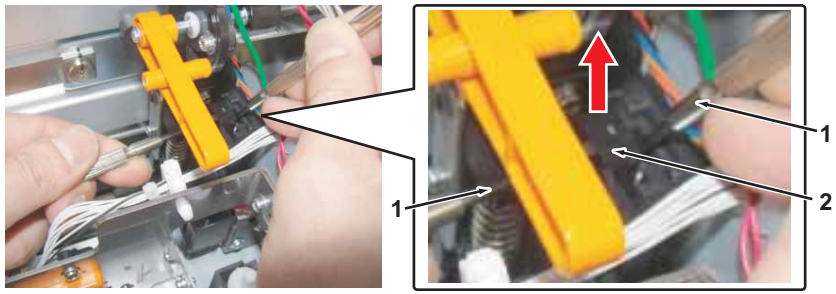
7. Remove the screw (1 piece) retaining Cutter Cap.



No.	Name
1	Pan head screw with spring washer and flat washer M3 × 8

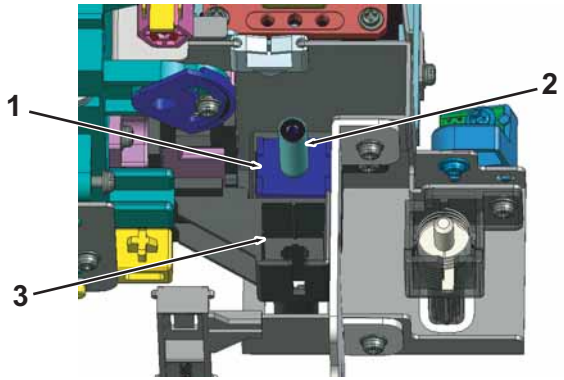
No.	Name
2	Cutter cap

8. Remove Cutter Cap.
9. Remove Lock kicker.
   - Insert slotted screwdrivers (2 pieces) into the clearance.
   - Release the inner lock by righth slotted screwdriver.
   - Remove the lock kicker by using left slotted screwdriver.



No.	Name
1	slotted screwdriver
2	Lock kicker

10. Remove Cutter Solenoid Assy from Cutter holder.



No.	Name
1	Cutter Solenoid
2	Solenoid spring
3	Cutter holder

TIP

- When replacing Solenoid spring, replace it.
- To reassemble unit, reverse the removal procedure.

11. Replace Cutter Solenoid Assy.
12. To reassemble unit, reverse the removal procedure.

3.7.9 Replacing Solenoid Head Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Solenoid Head Assy	DG-41543	☞" Exploded View Cursor Assy1" p.11-10
Solenoid Head Washing Kit(VJ Ink)	DG-41787	☞" Exploded View Other" p.11-21
＋ Driver No.2	Generic products	-
longnose pliers	Generic products	-
dedicated cleaning fluid	Generic products	-

(1) Pour Cleaning fluid into the new Solenoid Head Assy and let it settle for a while.
(2) Replace the faulty Solenoid head Assy.

(1) Pouring Cleaning liquid

For a test and quality maintenance, the Solenoid head Assy for VJ-1624 is filled with the water-based cleaning liquid when that is ship.

CAUTION

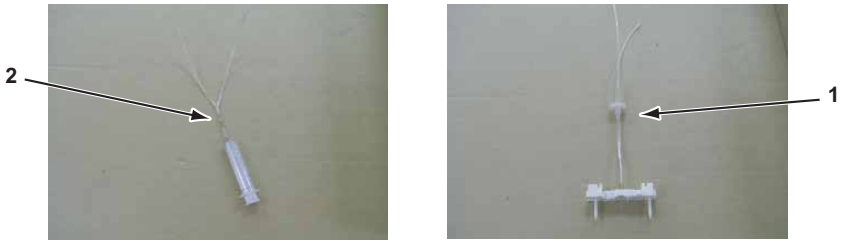
- Make sure to pour Cleaning fluid into the new Solenoid head Assy.
  If ink is charged before Cleaning liquid is poured in, Solenoid head might get damaged.
- Be careful not to get Cleaning liquid in your eyes.If Cleaning liquid gets in your eye, immediately wash your eye with running water for over 15 minutes and see your ophthalmologist.

The tools required for pouring Cleaning liquid are as follows:

- Solenoid head cleaning jig (Maintenance number: DG-41787. Maintenance part name: Solenoid head cleaning kit (VJ ink))
- Cleaning liquid (for Ecosolvent ink)

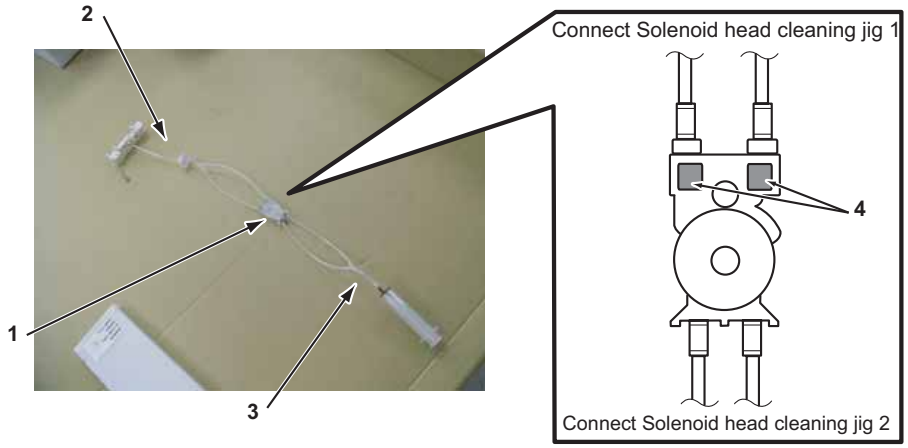
NOTE

For the following procedure, Solenoid head cleaning jigs are separated into two parts and called Solenoid head cleaning jig 1 and 2, for the sake of convenience.



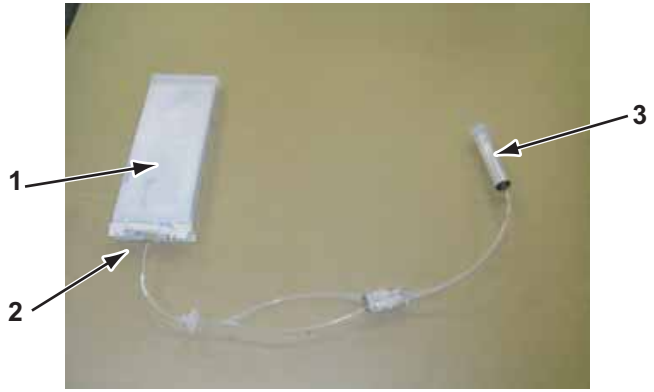
No.	Name
1	Solenoid head cleaning jig 1
2	Solenoid head cleaning jig 2

1. Install Solenoid head cleaning jib on the new Solenoid head Assy.
   Make sure that the filter (silver part) side of Solenoid head Assy is connected to the Solenoid head cleaning jig 1 side.



No.	Name
1	Solenoid head Assy
2	Solenoid head cleaning jig 1
3	Solenoid head cleaning jig 2
4	Filter

2. Attch the cleaning cartridge for the eco solvent inks to the top of the Solenoid head cleaning jig 1.



No.	Name
1	Cleaning liquid cartridge
2	Solenoid head cleaning jig 1
3	Syringe

3. Pull Pump of Syringe attached to Solenoid head cleaning jig 2 and inflow about 3cc of Cleaning liquid into the cylinder of Syringe.

NOTE

Air should not be included in the 3cc. Make sure that there is 3cc of Cleaning liquid only when pulling the pump of Injector.

4. Turn Solenoid head Assy upside down to let Cleaning liquid settle in Solenoid head Assy.

⚠ CAUTION

- Do not hold the transparent films on the sides of Solenoid head Assy. Cleaning liquid inside Solenoid head Assy inflows into the tube.
- Do not damage the transparent films on the sides of Solenoid head Assy.

5. Remove the cleaning cartridge from the Solenoid head cleaning jig1.
6. Remove the cleaning liquid from the Solenoid head Assy by pulling the syringe pump.

NOTE

Step 6 above is only for avoiding any leakage. You do not need to empty the Solenoid head Assy completely.

7. Remove the Solenoid head cleaning tools from the Solenoid head Assy.

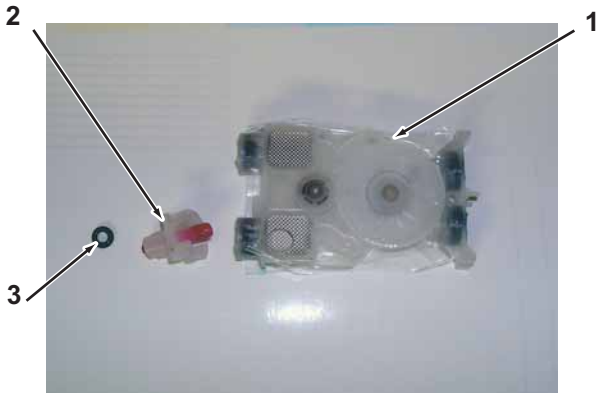
CAUTION

- When removing the tube, make sure to cover the tip of it with a Polynit wiper, etc so that Cleaning liquid does not spit out of the removed tube.
  Make sure to use a clean Polynit wiper with no ink attached. If a foreign substance on the Polynit wiper adheres on the tube, it may cause Print head malfunction.
- Be careful not to get Cleaning liquid in your eyes. If Cleaning liquid gets in your eye, immediately wash your eye with running water for over 15 minutes and see your ophthalmologist.

(2) Replacing Solenoid Head Assy

NOTE

When replacing Solenoid Head Assy, replace the following parts at the same time.



No.	Name
1	Solenoid Head Assy
2	Connector Solenoid head
3	O ring （M6）

1. Perform ink discharging to completely discharge ink from the ink paths.
   ☞"5.7.9 Longstore Menu" p.5-50

NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

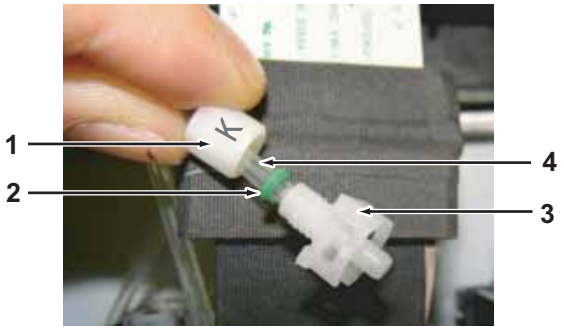
2. Remove Solenoid Head Assy from Print head.
   Proceed up to the step 21 of ☞"3.7.10 Replacing Print Head" p.3-148

CAUTION

- Do not hold the transparent films on the sides of Solenoid head Assy.The ink inside of Solenoid head Assy is discharged.
- Do not damage the transparent films on the sides of Solenoid head Assy.
- To avoid leakage of the remaining ink, place a waste cloth under the removed Solenoid head Assy or put Solenoid head Assy into a plastic bag.

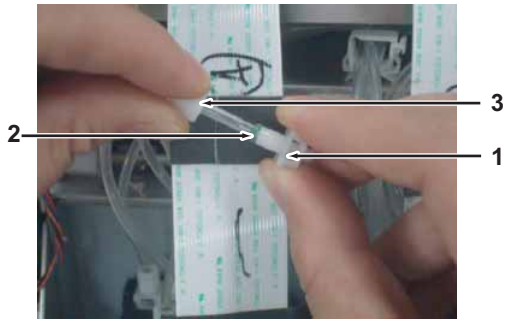
3. Refer to the Note of the step 8 in this section to mark on Ink tube (K, C, Y, M etc).

4. Remove the O-ring (1 piece) from Ink tube.



No.	Name
1	Ink tube
2	O ring（M6）
3	Joint screw

5. Install a new O-ring around the tip of Ink tube.
6. Push the O-ring with Connector Solenoid head to connect the joint screw and Connector Solenoid head.



No.	Name
1	Connector Solenoid head
2	O ring （M6）
3	Joint screw

7. Install the new Solenoid head Assy filled with Cleaning liquid on Print head.

NOTE

Replace Solenoid head Assy and mount Ink tube one color at a time.

When replacing four Solenoid head Assy at the same time, there is a higher possibility of inserting a wrong Ink tube into a wrong Solenoid head Assy.

8. Install Ink tube to Solenoid Head Assy as it was before.

NOTE

- When inserting Ink tube into Solenoid head Assy, make sure to insert it to the original slot. If it is inserted to the wrong slot, the correspondence relationship between the nozzle and ink will be changed.
- Before removing Connector solenoid head from Solenoid Head Assy, mark on the joint screw (or Ink tube) so that it is easy to see where it should be inserted.
- Refer to the following chart for the connections of Ink tubes.

9. To reassemble unit, reverse the removal procedure.
10. Charge ink .

☞"5.6 Ink Charging Menu" p.5-25

NOTE

After charging ink, make sure that there is no air in Solenoid Head Assy.

When there is air in Solenoid Head Assy, charge ink till about 3/4 of Solenoid Head Assy is filled.

3.7.10 Replacing Print Head

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Head Assy	DG-42987	☞" Exploded View Cursor Assy1" p.11-10
＋ Driver No.2	Generic products	-
longnose pliers	Generic products	-
-Driver	Generic products	-

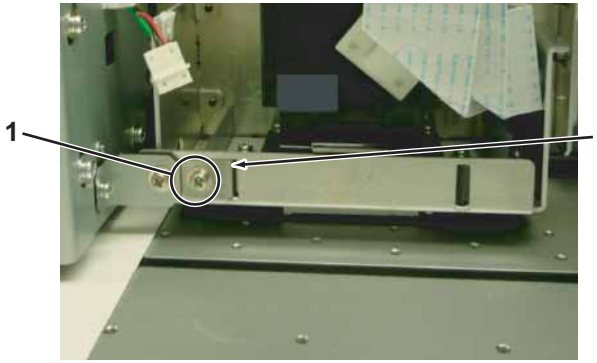
TIP

This section describes the procedure to replace the maintenance part, Head Assy.
In this section, it is referred to as Print Head.

⚠ CAUTION

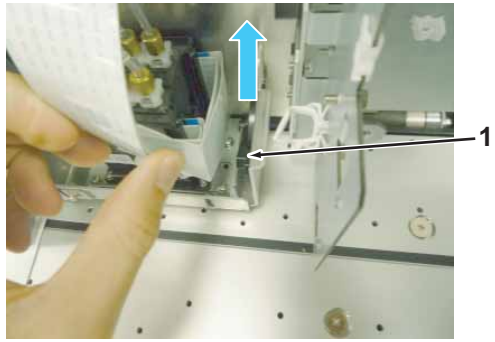
- During operation, make sure not to touch the nozzle surface of Head or let foreign substances adhere.
- Print head Assy has been adjusted. Do not disassemble it.
- Before replacing the board or plugging/unplugging FFC, unplug Power cable and leave it for a while. If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- When handling board, do not touch on-board devices with bare hands.
- Before plugging FFC, check FFC terminal (to see the corner of the terminal is not crooked and reinforcement is not peeled off).
- When plugging/unplugging FFC, do it vertically to the connector.
  If plugged/unplugged obliquely, it may damage, shunt, or disconnect the terminals inside the connector, and may damage the elements on the board.
- Make sure to plug FFC all the way. After plugging, make sure that FFC and connector terminal are aligned and that FFC is not plugged obliquely.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
3. Move Carriage toward the center of Platen.
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
5. Loosen the screw (1 piece) retaining Head guide leaf spring.



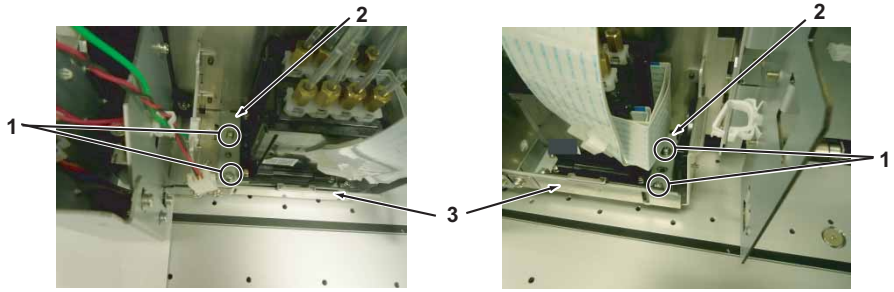
No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Head guide leaf spring

6. Raise the notch of Head adjustment cam to the top.



No.	Name
1	Notch of Head adjustment cam

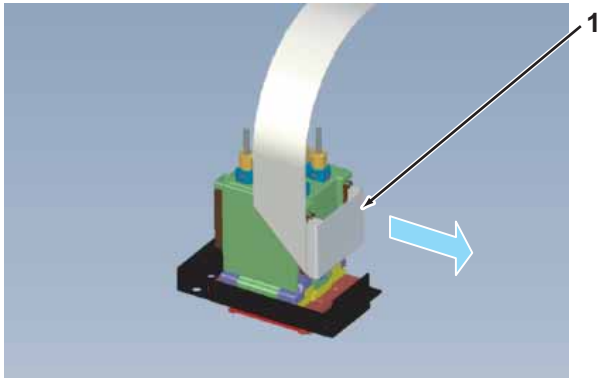
7. Remove screws (4 pieces) retaining Head base.



No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Head base
3	Head mounting plate

8. Remove Print head from Head mounting plate.

9. Pull out Head FFCs (4 pieces) from Print head.



No.	Name
1	Head FFC

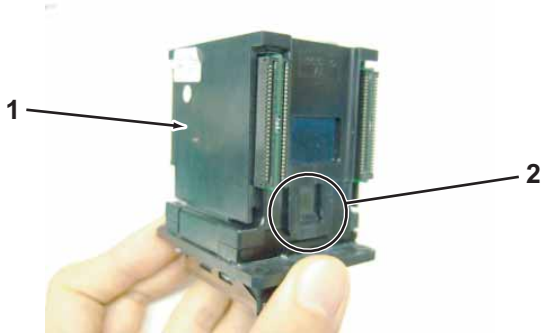
10. Turn Connector Solenoid Heads (8 pieces) 45 degrees (clockwise), release the lock, and pull it out.

No.	Name
1	Connector Solenoid head

CAUTION

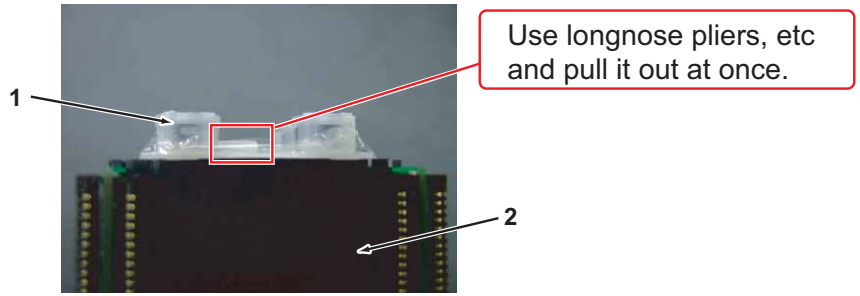
Turning it anticlockwise will loosen the joint, resulting in ink leakage.

11. Remove Head cover from the hooks (2 pieces on both sides).



No.	Name
1	Head cover
2	Hook of Print head

12. Remove Solenoid head Assy from Print head.

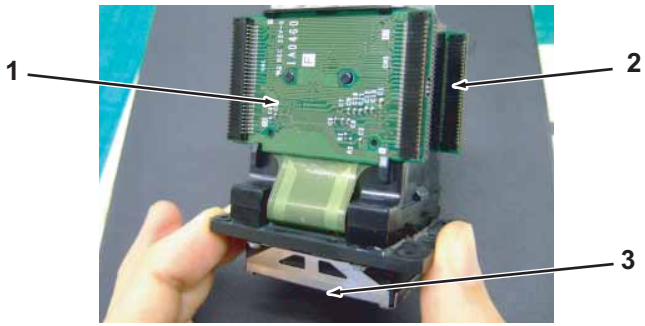


No.	Name
1	Solenoid Head Assy
2	Print head

13. Replace Print head.

CAUTION

Be careful not to damage Head board, Head nozzles, and Head FFC connector.



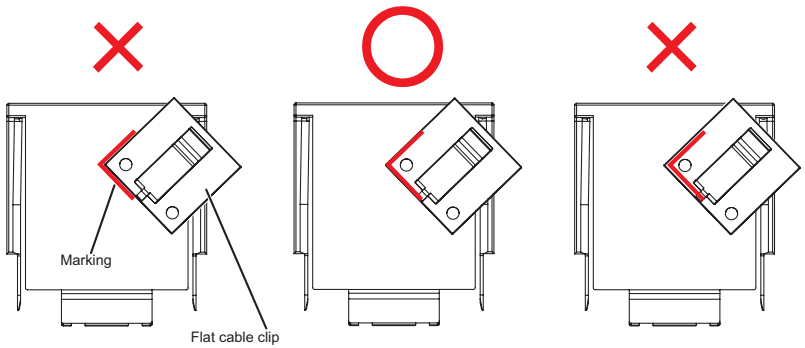
No.	Name
1	Head board
2	FFC connector
3	Head nozzles

14. Install Solenoid Head.
15. Install Head cover.
16. Affix Flat cable clip to the Head cover.

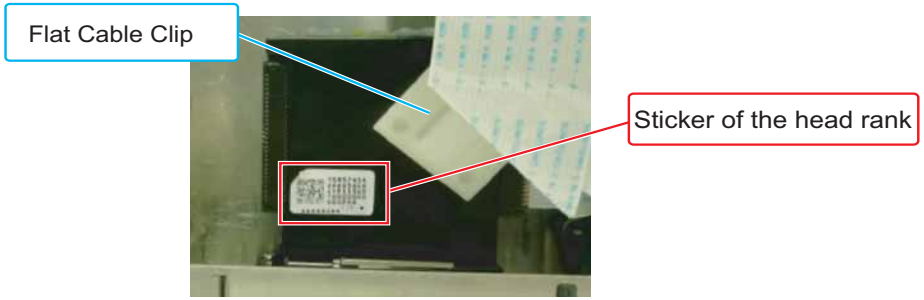
NOTE

As for the head cover newly installed, the installation position of the flat cable clip is marked.

- Position the corner of Flat cable clip to the marking.
- To hide the marking,affix Flat cable clip to the marking.
- Not to get out of the marking,affix Flat cable clip to the marking.



17. Stick Flat cable clip at the designated place on the new Head cover to be installed.



18. Install Head FFC.

NOTE

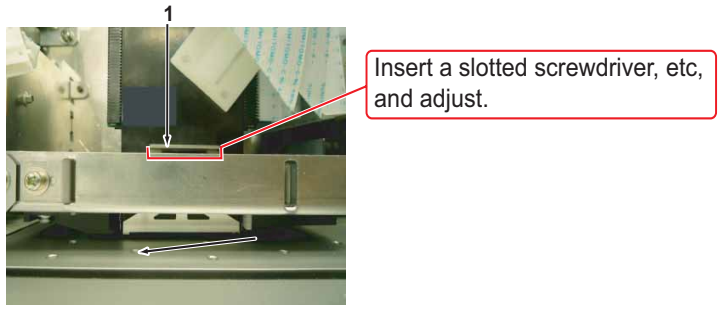
Make sure to insert Head FFC fully.

19. Put Print head back to the fixing position of Head mounting plate.

NOTE

Do not screw on Print head at this point.

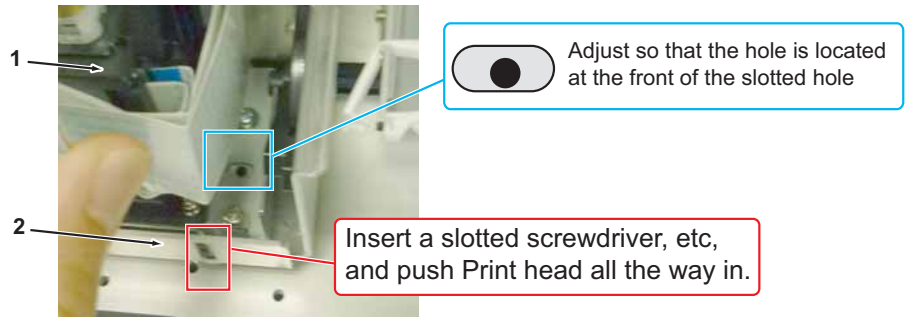
20. Install Connector Solenoid Head Assy.
21. Adjust so that Head guide leaf spring is horizontal.



No.	Name
1	Head guide leaf spring

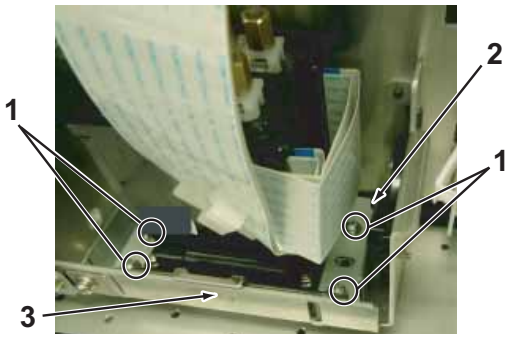
22. Make sure that the notch of Head adjustment cam is raised to the top.
☞"6. Raise the notch of Head adjustment cam to the top." p.3-149

23. Adjust the fixing position of Print head.



No.	Name
1	Print head
2	Head mounting plate

24. Tighten the screws retaining Head base and Head mounting plate.



No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Head base
3	Head mounting plate

25. Replace the old head rank sticker with a new head rank sticker.
26. To reassemble unit, reverse the removal procedure.
27. Perform various adjustments.

☞"4.2 Adjustment Item" p.4-3

3.7.11 Replacing Head_FFC

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Head FFC (VJ-1608H)	DG-42385	☞" Exploded View Cursor Assy1" p.11-10 ☞" Head_FFC Folding instruction" p.11-24
+ Driver No.2	Generic products	-

TIP

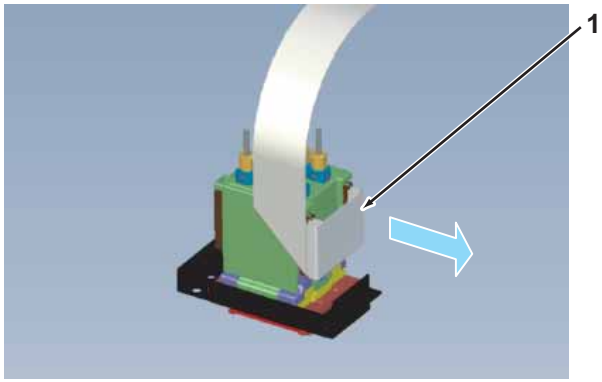
This section describes the procedure to replace the maintenance part, Head_FFC (VJ-1608H).

In this section, it is referred to as Head_FFC.

⚠ CAUTION

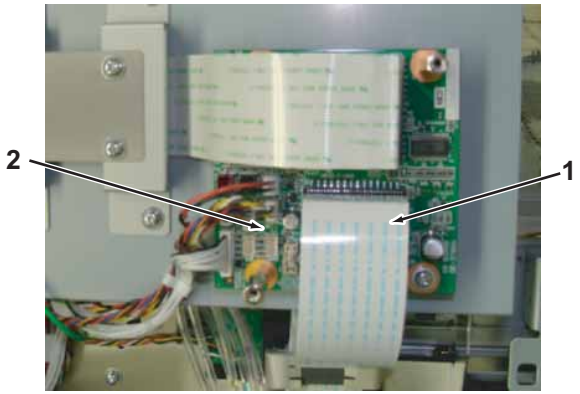
- During operation, make sure not to touch the nozzle surface of Head or let foreign substances adhere.
- Print head Assy has been adjusted. Do not disassemble it.
- Before replacing the board or plugging/unplugging FFC, unplug Power cable and leave it for a while. If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- When handling board, do not touch on-board devices with bare hands.
- Before plugging FFC, check FFC terminal (to see the corner of the terminal is not crooked and reinforcement is not peeled off).
- When plugging/unplugging FFC, do it vertically to the connector.
  If plugged/unplugged obliquely, it may damage, shunt, or disconnect the terminals inside the connector, and may damage the elements on the board.
- Make sure to plug FFC all the way. After plugging, make sure that FFC and connector terminal are aligned and that FFC is not plugged obliquely.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
3. Remove CR board cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
4. Remove Head_FFC from Ptint Head.



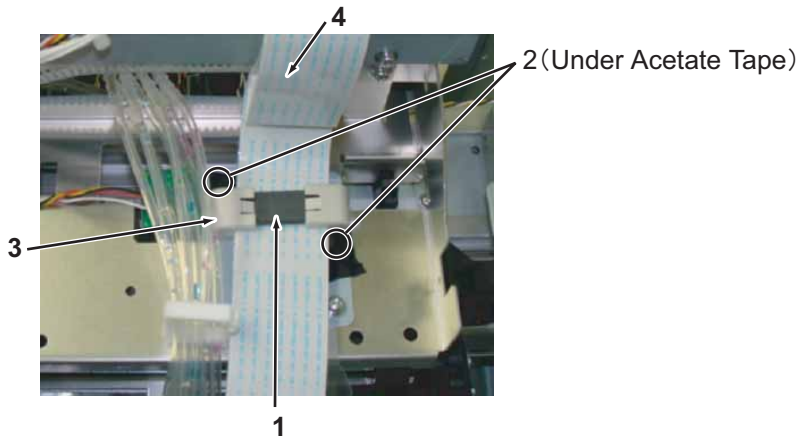
No.	Name
1	Head_FFC

5. Remove Head_FFC from CR Board Assy.



No.	Name
1	Head_FFC
2	CR Board Assy

6. Remove the screws (2 pieces) retaining Flat core holder.



No.	Name
1	Flat core holder
2	Pan-head screw with spring washer and flat washer M3 × 8
3	Flat core
4	Head FFC

7. Remove Flat core holder and flat core.
8. Replace Head FFC.
☞" Head_FFC Folding instruction" p.11-24

NOTE

- Contact non-engraved surfaces of head FFC with each other so that engraved surfaces face outwardly.
- Reassemble Head FFC in order of the following: Print head - CR board - Flat core.

9. To reassemble unit, reverse the removal procedure.

3.7.12 Replacing Paper Edge Sensor Assy

A necessary jigs and tools are as follows.

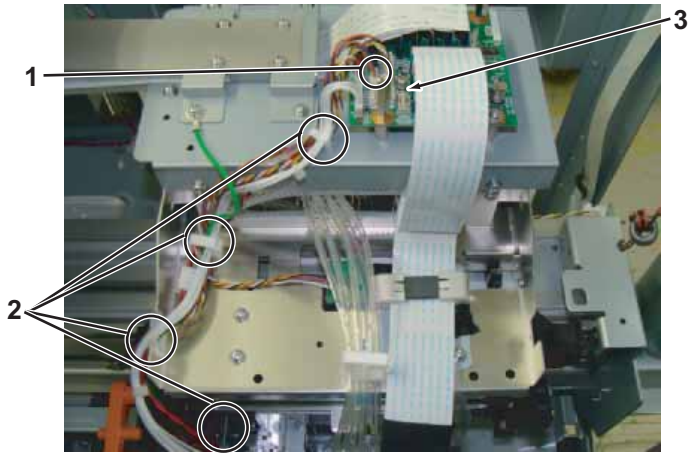
Name	Maintenance Part No.	Remarks
P_EDGE Sensor Assy	DG-42946	☞" Explded View Cursor Assy3" p.11-12
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, P_EDGE sensor Assy.

In this section, it is referred to as P_EDGE sensor.

1. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
2. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
3. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
5. Remove CR Board Cover.
   ☞"3.7.3 Removing CR Board Cover" p.3-133
6. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
7. Remove connector of Paper Edge Sensor Assy from CR Board Assy.
8. Remove P_EDGE Sensor from Clamps（4 pieces）.

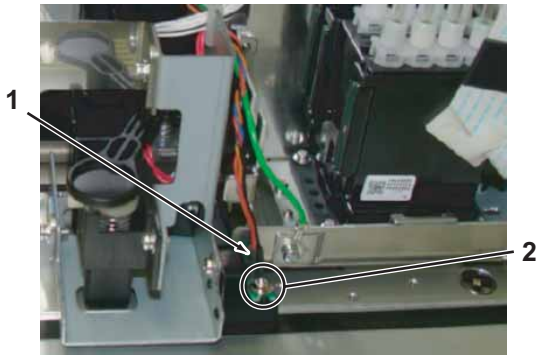


No.	Name
1	Connector of P_EDGE Sensor
2	Clamp
3	CR Board Assy

NOTE

Cable of P_Edge Sensor is a stranded wire of red, black, blue and orange. ☞"3.7.4 Replacing CR Board Assy" p.3-134

9. Remove the screw (1 piece) retaining P_EDGE Sensor.



No.	Name
1	P_EDGE Sensor
2	P tight cupM3 × 6 Ni-3

10. Replace P_EDGE Sensor.
11. To reassemble unit, reverse the removal procedure.
12. Perform various adjustments.
☞"4.2 Adjustment Item" p.4-3

3.7.13 Replacing Cursor Roller Arm Assy

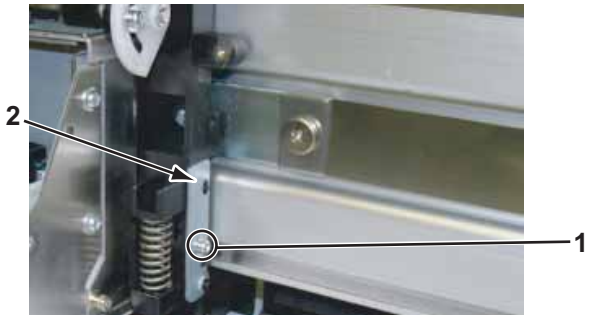
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ Cursor Roller Arm Assy	DG-40326	☞" Exploded View Cursor Assy1" p.11-10
＋ Driver No.2	Generic products	-
longnose pliers	Generic products	-

TIP

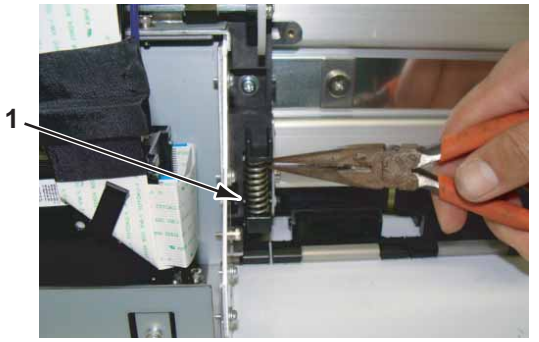
- This section describes the procedure to replace the maintenance part, VJ Cursor Roller Arm Assy.In this section, it is referred to as Cursor Roller Arm Assy.
- The procedure to remove Cursor Roller Arm Assy is the same for both R and L side. This section describes the procedure to replace Cursor Roller Arm Assy on R side.

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Open front cover.
4. Move carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
5. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
6. Remove screw (1 piece) retaining Roller holder R.



No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Roller holder R

7. Remove Cursor arm spring using a plier and so on.

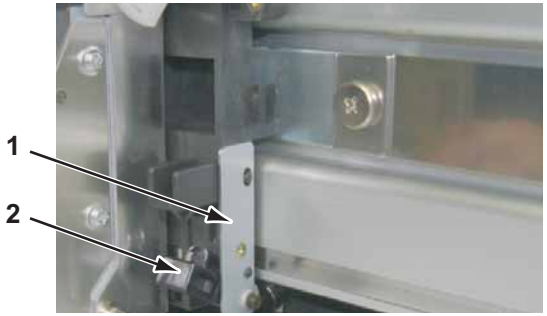


No.	Name
1	Cursor arm spring

CAUTION

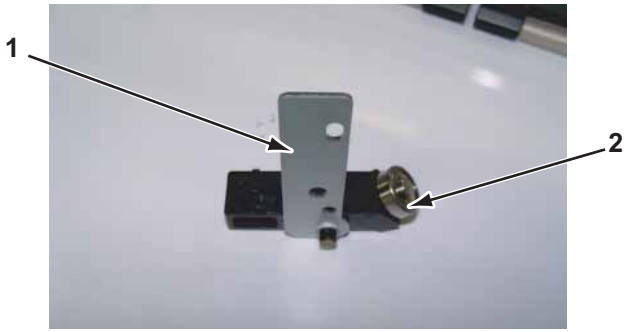
The tension force of cursor arm spring is strong. Remove it with care.

8. Remove Cursor roller arm and Roller holder R.



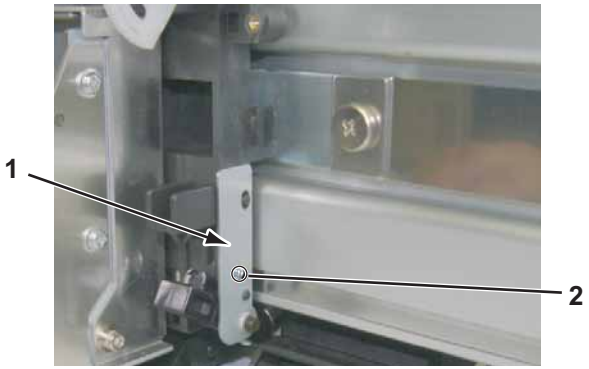
No.	Name
1	Roller holder R
2	Cursor roller arm Assy

9. Temporary assemble new cursor roller arm Assy and Roller holder R.



No.	Name
1	Roller holder R
2	Cursor roller arm Assy

10. Retain the temporary assembled Cursor roller arm and Roller holder L to CR cursor with a screw.



No.	Name
1	Roller holder R
2	Pan-head screw with spring washer and flat washer M3 × 6

11. Set Cursor arm spring in salient of the arm on Cursor side with tweezers.
12. To reassemble unit, reverse the removal procedure.

3.7.14 Replacing Carriage Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ1624_Cursor Assy	DG-42995	☞" Exploded View Cursor Assy1" p.11-10
＋ Driver No.2	Generic products	-
Stainless pan	Generic products	-
Dedicated Cleaning fluid	-	☞Operation Manual
Poly-knit wiper	Generic products	-

TIP

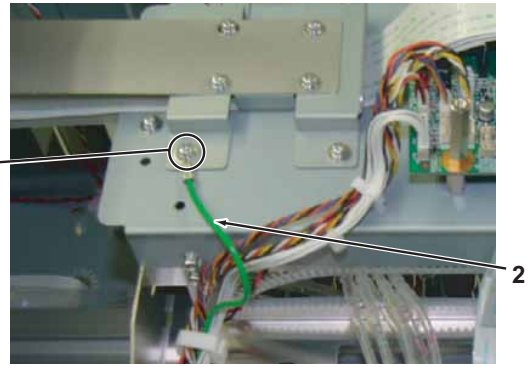
This section describes the procedure to replace the maintenance part, VJ1624_Cursor Assy.
In this section, it is referred to as Carriage Assy.

1. Perform ink drainage operation and drain ink from all the ink path.
   ☞"5.7.9 Longstore Menu" p.5-50

NOTE

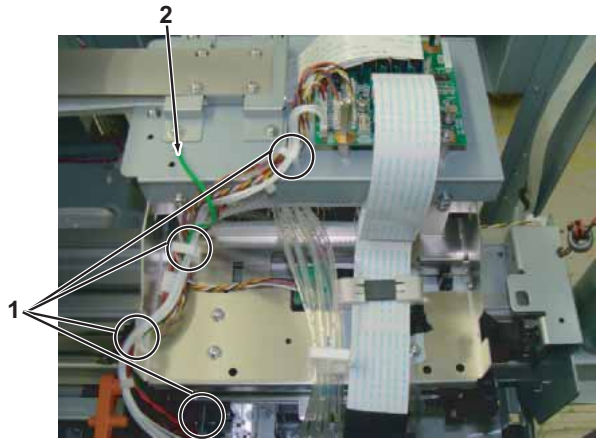
After ink is discharged, check if Ink cartridges are removed.

2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove Side top cover L.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
5. Remove Maintenance cover L.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
6. Remove CR Board cover.
   ☞"3.7.4 Replacing CR Board Assy" p.3-134
7. Remove carriage cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
8. Remove Bracket (For Photometer).
   ☞"3.7.6 Replacing Photometer Junction Board Assy (VJ1624) （Removing Bracket）" p.3-138
9. Remove Screws retaining Head FG cable (1 piece).



No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Head FG Cable

10. Remove Head FG Cable from Clamps.



No.	Name
1	Clamps

11. Shift Carriage above Flushing box on the opposite side of the origin.
12. Remove Solenoid Head Assy.
☞"3.7.9 Replacing Solenoid Head Assy" p.3-143

TIP

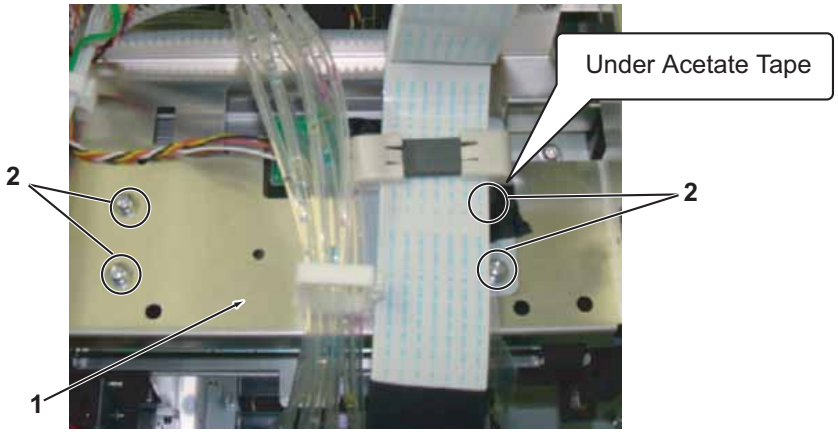
We recommend that you put the removed Connector Solenoid's tip in a plastic bag during this operation to avoid ink leakage.

13. Pave Poly-knit wipers in stainless pan and fill with cleaning fluid (for solvent ink).

No.	Name
1	Stainless pan
2	Poly-knit wiper

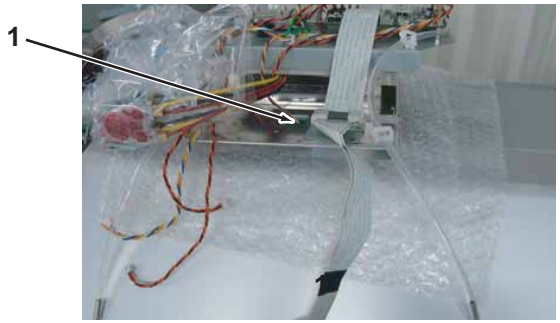
14. Remove Print head.
☞"3.7.10 Replacing Print Head" p.3-148
15. Put the nozzle surface of the removed Print head facing down and carefully place it on top of the Polynit wiper in a stainless pan.

16. Remove the screws (2 pieces) retaining CR board mounting plate base to CR cursor.



No.	Name
1	CR Board mounting base
2	Pan-head screw with spring washer and flat washer M3 × 8

17. Remove CR Board mounting base with CR Board Assy attached to it and place them on Top cover.

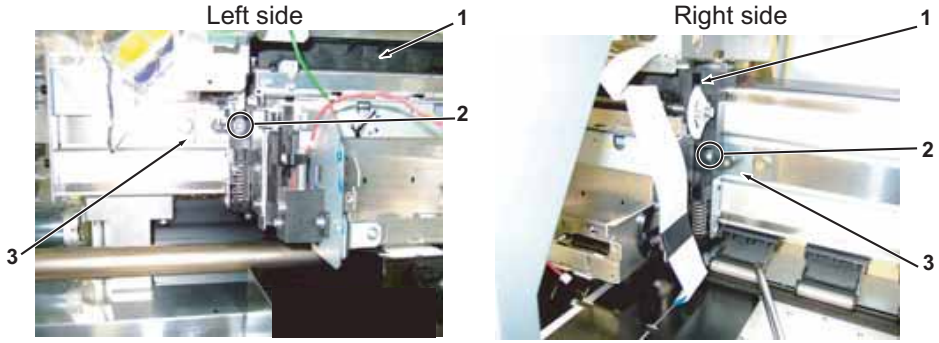


No.	Name
1	CR Board mounting base

CAUTION

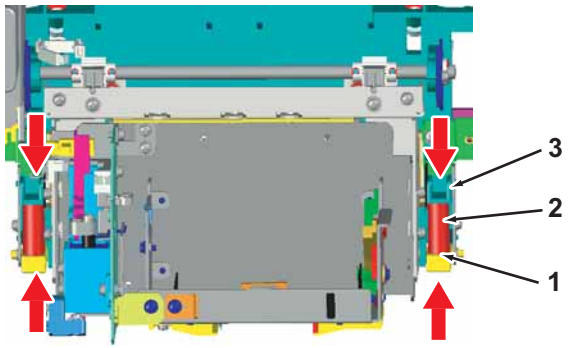
- Carefully remove CR board mounting base, so that CR Encoder Assy and T fence won't be damaged.
- Pave air cap over TOP cover and place CR board mounting base so that CR board Assy won't be damaged.

18. Remove the screws (2 pieces) retaining CR cursor to CR belt fixing plate.



No.	Name
1	CR Cursor
2	Pan-head screw with spring washer and flat washer M4 × 8
3	CR belt fixing plate

19. Remove carriage Assy from Y rail in the following procedure: 1) Pinch cursor roller arm on both side and CR cursor side arm strongly 2) Compress cursor arm spring.



No.	Name
1	Cursor roller arm
2	Cursor arm spring.
3	Arm on CR cursor side

CAUTION

- Note that tension of Cursor arm spring is high. Remove it with care.
- Remove carefully so that Cursor roller won't be damaged by the Y rail.
- When you place removed Carriage Assy, make sure that Cursor roller won't touch the ground.

20. Replace Carriage Assy.

NOTE

When you assemble CR cursor to CR belt fixing plate, fix salient of the CR cursor side into hole of CR belt fixing board and screw them.

21. To reassemble unit, reverse the removal procedure.
22. Perform various adjustments.

☞"4.2 Adjustment Item" p.4-3

3.7.15 Replacing Cutter Spring

A necessary jigs and tools are as follows.

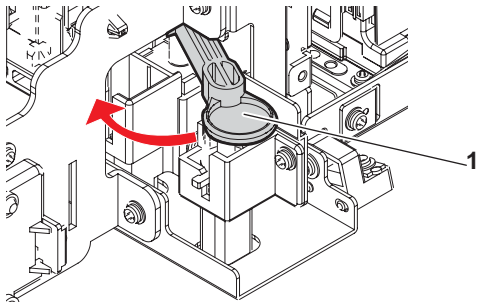
Name	Maintenance Part No.	Remarks
Cutter Spring (small diameter)	DG-43484	☞" Explded View Cursor Assy3" p.11-12
+ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace Maintenance part: Cutter Spring (small diameter).

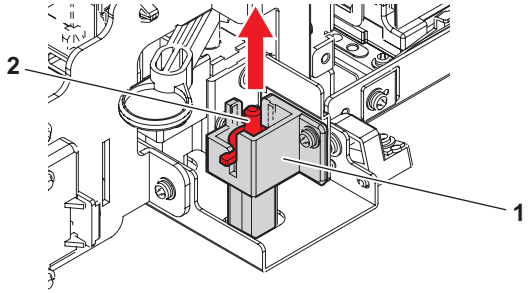
In this section, it is referred to as Cutter Spring.

1. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
2. Remove Carriage Cover.
   ☞"3.7.2 Removing Carriage Cover" p.3-132
3. Move Cutter cap to left.



No.	Name
1	Cutter Cap

4. Remove Cutter blade.

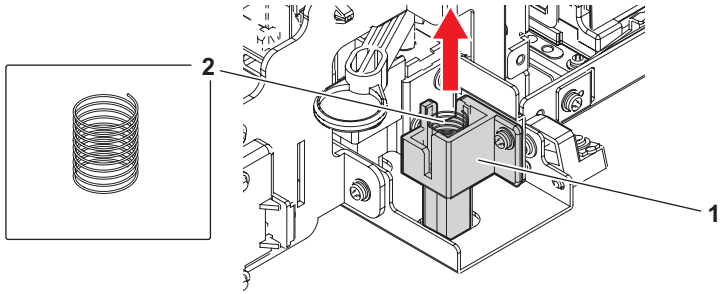


No.	Name
1	Cutter holder
2	Cutter blade

NOTE

Be careful not to cut a finger etc. by the cutter.

5. Replace Cutter Spring.



No.	Name
1	Cutter Spring

6. To reassemble unit, reverse the removal procedure.

3.8 Replacing Maintenance Section

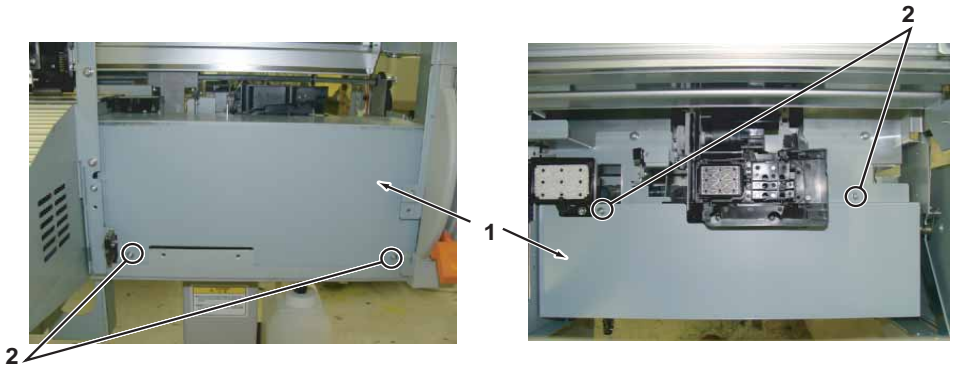
This section describes the procedure to replace the maintenance section.

3.8.1 Removing Maintenance Inner Cover

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+ Driver No.2	Generic products	-

1. Open Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Maintenance cover U_R.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
5. Remove the screws (4 pieces) retaining Maintenance inner cover.



No.	Name
1	Maintenance inner cover
2	Tappinng screwM3 × 6　Stight cup

6. Remove Maintenance cover (inner).
7. To reassemble unit, reverse the removal procedure.

3.8.2 Replacing Flushing Box Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ16 Flushing Box Assy	DG-40355	☞" Explded View Maintenance Assy" p.11-13
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, VJ16 Flushing Box Assy.

In this section, it is referred to as Flushing Box Assy.

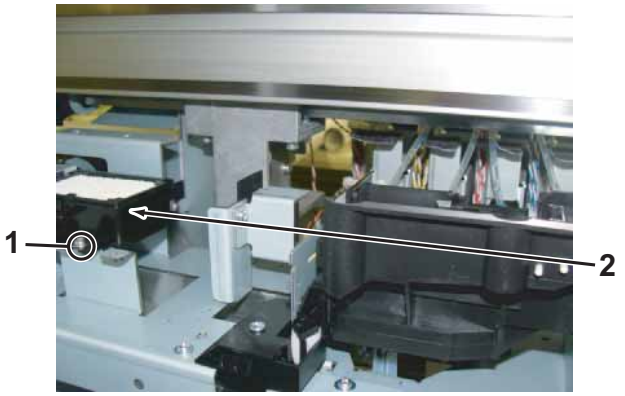
CAUTION

Ink may drop from the removed flushing frame. Put down cloth or paper waste before operation.

1. Open Maintenance cover R.
2. Remove Maintenance cover U_R.
   ☞"3.2.2 Removing Maintenance Cover U" p.3-8
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
5. Remove Maintenance Inner cover.
   ☞"3.8.1 Removing Maintenance Inner Cover" p.3-164
6. Remove Silicon Tube 11-14 (90mm) from L-type Tube fitting.

No.	Name
1	Silicon Tube 11-14 (90mm)
2	L-type Tube fitting

7. Remove the screws (2 pieces) retaining Flushing box Assy.



No.	Name
1	Flushing box Assy
2	Tappinng screwM3 × 6　Stight cup

8. Replace Flushing box Assy.
9. To reassemble unit, reverse the removal procedure.

3.8.3 Replacing Wiper

A necessary jigs and tools are as follows.

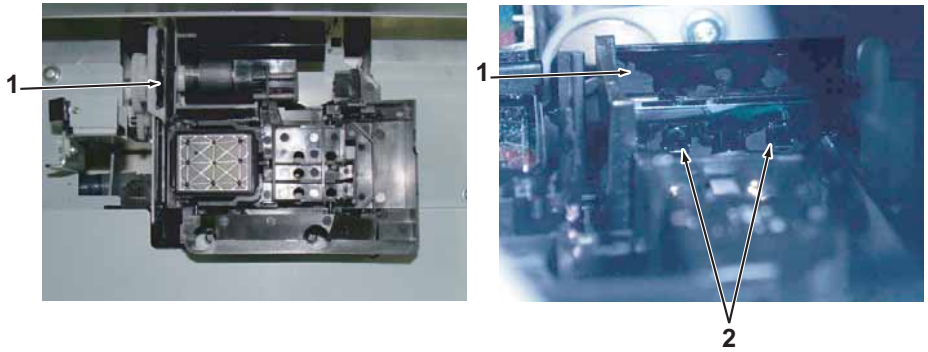
Name	Maintenance Part No.	Remarks
VJ16 Wiper Assy	DG-40355	☞" Explded View Maintenance Assy" p.11-13
+ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, VJ16 Wiper Assy.

In this section, it is referred to as Wiper.

1. Remove Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Move Carriage to left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
3. Using tweezers, detach the Wiper from the hook at the cleaner head retaining section, anr remove it upwardly.



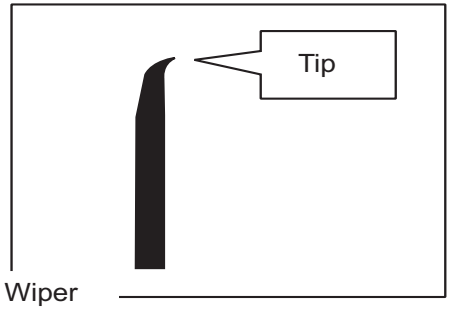
No.	Name
1	Wiper
2	hook

4. Replace Wiper.

NOTE

When reassembling Wiper, pay attention to the following.

- Do not touch the Wiper with bare hands.
- Make sure that the Wiper gets no dust or oil.
- Install the Wiper so that the point of the Wiper is located to the observer's right side.



- Insert the Wiper into the holder to the full depth securely and hook it.

5. To reassemble the unit, reverse the removal procedure.

3.8.4 Replacing Cap Head Assy

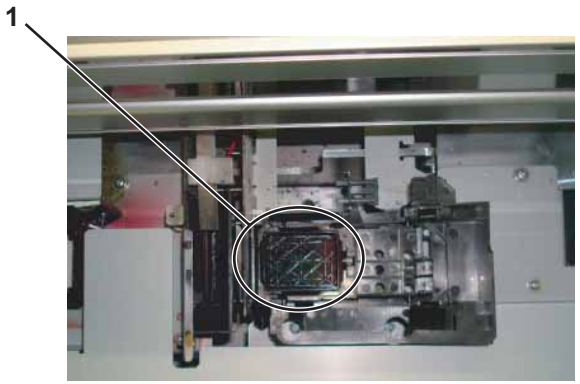
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Cap Head Assy	DG-41179	☞" Explded View Maintenance Assy" p.11-13
+ Driver No.2	Generic products	-

NOTE

- When replacing Cap Head Assy, wear rubber gloves.
- Ink may spatter around during the operation, so put down cloth or paper waste before operation.

1. Open Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove Cap Head Assy.

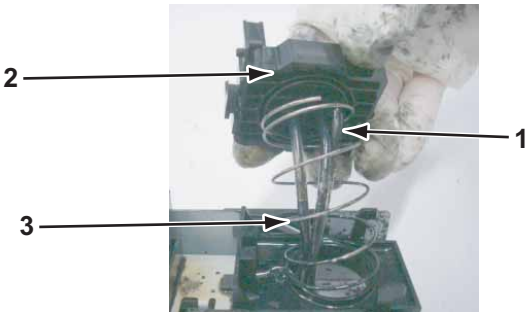


No.	Name
1	Cap Head Assy

NOTE

Make sure not to drop Cap tube after removing.

5. Remove Cap tubes (3 pieces) from Cap head Assy.



No.	Name
1	Cap tube
2	Cap Head Assy
3	Cap spring

6. Remove Cap Head from Mainte Slide base.

NOTE

When cap head is removed, cap spring shall be also removed at the same time. Do not lose it.

7. Replace Cap Head Assy.
8. To reassemble unit, reverse the removal procedure.

NOTE

When connecting cap tube and pump, pay attention not to mix up connections. If not connected to the corresponding, ink may leak.

9. To reassemble the unit, reverse the removal procedure.

3.8.5 Replacing Maintenance Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ16 Maintenance Assy	DG-41000	☞" Exploded View Maintenance Assy" p.11-13
＋ Driver No.2	Generic products	-

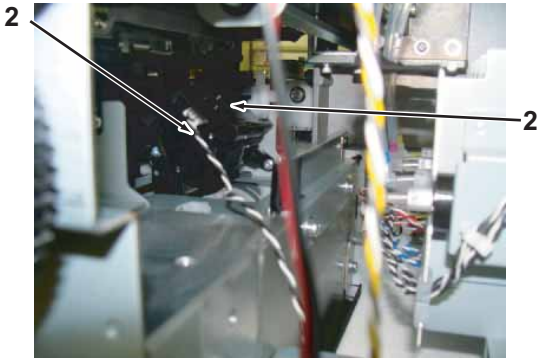
TIP

This section describes the procedure to replace the maintenance part, VJ16 Maintenance Assy.

In this section, it is referred to as Maintenance Assy.

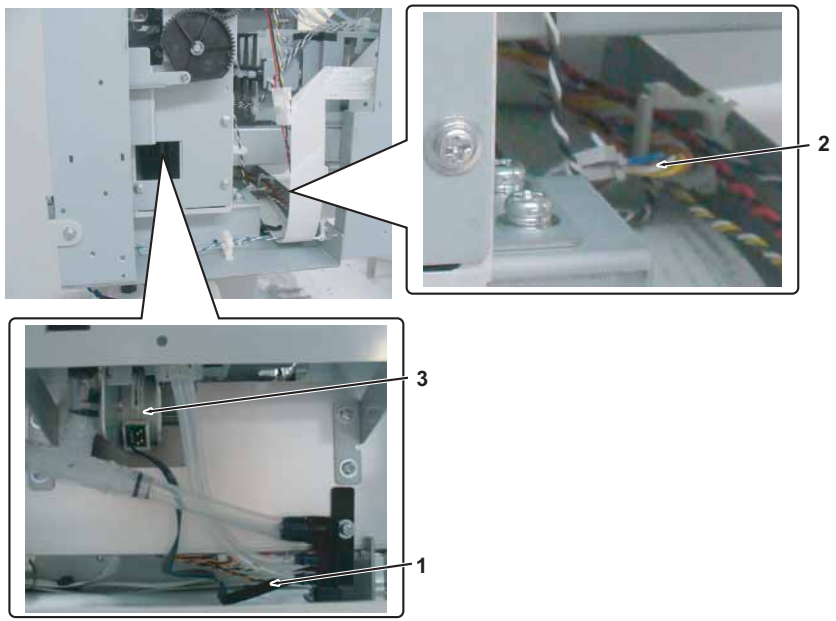
There are some remaining ink in Tubes. Make sure that the ink does not drop from Tube outlet onto the printer or Covers. Place a waste cloth or media underneath before operation.

1. Open Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Move Carriage to the left (opposite side of the origin).
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Remove Maintenance cover (inner).
   ☞"3.8.1 Removing Maintenance Inner Cover" p.3-164
5. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
6. Remove Wiper origin sensor cable Assy from Maintenance Assy.



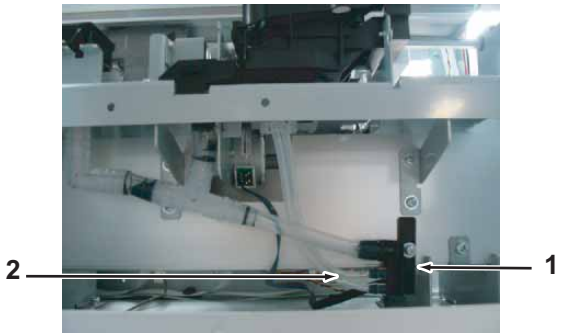
No.	Name
1	Wiper origin sensor cable Assy
2	Pump Motor cable Assy
3	Maintenance Assy

7. Remove Pump Motor cable Assy from Maintenance Assy.



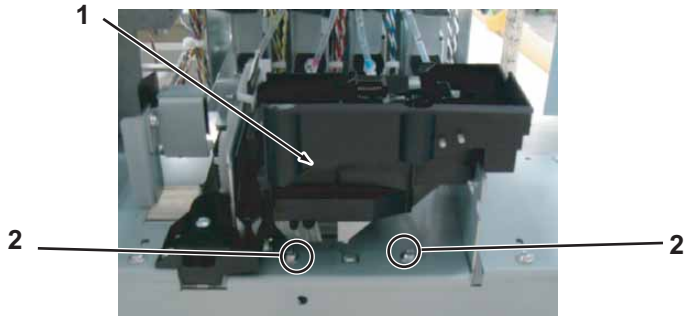
No.	Name
1	Pump Motor
2	Cable (Maintenance Assy side)
3	Pump Motor cable Assy

8. Remove Pump tube from Waste fluid joint.



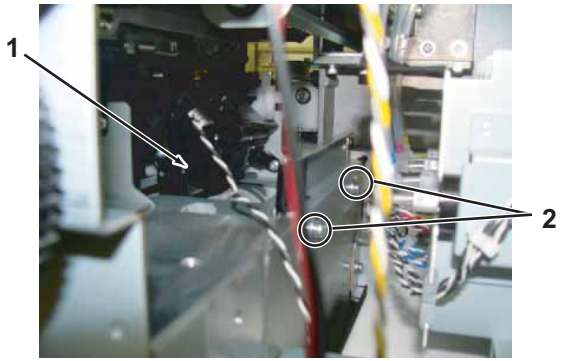
No.	Name
1	Waste fluid joint
2	Pump tube

9. Remove screws (2 pieces) retaining Maintenance Assy.



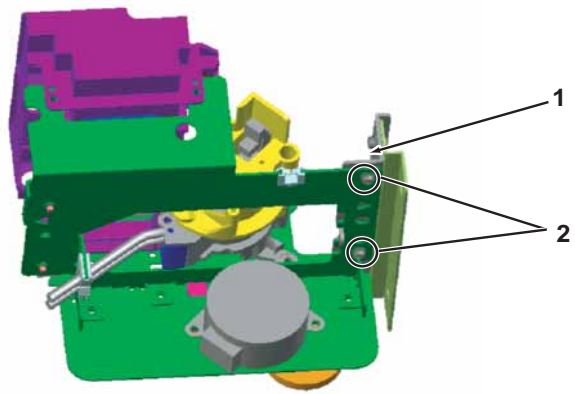
No.	Name
1	MaintenanceAssy
2	Tappinng screwM3 × 6Stight cup

10. Remove the screws (2 pieces) retaining the Maintenance Assy (Back side of Maintenance Assy).



No.	Name
1	Maintenance Assy
2	Tappinng screwM3 × 6Stight cup

11. Remove Maintenance Assy (with plate retaining) from the Printer body.
12. Remove the plate from Maintenance Assy.



No.	Name
1	Plate
2	Tappinng screwM3 × 6 Stight cup

13. Replace Maintenance Assy.
14. To reassemble unit, reverse the removal procedure.

3.8.6 Replacing Wiper origin sensor cable Assy

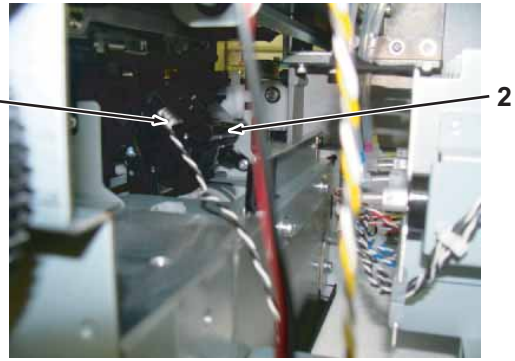
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Wiper Origin Sensor Cable Assy	DG-43027	☞" Explded View Maintenance Assy" p.11-13
＋ Driver No.2	Generic products	-

1. Open Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Wiper origin sensor cable Assy from JUNCTION Board Assy（J13).

No.	Name
1	JUNCTION Board Assy
2	Wiper origin sensor cable Assy

5. Remove Wiper origin sensor cable Assy from clamps on the path.
6. Remove Wiper origin sensor cable Assy from Maintenance Assy.



No.	Name
1	Wiper origin sensor cable Assy
2	Maintenance Assy

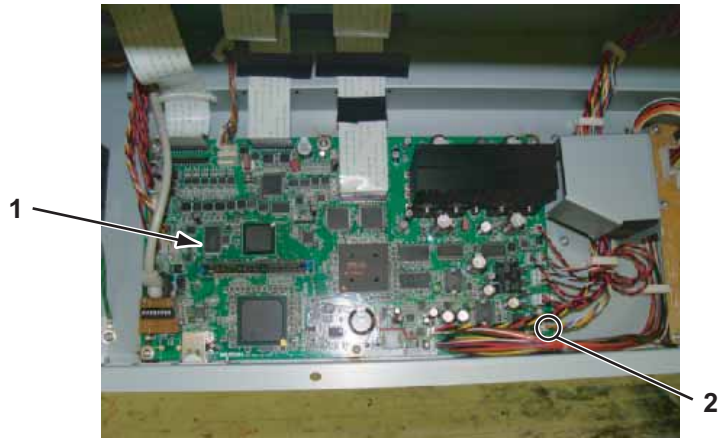
7. Replace Wiper origin sensor cable Assy.
8. To reassemble unit, reverse the removal procedure.

3.8.7 Replacing Pump Motor cable Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Pump Motor Cable Assy	DG-43036	☞" Explded View Maintenance Assy" p.11-13
＋ Driver No.2	Generic products	-

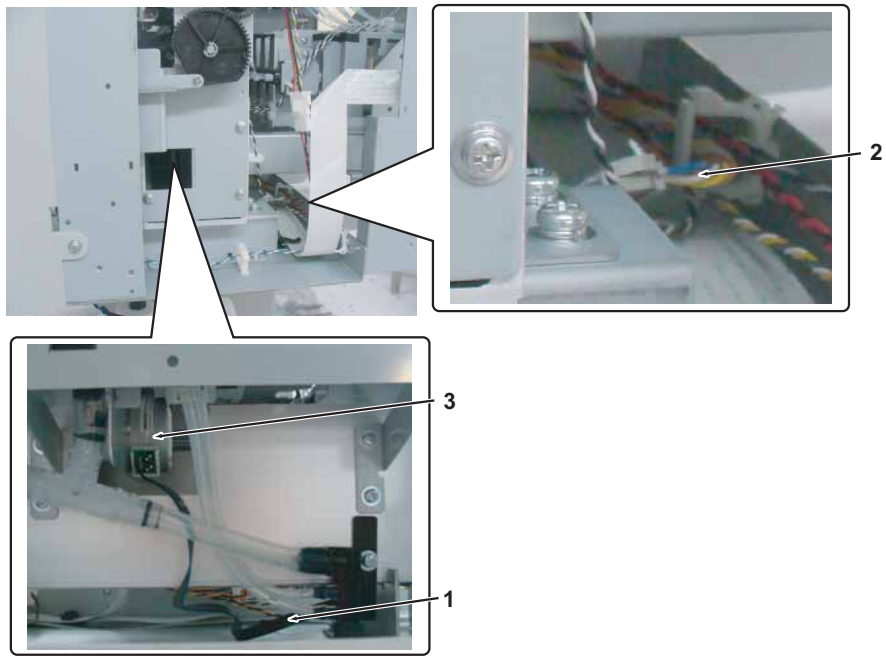
1. Open Maintenance cover R.
   ☞"3.2.1 Removing Maintenance Cover" p.3-7
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove Paper guide R (lower).
   ☞"3.2.13 Removing Paper guide R (Lower)" p.3-23
6. Open Board Box.
   ☞"3.4.1 Opening Board box" p.3-40
7. Remove Pump Motor cable Assy from MAIN BoardAssy（J18).



No.	Name
1	MAIN Board Assy
2	Pump Motor cable Assy

8. Remove cable of Pump Motor cable Assy from clamps on the path.

9. Remove Pump Motor cable Assy from Maintenance Assy.



No.	Name
1	Pump motor
2	Cable (Maintenance Assy side)
3	Pump Motor cable Assy

10. Replace Pump Motor cable Assy.
11. To reassemble unit, reverse the removal procedure.

3.9 Replacing IH Section

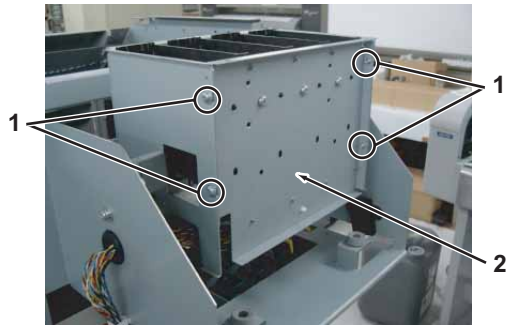
This section describes the procedure to replace IH section.

3.9.1 Replacing Cartridge Holder Assy

A necessary jigs and tools are as follows.

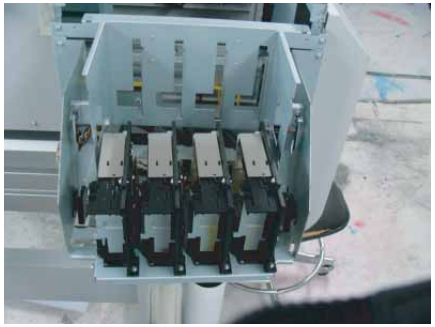
Name	Maintenance Part No.	Remarks
Cartridge Holder Assy1	DG-42997	☞" Explded View I/H Assy 1 (Cartridge)" p.11-14
Cartridge Holder Assy2	DG-42998	
Cartridge Holder Assy3	DG-42999	
Cartridge Holder Assy4	DG-43000	
＋ Driver No.2	Generic products	-

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Cartridge cover.
   ☞"3.2.7 Removing Cartridge cover" p.3-13
5. Loosen the screws (4 pieces) retaining IH base.

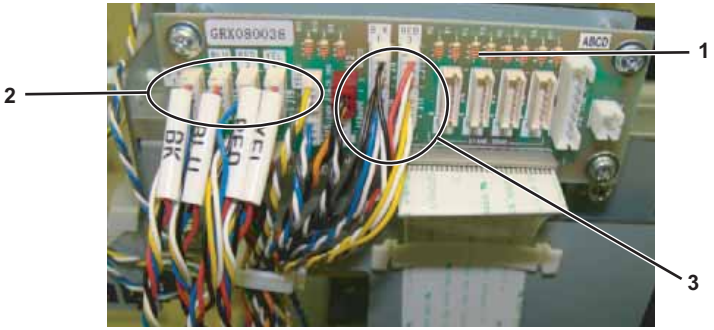


No.	Name
1	S tight cup M4 × 6 Ni-3
2	IH base

6. Move the cartridge holder Assy to the following state.



7. Remove Ink ID Cable Assy (VJ16 to J19) and I/C Cable Assy (J8 to J11) of the targeted Cartridge holder Assy from JUNCTION Board Assy.

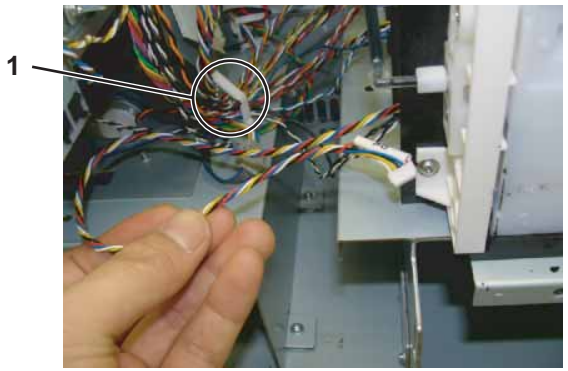


No.	Name
1	JUNCTION Board Assy
2	Ink ID Cable Assy
3	I/C Cable Assy

TIP

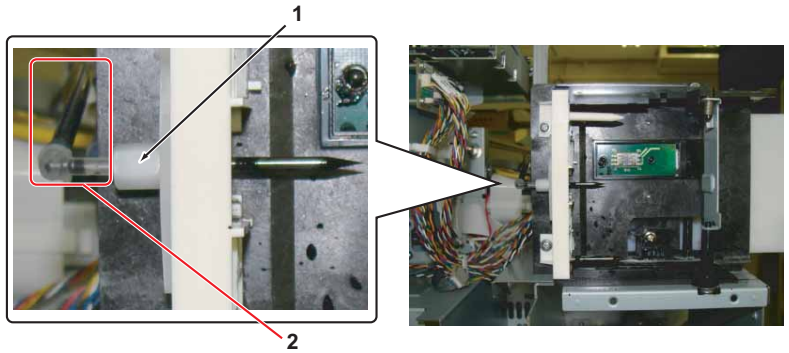
☞"3.4.20 Replacing JUNCTION Board Assy" p.3-66

9. Removethe removed cables from clamps.



No.	Name
1	Clamps

10. Loosen Joint screw, remove Joint and Ink tube.

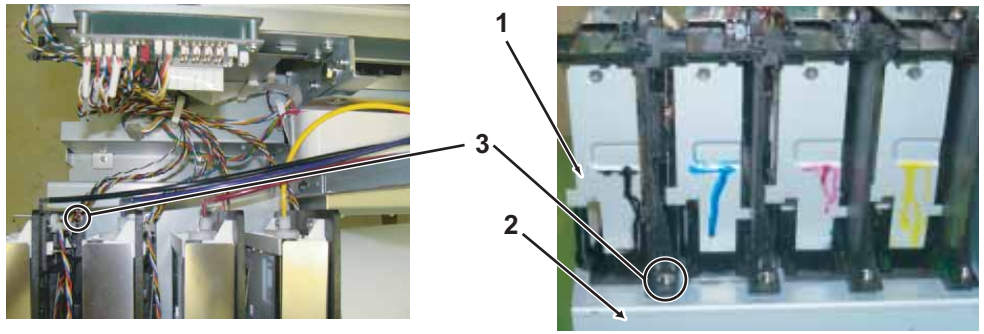


No.	Name
1	Joint screw
2	Joint、Ink tube

NOTE

- Do not reuse the O-ring inside Joint screw. Using the old O-ring may cause ink leakage.
- K, C, and M are L-shaped joints, and Y is I-shaped joint.

11. Remove screws (2 pieces) retaining Cartridge holder Assy to Cartridge base.



No.	Name
1	Cartridge holder Assy
2	Cartridge base
3	Tappinng screw M3 × 12 Stight cup

12. Replace Cartridge holder Assy.

13. To reassemble unit, reverse the removal procedure.

NOTE

Note the following during installation.

- When tightening Joint screws, use dedicated jigs, and be careful with the tightening torque.

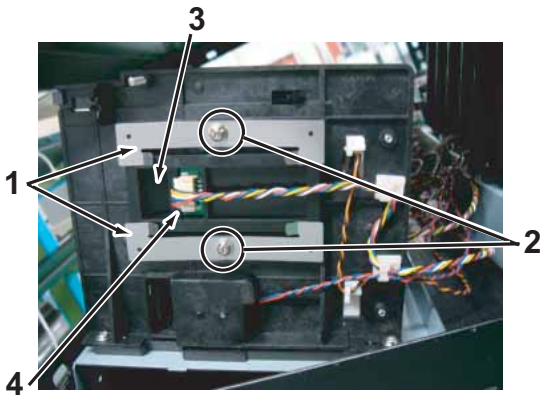
☞"7.4 Jigs and Tools" p.7-6

3.9.2 Replacing Ink ID Board Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
INK ID Board Assy	DF-43968	☞" Explded View I/H Assy 1 (Cartridge)" p.11-14
＋ Driver No.2	Generic products	-

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Cartridge cover.
   ☞"3.2.7 Removing Cartridge cover" p.3-13
5. Remove Cartridge holder Assy from Cartridge base.
   ☞"3.9.1 Replacing Cartridge Holder Assy" p.3-174
6. Remove screws (2 pieces) retaining Holder pressure sprintgs (2pieces).
7. Remove Ink ID Cable Assy from Ink ID Board Assy.



No.	Name
1	Holder pressure spring
2	Ptight cupM3 × 6　Ni-3
3	Ink ID Board Assy
4	Ink ID CableAssy

8. Remove holder pressure springs.
9. Replace Ink ID Board Assy.
10. To reassemble unit, reverse the removal procedure.

3.9.3 Replacing 2 way Solenoid Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
2way Solenoid Assy (VJ16)	DG-41092	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
＋ Driver No.2	Generic products	-

TIP

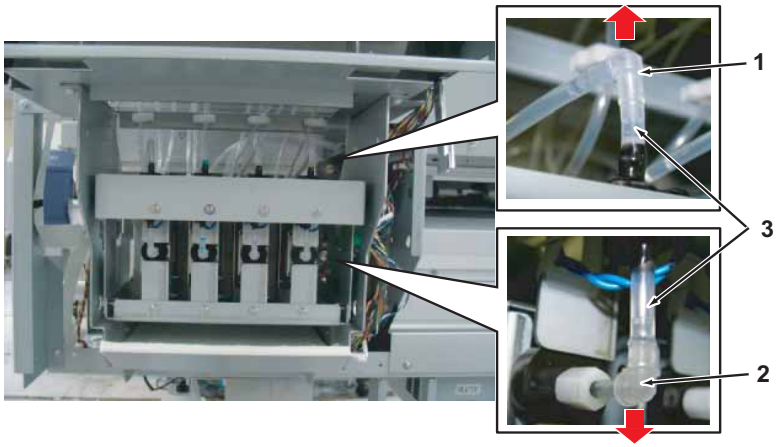
This section describes the procedure to replace the maintenance part, 2-way Solenoid Assy (VJ16). In this section, it is referred to as 2-way Solenoid Assy.

1. Perform ink drainage operation and drain ink from all the ink path.
   ☞"5.7.9 Longstore Menu" p.5-50

NOTE

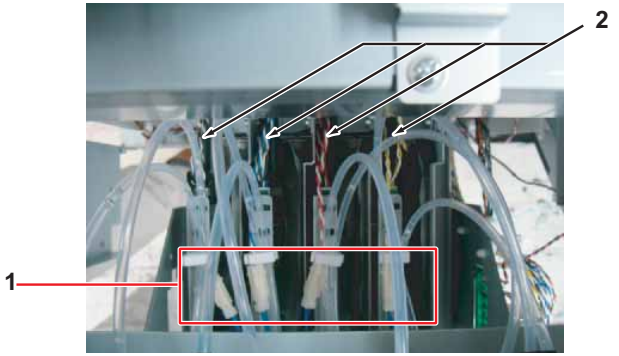
After ink is discharged, check if Ink cartridges are removed.

2. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
4. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
5. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
6. Remove Mini fitting (4 pieces:upper) and L fitting (4 pieces:lower) from Ink tube (8 pieces).



No.	Name
1	Mini fitting
2	L fitting
3	Ink tube（2cm）

7. Remove 2 way solenoid cable Assy (4 pieces) from Connectors of 2 way solenoids (4 pieces).

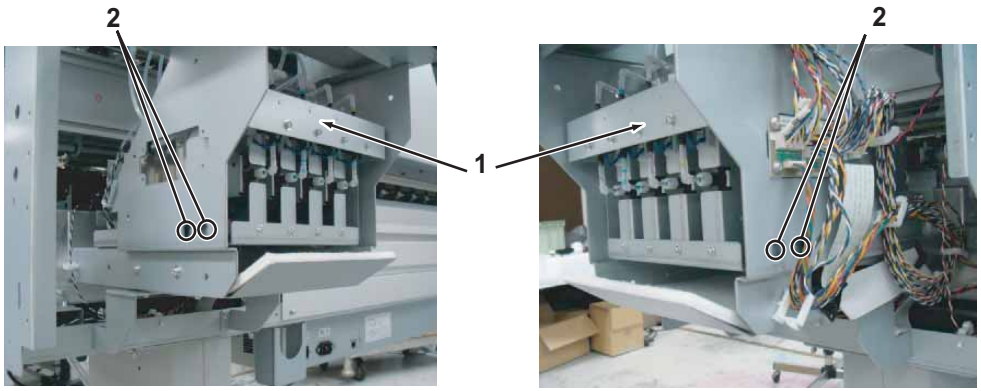


No.	Name
1	Connector of 2 way solenoid（Cable color :Blue）
2	2 way solenoid cableAssy

CAUTION

When installing 2-way Solenoid connector, make sure to install it correctly. Refer to the color of Cable of 2-way Solenoid Cable Assy before installation.

8. Remove the screws (4 pieces) retaining 2 way solenoid mounting plate.



No.	Name
1	2 way solenoid mounting plate
2	Tappinng screwM3 × 6 Stight cup

9. Divide Ink tube which is included as a maintenance part into 8 (2cm each) pieces.

NOTE

When cutting Ink tube, use a tube cutter so that the cut surface is even. If it is not cut evenly, ink may leak.

10. Connect the 8 Ink tubes at the top and bottom of the new 2-way Solenoids (4 pieces) to be installed.
11. Replace 2 way solenoid Assy.
12. To reassemble unit, reverse the removal procedure.
13. Perform various adjustments.

☞"4.2 Adjustment Item" p.4-3

3.9.4 Replacing 2 way solenoid Cable Assy

A necessary jigs and tools are as follows.

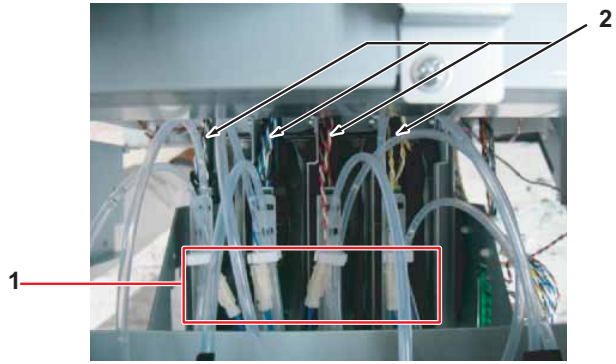
Name	Maintenance Part No.	Remarks
Two way Solenoid Cable Assy	DG-43003	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
＋ Driver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Two-way Solenoid Cable Assy.

In this section, it is referred to as 2 way Solenoid Cable Assy.

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Subtank cover.
5. Remove 2 way solenoid cable Assy (4 pieces) from Connectors of 2 way solenoids (4 pieces).



No.	Name
1	Connector of 2 way solenoid（Cable color :Blue）
2	2 way solenoid cableAssy

CAUTION

When installing 2-way Solenoid Solenoid connector, make sure to install it correctly. Refer to the color of Cable of 2-way Solenoid Solenoid Cable Assy before installation.

6. Remove 2 way Solenoid Cable Assy from JUNCTION Board Assy（J3).

No.	Name
1	JUNCTION Board Assy
2	2 way Solenoid Cable Assy

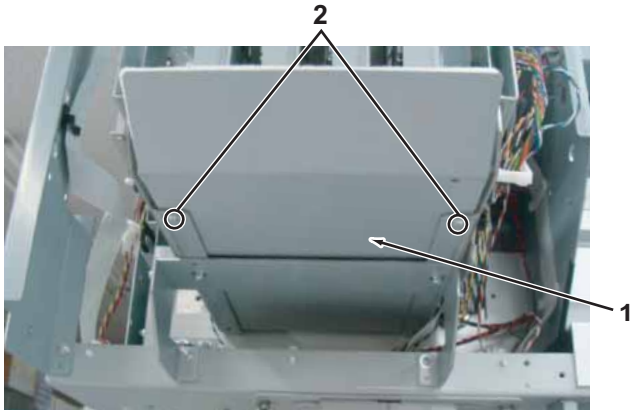
7. Remove 2 way Solenoid Cable Assy from clamps on the path.
8. Replace 2 way Solenoid CableAssy.
9. To reassemble unit, reverse the removal procedure.

3.9.5 Replacing Sub Tank Under Sponge Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Sub Tank Under Sponge Assy	DG-41096	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
＋ Driver No.2	Generic products	-

1. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
2. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
3. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
4. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
5. Remove the screws (2 pieces) retaining Sub Tank Under Sponge Assy.



No.	Name
1	Sub Tank Under Sponge Assy
2	Tappinng screw M3 × 6 Stight cup

6. Replace Sub Tank Under Sponge Assy.
7. To reassemble unit, reverse the removal procedure.

3.9.6 Replacing Sub Tank Assy

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Sub Tank Assy	DG-41093	☞" Explded View I/H Assy 2(Sub Tank)" p.11-15
TANK_H/L Cable Assy1	DG-43005	
TANK_H/L Cable Assy2	DG-43006	
TANK_H/L Cable Assy3	DG-43007	
TANK_H/L Cable Assy4	DG-43008	
＋ Driver No.2	Generic products	-

NOTE

- Ink may leak from the removed Subtank, etc, so place a waste cloth or media on the floor during this operation.
- There are 4 sets (KCMY) of Subtank Assy, but the replacement procedure is the same. This section describes the procedure to replace Black (K).

1. Perform ink drainage operation and drain ink from all the ink path.
   ☞"5.7.9 Longstore Menu" p.5-50
2. Turn the power OFF and remove Power cable.

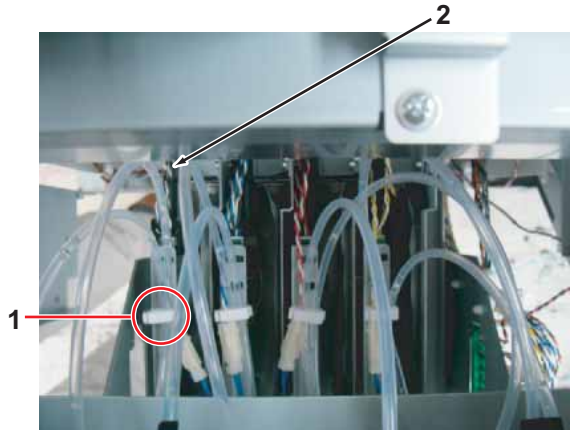
CAUTION

Before replacing Sub Tank Assy, unplug Power cable and leave it for a while.
If operating with Power cable still plugged, the operator may get an electric shock by standby electricity.

3. Remove all Ink cartridges.
4. Remove Side top cover R.
   ☞"3.2.4 Removing Side Top Cover" p.3-10
5. Remove Side Maintenance cover.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
6. Remove IH cover.
   ☞"3.2.6 Removing IH Cover" p.3-12
7. Remove Subtank cover.
   ☞"3.2.8 Removing Sub Tank Cover" p.3-15
8. Remove 2 way Solenoid Assy.
   ☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177

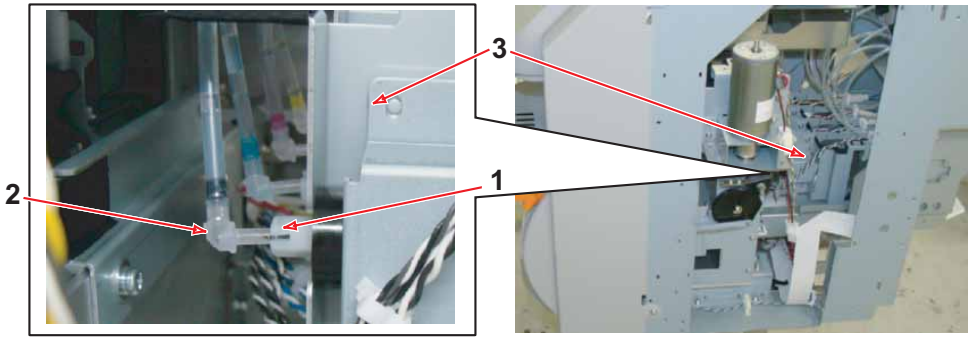
NOTE

Before removing 2 way Solenoid Assy, remove 2 way solenoid cable Assy from clamps first.



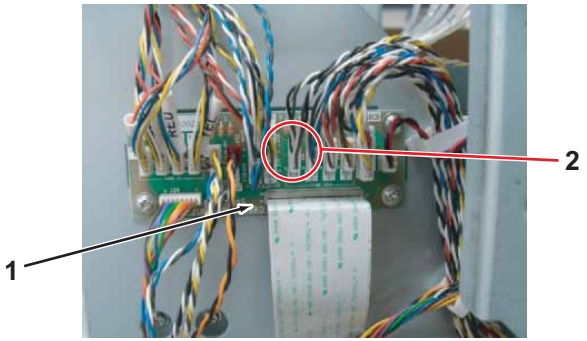
No.	Name
1	Clamps
2	2 way Solenoid Cable Assy

9. Loosen Joint screw M6 on the back side of Subtank and remove L Joint 2-3.



No.	Name
1	Joint Screw M6
2	L Joint 2-3
3	Subtank

10. Remove Cables of Sub Tank H/L Sensor（TANK_H/L Cable Assy 1：For “K”） from JUNCTION Board Assy（J4).



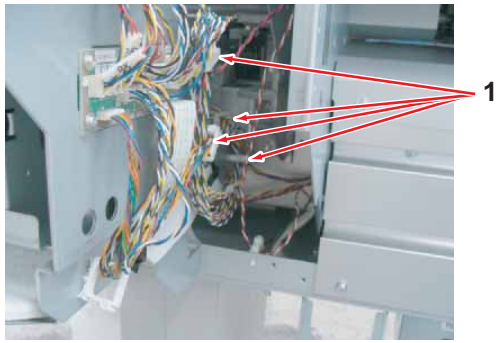
No.	Name
1	JUNCTION Board Assy
2	TANK_H/L Cable Assy 1

TIP

The feature of TANK_H/L Cable Assy

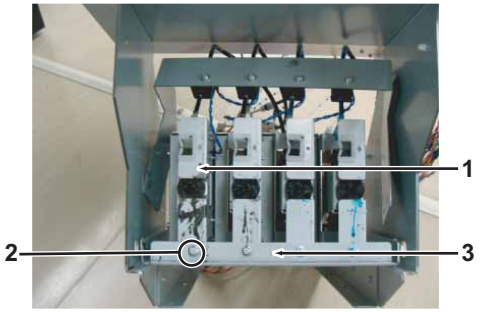
Name	Cable color	Ink	JUNCTION Board
TANK_H/L Cable Assy 1	White、Black,Grey	K	J4
TANK_H/L Cable Assy 2	White、Black、Blue	C	J5
TANK_H/L Cable Assy 3	White、Black、Red	M	J6
TANK_H/L Cable Assy 4	White、Black、Yellow	Y	J7

11. Remove TANK_H/L Cable Assy 1 from clamps on the path.



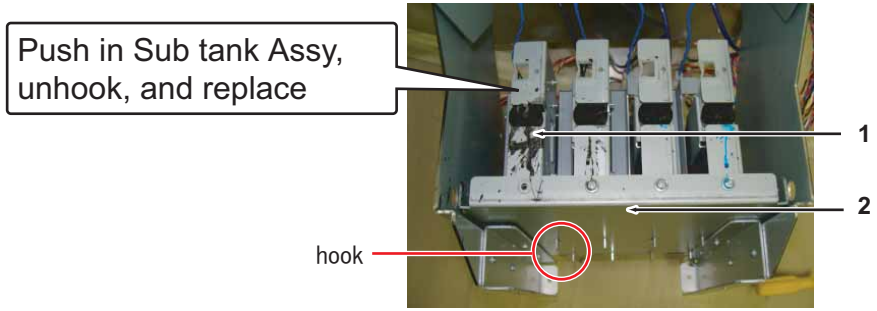
No.	Name
1	Clamps

12. Remove screw (1 piece) retaining Sub Tank Assy.



No.	Name
1	Sub Tank Assy
2	Tapping screwM3 × 6　S tight cup
3	Sub Tank base

13. Remove Sub Tank Assy From Sub Tank base.
It is fixed witha hook.
To remove it, Push Sub Tank Assy and unhook, and pull it out forward.



No.	Name
1	Sub Tank base
2	hook

NOTE

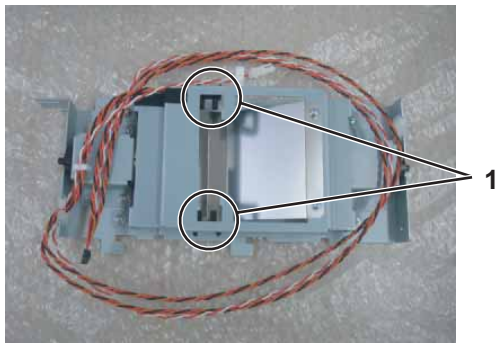
When removing Sub Tank Assy, be careful so that TANK_H/L Cable Assy does not get stuck on plates and get disconnected.

14. Remove TANK_H/L Cable Assy from Sub Tank Assy.

NOTE

- TANKH/L Cable Assy is connected to Sub Tank High/Low Sensor（Photo interrupter）
- When replacing TANK_H/L Cable Assy, replace it at this point.

15. Remove High/Low Sensors (Photo interrupter: 2 pieces) from newly assembled Sub Tank Assy.



No.	Name
1	High/Low Sensor

NOTE

High/Low sensor is fixed with threadlocker.

16. Connect TANK_H/L Cable Assy to the removed High/Low Sensors.

17. Reassemble High/Low Sensors to Sub Tank Assy.

NOTE

When installing High/Low sensor, fix it with threadlocker again.

18. Charge ink .

☞"5.6 Ink Charging Menu" p.5-25

19. Check the operations of High sensor, Low sensor and Two-way solenoid in Remote panel mode of MUTOH Service Assistance.

NOTE

If there is no computer available to use MUTOH Service Assistance on, follow the procedure below to check the operations.

i)Activate Self-diagnosis function.

☞"5.2.2 Starting Up" p.5-3

ii)Following procedure, Check if 2-way solenoids are activated correctly.

[Check 2 : Test]-[Test 4 : Sensor]-[Sen. 19 : TankValve]

☞"5.14 ExControl Menu" p.5-79

3.10 Replacing Leg Section

3.10.1 Replacing Waste Fluid Bottle and Waste Fluid Level Switch

A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Waste Fluid Bottle Assy	DG-43501	☞" Exploded View Stand" p.11-20
Waste Fluid Level Switch 2 Assy	DG-43469	

TIP

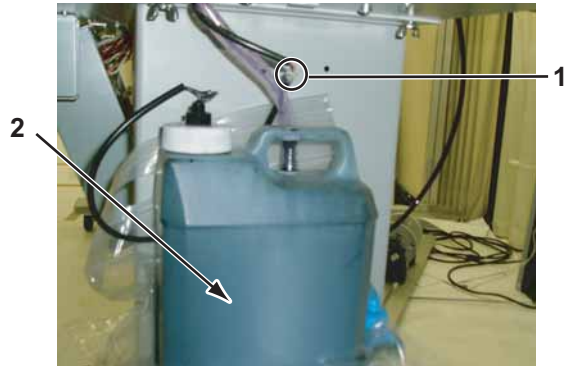
This section describes the procedure to replace the maintenance parts, Waste Fluid Bottle Assy and Waste Fluid Level Switch (VJ16).

In this section, they are referred to as Waste Fluid Bottle and Waste Fluid Level Switch.

NOTE

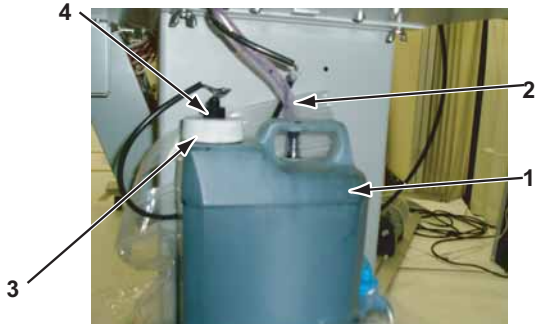
- Discharge the waste fluid fully to replace Waste fluid bottle.
- Confirm that there remains no waste fluid in the waste fluid tube.

1. Remove Connector to Waste fluid level switch.



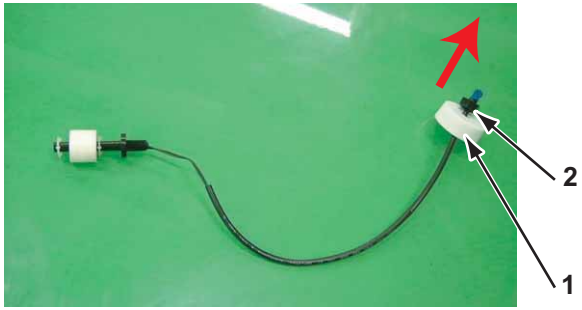
No.	Name
1	Waste fluid level switch connector
2	Waste fluid bottle

2. Remove Waste fluid tube.
3. Loosen Cap of Waste fluid bottle.
4. Loosen the nut of Waste fluid level switch.



No.	Name
1	Waste fluid bottle
2	Waste fluid tube
3	Cap of Waste fluid bottle
4	Nut of Waste Fluid Level switch

5. Pull out the nut of Waste fluid level switch and Waste fluid bottle cap from Waste fluid bottle.



No.	Name
1	Cap of Waste fluid bottle
2	Nut of Waste fluid level switch

6. Replace Waste fluid bottle.
7. Replace Waste Fluid Level switch.
8. To reassemble unit, reverse the removal procedure.

3.11 Replacing Roll media holder Assy

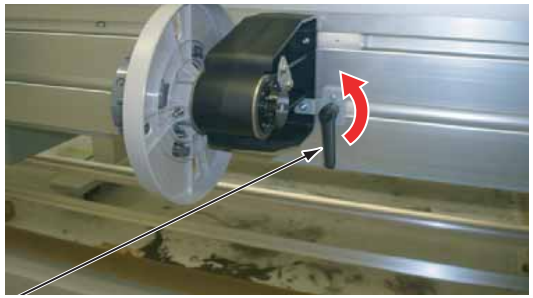
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ16 Roll media holder R Assy 2	DG-41174	☞" Exploded View Roll Media Holder Assy" p.11-19
VJ16 Roll media holder L Assy 2	DG-41173	
＋ Driver No.2	Generic products	-

NOTE

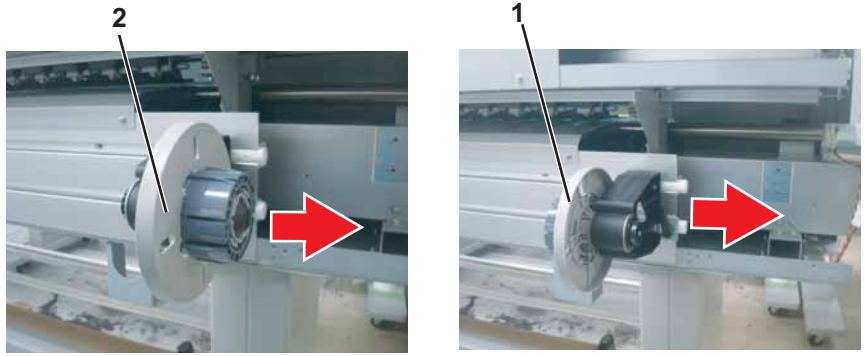
This section describes the procedure to replace the maintenance parts, VJ16 Roll media holder R Assy and VJ16 Roll media holder L Assy.
In this section, they are referred to as Roll media holder Assy.

1. Remove Side top cover L.
☞"3.2.4 Removing Side Top Cover" p.3-10
2. Remove Rear s ide cover.
☞"3.2.5 Removing Rear side cover" p.3-11
3. Release Roll media fixing lever.



No.	Name
1	Release Lever for fixing the roll media

4. Pull out Roll media holder Assy from the right side.



No.	Name
1	Roll media holder Assy L
2	Roll media holder Assy R

5. Replace Roll media holder Assy.

TIP

- When replacing Roll media holder_R, Replacing Roll media holder L at first.
- Roll media holder Assy is an integral part.

6. To reassemble unit, reverse the removal procedure.

3.12 Replacing Take-up Unit Section (Option)

This explains the replacement procedures for Take-up unit section.

CAUTION

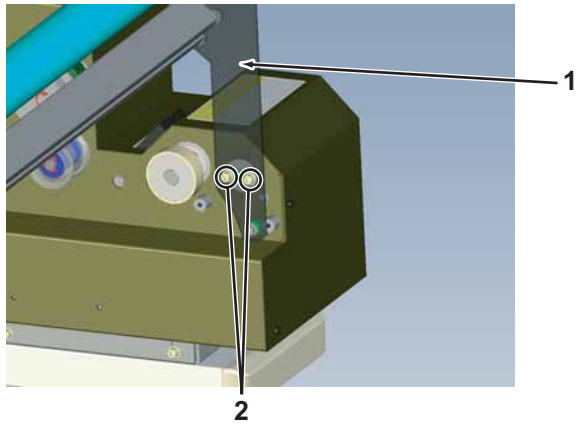
- Before replacing a Take-up device peripheral, unplug Power cable and leave it for a while.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- Do not touch element on Board with bare hand.
  Elements may be damaged by static electricity.

3.12.1 Removing Tension Arm

A necessary jigs and tools are as follows.

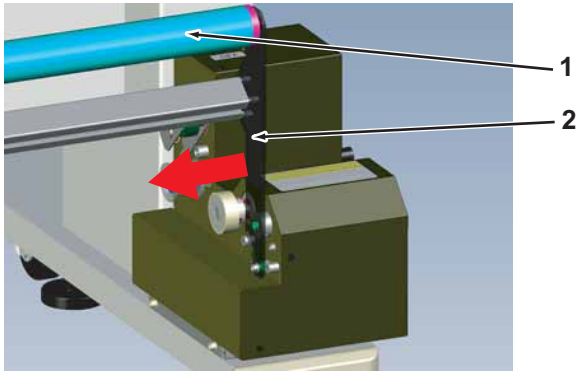
Name	Maintenance Part No.	Remarks
Hex wrench (3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove the screws (2 pieces) retaining Right tension arm.



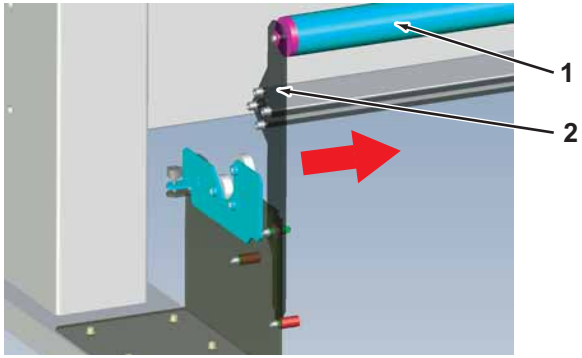
No.	Name
1	Right tension arm
2	Hexagon socket head cap screw with spring washer and flat washer M4 × 10 Ni-3

3. Shift Tension arm in the direction of the red arrow and remove Right tension arm.



No.	Name
1	Tension arm
2	Right tension arm

4. Shift Right tension arm and remove left Tension arm.



No.	Name
1	Tension arm
2	Left tension arm

5. To reassemble unit, reverse the removal procedure.

3.12.2 Removing Take-up Unit

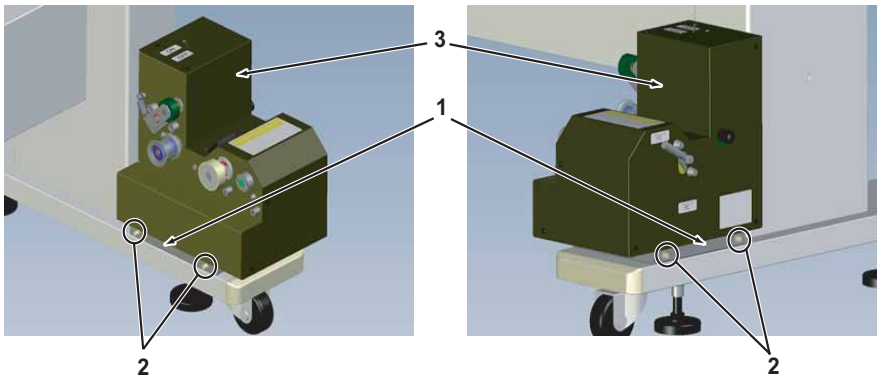
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Hex wrench (3mm)	Generic products	-

CAUTION

When replacing Take-up unit, unplug Power cable and leave it for a while.
If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.

1. Remove Take-up scroller.
2. Remove Tension arm.
☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove the screws (4 pieces) retaining Take-up holding plate (lower).



No.	Name
1	Take-up Holding Plate (lower)
2	Hexagon socket head cap screw with spring washer and flat washer M4 × 10
3	Take-up unit

4. Remove Take-up unit.
5. To reassemble unit, reverse the removal procedure.

3.12.3 Removing Take-up Cover

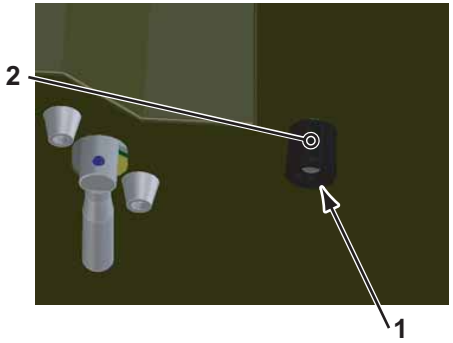
A necessary jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
+Driver No.2	Generic product	-
Hex wrench (3mm)	Generic products	-

NOTE

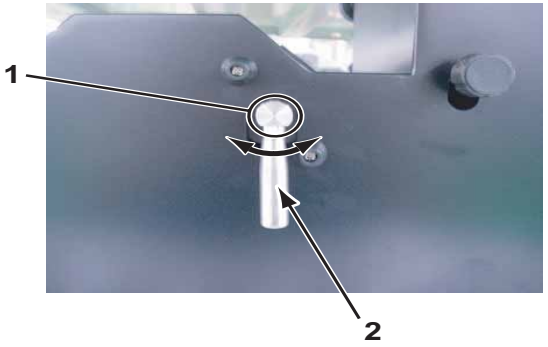
Lower Release lever to FREE side before removing Take-up cover.

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove the screw (1 piece) retaining Knob.



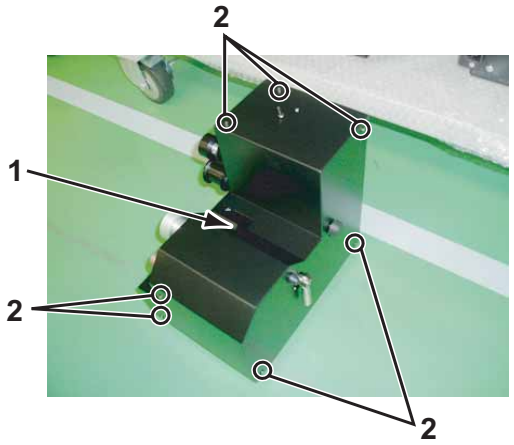
No.	Name
1	Knob
2	Screw retaining Knob (Set screw)

5. Remove Take-up cover from Release cam by turning Lever base in direction of red arrow shown below with pincer or something alike



No.	Name
1	Release cam
2	Lever

6. Remove the screws (7 pieces) retaining Take-up cover.



No.	Name
1	Take-up cover
2	Binding small screw M3 × 5

7. Remove Take-up cover.
8. To reassemble unit, reverse the removal procedure.

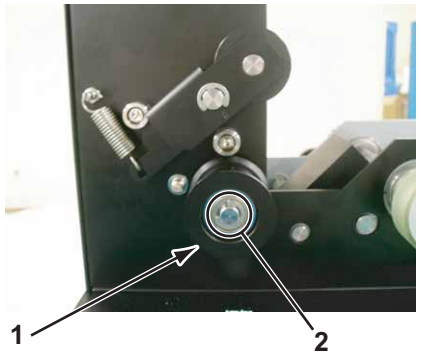
3.12.4 Replacing Scroller

(1) Replacing Holding Roller

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Holder roller	DG-40473	☞" Exploded View Take Up Assy1" p.11-22
＋ Driver No.2	Generic products	-
－ Driver	Generic products	-
Hex wrench(3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove E ring retaining Holding roller using a driver.



No.	Name
1	Holding roller
2	E ring (E-6)

4. Remove Holding roller and the set of its accessories.

NOTE

The list of accessories of Holding roller when removing Roller is as follows:

- Bearing
- Holding axis
- Flat washer (polished) M6
- E type snap ring E-5

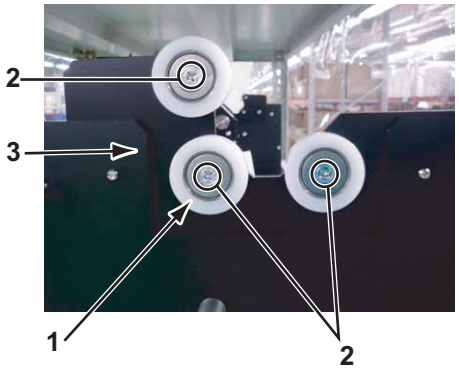
5. Replace Holding roller and set of its accessories.
6. To reassemble unit, reverse the removal procedure.

(2) Replacing Holding Roller L

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Holder roller L	DG-40474	☞" Exploded View Take Up Assy1" p.11-22
+ Driver No.2	Generic products	-

1. Remove Take-up scroller.
2. Remove the screw retaining Holding roller L on Scroller receiver (left).



No.	Name
1	Holding roller L
2	Screw retaining Holding roller L
3	Scroller receiver (left)

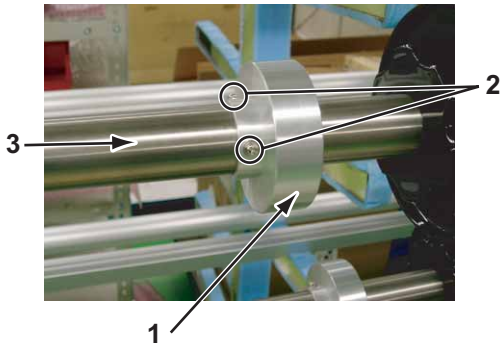
3. Remove Holding roller L.
4. To reassemble unit, reverse the removal procedure.

(3) Replacing Drive Collar

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Drive Collar	DG-40475	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-

1. Remove Take-up scroller.
2. Remove the screws (2 pieces) retaining Drive collar on Take-up scroller (left).



No.	Name
1	Drive collar
2	Pan-head screw with spring washer and flat washer M3 × 8
3	Take-up scroller (left)

3. Remove Drive collar.
4. To reassemble unit, reverse the removal procedure.

3.12.5 Replacing Take-up Control Board Assy

CAUTION

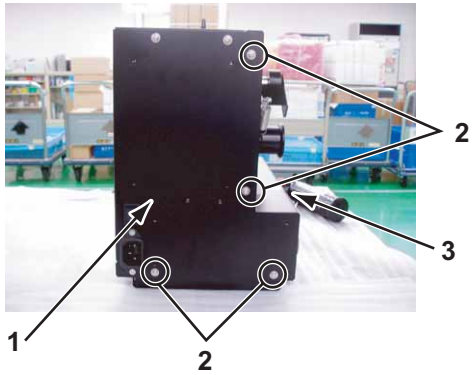
- When replacing Take-up control board Assy, unplug Power cable and leave it for a while.
  If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- Do not touch element on Board with bare hand.
  Elements may be damaged by static electricity.

(1) Removing Board Chassis

A necessary jigs and tools are as follows.

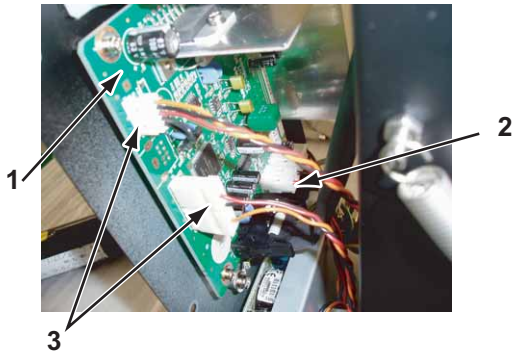
Name	Maintenance Part No.	Remarks
+Driver No.2	Generic product	-
Hex wrench (3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove the screws (4 pieces) retaining Board chassis on Chassis (out).



No.	Name
1	Board chassis
2	Pan-head screw with spring washer and flat washer M3 × 6
3	Chassis (out)

5. Remove Motor cable, Take-up ON sensor relay Assy and Take-up OFF sensor relay Assy from Connector to Take-up control board Assy.



No.	Name
1	Take-up control board Assy
2	Take-up motor Assy cable
3	Take-up ON sensor relay Assy Take-up OFF sensor relay Assy

6. Remove Board chassis.
7. To reassemble unit, reverse the removal procedure.

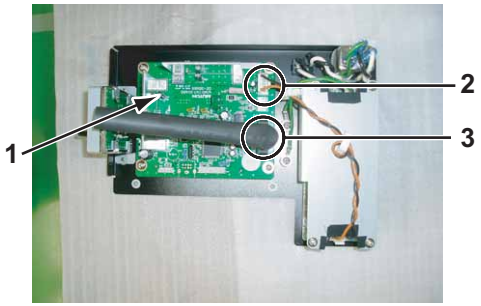
(2) Replacing Take-up Control Board Assy

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ take-up CNT board Assy	DG-40478	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench (1.5mm ~ 6.0mm)	Generic products	-

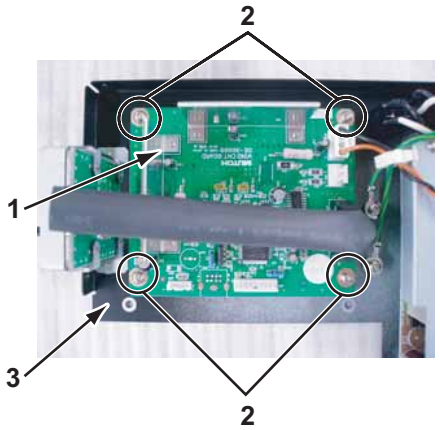
This section describes the procedure to replace Take-up control board Assy (maintenance part name: VJ take-up CNT board Assy maintenance No.: DG-40478).

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove DC cable Assy and Take-up switch board Assy cable from Connector to Take-up control board Assy.



No.	Name
1	Take-up control board Assy
2	DC cable Assy
3	Take-up switch board Assy cable

6. Remove the screws (4 pieces) retaining Take-up control board Assy to Board chassis.



No.	Name
1	Take-up control board Assy
2	Pan-head screw with spring washer and flat washer M3 × 6
3	Board chassis

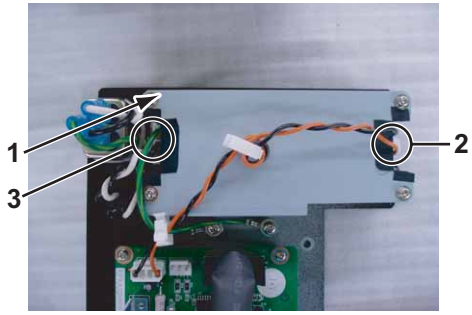
7. Remove Take-up control board Assy.
8. To reassemble unit, reverse the removal procedure.

(3) Replacing Power Board Assy

A necessary maintenance part, jigs and tools are as follows.

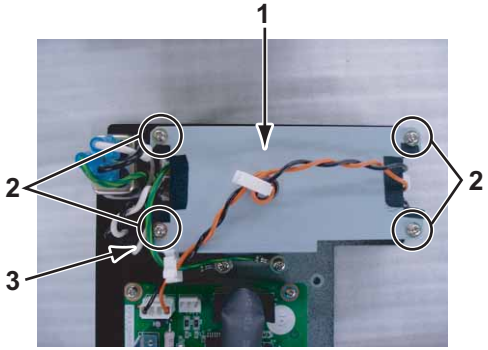
Name	Maintenance Part No.	Remarks
Power Supply (External Take Up)	DF-44506	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench(3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove the screws (4 pieces) retaining Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove AC cable Assy and DC cable Assy from Connector to Power board Assy.



No.	Name
1	Power board Assy
2	DC cable Assy
3	AC cable Assy

6. Remove the screws (4 pieces) retaining Power supply cover to the Hexagon spacer.



No.	Name
1	Power supply cover
2	Pan-head screw with spring washer and flat washer polished M 3 × 8
3	Hexagon spacer

7. Detach Hexagon spacers (4 pieces) from Board chassis.
8. Detach Power board Assy from Board chassis.
9. Replace Power supply board Assy.
10. To reassemble unit, reverse the removal procedure.

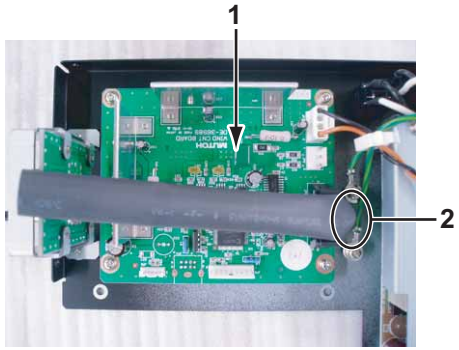
(4) Replacing Take-up Switch Board Assy

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
VJ take-up SW board Assy	DG-40479	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench(3mm)	Generic products	-

This section describes the procedure to replace Take-up switch board Assy (maintenance part name: VJ take-up SW board Assy maintenance No.: DG-40479).

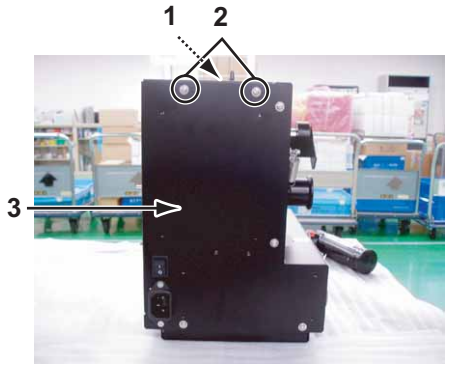
1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove Take-up switch board Assy cable from Connector to Take-up control board Assy.



No.	Name
1	Take-up control board Assy

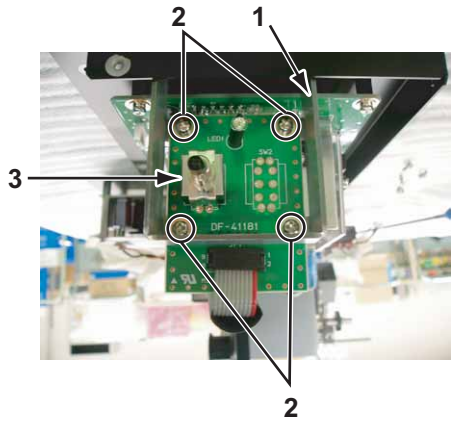
No.	Name
2	Take-up switch board Assy cable

6. Remove the screws (2 pieces) retaining Switch mounting plate to Board chassis.



No.	Name
1	Switch mounting plate
2	Countersunk head screw M3 × 6
3	Board chassis

7. Remove the screws (4 pieces) retaining Take-up switch board Assy to Switch mounting plate



No.	Name
1	Take-up switch board Assy
2	Pan-head screw M3 × 8
3	Switch mounting plate

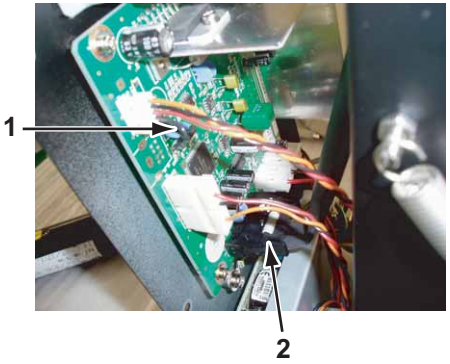
8. Remove Take-up switch board Assy.
9. Replace Take-up switch board Assy.
10. To reassemble unit, reverse the removal procedure.

(5) Replacing DC Cable Assy

A necessary maintenance part, jigs and tools are as follows.

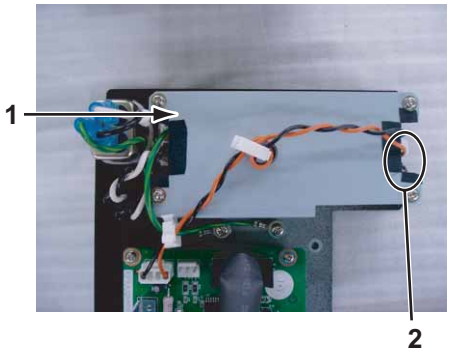
Name	Maintenance Part No.	Remarks
DCCable Assy	DG-40483	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench (1.5mm ~ 6.0mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove the screws (2 pieces) retaining DC cable Assy to Board chassis.



No.	Name
1	Take-up control board Assy
2	DC cable Assy

6. Detach DC cable Assy from Connector to Power board Assy (of Take-up section for foreign use).



No.	Name
1	Power board Assy (of Take-up section for foreign use)
2	DC cable Assy

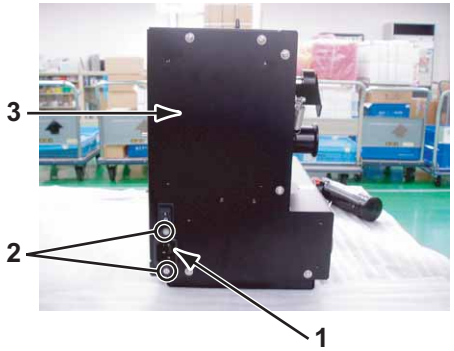
7. Replace DC cable Assy.
8. To reassemble unit, reverse the removal procedure.

(6) Replacing AC Cable Assy

A necessary maintenance part, jigs and tools are as follows.

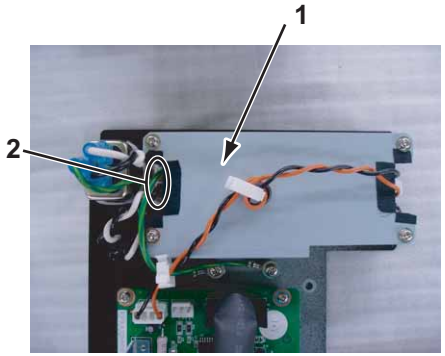
Name	Maintenance Part No.	Remarks
ACCable Assy	DG-40482	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench(3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove the screws (2 pieces) retaining AC cable Assy on Board chassis.



No.	Name
1	AC cable Assy
2	Pan-head screw with spring washer and flat washer polished M3 × 6 Ni-3
3	Board chassis

6. Detach AC cable Assy from Connector to Power board Assy (of Take-up section for foreign use).



No.	Name
1	Power board Assy (of Take-up section for foreign use)
2	AC cableAssy
3	FG cable
4	Pan-head screw with spring washer and flat washer polished M4 × 8 Ni-3

7. Remove the screws (1 piece) retaining FG cable.
8. Cut Cable tie retaining the AC cable Assy to replace AC cable Assy.

NOTE

Retain AC cable Assy as it was by Cable tie after replacing AC cable Assy.

9. To reassemble unit, reverse the removal procedure.

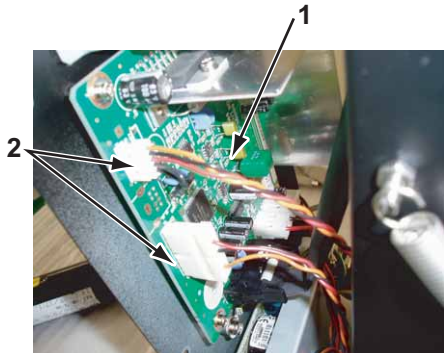
3.12.6 Replacing Take-up ON Sensor and Take-up OFF Sensor

(1) Replacing take-up on sensor relay Assy and take-up OFF sensor relay Assy

A necessary maintenance part, jigs and tools are as follows.

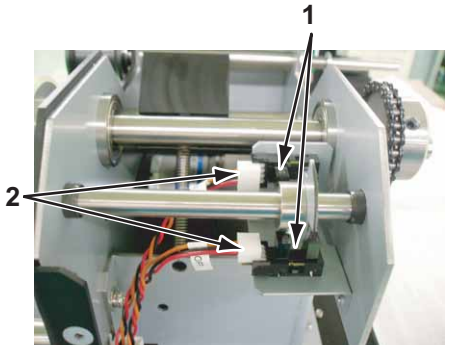
Name	Maintenance Part No.	Remarks
W_ONSensor RelayAssy	DG-40480	☞" Exploded View Take Up Assy2" p.11-23
W_OFFSensor RelayAssy	DG-40481	
+ Driver No.2	Generic products	-
Hex wrench(3mm)	Generic products	-

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194
5. Remove Take-up ON sensor relay Assy and Take-up OFF sensor relay Assy from Connector to Take-up control board Assy.



No.	Name
1	Take-up control board Assy
2	Take-up ON sensor relay Assy cable Take-up OFF sensor relay Assy cable

6. Remove Take-up ON sensor relay Assy and Take-up OFF sensor relay Assy from CR origin sensor and Lever sensor



No.	Name
1	CR origin sensor, Lever sensor
2	Take-up ON sensor relay Assy Take-up OFF sensor relay Assy

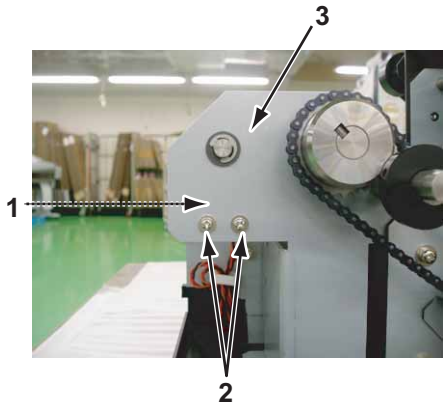
7. Replace Take-up ON sensor relay Assy and Take-up OFF sensor relay Assy.
8. To reassemble unit, reverse the removal procedure.

(2) Replacing the take-up ON sensor, take-up OFF sensor

A necessary maintenance part, jigs and tools are as follows.

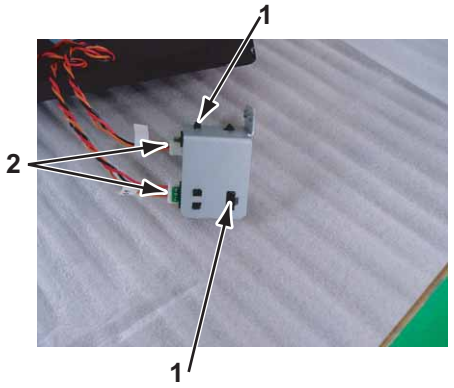
Name	Maintenance Part No.	Remarks
CR_HP Sensor、Lever Sensor	DG-40482	☞" Exploded View Take Up Assy2" p.11-23
＋ Driver No.2	Generic products	-
Hex wrench (3mm)	Generic products	-
Thread Locker	-	Three bond 1401

1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove the screws (2 pieces) retaining Sensor mounting plate on the right of the inside Chassis.



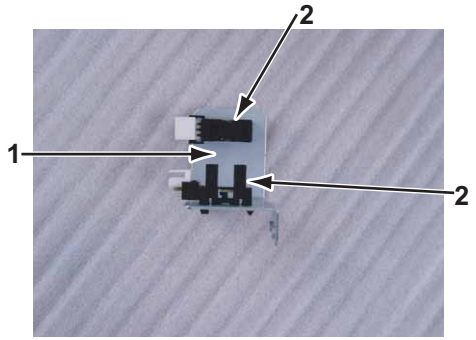
No.	Name
1	Sensor mounting plate
2	Pan-head screw with spring washer and flat washer (polished) M3 × 6 Ni-3
3	Right of the inside Chassis

4. Remove Take-up ON sensor relay Assy and Take-up OFF sensor relay Assy from CR origin sensor and lever sensor.



No.	Name
1	CR origin sensor, Lever sensor
2	Take-up ON sensor relay Assy Take-up OFF sensor relay Assy

5. Remove Take-up ON sensor and Take-up OFF sensor from Sensor mounting plate.



No.	Name
1	Sensor mounting plate
2	CR origin sensor, Lever sensor

6. Replace Take-up ON sensor and Take-up OFF sensor.
7. To reassemble unit, reverse the removal procedure.

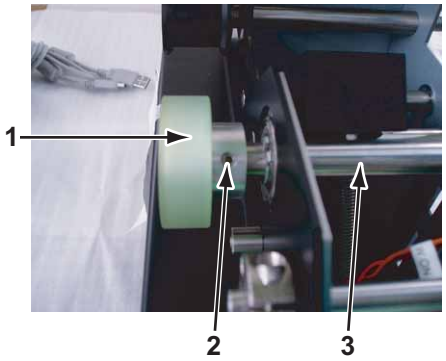
3.12.7 Replacing Peripheral Devices of Take-up Motor Assy

(1) Replacing Drive Roller

A necessary maintenance part, jigs and tools are as follows.

Name	Maintenance Part No.	Remarks
Drive roller	DG-40472	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-

1. Remove Take-up scroller.
2. Remove the screws (2 pieces) retaining Driver roller to Drive axis C.



No.	Name
1	Drive roller
2	Screws retaining Drive roller (Set screw with thin tip M4 × 6)
3	Drive axis C

3. Remove Drive roller.
4. Replace Drive motor.
5. To reassemble unit, reverse the removal procedure.

(2) Replacing Take-up Motor Assy

A necessary maintenance part, jigs and tools are as follows.

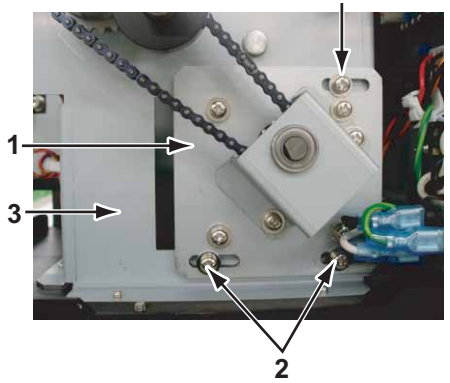
Name	Maintenance Part No.	Remarks
VJ take-up Motor Assy	DG-40471	☞" Exploded View Take Up Assy2" p.11-23
+ Driver No.2	Generic products	-
Hex wrench (3 mm)	Generic products	-

⚠ CAUTION

Do not touch Motor shortly after the printer has stopped. Otherwise, you may be burned.

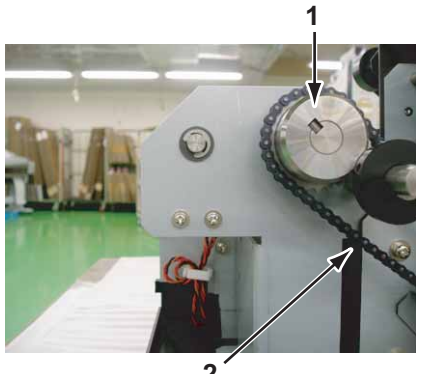
1. Remove Take-up scroller.
2. Remove Tension arm.
   ☞"3.12.1 Removing Tension Arm" p.3-188
3. Remove Take-up unit.
   ☞"3.12.2 Removing Take-up Unit" p.3-190
4. Remove Take-up cover.
   ☞"3.12.3 Removing Take-up Cover" p.3-191
5. Remove Board chassis.
   ☞"(1) Removing Board Chassis" p.3-194 of "3.12.5 Replacing Take-up Control Board Assy" p.3-194

6. Remove the screws (3 pieces) retaining Motor mounting plate on the right of the inside Chassis.



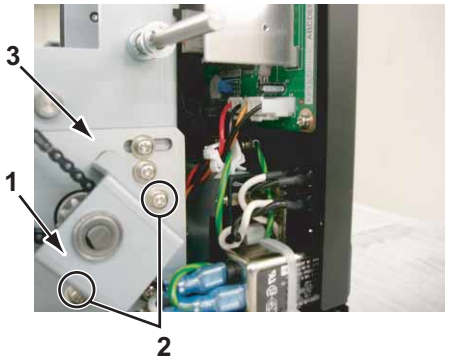
No.	Name
1	Motor mounting plate
2	Screws retaining Motor mounting plate (Pan-head screw with spring washer and flat washer polished M4 × 10: 3 pieces)
3	Right of inside Chassis

7. Detach Chain from Sprocket large.



No.	Name
1	Chain
2	Sprocket large

8. Remove the screws (2 pieces) retaining Axis holder on Motor mounting plate.



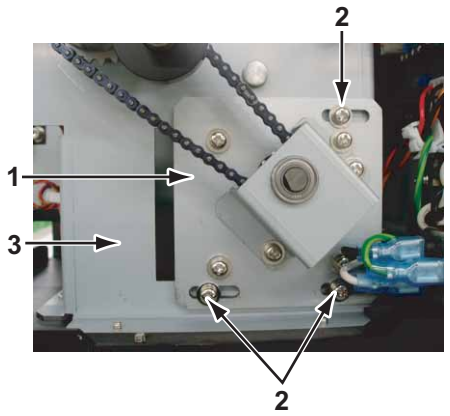
No.	Name
1	Axis holder
2	Screws retaining Axis holder (Pan-head screw with spring washer and flat washer polished M4 × 6 Ni-3)
3	Motor mounting plate

9. Replace VJ take-up motor Assy.

NOTE

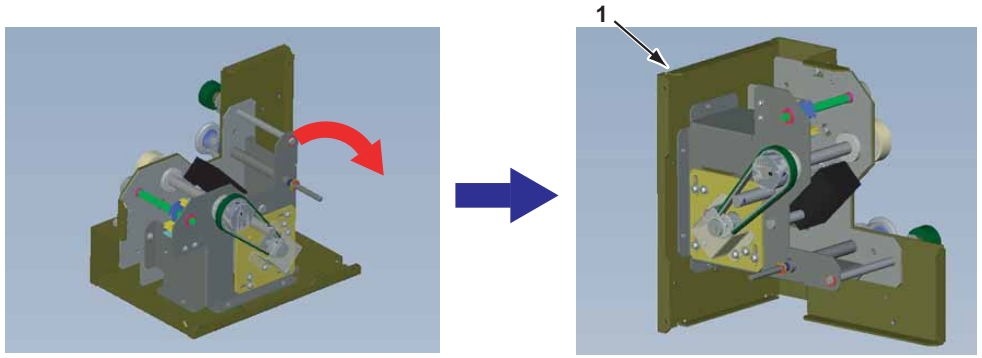
When mounting VL take-up motor, follow the step below to adjust chain tension.

i) Temporary joint the screws (3 pieces) retaining Motor mounting plate to the right of the inside Chassis.



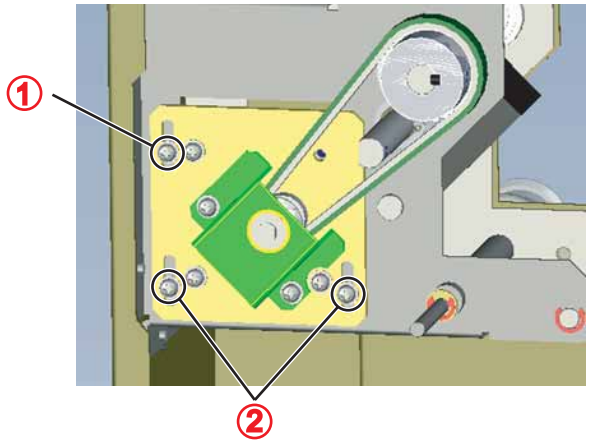
No.	Name
1	Motor mounting plate
2	Screw retaining Motor mounting plate (Pan-head screw with spring washer and flat washer polished M4 × 10 3 pieces)
3	Right of the inside Chassis

ii) Tilt Take-up unit at 90 degree and place it as shown below on the right.



No.	Name
1	Take-up unit

iii) Tighten the screws in the following order as shown below and fix Motor mounting plate to right of the inside Chassis.



10. To reassemble unit, reverse the removal procedure.

4 Adjustment

4.1 Introduction

This chapter provides information on necessary adjustment items and procedure.

TIP

☞"7.4 Jigs and Tools" p.7-6

4.2 Adjustment Item

This section describes the adjustment items required in part replacement procedures.
When you adjust or replace any of the maintenance parts listed in “Table 7-1 Adjustment Item List”, you must always adjust the printout quality using the self-diagnosis function referring to Table 7-1“Adjustment Item List” (p.7-3).

Part replaced or adjusted	Adjustment order	Adjustment item	Reference
Printer head	1	Head rank input (including initial ink charge)	☞"(2) Head Rank" p.5-60 ☞"5.6 Ink Charging Menu" p.5-25
	2	Head nozzle check	☞"5.7.2 Head Nozzle Check Menu" p.5-30
	3	Head height adjustment	☞"4.7 Head Height Adjustment" p.4-58
	4	Head slant check	☞"5.7.4 Head Slant Check Menu" p.5-34 ☞"4.6 Head Accuracy Adjustment" p.4-54
	5	Uni-D / Bi-D Adjustment	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
	6	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
	7	Reset of head unit life counter	☞"5.10.1 Parameter Initialization Menu" p.5-57
MAIN Board Assy	1	Differs depending on the status of MAIN Board Assy.	☞"4.3 Working with MUTOH Service Assistance Software" p.4-5
CR Motor Assy	1	Duration counter clear	☞"6.3.2 Counter Initialization Menu" p.6-11
	2	Uni-D / Bi-D adjustment	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
	3	Side margin adjustment	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
	4	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
PF Motor Assy	1	X speed reduction belt tention adjustment	☞"4.5 X Speed Reduction Belt Tension Adjustment" p.4-52
	2	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
	3	Duration counter clear	☞"6.3.2 Counter Initialization Menu" p.6-11
P_EDGE Sensor	1	P_EDGE Sensor sensitivity adjustment	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
	2	Side margin adjustment	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
P_REAR Sensor	1	P_Rear Sensor sensitivity adjustment	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
PF Encoder Assy	1	PF encoder inspection	☞"5.5.5 Encoder Menu" p.5-15
	2	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
T Fence	1	CR encoder inspection	☞"5.5.5 Encoder Menu" p.5-15
	2	Uni-D / Bi-D Adjustment	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39

Part replaced or adjusted	Adjustment order	Adjustment item	Reference
T Fence (Continued)	3	Side margin adjustment	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
	4	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
CR Return Pulley	1	Steel belt tention adjustment	☞"4.4 Steel Belt Tension Adjustment" p.4-50
	2	Uni-D/Bi-D adjustment	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
	3	Side adjustment	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
	4	Test printing	☞"5.7.8 Test Printing Menu" p.5-48
Carriage Assy	1	PG height adjustmen	☞"4.7 Head Height Adjustment" p.4-58
	2	CR encoder inspection	☞"5.5.5 Encoder Menu" p.5-15
	3	Paper Edge Sensor Assy sensitivity adjustment	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
	4	Sequential printing endurance operation check	☞"5.12.7 General Endurance Menu" p.5-76
	5	Side margin adjustment	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
	6	Head nozzle check	☞"5.7.2 Head Nozzle Check Menu" p.5-30
	7	Head slant check	☞"5.7.4 Head Slant Check Menu" p.5-34
	8	Head slant adjustment	☞"4.6 Head Accuracy Adjustment" p.4-54
	9	Uni-D/Bi-D adjustment	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
	10	Test printing	☞"5.7.8 Test Printing Menu" p.5-48

4.3 Working with MUTOH Service Assistance Software

This section explains operation using "MUTOH Service Assistance".
“MUTOH Service Assistance“ is abbreviated as “MSA“ hereinafter.

Installation and download of parameters and firmware installation are performed through the network using dedicated network software (MSA).

CAUTION

Never disclose how to replace MSA for Technician (explained later) in "MUTOH Service Assistance" to users because the software has a function regarding printer security.
Each function of "MUTOH Service Assistance" works on the premise that the serial number is entered. If it is not entered, register it again using Board replacement wizard.
☞"4.3.11 Board Replacement Wizard" p.4-27

NOTE

This manual is edited based on MUTOH Service Assistance Ver.1.1.2

4.3.1 Parameter Backup

The NVRAM (Flash-ROM) installed on the MAIN board Assy stores various parameters for the system operation.

The available backup parameters are as follows.

- Panel setting parameters
- Mechanism adjustment parameters
- Main board-unique adjustment parameters

TIP

The MAIN board-unique adjustment parameters cannot be erased or modified.

If the MAIN board Assy is found to need replacement during maintenance operations, make sure to back up the parameters. The backup data can be used to restore the original system status, omitting some adjustment steps.

☞"4.3.9 Receiving Backup Parameters" p.4-25
☞"4.3.10 Sending Backup Parameter" p.4-26

4.3.2 Jigs and Tools

The following jigs and tools are required for MUTOH Service Assistance.

- Windows PC:
  - CPU: Pentium 400MHz or higher, Installed memory: 128MB or more
  - With one of the following installed: Windows 98 SE / Windows 98 Me / Windows 2000 / Windows XP/ Windows Vista
  - Equipped with network interface connector (RJ-45) (10M/100M Ethernet I/F)
  - Dedicated network software (MUTOH Service Assistance) is already installed
- Network interface cable (crossover cable *For hub connection, straight cable)

4.3.3 Required Environment

Before starting work, set up the following environment.

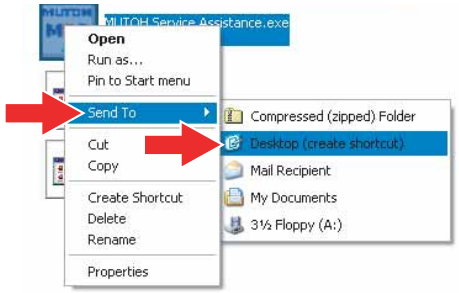
(1) Installing MUTOH Service Assistance

1. Insert the MSA installed CD-ROM in the CD-ROM drive of the PC, and open from "My Computer".
2. Drag and drop the "MUTOH Service Assistance" folder to the desktop to copy the files.

(2) Creating a Shortcut

To make it simple to start the "MUTOH Service Assistance", create a shortcut on the desktop.

1. Open the "MUTOH Service Assistance" folder on the desktop.
2. Right-click the [MUTOH Service Assistance.exe] in the folder, and select [Send To]-[Desktop (create shortcut)].



3. A "Shortcut to MUTOH Service Assistance" icon is created on the desktop.

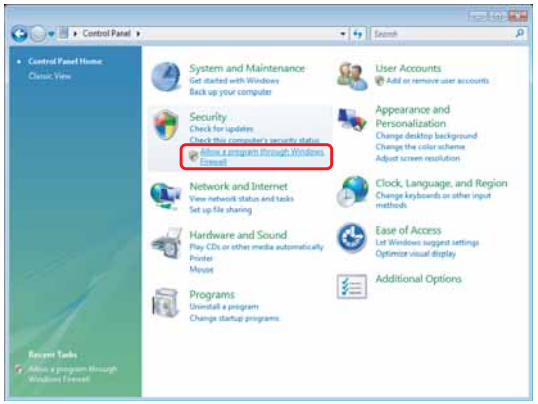
(3) Setting Exceptions in Windows Firewall Setting

If you use Windows Vista or later as the OS, you need to add MSA to the exceptions list for Windows Firewall.

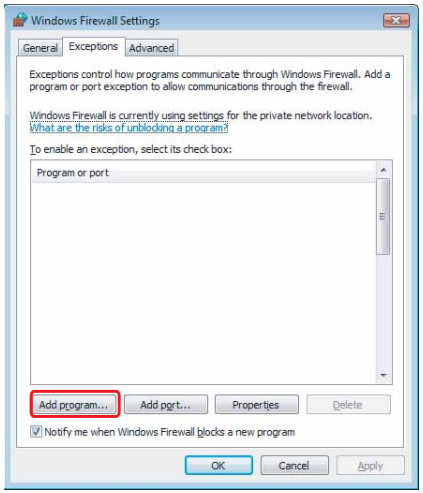
NOTE

- This procedure is for Windows Vista.
- If you use virus security software other than Windows Firewall, you may need to change settings for that software. Contact the software vendor for correct settings and procedures.

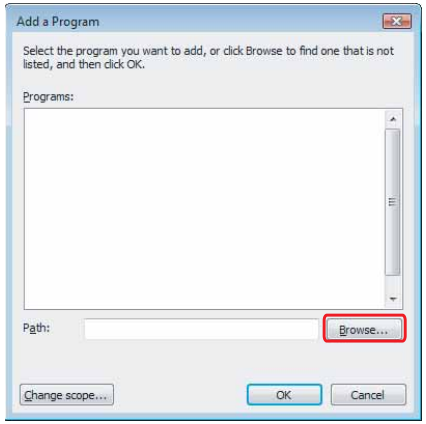
1. Click the Start button and then click [Control Panel].
   - The “Control Panel” window will be displayed.
2. Click "Allow a program through Windows Firewall”.



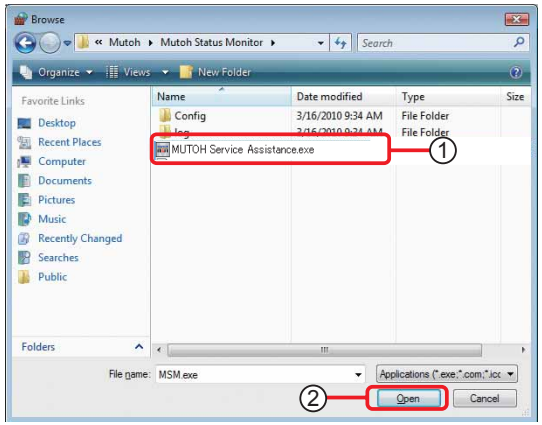
3. When the “Windows Firewall Settings” window is displayed, select the “Exceptions” tab and click the “Add program...” button.



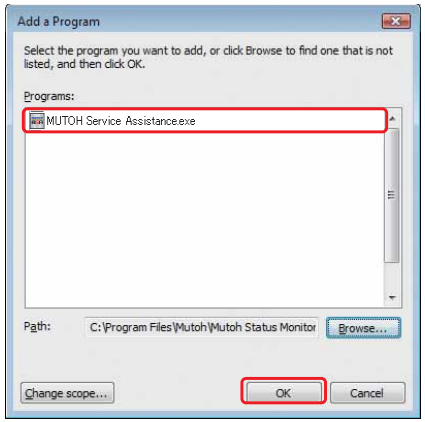
4. When the “Add a Program” window is displayed, click the “Browse...” button.



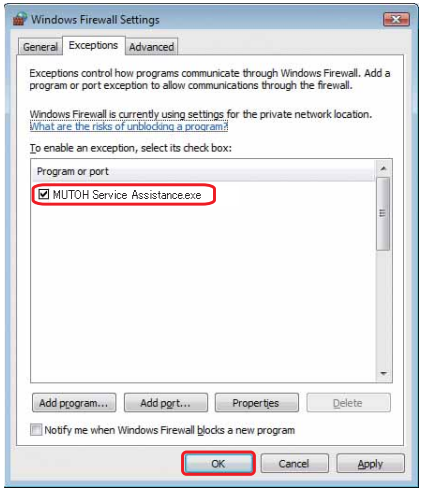
5. When the “Browse” window is displayed, select Mutoh Service Assistance.exe where the Mutoh Service Assistance is installed and click the “Open” button.



6. Make sure that MSA.exe is added and click the “OK” button.
   - The Windows Firewall Settings window will be displayed.



7. Confirm that MSA.exe is added in the “Windows Firewall Settings” window and click the “OK” button.
   - Complete the setting.



(4) Confirming Startup of the "MUTOH Service Assistance"

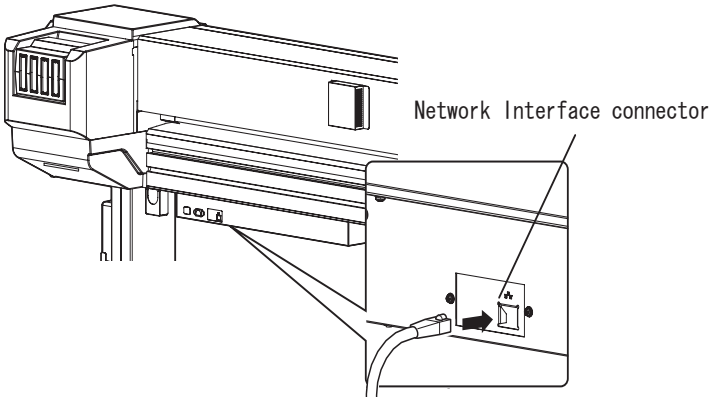
1. Double-click the [Shortcut to Mutoh Service Assistance.exe], and check that the application starts correctly.

   At the first startup, it shall be started in English mode.

(5) Connecting Printer and Computer

1. Turn OFF both the printer and computer.

2. Insert Connector of Network interface cable into Network interface connector located in the back of the printer.



3. Connect the other connector of Network interface cable to your PC.

NOTE

When connecting a printer to a computer one-on-one, use a cross cable. When connecting the printer and computer via a hub, use a straight cable.

If possible, set the printer away from Network and directly connect to the host computer with a cross cable.

(6) Starting the printer

When using MSA, the printer must be started in the relevant mode depending on the function you use.

NOTE

When the printer's set up mode is inappropriate to the MSA function, an error message appears. When an error message is displayed, restart the printer in the mode described in the next table.

PR : Printer mode
BM : Board manager mode
PR/BM : Any mode can be used

MSA Function	Printer start mode
☞"4.3.5 Editing Media Type" p.4-19	BM
☞"4.3.6 Acquiring and Saving Error Log" p.4-21	PR
☞"4.3.7 Updating main firmware" p.4-23	PR/BM
☞"4.3.8 Updating Heater Controller Firmware" p.4-24	BM
☞"4.3.9 Receiving Backup Parameters" p.4-25	PR/BM
☞"4.3.10 Sending Backup Parameter" p.4-26	BM
☞"4.3.11 Board Replacement Wizard" p.4-27	BM
☞"4.3.12 Remote Panel Mode" p.4-33	PR
☞"4.3.13 Acquiring Printer Identification Data" p.4-41	BM
☞"4.3.14 Sending Authorization code" p.4-42	BM
☞"4.3.15 Referring Set Up Information" p.4-44	PR
☞"4.3.16 Referring Adjustment Parameter" p.4-46	PR

(6-a)Starting Board Manager Mode

Start up printer in board manager mode.
Follow the steps below to start up in board manager mode.

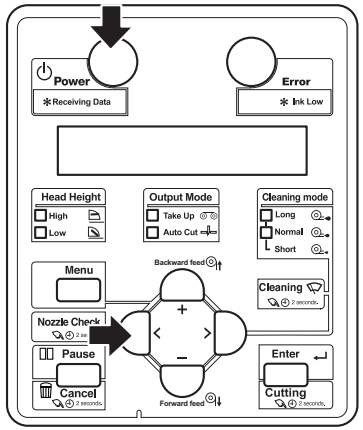
(6-b)Starting Board Manager Mode

Start up printer in board manager mode.

Follow the steps below to start up in board manager mode.

1. When printer is in operation status or in diagnosis menu display status, press [Power] key to OFF.
2. While holding down [<] key on Operation panel, press [Power] key to turn OFF.

   [Board Manager Mode] is displayed on LCD panel. Releasing the [<] key will display [Waiting for command].



NOTE

If the [Waiting for command] is not displayed, follow the steps below.

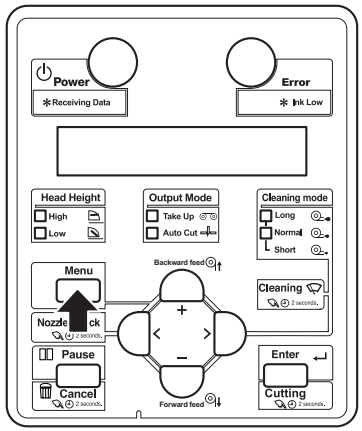
If any IP address other than default address is displayed on Board, release [<] key to change display to [IP192.168.xxx.xxx] (depending on the set address) on LCD panel. In this case, display the default IP (IP192.168.1.253) or the set IP address using the [+] key or [-] key, and press [Enter] key. [Waiting for command] will then appears.

(7) Printer IP Address Check

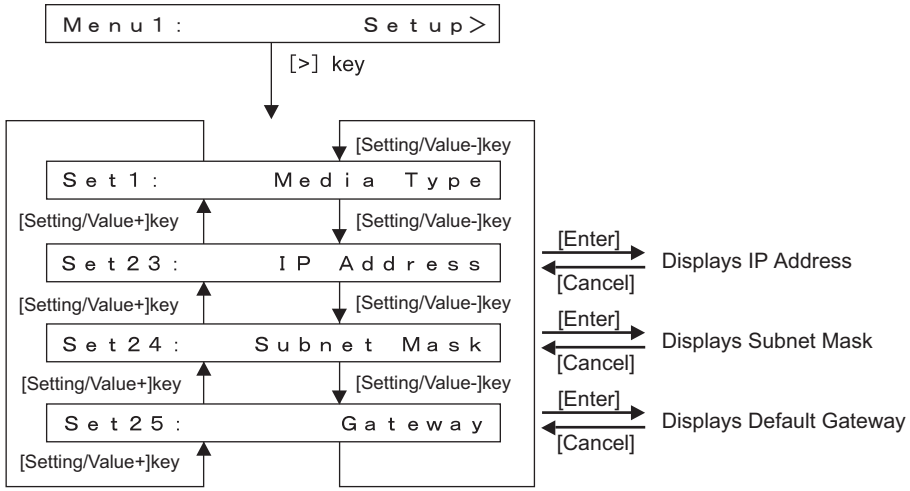
Printer IP address can be confirmed from either printer mode or board manager mode. Follow the steps below.

(7-a)Printer IP Address Check in Printer Mode

1. Start up the printer in printer mode.
2. Press [Menu] on Operation panel.



3. After LCD panel displays “Menu1:Setup>", confirm IP address, sub net mask, default gateway by following steps.



NOTE

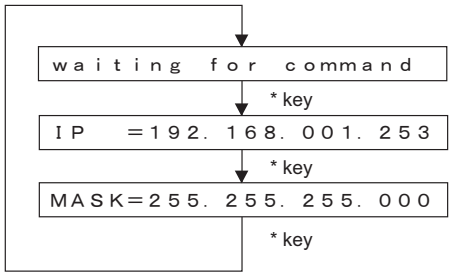
When “Set 23: IP address“ etc. does not appears, set up from “Menu 5: Easy Setup“ to display IP address and others.

☞『Operation Manual』

(7-b)Checking the printer IP address in Board manager mode

1. Start up printer in board manager mode.
2. While Power light is on, press any key other than [Power] key.

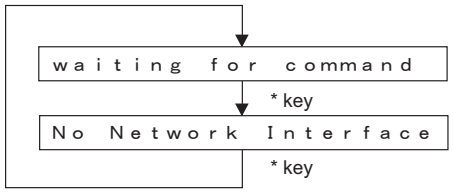
   IP address and sub net masks can be checked on the LCD monitor of Operation panel.



* key: any key other than [Power] key

NOTE

When Network interface card is not recognized because of its damage or contact failure, LCD display changes as shown in the right figure.



* key: any key other than [Power] key

(8) Computer IP Address Setting

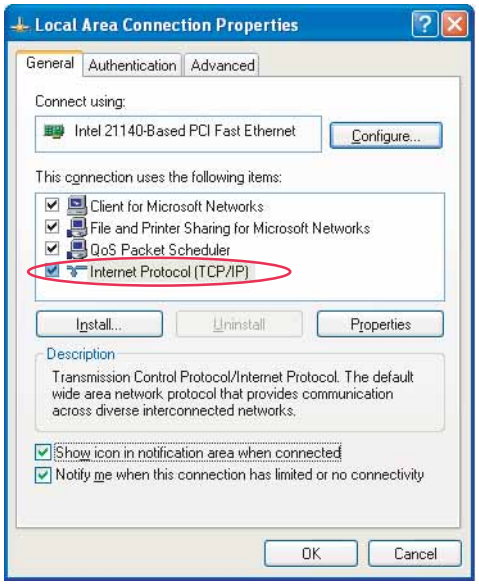
(8-a)Connecting with Crossover Cable

When directly connecting computer and printer, follow the steps as below.

NOTE

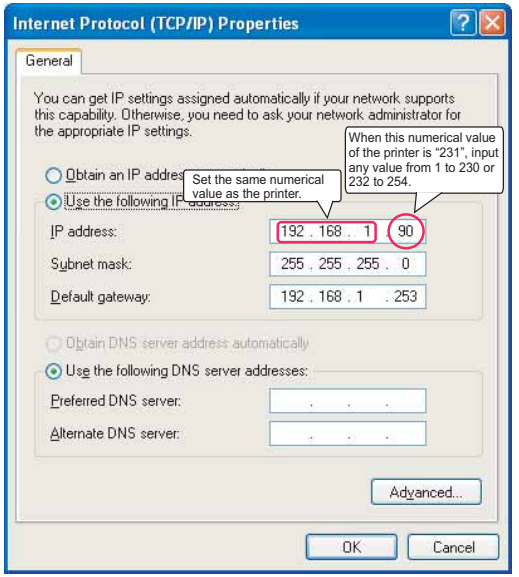
The following explains the procedure to set up on Windows XP keeping printer default IP address, “192.168.1.253”

1. From the [Control Panel], open [Network Connections].
2. Right-click [Local Area Connection] and select [Properties].
3. Double-click [Internet Protocol (TCP/IP)].



4. When printer IP address is “192.168.1.253“, enter any value of "192.168.1.1" to 192.168.1.252" or "192.168.1.254" in [IP address].

   *When printer IP address is changed to any other value, enter its value up to third dotted quad (third comma) in computer IP address field and enter different value for only last dotted quad.



5. Click [OK] to finish setting.

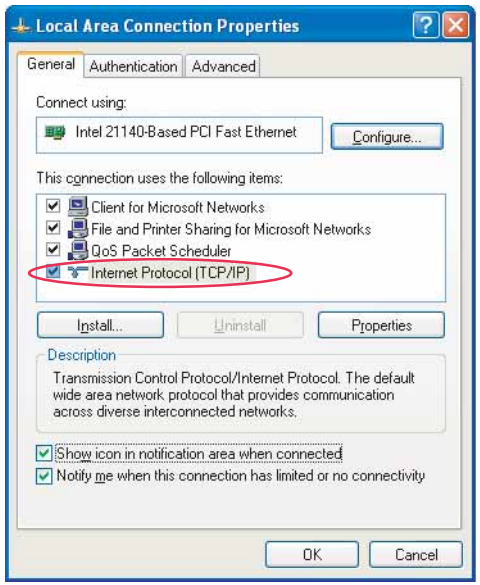
(8-b)Connecting with Straight Cable

When connecting computer and printer with straight cable (through hub, like LAN), follow the steps below.

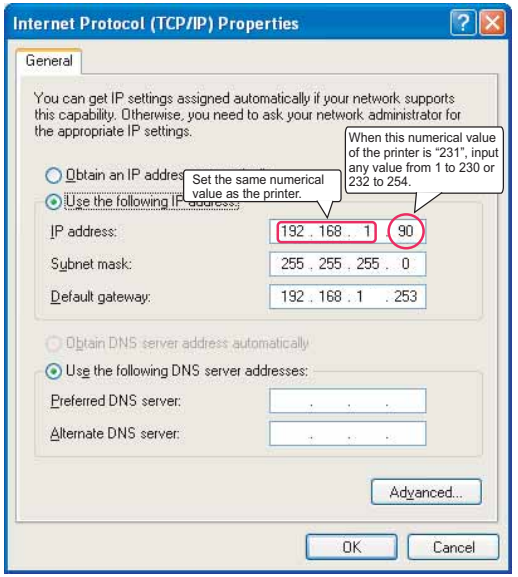
NOTE

The following explains the procedure to set up on Windows XP with printer IP address, “192.168.123.231”.

1. From [Control Panel], open [Network Connections].
2. Right-click [Local Area Connection] and select [Properties].
3. Double-click [Internet Protocol (TCP/IP)].



4. When printer IP address is “192.168.123.231“, enter any value from "192.168.123.1 to 192.168.123.230" or "192.168.123.232 to 192.168.123.254" in [IP address].
*In this case, IP address must be different from other PC IP address connected on the same hub

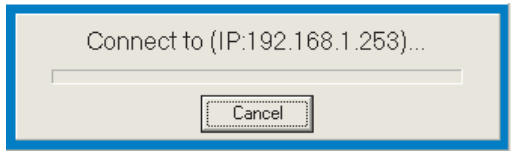


5. Click [OK] to finish setting.

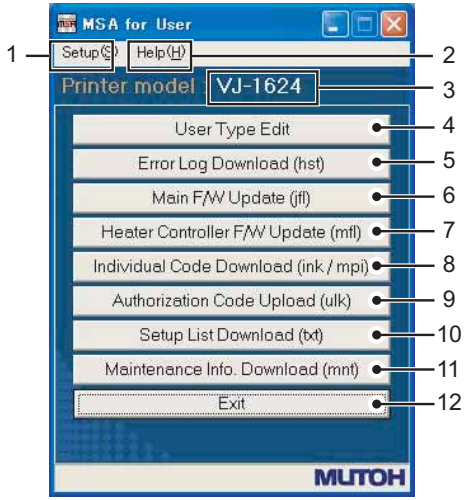
(9) Confirming Startup of the "MUTOH Service Assistance"

1. Double-click the [Shortcut to MUTOH Service Assistance.exe], and check that the application starts correctly.
   At the first startup, it shall be started in English mode.

2. Automatic printer model selection is started.
   (It displays IP address set by MSA.)
   - When [Cancel] is clicked, it appears the main window at the time of communication indefinite.
   - At the first startup, it shall be started in English mode.



3. After having chosen printer model, main window appears.

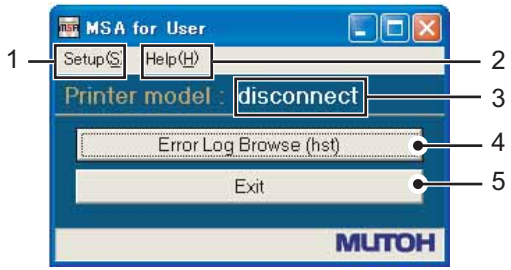


No.	Contents
1	Setting IP address, Selecting language, Automatic printer model selection
2	Confirming version of MSA.
3	Displaying chosen printer model name.
4	Editting “user type name”.
5	Acquring or Saving “ Error Log”.
6	Updating “Main F/W”.
7	Updating Heater Controller F/W”.
8	Acquring “Individual Code”.
9	Sending authorization code (.ulk file) sent by MUTOH Industries authorized dealer to a printer.
10	Acquring Setup information from a printer by a text file.
11	Acquiraing Maintenance information (.mnt file) from a printer.
12	Terminating the MSA.

TIP

・Following main window is displayed when it cannot communicate with a printer .

When [connection error] is displayed, refer to
☞**"2.2.7 Problems in Using MUTOH Service Assistance" p.2-61**



No.	Contents
1	Setting IP address. Changing language. Selecting printer model automatically.
2	Confirming MSA version.
3	Displaying “disconnect”.
4	Browsing “Error Log”.(It cannot be acquired from a printer.)
5	Terminating the MSA.

(10)IP address setting

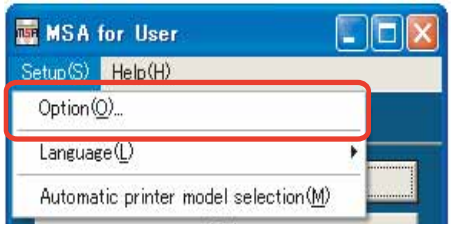
This section describes the procedure to set up IP address for MSA.
When indicated IP address is different from printer IP address, change IP address to match the printer IP address.

NOTE

The IP address default value for printer and MSA is set to "192.168.1.253". When the default value is used, the following setting in not needed.

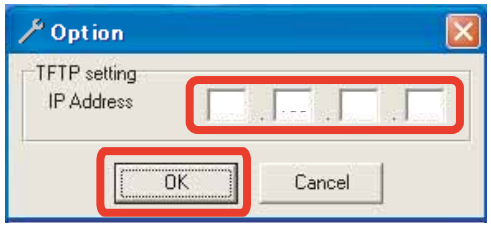
Follow the steps below to set the IP address.

1. Select [Setup (S)] - [Option (O)] on the main window.



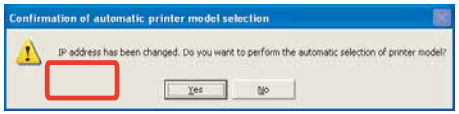
2. Input the IP address in the field with red mark. IP address is the same with computer's.

   When IP address is changed, [Automatic model selection confirmation] window appears.



3. Click [Yes] to use Automatic selection.
   Model name shall be changed to the name of the connected printer model.

   *This window appears only when IP address is changed.



(11)Language setting

Menu and message can be shown in either English or Japanese which can be selected. Change shall be activated when program is restarted.
Follow the steps below to change language.

1. Select [Setup (S)] - [Language (L)] form the main window.

2. Click [OK] on [Confirmation of language switching] window.

   Application shall be terminated automatically.

NOTE

- When English mode is selected, [Setup(S)] on menu changes to "Setup (S)".
- The language displayed at the initial startup of MSA depends on the language setting of your OS.(When the language setting of your OS is set to a language other than Japanese, MSA is displayed in English.)

(12)Switching to Technician Mode

MUTOH Service Assistance is in MSA for User (User mode) at the time of start-up. Switch it to MSA for Technician (Technician mode) when performing maintenance operations.

CAUTION

Do NOT disclose the procedure to switch Technician mode to the user.
This mode is approved to use only by maintenance engineers.

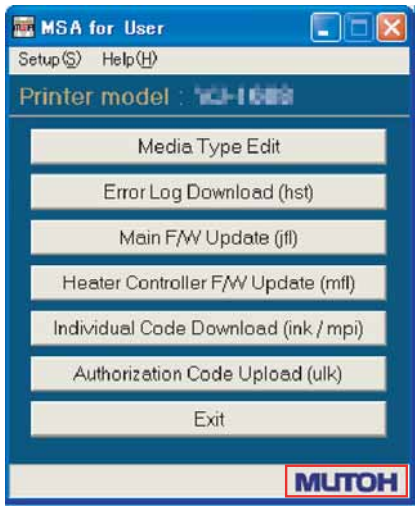
1. On User mode main window, click [Help] - [Version].

   [Version information] window appears.

2. Double-click the MUTOH logo (1) and then the MSA icon (2).

   Then click [OK].

3. Double click [MUTOH].
   Login window will be displayed.

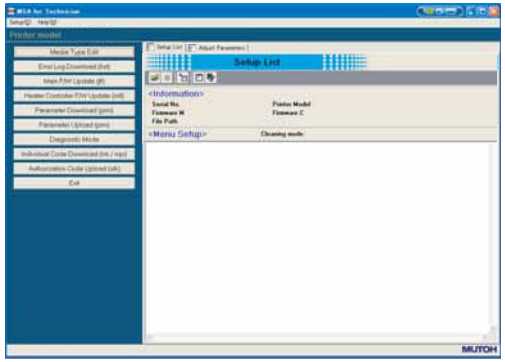


4. Enter User ID and Password.
   Then click [Login].

CAUTION

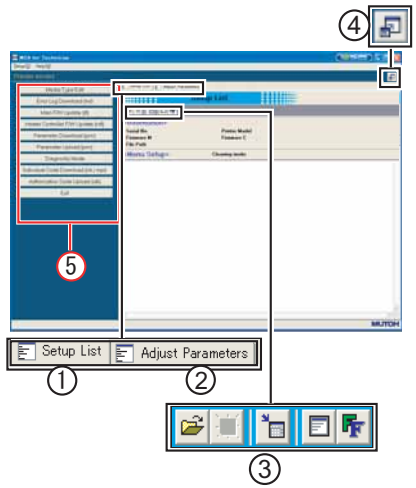
Login name and password is not disclosed in this manual.
Contact MUTOH INDUSTRIES dealer.

5. The main screen of Technician mode will be displayed.



TIP

The main window is changed with the tab of the right figures ① and ② .
①、Setup List
②、Adjust Parameter
③、Speed button
④、Changing the size of the Main wiondow
⑤、Function button



1. In [Setup Information] window, you can refer to the following:
   - Setup information of the printer
   - Setup information of the printer read by the saved parameters

2. In [Adjustment Parameters] window, you can refer to the following:
   - Printer adjustment parameters
   - Printer adjustment parameters by the saved parameters

3. Use the speed buttons (Number 3 in the figure) to save files. (Common to all windows.)

	Lists up the information acquired from the parameter file.
	Saves the listed information as plain text.
	Lists up the information acquired from the printer.
	Clears the listed information.
	Changes the font of the listed information.

4. Changing the size of the Main window.
5. Details of each function button

button name	refer to (details)
Date and Time Update	☞"4.3.4 Updating Date and Time" p.4-18
Media Type Edit	☞"4.3.5 Editing Media Type" p.4-19
Error Log Download (hst)	☞"4.3.6 Acquiring and Saving Error Log" p.4-21
Main F/W Update (jfl)	☞"4.3.7 Updating main firmware" p.4-23
Heater Controller F/WUpdate (mfl)	☞"4.3.8 Updating Heater Controller Firmware" p.4-24
Parameter Download(prm)	☞"4.3.9 Receiving Backup Parameters" p.4-25
Parameter Upload(prm)	☞"4.3.10 Sending Backup Parameter" p.4-26
Board Replacement Wizard	☞"4.3.11 Board Replacement Wizard" p.4-27
Diagnostic Mode	☞"4.3.12 Remote Panel Mode" p.4-33
Individual Code Download(ink/mpi)	☞"4.3.13 Acquiring Printer Identification Data" p.4-41
Authorization Coce Upload(ulk)	☞"4.3.14 Sending Authorization code" p.4-42
Inactivation	☞"4.3.17 Initializing activation" p.4-48
Exit	☞"4.3.19 Terminating Application" p.4-49

NOTE

If User mode is started in English mode, Technician mode also starts in English mode. If the language mode is switched from “Setting (S)” - “Language (L)” in Technician mode, you will need to login again.

(13)Optional Function for Technician Mode

In Technician mode, the following can be done from “Option” window.

- Selecting appropriate model manually
- Check and confirmation of MSA IP address

NOTE

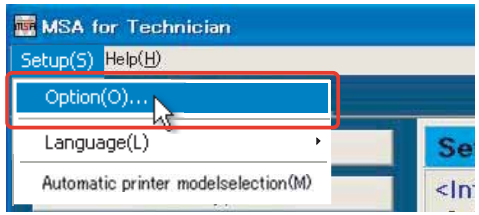
MSA has a function to automatically recognize model so that manual model select function is normally not required.

Manual function is limited to use especially when installing the new firmware in a Board without any firmware in it.

1. Start [MUTOH Service Assistance.exe] from shortcut on desktop window.

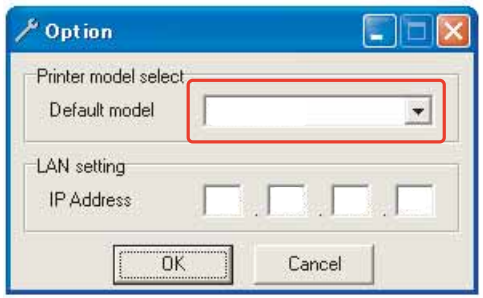
2. Switch to Technician mode.
☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

3. From main window, select [Setup(S)] - [Option(O)].



4. Select appropriate model name from drop-down menu for “Model name”.

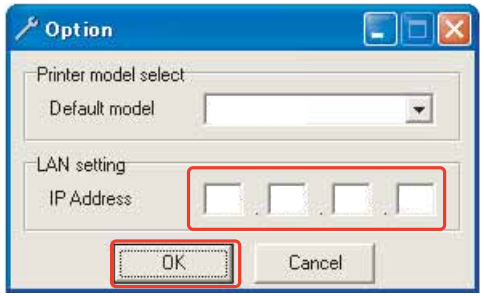
   After model is selected, model-specific functions are operable.



5. Confirm IP address is the same with printer IP address in IP address field.

   After confirmation, click [OK].

   If an IP address that is different from that of the printer is displayed, change it to the same IP address as the printer, and then click on “OK”.



4.3.4 Updating Date and Time

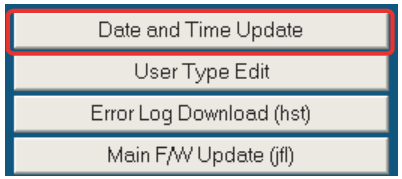
This section explains the operating procedure which updates the date and time of a printer using MSA.

NOTE

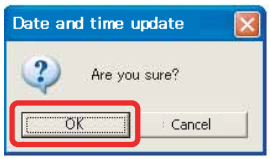
Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Date and Time Update]on main window.



2. Click ［OK］ to send the systemtime of the computer to the printer, as the data of year, month, day, and time.



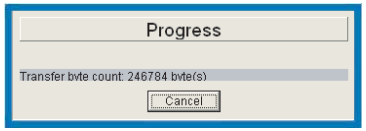
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

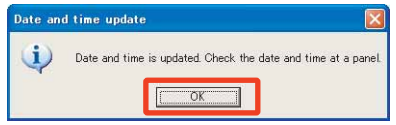
In both cases, communication with printer shall be interrupted.

Click [OK] to return to main menu.

3. Once transmission has started, the 「Progress」 window is displayed.



4. Once transmission has completed, the 「Date and time update」window is displayed.Click [OK] to close the window.



5. Make sure that the time displayed on thepanel of the printer has beed changed.
   ☞"5.5.10 Time Check Menu" p.5-24

4.3.5 Editing Media Type

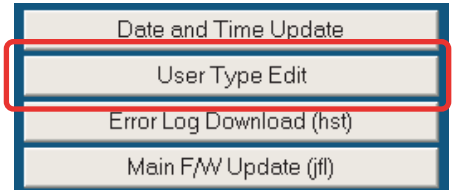
This section describes the procedure to customize media name for user.

NOTE

Before this procedure, make sure to prepare the following:

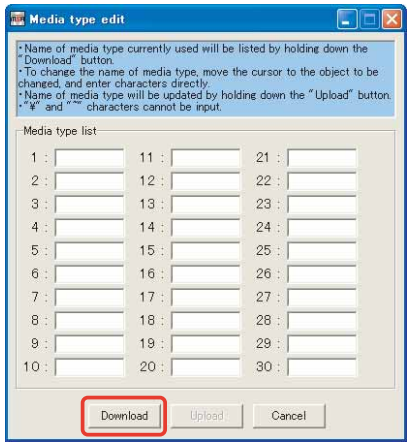
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Media Type Edit]on main window.



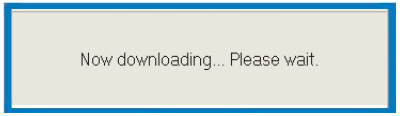
2. When [Media Type Edit] window appears, click [Download].

   Click [Cancel] to return to the main window.

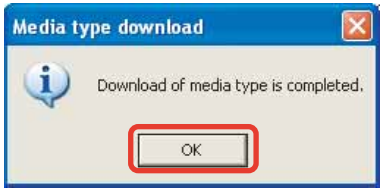


3. When [Media type download] window appears, click [OK].

4. When acquisition starts, [Process dialog] window appears.

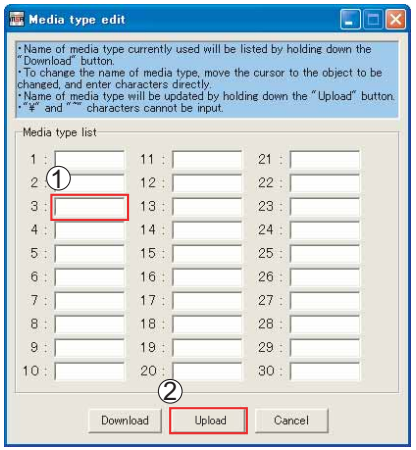


5. After media names are acquired, [Media type download] window appears.
   Click [OK] to return to [Media type download] window.



6. Edit user media name ① . After editing completed, click [Upload] ② .

   *UP to 10 characters can be entered. Delete unwanted character by entering space. “¥(back slash)” and “~ (tilde)” cannot be entered.



7. On [Media type upload] click [OK].

   Media name update starts.

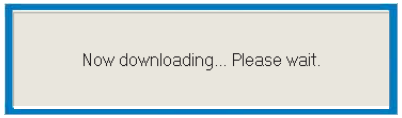
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

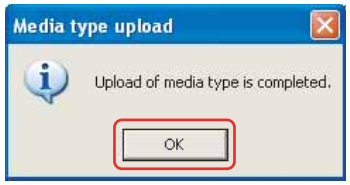
Click [OK] to return to main window.

8. When Update starts, [Process dialogue] window appears.



9. Confirm completion of update on [Media type upload] window, click [OK].

   Return to [Media Type Edit] window.



4.3.6 Acquiring and Saving Error Log

This section describes how to acquire and save error log on printer accessed to Technician mode.

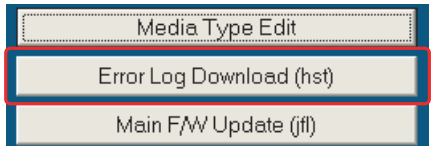
NOTE

Acquiring and saving error log can be processed form printer mode or Manager mode.
Before this procedure, make sure to prepare the following:

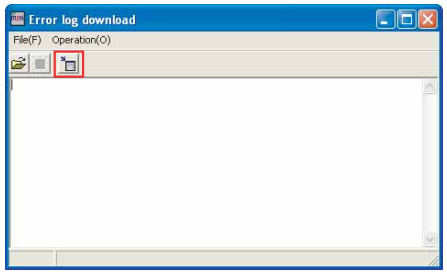
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.

  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Error Log Download]on main window..



2. Click  on [Error log download].



NOTE

You can also get the data by selecting [Operation] - [Download] from［Error log download］window.

3. On [Confirmation of error log download] window, click [OK].

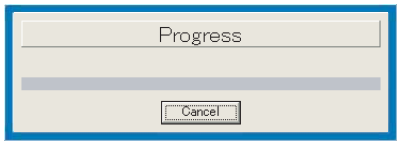
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.

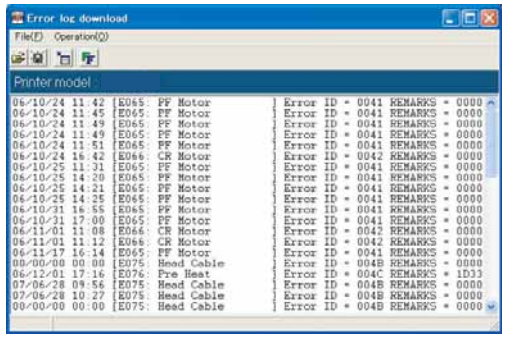
4. While downloading error log, [Communication situation] window appears.



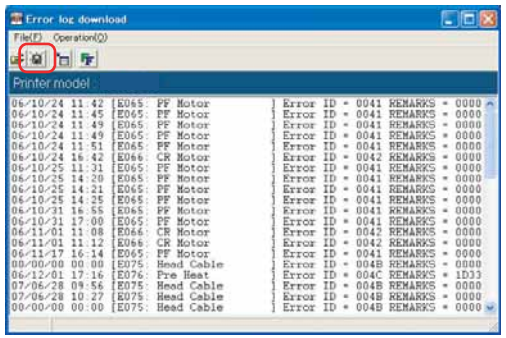
5. After completion of acquiring failure record information, [Error log download] window appears.
   Click 「OK」.

6. After completion of acquiring failure record information, [Error log download] window appears.

   If there is no failure record in printer, [<No data>] appears on [Error log download] window.



7. If saving the data, click  on [Error log download] window.

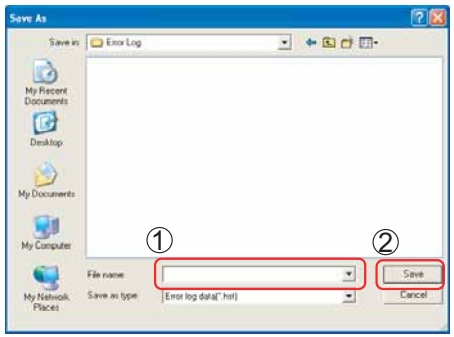


NOTE

You can also save the data by selecting [File] - [Save as] from [Error log download] window.

8. On [Save as] window, enter desired file name ① and click [Save] ② .

   The File extension will be *hst.



TIP

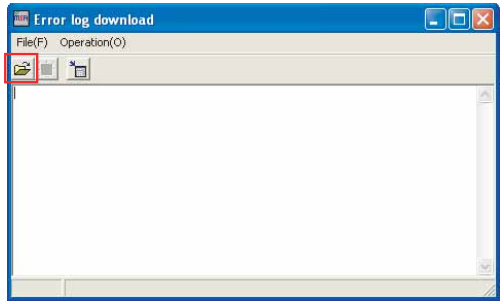
You can also save the data by selecting [File] - [Save as] from [Error log download] window.

NOTE

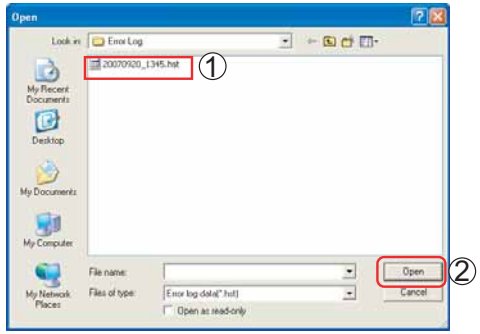
To reference failure record information, proceed as follows.

1. Click  on [Error log download] Window.

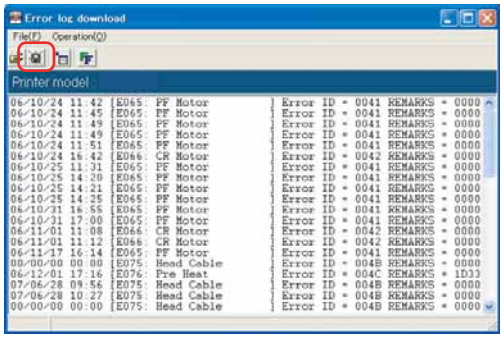
   Also form ［File］ - ［Open］ is the same.



2. Click appropriate failure record information file (*.hst) ① and click [Open] ② .



3. Record data appears on [Error log download] window.



4.3.7 Updating main firmware

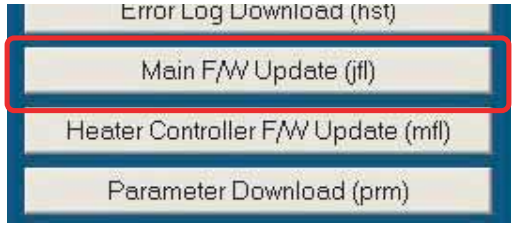
The following describes the procedure to update main side firmware accessed to Technician mode without replacing Main board Assy.

NOTE

Before this procedure, make sure to prepare the following:

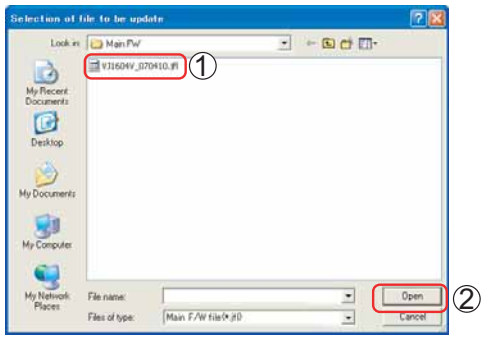
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Main F/W Update] on main window.



2. Select and click target install file (*jfl) to transfer ① and click [Open] ② .

   * Press [Cancel] to return to the main window.



3. On [Main F/W update], click [OK].

   *Press [Cancel] to return to the main window.

NOTE

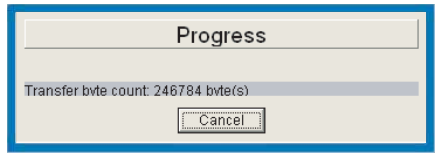
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

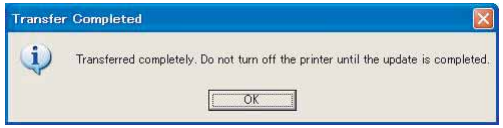
Click [OK] to return to main window.

4. While firmware transfer is in process, [Communication situation] window appears.

   *Press [Stop] to stop transfer and return to the main window.



5. After [Transfer completed] window appears, click [OK] to close.



CAUTION

When “Main F/W update” windows appears on step 5, only transfer of install file from MSA for Technician to printer is terminated but program installation to printer is not terminated. DO NOT turn off the printer unless installation to printer is terminated. After program installation completes, Main board buzzer rings 3 times.

4.3.8 Updating Heater Controller Firmware

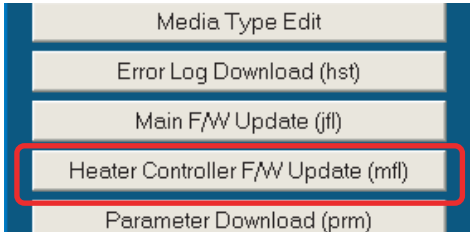
This section describes procedure to update heater controller firmware on Technician mode.

NOTE

Before this procedure, make sure to prepare the following:

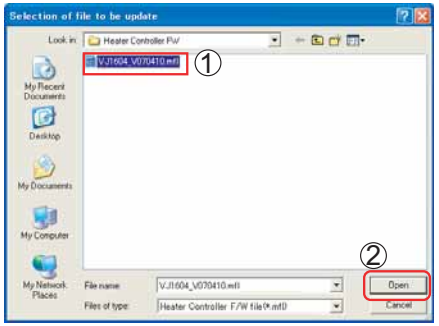
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Heater Controller F/W Update]on main window.



2. Select and click target install file (*mfl) to transfer ① and click [Open] ② .

   * Press [Cancel] to return to the main window.



3. On [Heater controller F/W update], click [OK].

   *Press [Cancel] to return to the main window.

NOTE

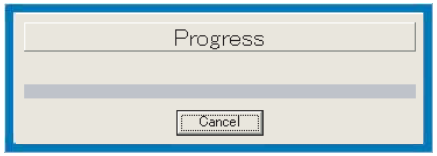
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

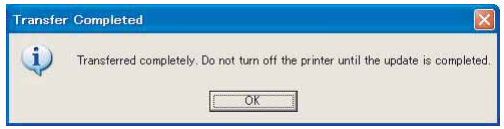
Click [OK] to return to main window.

4. When firmware installation is in process, [Communication situation] window appears.

   *Press [Cancel] to return to the main window.



5. After [Transfer completed] window appears, click [OK] to close.



CAUTION

When “Heater controller F/W update” window appears on step 5, only transfer of installation file from MSA for Technician to printer is terminated but program installation to printer is not terminated. DO NOT turn off power unless installation to printer is terminated.

After program installation completes, Main board buzzer rings 3 times.

4.3.9 Receiving Backup Parameters

This section describes the procedure to receive backup parameter from the printer by using Technician mode.

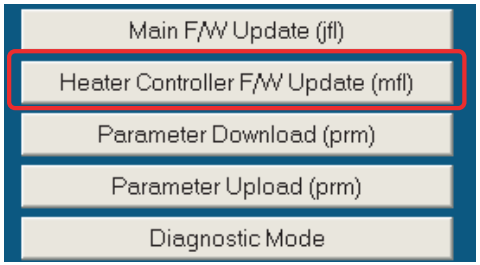
NOTE

Saving backup parameter and main board inheritance information acquisition can be processed both from printer mode and board manager mode.

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6

1. Click [Parameter Download] on main window.



2. Click [OK] on [Parameter Download] window to start receiving backup parameters.

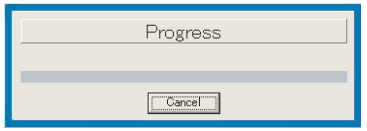
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

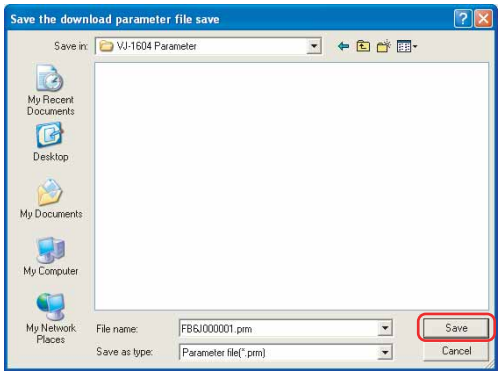
Click [OK] to return to main window.

3. While receiving Parameters, [Progress] window appears.



4. Enter any file name and click [Save] on [Save the download parameter save] window. (File shall be saved in ".prm" extension form automatically.)

*File name can be anything.
** Click [Cancel] to return to the previous window without saving.



5. On [Parameter download] window, click [OK] to close the window.

4.3.10 Sending Backup Parameter

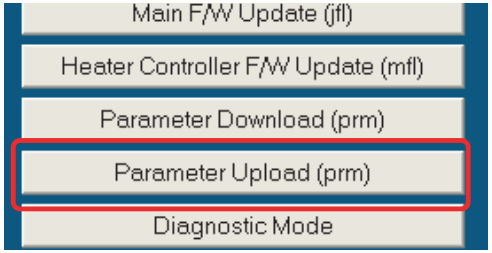
This section describes the procedure to send backup parameters by using Technician mode.

NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Parameter Upload (prm)] on main window.

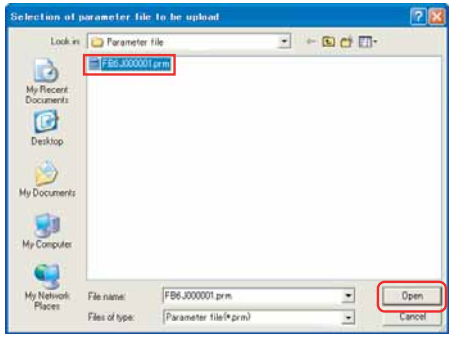


2. The [Selection of parameter file to be uploaded] window appears.

   Select and click appropriate parameter file and click [Open] to send.

   * Any extension except *.prm is invalid.

   **Click [Cancel] to stop sending and return to the main window.



NOTE

If clicking [Open] to select any file not saved in *.prm extension file, an error message appears and return tothe main window.

3. Click [OK] on “Parameter upload“.

NOTE

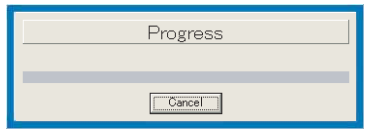
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.

4. When parameter sending is in process, [Progress] window appears.

   *Click [Cancel] to return to the main window without saving.



5. Click [OK] on [Parameter upload].

4.3.11 Board Replacement Wizard

This section describes Board replacement wizard which support replacing MAIN board Assy.

NOTE

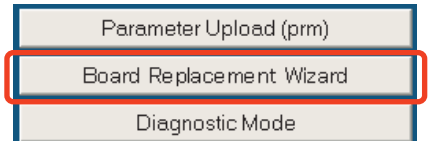
- About mounting alternative MAIN board, refer to ☞"3.4.11 Replacing MAIN Board Assy" p.3-53.
- When completing Board replacement wizard normally, Printer Identification DATA is saved automatically at the end of the wizard.Make sure to upload saved mpi file to MB-web server, then update the Printer Identification DATA.
  If you fail to update, printer user does not receive services such as Smart/C.
- Install the latest firmware using the latest MSA.

1. Start up the printer in board manager mode.
   ☞"(6-b) Starting Board Manager Mode" p.4-9
2. Connect PC to the printer.
   ☞"(8) Computer IP Address Setting" p.4-11

NOTE

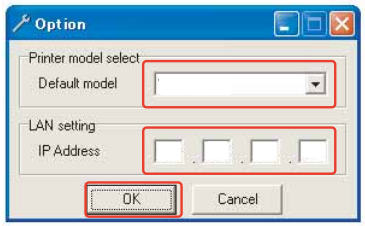
When using Board replacement wizard, set the Ip address of PC to [192.168.1.1] and set the IP address of printer to[192.168.1.253].

3. Start up the MSA in Technician mode.
   ☞"(12) Switching to Technician Mode" p.4-15
4. Select the［Board replacement wizard].



NOTE

- Before selecting [Board replacing wizard], it is necessary that the printer model for board replacement is selected in MSA.
- After confirming the printer model for board replacement is correct on [Printer model] of [Option] of [Setup], selected [Board replacement wizard].
- On the same window, confirm that [LAN setting] is set to [192.168.1.253].



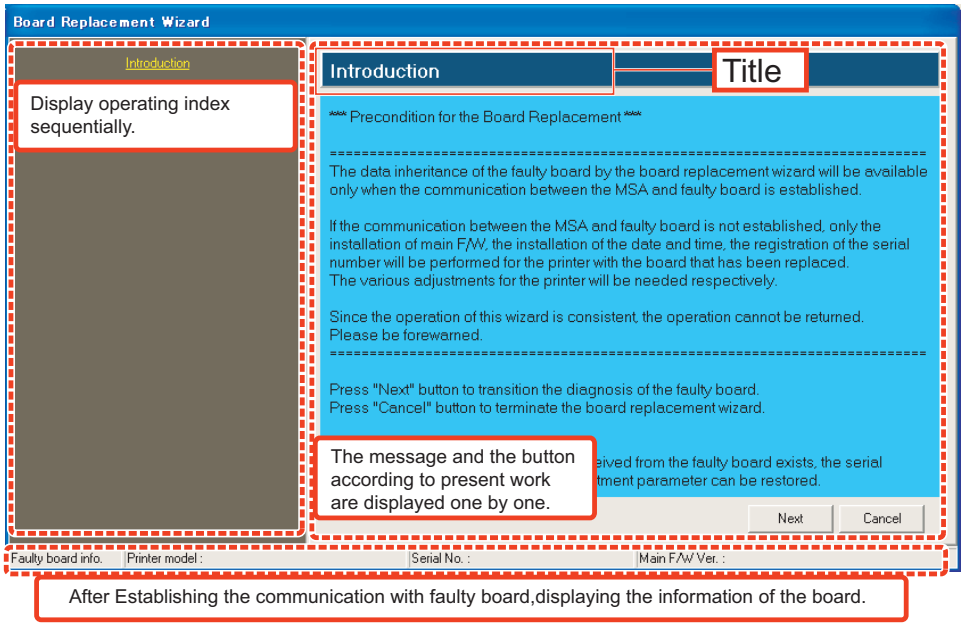
- Confirm that the printer is running in board manager mode.

5. Confirm the printer model for board replacement ① .
   Then click ［OK］② .

6. After displaying Board replacement wizard window, work by messages.

NOTE

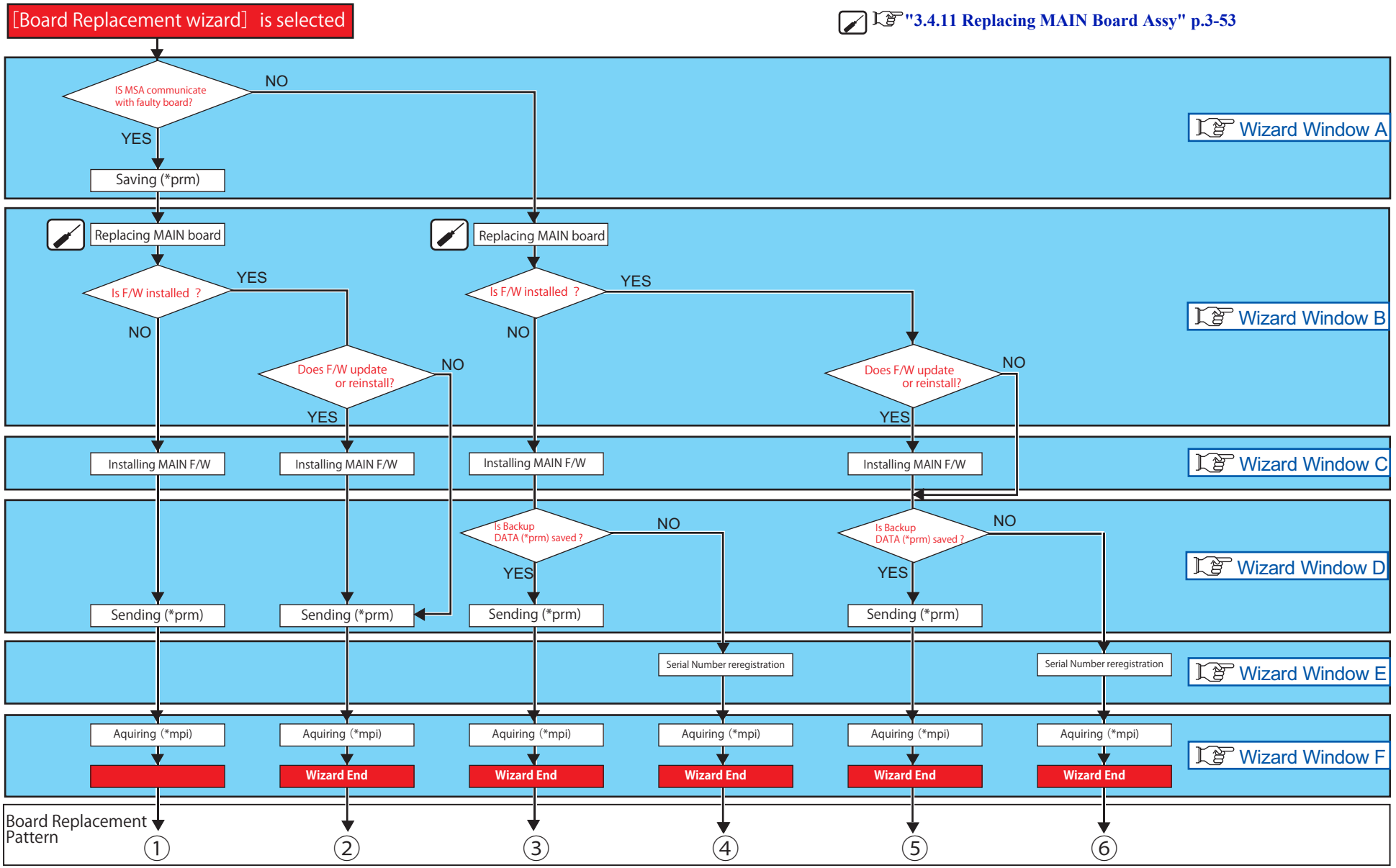
Work contents are different by the conditions of malfunction board and alternative board.
☞"(1) Flow Chart of Board Replacement Wizard" p.4-28



After Establishing the communication with faulty board,displaying the information of the board.

7. After finishing the wizard, doing various adjustment works to complete the replacing MAIN board Assy.
   ☞"(2) List of adjustment operations after replacing the board for each board replacement pattern" p.4-29

(1) Flow Chart of Board Replacement Wizard



"(2) List of adjustment operations after replacing the board for each board replacement pattern" p.4-29

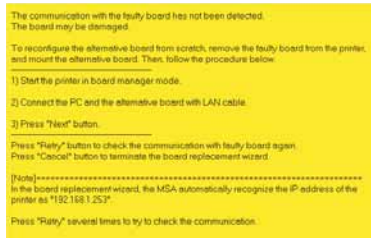
(2) List of adjustment operations after replacing the board for each board replacement pattern

sequence	Adjustment Items	Refer to	Board replacement pattern ①	②	③	④	⑤	⑥
1	Requiring Printer Identification DATA (mpi file)	☞"4.3.13 Acquiring Printer Identification Data" p.4-41	–	–	●	●	●	●
2	Resending Authorization code (ulk file)	☞"4.3.14 Sending Authorization code" p.4-42	–	–	●	●	●	●
3	Updating (*mpi) on the MB-web	☞Printer Activation guide	●	●	●	●	●	●
4	Resetting Smart/C	☞Printer Activation guide	–	–	●	●	●	●
5	Inputting Head rank	☞"(2) Head Rank" p.5-60	–	–	–	●	–	●
6	Adjusting Paper edge sensor	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59	●	●	●	●	●	●
7	Adjusting Paper Rear Sensor	☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59	●	●	●	●	●	●
8	Setting Ink-NOT Filled Flag	☞"(5) Ink filled flag" p.5-63	–	–	–	●	–	●
9	Confirming Head nozzles	☞"5.7.2 Head Nozzle Check Menu" p.5-30	●	●	●	●	●	●
10	Adjusting Uni-D/Bi-D	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39	–	–	–	●	–	●
11	Adjusting Top & Side	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47	–	–	–	●	–	●
12	Test Printing	☞"5.7.8 Test Printing Menu" p.5-48	●	●	●	●	●	●

● : Need to work ／ – : Need not work

(3) Wizard window（according to Flow chart)

(3-a)Wizard Window A

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
●	●	●	●	●	●	**Introduction**	Click Next	-
						Diagnosis of the faulty board	It diagnose whether it can communicate with faulty board. After settings, click Next.	-
						Diagnosing the faulty board	-	**Do not turn off the printer.**
●	●	-	-	-	-	Is MSA communicate with faulty board ? → When YES:		
						Data back up of the faulty board	Click Get prm, After acquiring, click Next.	-
						Making the faulty board data back up	After completing Back up ,proceed to,☞**"(3-b) Wizard window B" p.4-31**	**Do not turn off the printer.**
-	-	●	●	●	●	IS MSA communicate with faulty board? → When NO:		
						Diagnosis of the faulty board	Click Retry when reconfirming the communication with the faulty board. Click Next when not performing the above work. Proceed to ☞**"(3-b) Wizard window B" p.4-31**	Display Yellow window. 

☞"(1) Flow Chart of Board Replacement Wizard" p.4-28

(3-b)Wizard window B

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
●	●	●	●	●	●	**Attachment and diagnosis of the alteranative board**	Replace MAIN board Assy. ☞**"3.4.11 Replacing MAIN Board Assy" p.3-53** ↓ After replacing, Click [Next].	**Do not turn off the PC.**
						Diagnosing the alternative board	Diagnoses whether main F/W is installed.	**Do not turn off the printer.**
-	●	-	-	●	●	Is F/W installed? → If YES:		
						Attachment and diagnosis of the alteranative board	When reinstalling or updating main F/W, click [Re-install]. Proceed to☞**"(3-c) Wizard window C" p.4-31** Click [Skip] when not performing the above work. Proceed to ☞**"(3-d) Wizard windowD" p.4-32**	Display Green window. The main F/W is already installed on the alternative board. In order to update or re-install the main F/W, press "Re-install" button Press "Skip" button to skip the installation of main F/W. Press "Cancel" button to terminate the board replacement wizard.
●	-	●	●	-	-	Is F/W installed? → If NO:		
						Proceed to ☞**"(3-c) Wizard window C" p.4-31**		

(3-c)Wizard window C

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
●	●	●	●	●	●	**Installation of main F/W**	After Clicking [Refer] to select main F/W, clicking [Next] to start installing.	• When main F/W is not installed, clicking [Next] without selecting main F/W. Proceed to ☞**"(3-d) Wizard windowD" p.4-32**
②⑤ are only is selected. [Re-install]						**Installing the main F/W**	After completing, proceed to ☞**"(3-d) Wizard windowD" p.4-32**.	**Do not turn off the printer.**

☞**"(1) Flow Chart of Board Replacement Wizard" p.4-28**

(3-d)Wizard windowD

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
●	●	-	-	-	-	Sending of the back up data	Click Next to send “*.prm”.	-
-	-	●	●	●	●	Sending of the back up data	When there is ".prm" data saved before, click Restore to send it. When there is no ".prm" data saved, click Skip. Proceed to ☞"(3-e) Wizard window E" p.4-32	When Skip is clicked, the ".prm" data is not sent.
●	●	●	-	●	-	Sending the back up data	After sending the ".prm" data, proceed to ☞"(3-f) Wizard window F" p.4-32.	Do not turn off the printer.

(3-e)Wizard window E

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
-	-	-	-	●	●	R-registration of the serial number	Click Next to register the serial number.	Register the same serial number as the faulty board.
						Registering the serial number	「After registering the "serial number", proceed to ☞"(3-f) Wizard window F" p.4-32	Do not turn off the printer.

(3-f)Wizard window F

Board replacement pattern ①	②	③	④	⑤	⑥	Board replacement window（Title）	work contents	NOTE
●	●	●	●	●	●	Termaination	After the wizard ends, click Get prm to acquire the ".mpi" data. After acquiring the ".mpi" data, perform various adjustments. ☞"(2) List of adjustment operations after replacing the board for each board replacement pattern" p.4-29	-

☞"(1) Flow Chart of Board Replacement Wizard" p.4-28

4.3.12 Remote Panel Mode

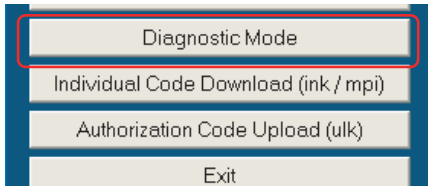
This section describes the procedure to use remote panel mode on Technician mode.
Each function can be monitored on each window and those windows can be displayed at the same time.

NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

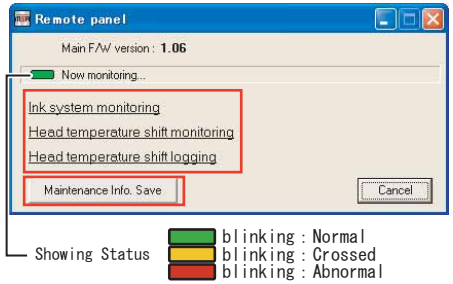
1. Click [Remote panel mode] on main window.



2. Click appropriate function to monitor.

   *Click [Cancel] to return to the main window.

3. Click "Maintenance Information Save" to save maintenance information.
   ☞"(6) Saving the maintenance information" p.4-40

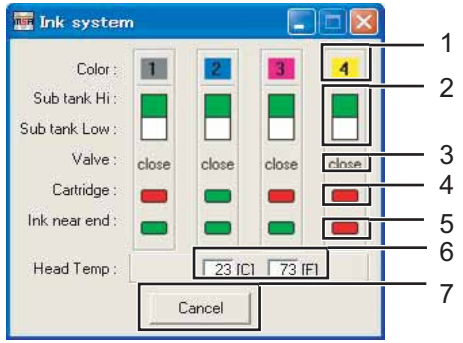


NOTE

The monitoring information is acquired every time seconds from the printer through the「Remort Panel」.When a communication error has occurred, the communication status changes to red, and an error message [Communication error] is displayed.

(1) Ink System Monitoring

Click [Ink system monitor] on [Remote panel] to indicate the condition of connected printer ink system.



No.	Part name
1	Ink color indication
2	The condition of Sub tank sensor is displayed. Green: Sensor ON White: Sensor OFF
3	The condition of Two-way solenoid is displayed. open : Two-way solenoid is open close : Two-way solenoid is closed
4	Condition of cartridge Green: Cartridge exists Red : No Cartridges
5	Display the existence of Smart chip card. Green: Normal Red : Ink near End
6	Head Temperature (C = Celsius, F = Fahrenheit)
7	Cancel monitoring

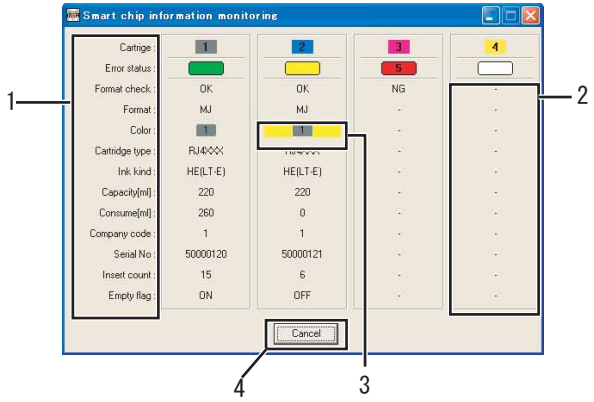
NOTE

Grayed out when some sensors are malfunctioning and their monitoring information is invalid.

Also grayed out when the function does not apply to the model.

(2) Smart chip monitoring

Click [Smart chip monitoring] on [Remort panel] window to indicate the condition of the connected printer cartridge.



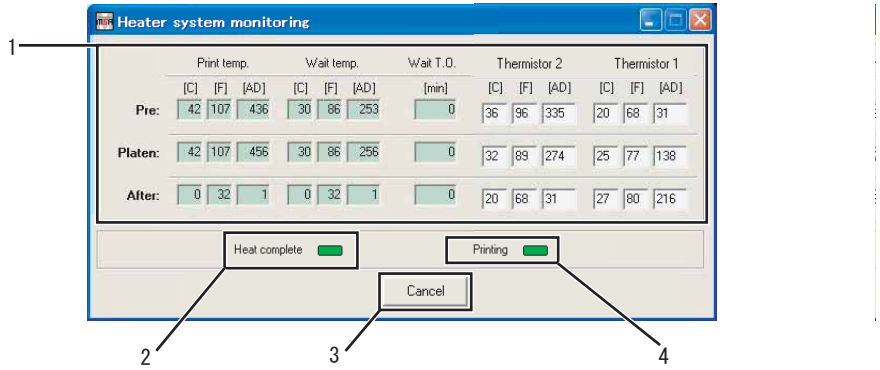
No.	content	
1	Error status	No errors Recoverable error (the target item is displayed in yellow) Non-recoverable error (the error number is displayed) Not supported Cartridge is not inserted
	Format Check	OK：Normal、NG：Abnormal
	Format	-
	Color	Indicating inserted cartridge color （When the cleaning cartridge inserted, the display is gray.）
	Ink type	-
	Ink kind	Ink category
	Capacity(ml)	Ink Volume(ml)
	Consume (ml)	Consumed amount of Ink (ml)
	Company code	-
	Serial No	-
	Insert count	Plug in / off counter
	Format Check	OK：Normal、NG：Abnormal
2	Displaying no message when the cartridges are not installed.	
3	Indicating an ink cartridge of wrong color is inserted in the cartridge slot.	
4	Cancel monitoring.	

NOTE

- Grayed out when some sensors are malfunctioning and their monitoring information is invalid.
  Also grayed out when the function does not apply to the model.
- When the monitoring information is invalid due to smart chip read error, etc, [NG] is displayed in [Format Check], and [-]is displayed in other items.

(3) Heater System Monitoring

Click [Heater monitoring] on [Remort panel] to indicate the condition of connected printer heater system



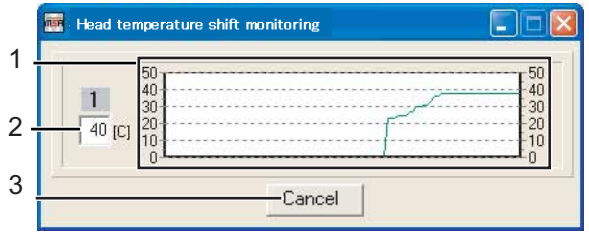
No.	Content
1	Followings are indicated for preheater, platen heater, Dryer in order from top. Preset printing temperature Preset stand-by temperature Preset stand-by limit time Thermistser 1,2 *In addition, Temperatures are indicated in C=Celsius, F=Farlenheit. AD value is reference value.
2	When thermistor reaches to preset temperature, the indication changes to green.
3	Cancel monitoring
4	After heating completes and starts printing, the indication changes to green.

NOTE

When monitoring information is invalid because of any sensor errors, thermistor temperature indication shall be the default value of 20 °C (68°F).

(4) Head Temperature Transition Monitoring

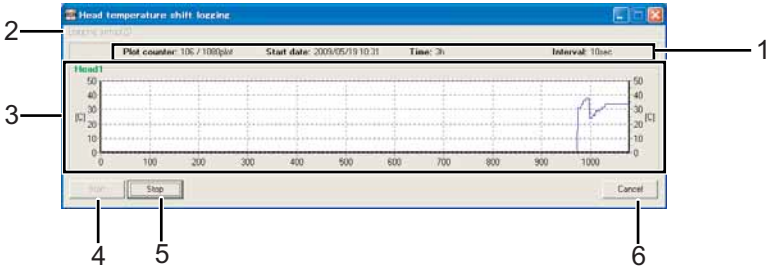
Head temperature transition of the connected printer can be monitored.
[Head temperature transition] graphs vary depending on the number of the print heads.



No.	Part name
1	Displays the head temperature at every 3 seconds for 5 minutes.
2	Displays the current head temperature (°C).
3	Stops monitoring.

(5) Head temperature transition logging

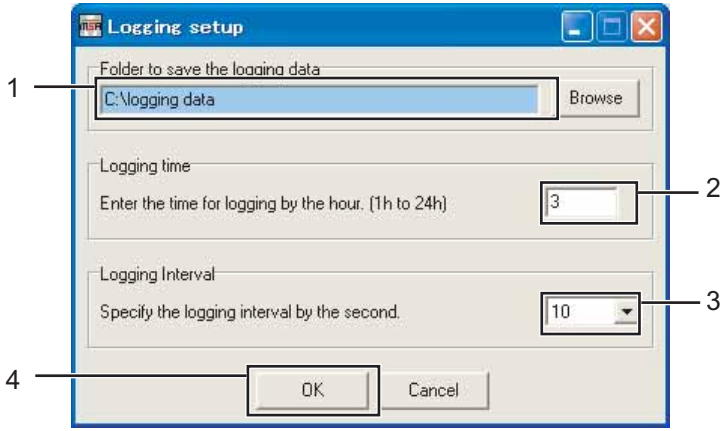
The transition of the head temperatures of the connected printer can be logged in.
Every head on the printer is displayed in the graph of [Head temperature transition].
Press the start button to start logging.



No.	Part name
1	Logging details are displayed. • Measuring counter • Starting date • Time • Interval
2	Make settings for logging.
3	Displays the transition of head temperatures.
4	Start logging.
5	Stop logging.
6	Stop logging, and close the logging window.

(5-a)Logging setting

Select Logging setting menu to open the Logging setting window.



No.	Part name
1	Set up the destination folder to save logging data.
2	Enter the time for logging.
3	Enter the interval of logging.
4	Save the setting.

TIP

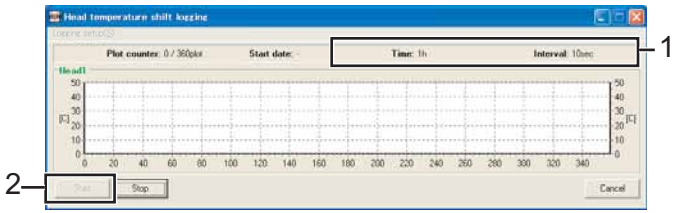
Logging data is sorted by head and saved in plain text format.

(5-b)Logging method

First, set the conditions in the Logging setting menu.

☞"(5-a) Logging setting" p.4-38

1. Check the time and interval.
2. Press the Start button.

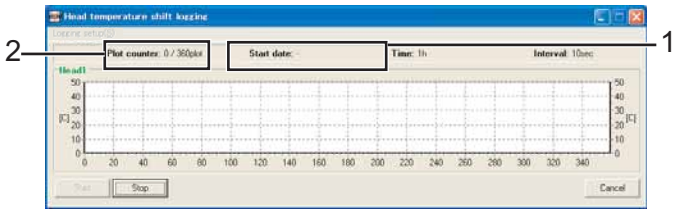


TIP

If the logging data save folder is not set before pressing Start button, an error message is displayed.

3. The message box is displayed to confirm the start of logging.
   Click [OK].

4. Logging starts.



5. Logging starts date is registered.
6. Measuring counter starts counting up.

TIP

The logging data is saved in the designated folder every time it is logged in. Even when logging is interrupted by clicking the [Finish] or [Cancel] button, the logging data up to that point is saved.

7. When more than the set time has passed, a message box is displayed to confirm the end of logging.

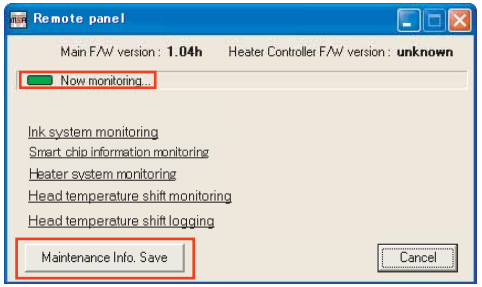
8. Click OK to go back to the Head temperature transition logging window and confirm the logging data in the save folder.

TIP

The saved file name for the logging data is “Head_*_Tmp_Log.txt” (* is the head number).

(6) Saving the maintenance information

1. Make sure that monitoring is done normally.
2. Click [Maintenance Info. Save].



3. Click [OK] to start acquiring the maintenance information.

   * Click [Cancel] to return to the "Remote panel" window.

NOTE

Monitoring is stopped temporarily while the maintenance information is saved.

4. After acquiring the information, the "Name and save" window is displayed.

   The serial number of the printer and the date are set as default, but you can change it.

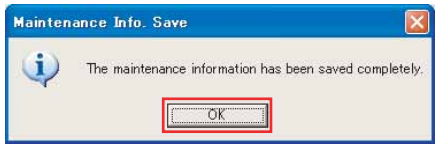
   Specify the location to save the data and click [Save].

   Click [Cancel] to return to the main window.

TIP

The extension is ".mnt".

5. After saving the data, the "Save maintenance information" message box is displayed.
   Click [OK] to return to the "Remote panel" window.



4.3.13 Acquiring Printer Identification Data

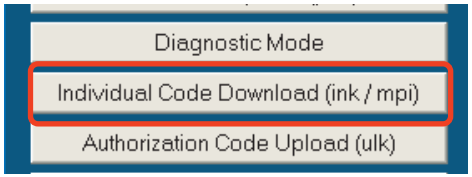
This section describe the procedure to acquire printer identification data.
Printer identification data file shall be used to issue authorization code file by MUTOH INDUSTRIES dealer.

NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Individual Code Download] on main window.



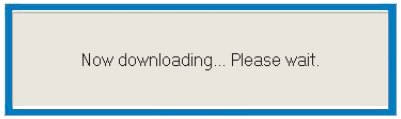
2. Click [OK] on [Individual code download] to start.

   *Click [Cancel] to return to main window without acquiring printer identification data.

NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.
In both cases, communication with printer shall be interrupted.
Click [OK] to return to main window.

3. When printer identification data acquisition is in process, [Progress dialog] window appears.



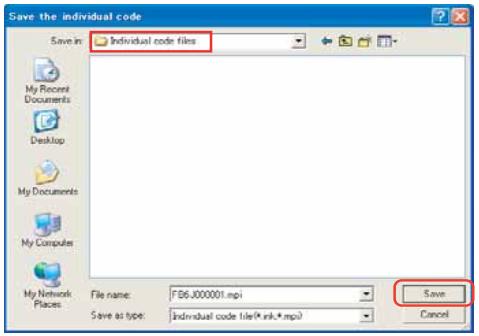
4. When data acquisition completes, [Individual code download] window appears.

   *Click [OK] to appear 「Save the individual code」window

5. On [Save the individual code] window, select where to save and enter name and click [Save] to save printer identification data file .

   *Saved file extension is *.ink.

   **Click [Cancel] to return to the main window without saving.



NOTE

Saved printer identification information file shall be used to issue authorization code file.
MUTOH will issue the authentication code file depending on the printer identification information file.

4.3.14 Sending Authorization code

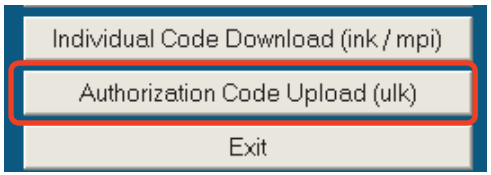
This section describes the procedure to send authorization code file from computer to printer by using Technician mode. Authorization code file will be issued based on the printer identification information file sent to MUTOH via email.

NOTE

Before this operation, prepare the following:

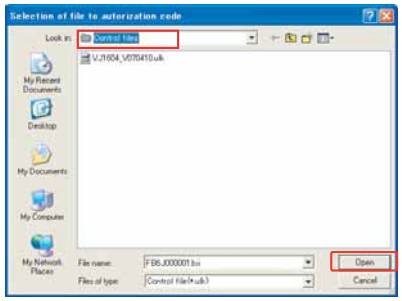
- Before sending authorization code, save authorization code file (*.ulk) from MUTOH INDUSTRIES dealer in any folder.
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Authorization Code Upload] on main window.



2. Select and click authorization code file from saved folder and click [Open] .

   *Click [Cancel] to return to the main window.



NOTE

When inappropriate file is selected clicked to open, error message appears and return to the main window.

3. Click [OK] on [Authorization code upload] to start sending authorization code file.

   *Click [Cancel] to return to the main window without sending.

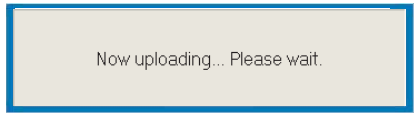
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

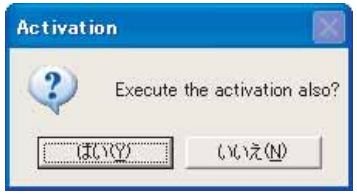
Click [OK] to return to main window.

4. When authorization code file sending is in process, a progress dialog appears.



NOTE

- When an error occurs while transmitting the authentification code, an error message is displayed. Click the [OK] button of the error message to return to the main window.
- When the printer supports activation and is locked, the 「Activation」 window is displayed. It is also possible to execute activation.



5. When sending completes, [Authorization code upload] window appears. Click [OK] to return to the main window.

4.3.15 Referring Set Up Information

This section describes the procedure to refer printer set up information using Technician mode.

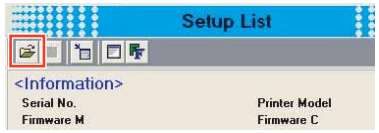
NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

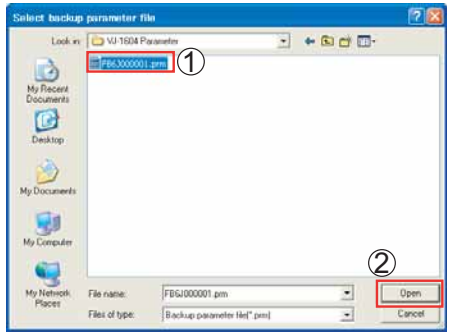
(1) Acquiring Setup Information from Backup Parameter (*.prn) to Reference

1. Click  on 「Set up List」.



2. On [Select backup parameter file] window, click to select backup parameter file ① , then click [Open] ② .

   *Click [Cancel] to return to the main window.



NOTE

If you select an inappropriate file (such as a file which has as extension other than *.prn, etc and click [Open]. an error message is displayed and the display returns to the main window.

3. Once the setup information has been acquired, the following information is displayed:
   - Serial No.
   - Printer Model
   - File path

TIP

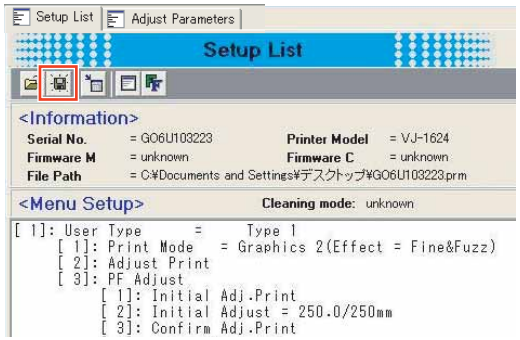
The acquired data and firmware version are not displayed.

4. 「Refer the file」window is displayed.Click [OK] and check the setup information described in step 3.

5. Acquired set up information shall be indicated under the tab named [Set up information].

   To save the file as plain text, click  .

   *Set up information is same detail with the one acquired in [Print setup parameters].

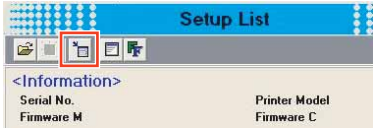


NOTE

Backup parameter file shown on the window shall be saved whether tab is switched over to others. When another parameter file is acquired or saved parameter file is open, the detail shall be renewed.

(2) Acquiring Setup Information from Printer to Reference

1. On [Setup List], click  .



2. Click [OK] on [Setup list download] to start.

   *Click [Cancel] to return to the main window without acquiring set up information.

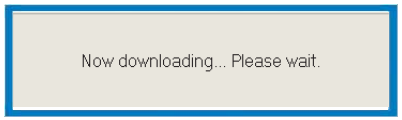
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.

3. When set up information acquisition is in process, a progress dialog appears.



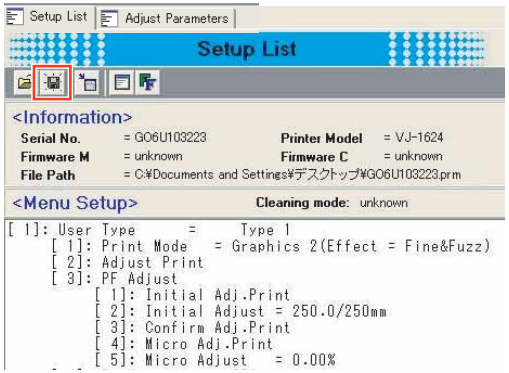
4. Once the setup information has been acquired, the following information is displayed:
   - Date of acquisition
   - Serial No.
   - Printer Model
   - File path
   - Firmware M (Version of Main F/W)
   - Firmware C (Version of Heater Controller F/W)

5. 「Setup list download」 window is displayed,. Click [OK], and check the setup information described in step 4.

6. Acquired set up information shall be indicated under the tab named [Set up information].

   To save the file as plain text, click  .

   *Set up information is same detail with the one acquired in [Print setup parameters].



NOTE

Backup parameter file shown on the window shall be saved whether tab is switched over to others. When another parameter file is acquired or saved parameter file is open, the detail shall be renewed.

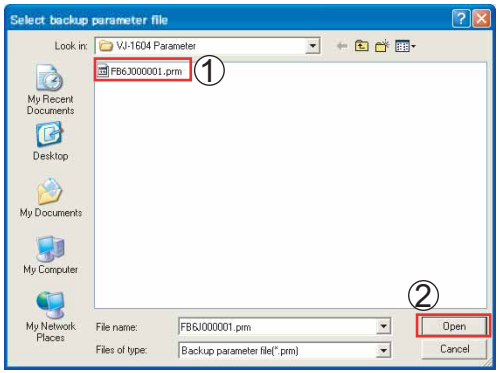
4.3.16 Referring Adjustment Parameter

(1) Acquiring Adjustment Parameter from Backup parameter (*prn) to reference

1. Click  on 「Adjust Parameters」.

2. Click to select backup parameter file on [Select backup parameter file] window ① , then click [Open] ② .

   *Click [Cancel] to return to the main window.



NOTE

When inappropriate file (such as file extension is different from *.prm) is selected clicked to open, error message appears and return to the main window.

3. Once the setup information has been acquired, the following information is displayed:
   - Serial No.
   - Printer Model
   - File path

TIP

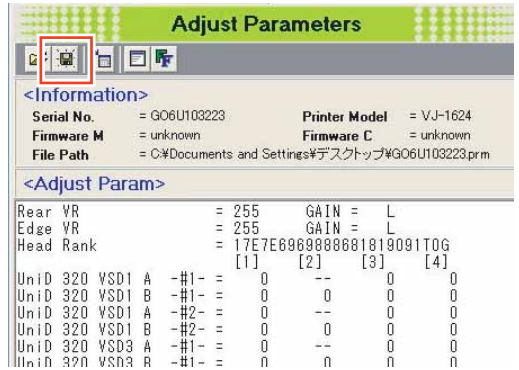
The acquired data and firmware version are not displayed.

4. 「Refer the file」window is displayed.Click [OK] and check the setup information described in step 3.

5. Adjustment parameter information acquired from backup parameter shall be shown in [Adjust Parameters] tab.

   To save the file as plain text, click  .

   *Adjustment parameter information is same detail with the one acquired on [Print all parameters] in self-diagnosis function. However, date and firmware version shall not be indicated.



☞"5.7.8 Test Printing Menu" p.5-48

NOTE

Backup parameter file shown on the window shall be saved even the tab is switch over to others. When another parameter file is acquired or saved parameter file is opened, the detail shall be renewed.

(2) Acquiring Adjustment parameter from printer to reference

NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click on 「Adjust Parameter」.

2. Click [OK] on [Adjustment parameters download] to start.

   *Click [Cancel] to return to main window without adjustment parameter acquisition.

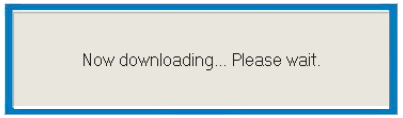
NOTE

After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.

3. When adjustment parameter acquisition is in progress, a progress dialog appears.



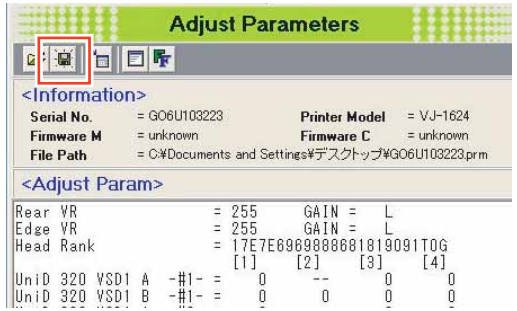
4. Once the setup information has been acquired, the following information is displayed:
   - Date of acquisition
   - Serial No.
   - Printer Model
   - File path
   - Firmware M (Version of Main F/W)
   - Firmware C (Version of Heater Controller F/W)

5. 「Adjust parameter download」window is displayed.Click [OK] and check the adjust parameter information.

6. Acquired adjustment parameter information shall be shown in [Adjust Parameters] tab.

   To save the file as plain text, click .

   *Adjustment parameter information is same detail with the one acquired on [Print all parameters] in self-diagnosis function.



TIP

Backup parameter file shown on the window shall be saved even the tab is switch over to others. When another parameter file is acquired or saved parameter file is opened, the detail shall be renewed.

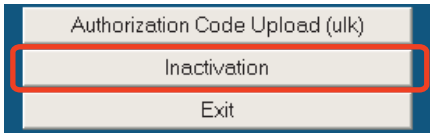
4.3.17 Initializing activation

NOTE

Before this procedure, make sure to prepare the following:

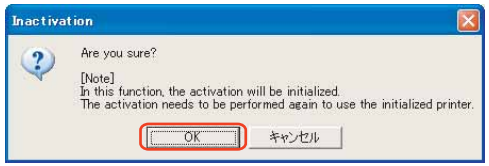
- Set up the printer, computer and MSA.
  ☞"4.3.3 Required Environment" p.4-6
- Start the printer on Board manager mode.
  ☞"(6) Starting the printer" p.4-9 of "4.3.3 Required Environment" p.4-6
- Change to Technician mode on MSA.
  ☞"(12) Switching to Technician Mode" p.4-15 of "4.3.3 Required Environment" p.4-6

1. Click [Inactivation] on the main window.



2. The "Inactivation" message box is displayed.
   Click [OK] to transfer the PC system time as year-month-day-time format data to the printer.

   * Click [Cancel] to return to the main window.



NOTE

After clicking [OK], if there is some communication error such as wrong IP address or unplugged LAN cable, an error message is displayed. If there is some setting error such as an appropriate model is not selected, or the serial number is not registered or wrong, a warning message is displayed. Either case, the communication with the printer is interrupted.

Click [OK] on each window to return to the main window.

3. After initializing, the "Inactivation" message box is displayed.
   Click [OK] to return to the main window.

CAUTION

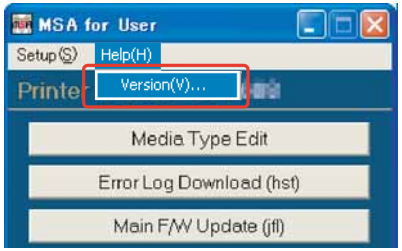
When using the printer whose activation is initialized in the "Inactivation", activation is required again.

Do not use activation lock unnecessarily.

4.3.18 Version Information

This section describes the procedure to confirm version information of this application.

1. Click to select [Help] - [Version (V)] on the main window.



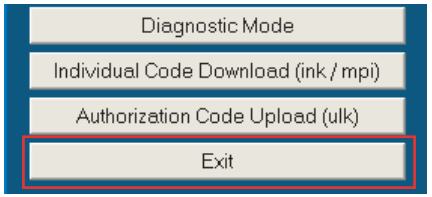
2. Confirm information on [Version information] window, then click [OK] to return to main window.

4.3.19 Terminating Application

This section describes the procedure to terminate this application.

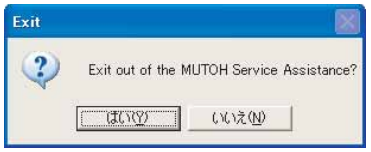
1. Click [Exit] on the main window or Click [×] on the right top corner of the window to terminate this application.

   *Detail in [Setup] - [Option] shall be saved and shall be effected when the application starts next time.



TIP

- Only when [Exit] is clicked, [Exit] message box appeared.



- When MSA starts next time, user mode shall be on. To switch the mode to Technician mode, proceed log in operation again.

4.4 Steel Belt Tension Adjustment

This section describes the procedure to adjust tension of the steel belt.
When you have removed and installed Steel belt, always adjust Steel belt tension.

4.4.1 Jigs and Tools

The jigs and tools required for steel belt tension adjustment are as follows.

- Tension gauge: for measuring Max. 2N (204gf)
- Steel belt tension attachment : DG-43197
- Threadlock

TIP

☞"7.4 Jigs and Tools" p.7-6

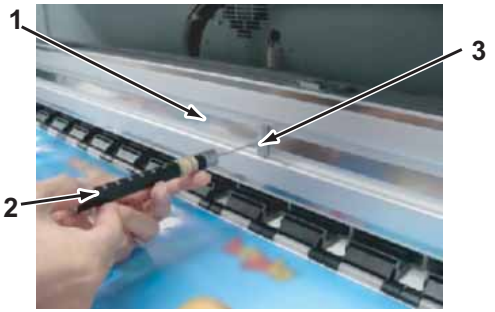
4.4.2 Adjustment Procedure

To adjust the steel belt tension, follow the steps below.

CAUTION

Wear a glove when handling steel belt and CR following movement belt pulley assembly. Keep away from dust or fold lines, otherwise Steel belt may be damaged during operation.

1. Open Front cover.
2. Remove Side maintenance cover L.
   ☞"3.2.3 Removing Side Maintenance Cover" p.3-9
3. Move Carriage to the opposite side of origin.
   ☞"3.7.1 Releasing Carriage Lock" p.3-131
4. Assemble Tension gauge and Steel belt tension attachment.
5. Press Tension gauge at the center position of Steel belt.



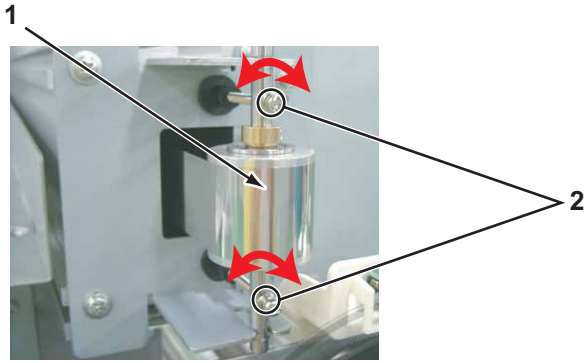
No.	Name
1	Steel belt
2	Tension gauge
3	Steel belt tension attachment

6. Press Jig until Steel belt and Y rail is attached, then gradually bear off. Value must be within the defined value when steel belt and Y rail is apart.

TIP

- The steel belt tension specification is 0.98N+0.09N (100gf +10gf).
- The range where Steel belt moves up and down in the pulley must be 1 mm or less.

7. If the tension of Steel belt does not agree to the specification, adjust the tension with a steel belt tension screw.

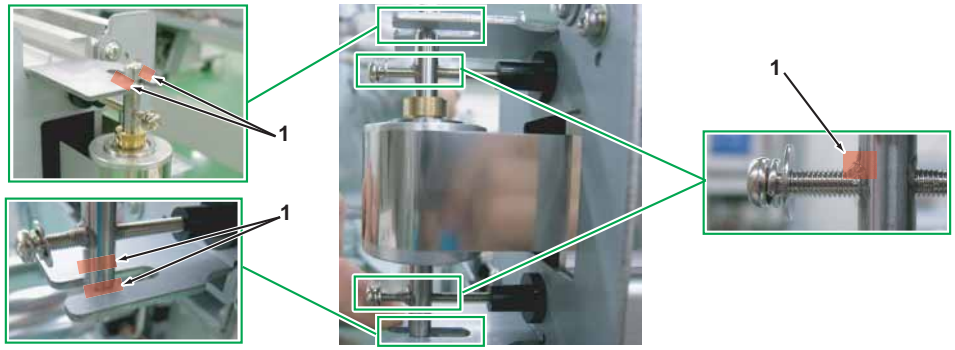


No.	Name
1	Steel belt
2	Steel belt tension screw

CAUTION

To adjust steel belt adjustment screw, turn top and bottom screws only same amount.
If CR following movement belt pulley assembly is tilted, Steel belt may be damaged during operation.

8. Apply Threadlock on area indicated in red as below.



No.	Name
1	Threadlock applying surface

9. Reciprocate the carriage and confirm Steel belt does not run over from CR following movement belt pulley assembly.
10. Close all the covers.

4.5 X Speed Reduction Belt Tension Adjustment

This section describes the procedure to adjust X reduction belt.
After replacing X reduction belt such as PF motor removal, adjust X speed reduction belt tension.

4.5.1 Jigs and Tools

The jigs and tools required for X speed reduction belt tension are as follows.

- Tension gauge: for measuring Max. 40N (4,080gf)

TIP

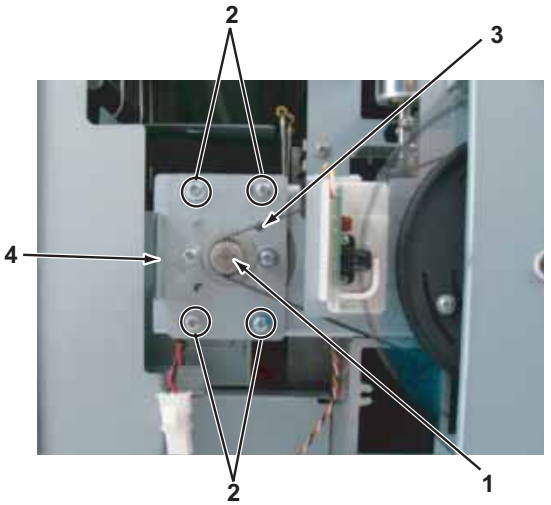
☞"7.4 Jigs and Tools" p.7-6

4.5.2 Adjustment Procedure

To adjust X speed reduction belt tension, follow the steps below.

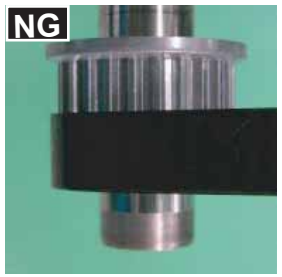
1. Remove Side maintenance cover L.
☞"3.2.3 Removing Side Maintenance Cover" p.3-9

2. Loosen the screws (4pieces) retaining PF Motor Mounting Plate.。

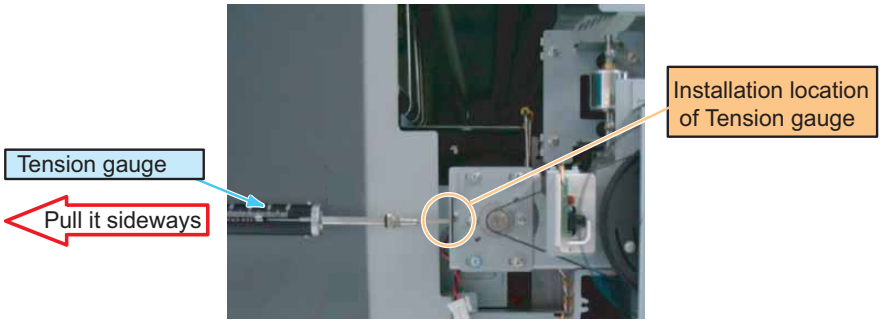


No.	Name
1	PF Motor Assy
2	Pan-head screw with spring washer and flat washer M4 × 8
3	X speed reduction belt
4	PF Motor mounting plate

3. Make sure that X Speed Reduction Belt, refer to the following procedure.



4. To adjust X speed Reduction Belt, refer to the following procedure.
   - Hook Tension Gauge on PF Motor mounting Plate.
     （See the figure below.）
   - Pull Tension Gauge horizontally.Fully tighten the screws(4 pieces) which were lightly tighten in the step 10 at **34.3N ± 3.4N（3500 g ± 350 g）** indicated on the scale.



NOTE

Do NOT hook Tension Gauge directly on PF Motor. Doing so may damage PF Motor Assy.

5. From this point on, reverse the removal procedure.

4.6 Head Accuracy Adjustment

4.6.1 Head Alignment (Horizontal Height)

This section describes the procedure to adjust the head slant.
When you have removed and installed the head assembly, such as head assembly replacement, always adjust the head slant following the steps below.

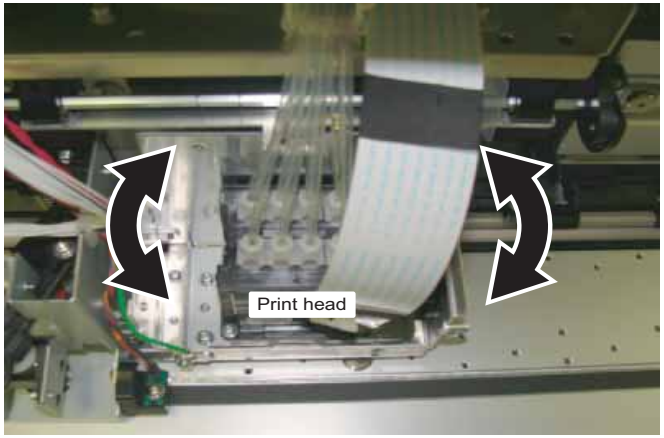
NOTE

Before starting adjustment, remove the following parts.

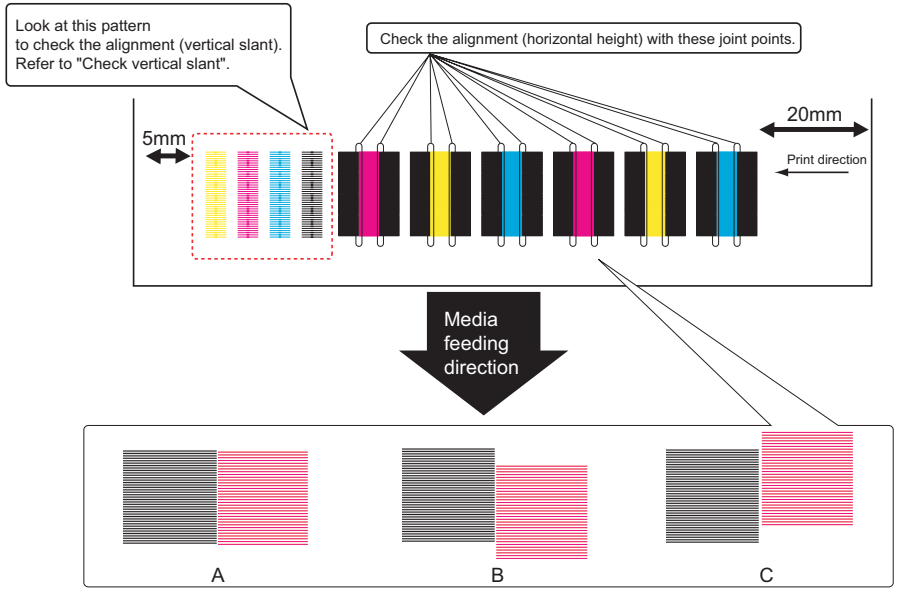
- Carriage cover: ☞"3.7.2 Removing Carriage Cover" p.3-132

Adjust the horizontal height of the head alignment before adjusting the vertical alignment slant of head alignment.

In this procedure, the print head will be aligned in the directions (horizontal slant) shown below.



1. Start the printer in the self-diagnosis function mode and print the check patterns in "Head Slant: Slant1"
   ☞"5.7.4 Head Slant Check Menu" p.5-34
2. Make adjustment based on the printed check patterns.

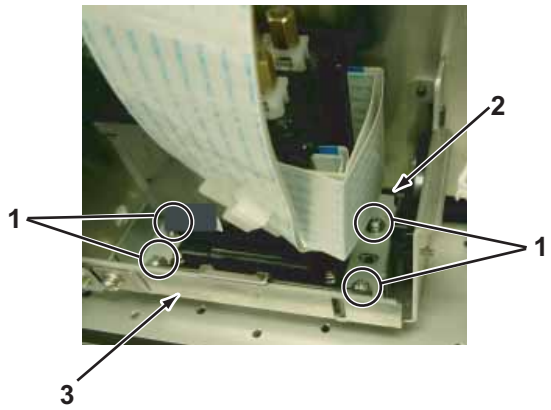


A : OK

B : Move magenta upward considering black as the center.
(Move Head adjustment cam upward.)

C : Move the magenta downward considering black as the center.
(Move Head adjustment cam downward.)

3. Loosen the screws (4 pieces) retaining Head base.



No.	Name
1	Pan-head screw with spring washer and flat washer M3 × 6
2	Head base
3	Head mounting plate

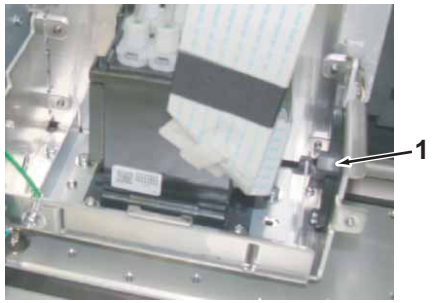
4. Move Head adjusting cam lever to adjust the print position of Magenta, and align the print head.

NOTE

Be careful of the following points when moving Head adjusting cam lever.

- Adjust magenta position to keep misalignment within 1/2 dot considering black as the center.
- When raising Lever, magenta also moves upward (in step 2 figure B).
  *Be careful as follows.
  - Do not pull up Lever upward at once. Move Head adjusting cam lever for a few notch at first, then slightly press Head from front. Then gradually lower Lever to adjust.

    When lowering Lever, Head adjusting plate pushes Head and slant changes. When raising Lever, Head adjusting plate draws apart from Head so that when raising Head adjusting cam, Head does not follow the movement and Head cannot be adjusted properly.
- When lowering Lever, magenta alsolowers. (in step 2 figure C).
  - Directly lower Head adjusting cam lever to adjust magenta position.



No.	Name
1	Head adjusting cam

5. Print check pattern again to check head slant (horizontal height) is appropriate.
☞"5.7.4 Head Slant Check Menu" p.5-34
6. Tighten the screws (4 pieces) that were loosened in Step 3.
7. When head slant is not correct, repeat step 3 and 4.
8. To reassemble the unit, reverse the removal procedure.

4.6.2 Head Alignment (Vertical Slant)

This section describes the procedure to adjust the head slant in the front-back direction.
After operation such as head replacement, you might need to adjust the head slant. When needed, adjust the head slant following the steps below. After an operation such as head replacement, adjust the head slant following the steps below.

NOTE

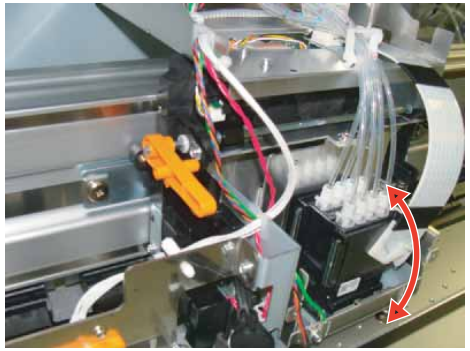
Before starting adjustment, remove the following parts.

- Carriage cover: ☞"3.7.2 Removing Carriage Cover" p.3-132

Adjust the horizontal height of the head alignment before adjusting the vertical alignment slant of head alignment.

☞"5.7.4 Head Slant Check Menu" p.5-34

This procedure is to adjust the front-back slant of print head (in the direction of the arrow shown in the figure)



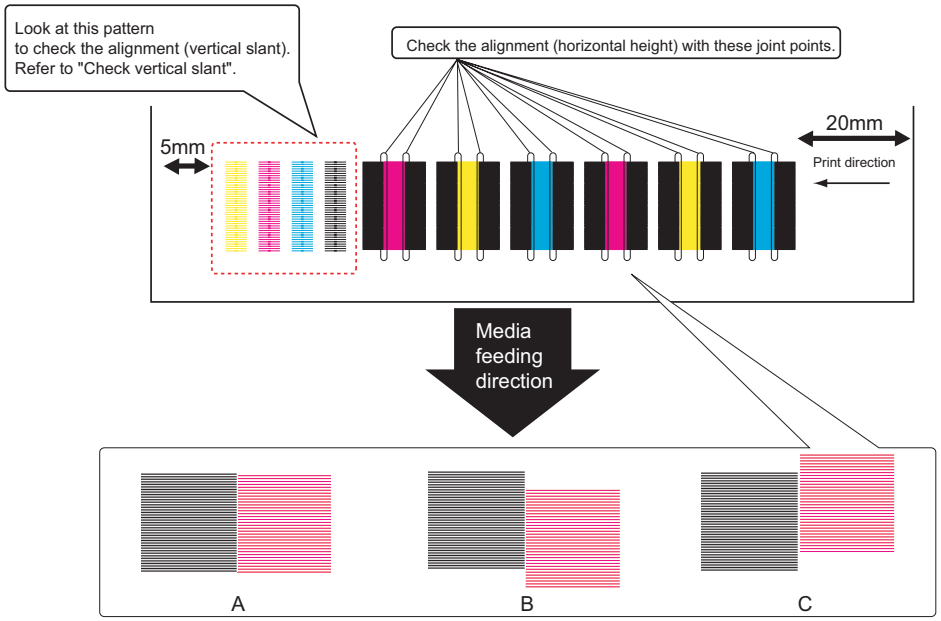
1. Start the printer in the self-diagnosis function mode and print the check patterns in "Head Slant: Slant 1."

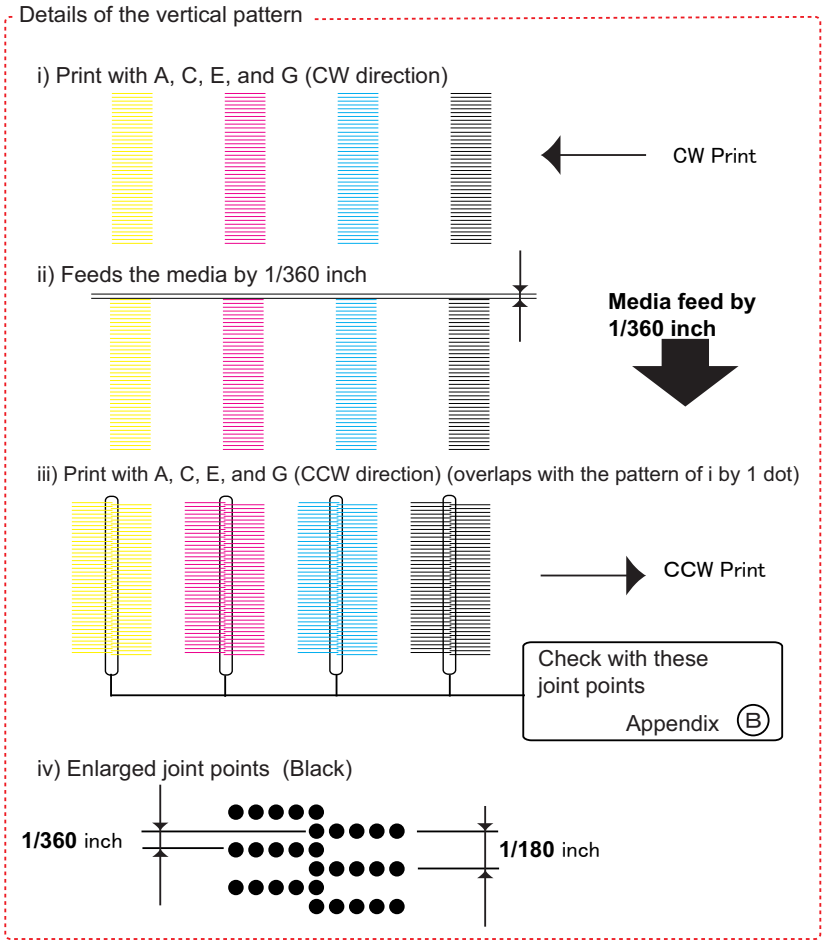
☞"5.7.4 Head Slant Check Menu" p.5-34

TIP

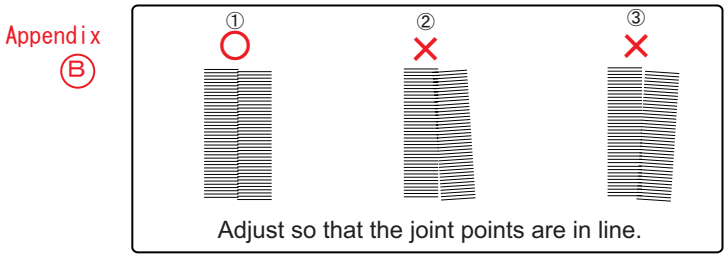
Adjustment patterns of Head alignment (horizontal height) and (vertical) are printed when printing the adjustment pattern of "Head Slant: Slant1".

2. Make adjustment based on the printed check patterns.

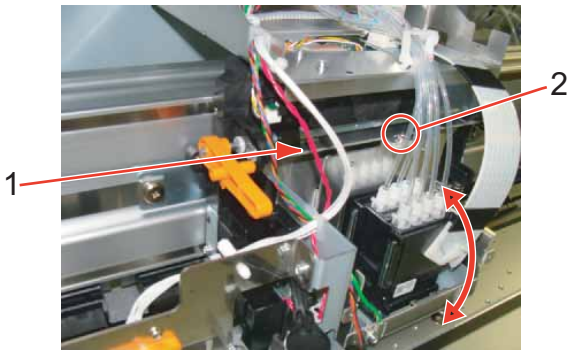




3. Refer to Appendix B to check the print result.



4. Loosen the screw retaining Head base mounting plate, refer to the above (1), (2), and (3) to adjust.
   ① : No adjustment required
   ② : Move Head base mounting plate upward.
   ③ : Move Head base mounting plate downward.



No.	Name
1	Head base mounting plate
2	(hexagon socket head cap with spring washer and flat washer small M3 × 8 Ni-3

5. Print the confirmation pattern again to check if Head slant (vertical) is appropriately adjusted.
☞"5.7.4 Head Slant Check Menu" p.5-34

6. If Head slant is still not adjusted, repeat printing and adjusting.

7. When the operation is completed, tighten the screw that was loosened in the step 4, and install Carriage cover.

4.7 Head Height Adjustment

This section describes the procedure to confirm and adjust distance between Print head and Platen.

4.7.1 Jigs and tools

- PG height adjustment jig: DG-43196

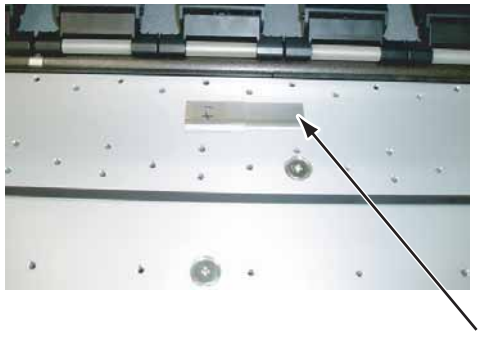
☞"7.4 Jigs and Tools" p.7-6

4.7.2 Head Height Adjustment

1. Remove the carriage cover.
☞"3.7.2 Removing Carriage Cover" p.3-132
2. Release the carriage lock.
☞"3.7.1 Releasing Carriage Lock" p.3-131
3. Place the PG height check jig on the platen.

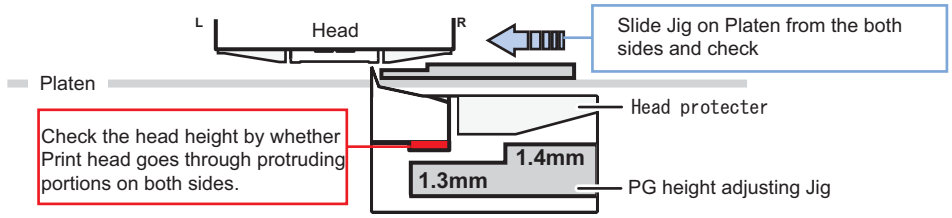
CAUTION

Place the PG height adjustment jig on the printer head away from the print head nozzle. Interference may cause damage on print head.

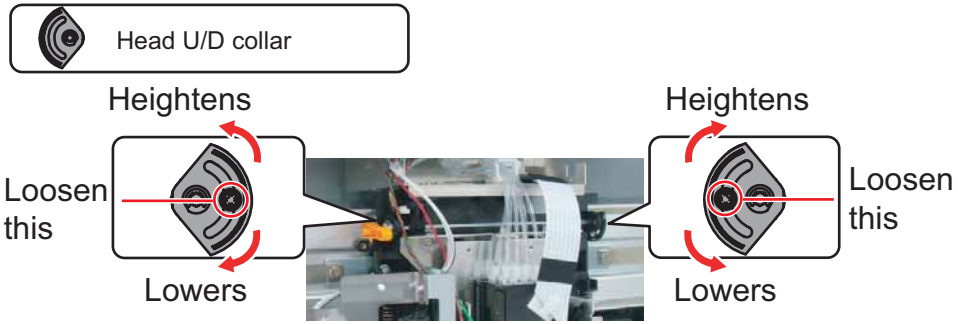


No.	Name
1	PG height adjustment jig

4. Move the carriage from the carriage origin while the lever is set to the “LOW” mode.
5. Confirm print head go through 1.3 mm step by head hight adjustment jig but not go through 1.4 mm step.



6. Turn the jig in the opposite direction, shift Carriage from the opposite side of the origin, and check the height in the same way as in the step 5.
7. When print head does not go through 1.3 mm step or go through 1.4 mm, loosen the screws (1 piece each on the right and left sides) that retain the head U/D eccentric levers located on the right and left sides of the carriage, and adjust the head height.
   - Move Head U/D collar upward: Highten the head height
   - Move Head U/D collar downward: Lower the head height



NOTE

The heights of right and left cams are separately changed. After changing the height, refer to the steps 5 to 7 and make sure to use the PG height checking jig to check that the heights of the right and left cams are appropriate.

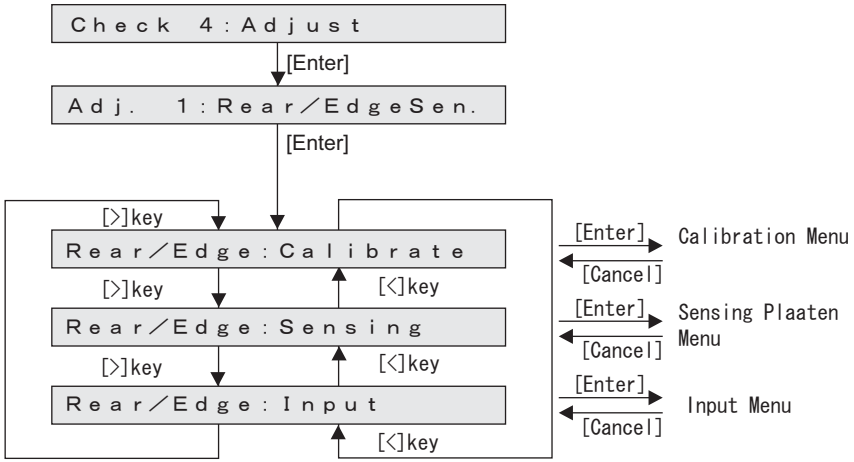
8. Tighten the screw which was loosened in the step 7 and fix the head height.
9. To reassemble unit, reverse the removal procedure.

4.8 Rear/ Edge Sensor Adjustment

TIP

- Automatically Adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values.
- After adjusting, measuring AD values when paper is not set.
  Confirming threshold that is used to judge whether paper is set.
- Measuring AD values of Edge sensor at four positions of Platen.
- Using MF-3G for adjusting sensor.

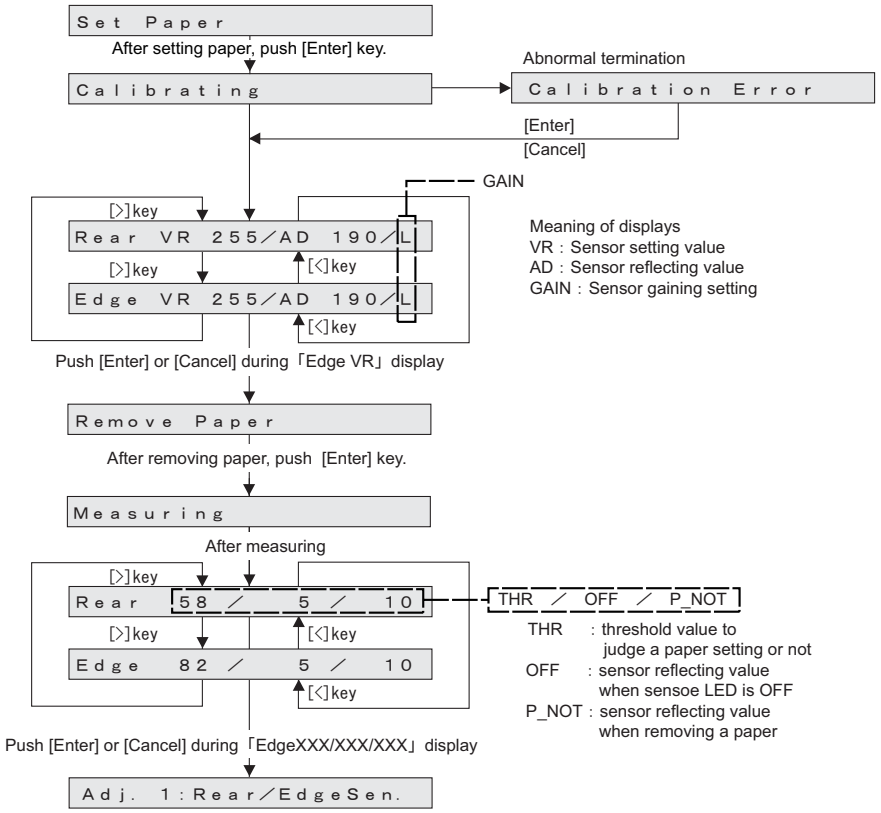
☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59



(1) Calibration

TIP

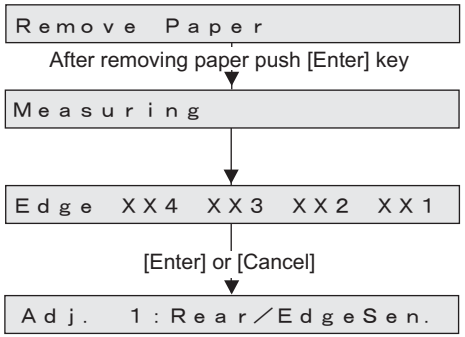
- After adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values, panel displays results.
- When abnormal termination, panel displays the VR values that is final state of adjusting process.



(2) Measuring Platen reflecting value（Sensing Platen）

TIP

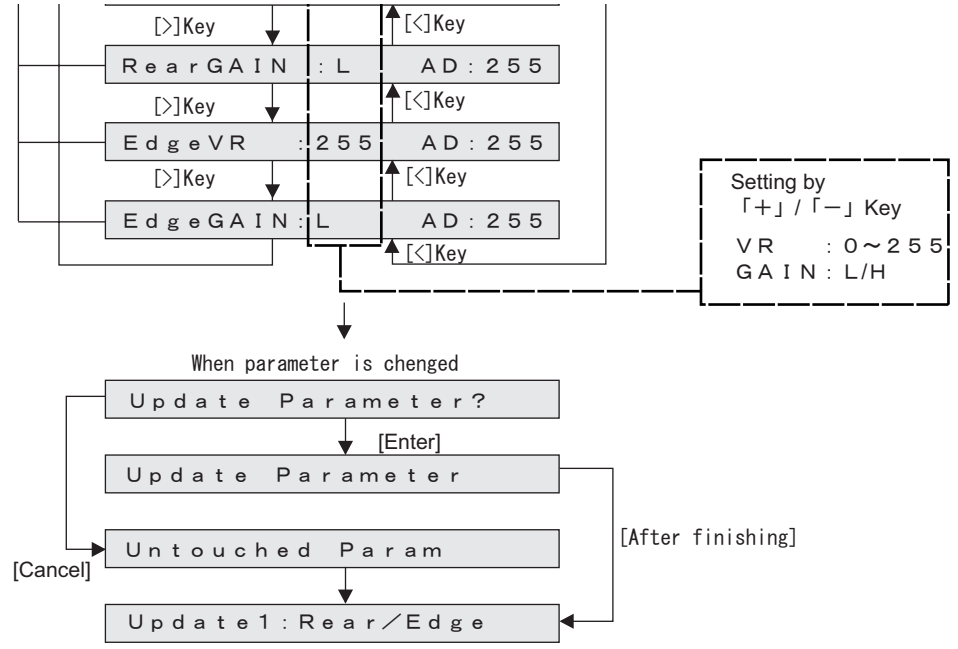
- Measuring AD values of Edge sensor at four positions of Platen.
- Measuring AD values at the four positions as shown below, and the AD values is displayed on the panel.



(3) Input

NOTE

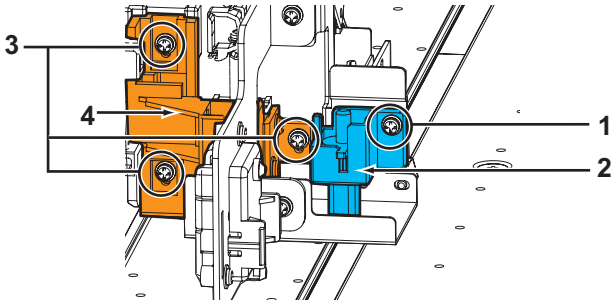
- Do not usually use this function.
  - Use only in:
    When any problems are occured at paper recognition, while adjusting the sensor at Calibration.
    When adjustment is needed for using environment (environment light , media type and so on) of user.
- You can Set the sensor parameter manually which was adjusted automatically at Calibration.
- Setting values are displayed immediately.
  ＡＤ （Sensor reflecting value）： ０～２５５



4.9 Cutter position adjustment

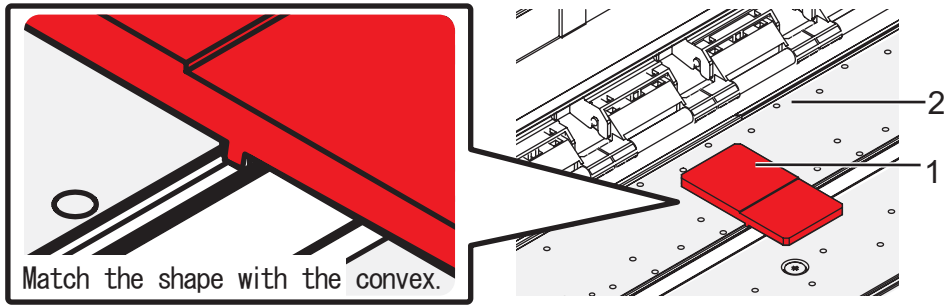
Name	Maintenance parts No.	Remark
Cutter adjustment Jig	DG-43194	☞" Exploded View Other" p.Ex-21
+ driver No.2	Generic product	-
− driver (precision driver)	Generic product	2 pieces（For removing Lock kicker)

1. Open front cover.
2. Release Carriage lock.
   ☞"3.7.1 Releasing Carriage Lock" p.3-103
3. Remove Lock kicker.
   ☞"3.7.7 Replacing Cutter Solenoid Assy and Solenoid Spring Assy" p.3-111
4. Move Carriage to Platen.
5. Loosen the screw (1piece) retaining Cutter holder B.



No.	Name
1	Pan head screw with spring washer and flat washer M3 × 6
2	Cutter holder B
3	Pan head screw with spring washer and flat washer M3 × 8

7. Set the Cutter adjustment Jig on the Platen.

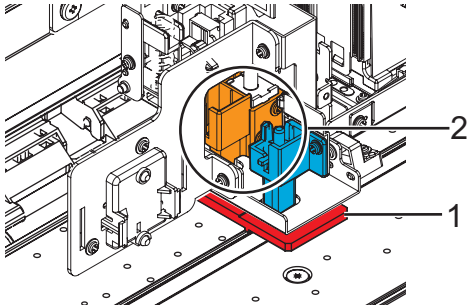


No.	Name
1	Cutter adjustment Jig
2	Platen

NOTE

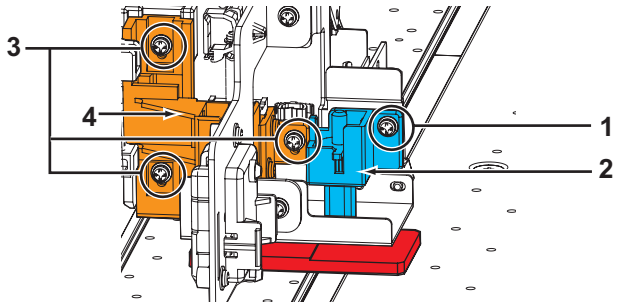
- Make sure thst there is no gap between Cutter adjustment Jig and Platen.
- Set Cutter adjustment Jig, placing the thinner side facing toward the front.

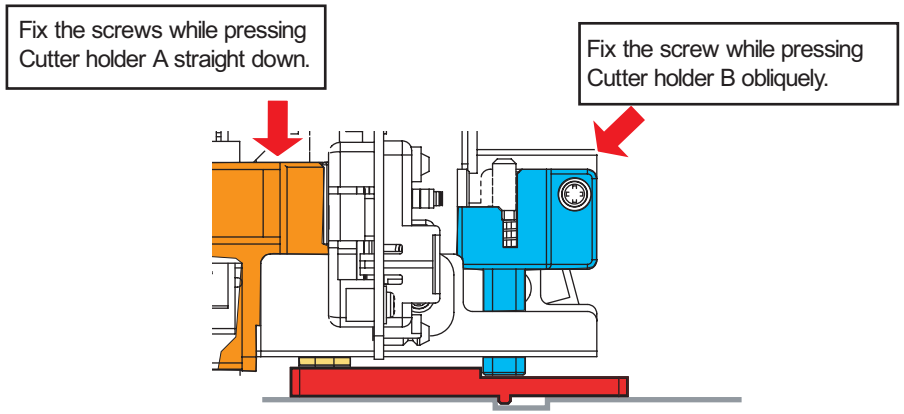
9. Move Carriage so that Jig is placed right under Cutter holders A and B.



No.	Name
1	Cutter adjustment Jig
2	Cutter holder A,B

10. Fix the screws (4 pieces) while lightly pressing Cutter folders A and B.





No.	Name
1	Pan head screw with spring washer and flat washer M3 × 6
2	Cutter holder B
3	Pan head screw with spring washer and flat washer M3 × 8
4	Cutter holder A

NOTE

When you press down, make sure that Cutter is not out of Cutter holder B.If Cutter is out, you may break it and adjustment may not be accurate.

12. To reassemble the unit, reverse the removal procedures.

5 Self-Diagnosis Mode

5.1 Introduction

This chapter provides information on the self-diagnosis function.

The self-diagnosis function adjusts the printing accuracy. It is used in the manufacturing process, adjustment, and maintenance.
The self-diagnosis function is implemented in the system firmware. All functions are available from Operation panel.

☞"8.2.3 Operation Panel" p.8-4

TIP

The contents of this manual are created based on F/W Ver.2.00.

5.2 Preparation

Before you can use the self-diagnosis function, you must make the machine ready to call up the self-diagnosis menu.

5.2.1 Preparations on Machine

Before starting up the self-diagnosis function, prepare the following.

(1) Setting Media

Set roll media for adjustment.

NOTE

For adjustment, use MF-3G.

(2) Connecting Power Cable

Connect Power cable to the machine's inlet Assy and insert Power plug into an outlet.

CAUTION

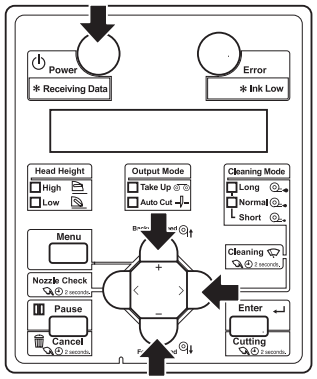
Make sure to supply power directly from a power supply outlet (AC 100 V to 120 V or AC 220 V to 240 V). Avoid using outlets that other appliances are plugged into. Doing so generates heat in the printer and may cause fire.

5.2.2 Starting Up

Display the self-diagnosis menu on Operation panel to use the self-diagnosis function.
The self-diagnosis menu is completely independent from the normal operation mode or setup menu display mode. Switch to the self-diagnosis menu display mode, following the steps below:

1. When the printer is in the operation mode or in the self-diagnosis menu mode, press the [Power] key to turn off the printer.
2. While holding down the [Setting value -], [Setting value +], and [>] keys on Operation panel simultaneously, press the [Power] key.

   The system will transit to the self-diagnosis menu display mode



5.3 Operations in Self-Diagnosis Mode

This section explains how to operate in the self-diagnosis mode as well as providing the list of available diagnosis items.

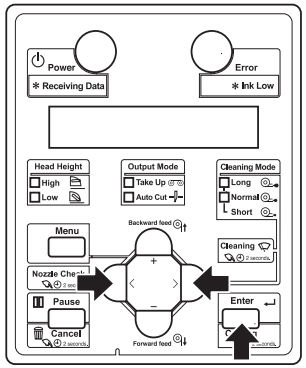
5.3.1 Operating Self-Diagnosis Mode

Follow the flow shown below to operate the self-diagnosis mode.

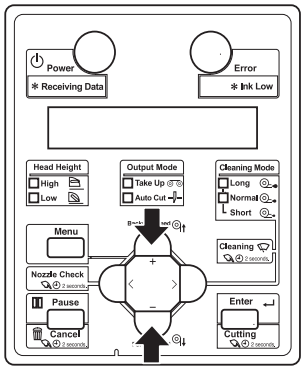
TIP

For more detailed operation procedure, refer to the flow chart of the applicable diagnosis items.

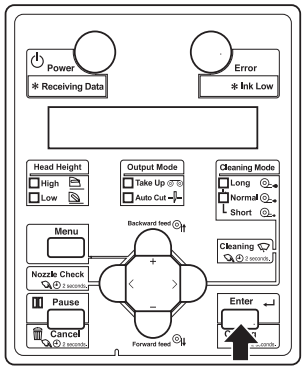
1. Press [<] key or [>] key on Operation panel to select the item to be diagnosed, and press [Enter] key.
   - The selected item is accepted.
   - If the item has a sub menu, the sub menu is displayed.



2. When the LCD monitor on Operation panel indicates a setting value, the value can be modified.
   Press [Setting/value +] key or [Setting/value -] key on Operation panel to modify the value.



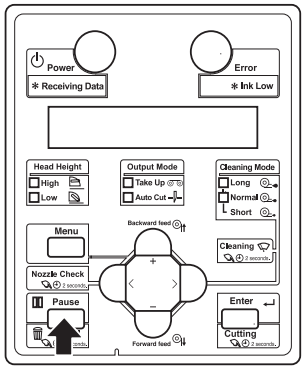
3. To save the modified value, press [Enter] key on Operation panel.
   *The modified set value is stored and the next item is displayed.



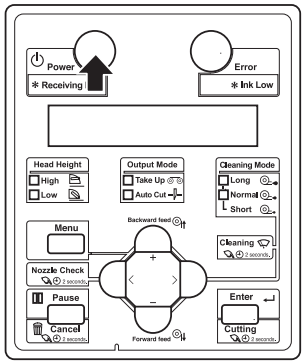
NOTE

If you press [Cancel] key, or, [Setting/value +] key or [Setting/value -] key, instead of [Enter] key, the modification is not stored.

4. To quit the diagnosis, press [Cancel] key on Operation panel.
   *The system returns to an upper hierarchy of the diagnosis menu.



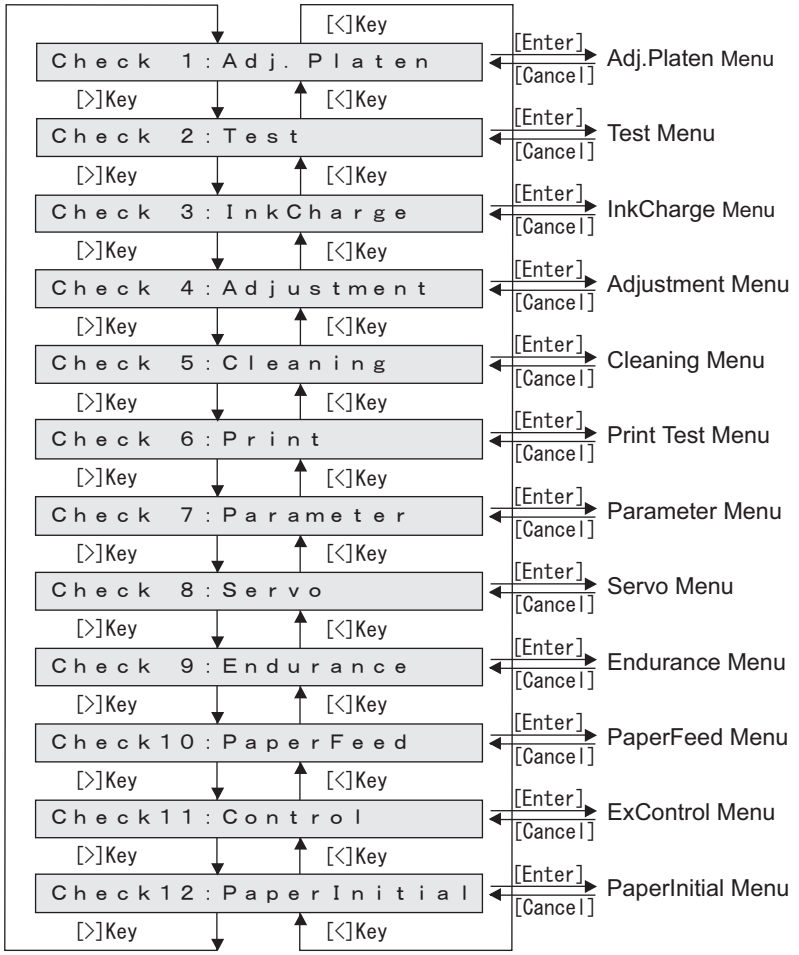
5. To exit the self-diagnosis menu, press [Power] key.



5.3.2 Diagnosis Items in Self-Diagnosis Menu

The self-diagnosis menu includes the following diagnosis items.

Diagnosis item	Contents	Reference
Platen Adjustment Menu	Raise the temperature for Platen heater to 42°C. Raise the temperature for Pre-heater to 47°C.	☞"5.4 Platen Adjustment Menu" p.5-6
Inspection Menu	Display the following items on Operation panel. • Memory size • Firmware version of the main side • Panel • Sensor • Encoder • Fan • Head waveform • History • Spectro Vue • Time Check	☞"5.5 IInspection Menu" p.5-7
Ink Charging Menu	Performs initial cleaning of Print head and ink charging.	☞"5.6 Ink Charging Menu" p.5-25
Adjustment Menu	Head Adjustment, Sensor Position、Sensivity adjustment	☞"5.7 Adjustment Menu" p.5-26
Cleaning Menu	Performs cleaning of Print head.	☞"5.8 Cleaning Menu" p.5-55
Test Print Menu	Performs printing of the following items: • Adjustment pattern ALL • Parameter ALL • Error history • S/C Log	☞"5.9 Sample Printing Menu" p.5-56
Parameter Menu	Performs the setting and initialization of the adjustment parameter.	☞"5.10 Parameter Menu" p.5-57
Servo Setting Menu	Performs setting for Servo motor.	☞"5.11 Servo Setting Menu" p.5-68
Endurance Running Menu	Performs endurance running of the printer mechanism. Performs cut.	☞"5.12 Endurance Running Menu" p.5-69
Media feed Menu	Feeds media into the printer forward or backward.	☞"5.13 Media Feed Menu" p.5-78
ExControl Menu	Checks the following items about the Hearter Cont board Assy. • Firmware version of the controller side • Sensor • Heater	☞"5.14 ExControl Menu" p.5-79
PaperInitial Menu	Performs media detection setting.	☞"5.15 PaperInitial Menu" p.5-83



5.4 Platen Adjustment Menu

Raise the temperature of Pre-heater and Platen heater to 47°C and 42°C respectively.

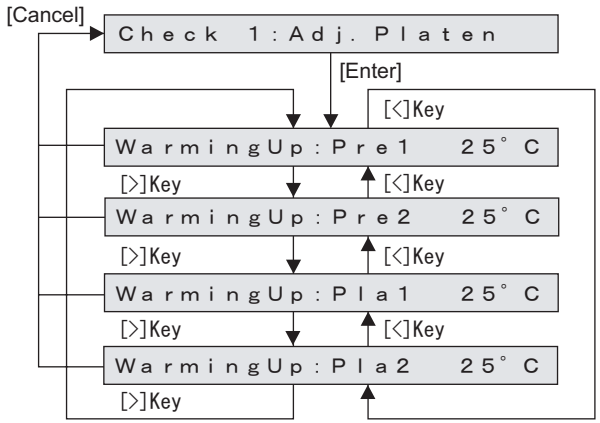


Fig. 5-1 The display before Pre-heater reaches 47°C and Platen heater reaches 42°C.

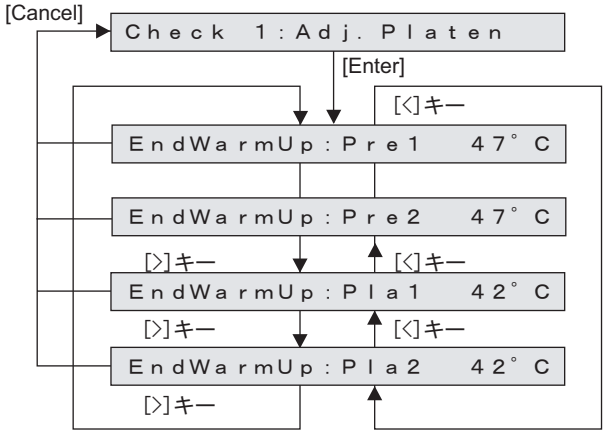


Fig. 5-2 The display after Pre-heater reached 47°C and Platen heater reached 42°C.

NOTE

- When Heater reaches the specified temperature, a buzzer is sounded.
- Pre2 is a reference value. Though Pre1reaches 42°C and Pla1or pla2 reaches 42°C and it will be complete.

5.5 Inspection Menu

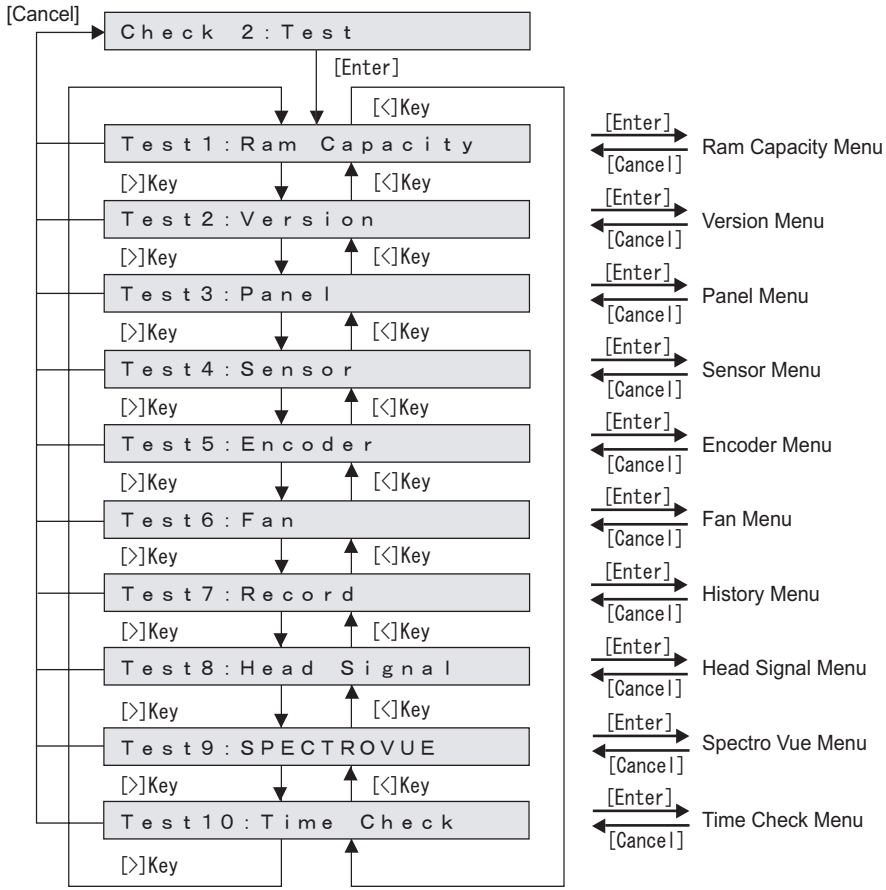
This menu displays the following items on Operation panel.

Table 5-1 Diagnosis Items for Inspection Menu

Diagnosis item	Contents	Reference
Memory size	Displays the size of memories installed on the MAIN board Assy .	☞"5.5.1 Memory Size Menu" p.5-9
Version	Displays the following items on Operation panel: • Firmware version • Backup parameter version • Setting of dip switches of MAIN board Assy • Revision of MAIN board Assy • Company code • Serial No.	☞"5.5.2 Version Menu" p.5-10
Operation panel	Used to check the operations of Operation panel keys, LCD, and LED.	☞"5.5.3 Operation Panel Menu" p.5-11
Sensor	Displays the status of the following sensors: • CR origin sensor • Waste fluid tank sensor • Wiper sensor • Cover sensor • Maintenance cover L sensor • Maintenance cover R sensor • Lever sensor • Paper edge sensor • Paper rear sensor • Head Gap • Head thirmistor sensor • Head Trans istor Thermistor Sensor 1/2 • INK Not（4 colors） • Ink End（4colors)） • Ink ID（4colors） • Solenoid • Tank Status • Tank Valve	☞"5.5.4 Sensor Menu" p.5-12
Encoder	Displays the detected values from the following encoders: • CR encoder • PF encoder	☞"5.5.5 Encoder Menu" p.5-15

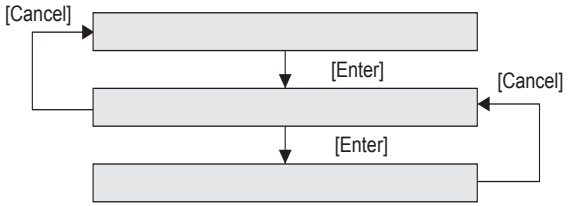
Table 5-1 Diagnosis Items for Inspection Menu (Continued)

Diagnosis item	Contents	Reference
Fan	Used to check if the following fans operate normally by turning them ON and OFF: • Suction Fan • Cooling fan (24V) Assy (for MAIN board Assy) • Exaust Fan	☞"5.5.6 Fan Menu" p.5-16
Record	Used to check the following records. Used to initialize the serious error record. • Maintenance record • Serious error record • Confirming Printing information • Confirming Operating Time • Confirming S/C Log • Initializing S/C Log	☞"5.5.7 Record Menu" p.5-17
Head waveform	Used to check the head-driving waveform.	☞"5.5.8 Head Waveform Menu" p.5-22
SPECTRO VUE	Check the connection of Spectro Vue	☞"5.5.9 SPECTROVUE Menu" p.5-23
Time Check	Confirming Operating ＲＴＣ(real Time clock)	☞"5.5.10 Time Check Menu" p.5-24


[Cancel]
Check 2:Test
[Enter]
[<]Key
Test1:Ram Capacity
[>]Key
[<]Key
Test2:Version
[>]Key
[<]Key
Test3:Panel
[>]Key
[<]Key
Test4:Sensor
[>]Key
[<]Key
Test5:Encoder
[>]Key
[<]Key
Test6:Fan
[>]Key
[<]Key
Test7:Record
[>]Key
[<]Key
Test8:Head Signal
[>]Key
[<]Key
Test9:SPECTROVUE
[>]Key
[<]Key
Test10:Time Check
[>]Key
[Enter]
[Cancel]
Ram Capacity Menu
[Enter]
[Cancel]
Version Menu
[Enter]
[Cancel]
Panel Menu
[Enter]
[Cancel]
Sensor Menu
[Enter]
[Cancel]
Encoder Menu
[Enter]
[Cancel]
Fan Menu
[Enter]
[Cancel]
History Menu
[Enter]
[Cancel]
Head Signal Menu
[Enter]
[Cancel]
Spectro Vue Menu
[Enter]
[Cancel]
Time Check Menu

5.5.1 Memory Size Menu

This menu is used to display the size of memories installed on MAIN board Assy on Operation panel.



5.5.2 Version Menu

This menu is used to display the following items on Operation panel.

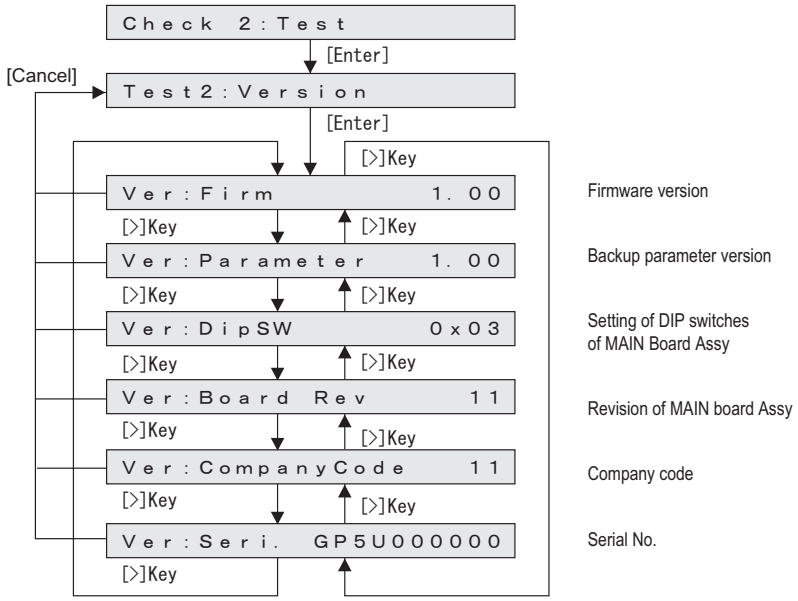
- Firmware version of the MAIN side
- Backup parameter version
- Setting of dip switches of MAIN board Assy
- Revision of MAIN board Assy
- Serial No.

TIP

The following is a supplement explanation about display contents.

- Settings for the DIP switch on the MAIN board Assy are displayed as follows:
  - ON: 0, OFF: 1
  - Switch No.1: LSB
  - Switch No.2: MSB
  - When Serial No. is not set , the following window is displayed.

```
Ver:Seri.        Not Set
```



5.5.3 Operation Panel Menu

This menu is used to check the operations of Operation panel keys, LCD, and LEDs.

(1) Operation Panel Key Check

When you press a key on Operation panel, the name of the key is displayed on LCD. To exit Operation panel key check, press [Cancel] key twice.

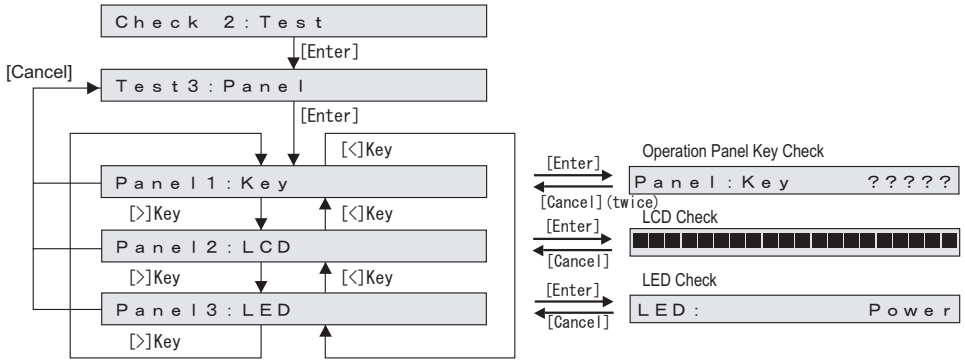
(2) LCD Check

The entire LCD screen is filled in black. You can check for any missing dots.

(3) LED Check

The following LEDs light up in the following order. The LCD displays the name of LED that is currently illuminated.

- Power lamp
- Data lamp
- High lamp
- Low lamp
- Wave lamp
- Fine lamp
- Strong lamp
- Normal lamp
- Economy lamp



5.5.4 Sensor Menu

This menu is used to display the sensor status on Operation panel.
If the displayed sensor status does not match the actual machine status, replace or adjust the relevant sensor.

Table 5-2 Sensor Menu

No.	Sensor name	Status in display	Reference
1	CR origin sensor	ON / OFF	☞"3.6.5 Replacing CR Origin Sensor" p.3-112
2	Waste fluid tank sensor	ON / OFF	☞"3.10.1 Replacing Waste Fluid Bottle and Waste Fluid Level Switch" p.3-185
3	Wiper sensor	ON / OFF	☞" A necessary jigs and tools are as follows." p.3-166
4	Cover sensor	Open / Close	☞"(3) Front Cover section" p.3-32
5	Maintenance cover L sensor	Open / Close	☞"3.3.3 Replacing Cover switch Assy" p.3-29
6	Maintenance cover R sensor	Open / Close	☞"3.3.3 Replacing Cover switch Assy" p.3-29
7	Lever sensor	Up / Down	☞"3.5.6 Replacing Lever sensor and Lever sensor Cable" p.3-85
8	P_EDGE sensor	0 to 255	☞"3.7.12 Replacing Paper Edge Sensor Assy" p.3-155 ☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
9	P_REAR sensor	0 to 255	☞"3.5.5 Replacing P_Rear Sensor" p.3-83 ☞"4.8 Rear/ Edge Sensor Adjustment" p.4-59
10	Head Gap	High/Low	☞"3.7.10 Replacing Print Head" p.3-148
11	Head thermistor	** ℃	☞"3.7.10 Replacing Print Head" p.3-148
12	Head transistor thermistor sensor 1	** ℃	☞"3.7.10 Replacing Print Head" p.3-148
13	Head transistor thermistor sensor 2	** ℃	☞"3.7.10 Replacing Print Head" p.3-148
14	Ink NOT	KCMY	☞"3.9.1 Replacing Cartridge Holder Assy" p.3-174

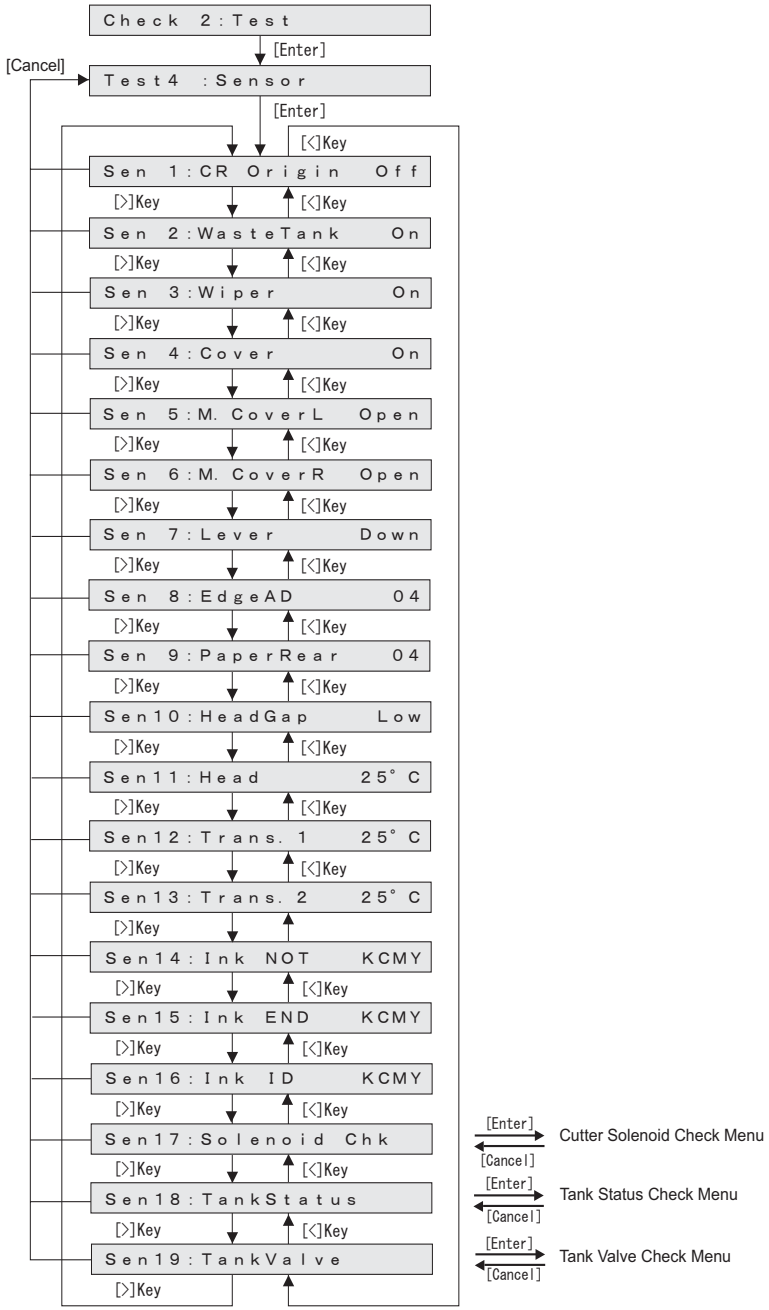
Table 5-2 Sensor Menu (Continued)

No.	Sensor name	Status in display	Reference
15	Ink END	KCMY	☞"3.9.1 Replacing Cartridge Holder Assy" p.3-174
16	Ink ID	KCMY	☞"3.9.2 Replacing Ink ID Board Assy" p.3-176
17	Solenoid Chk	-	☞"(1) Solenoid Menu" p.5-14
18	TankStatus	-	☞"(2) Tank satus" p.5-14 ☞"3.9.6 Replacing Sub Tank Assy" p.3-181
19	TankValve	-	☞"(3) Tank Valve" p.5-14 ☞"3.9.3 Replacing 2 way Solenoid Assy" p.3-177

NOTE

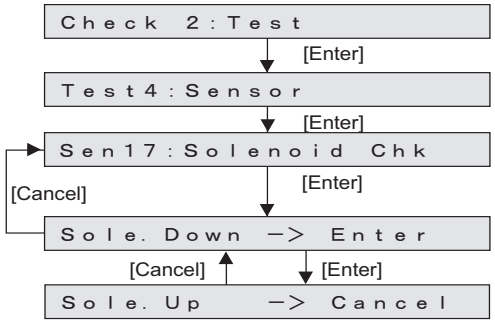
For the following sensors, the sensor sensitivity is displayed in decimal number.

- P_EDGE sensor
- P_REAR sensor


Check 2:Test
[Enter]
[Cancel]
Test4 :Sensor
[Enter]
[<]Key
Sen 1:CR Origin Off
[>]Key
[<]Key
Sen 2:WasteTank On
Sen 3:Wiper On
Sen 4:Cover On
Sen 5:M. CoverL Open
Sen 6:M. CoverR Open
Sen 7:Lever Down
Sen 8:EdgeAD 04
Sen 9:PaperRear 04
Sen10:HeadGap Low
Sen11:Head 25°C
Sen12:Trans. 1 25°C
Sen13:Trans. 2 25°C
Sen14:Ink NOT KCMY
Sen15:Ink END KCMY
Sen16:Ink ID KCMY
Sen17:Solenoid Chk
Sen18:TankStatus
Sen19:TankValve
[Enter]
[Cancel]
Cutter Solenoid Check Menu
Tank Status Check Menu
Tank Valve Check Menu

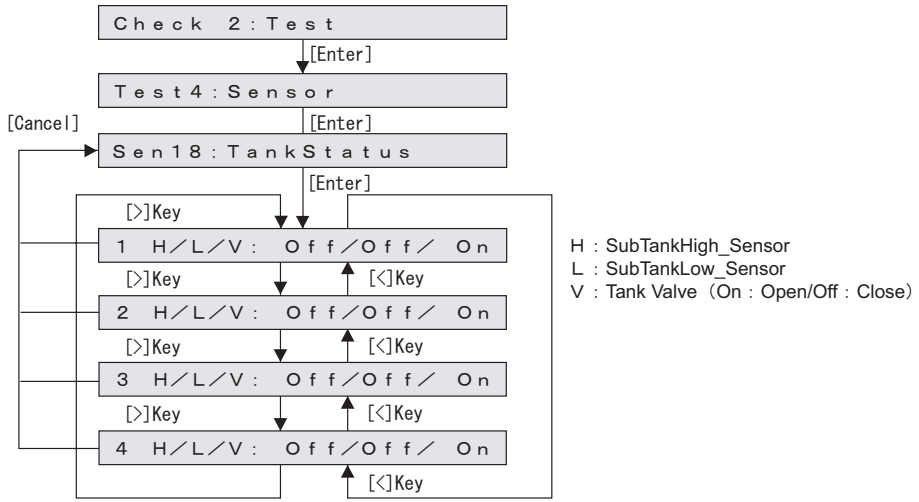
(1) Solenoid Menu

Check the up/down operations of Cutter solenoid.



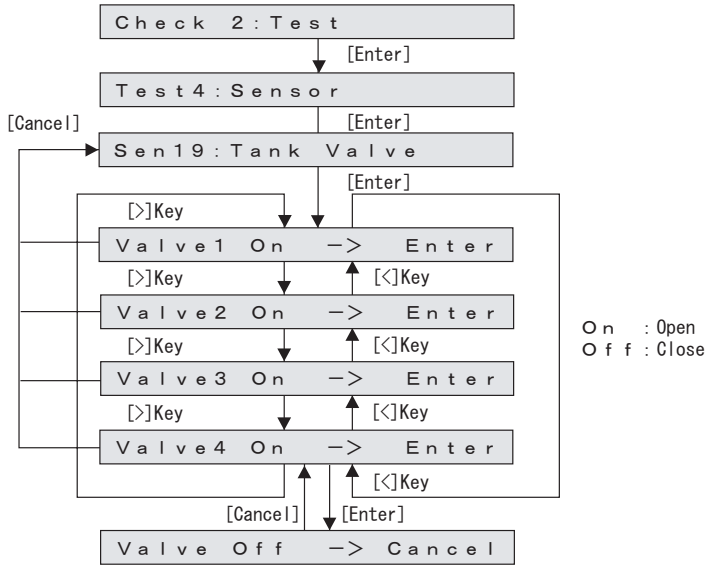
(2) Tank satus

Displays the status of Sensor and Solenoid valve of Subtank.



(3) Tank Valve

Check the operation of 2-way valve of Subtank.



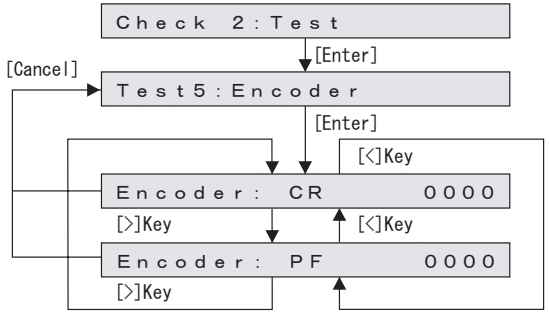
5.5.5 Encoder Menu

This menu is used to display the detected values from the following encoders:

- CR encoder
- PF encoder

NOTE

For the encoder-detected values, the encoder pulse numbers are displayed in hexadecimal number.



5.5.6 Fan Menu

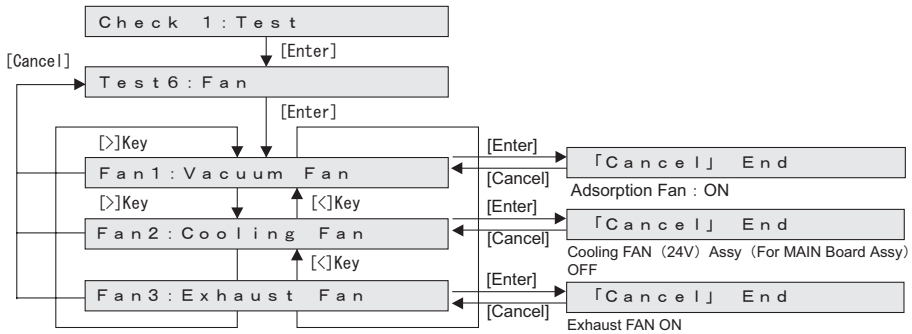
This menu is used to check if the following fans operate normally by turning them ON and OFF:

- Adsorption FAN
- Cooling FAN (24V) Assy (for MAIN board)
- Exhaust Fan

NOTE

- The “Cooling fan” on the Panel indicates Cooling FAN (24V) Assy (for MAIN board).
- While the power is on, Cooling FAN is always on.
- Depending on the type of FAN, the operation after the [Enter] key is pressed differes as below.

Name	While Power is ON	After [Enter] is pressed	After [Cancel] is pressed
Adsorption Fan	OFF	ON	OFF
Cooling FAN (24V)	ON	OFF	ON
Exhaust Fan	OFF	ON	OFF

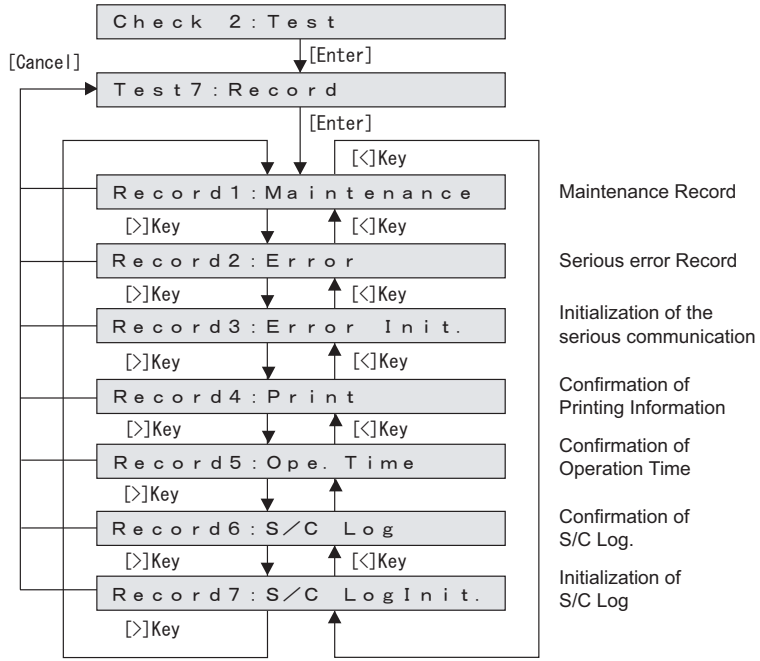


5.5.7 Record Menu

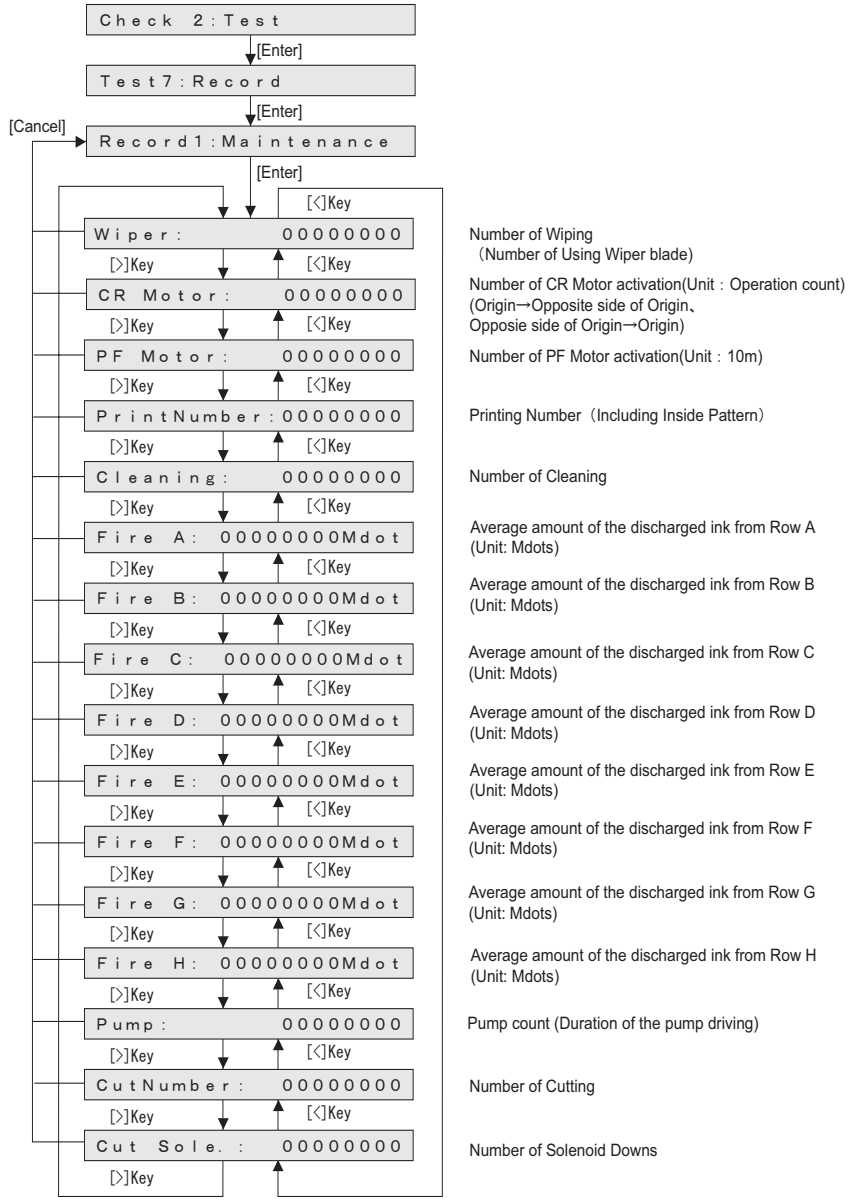
This menu is used to check the following record. In addition, it initializes serious error record.

- Maintenance record
- Serious error record
- Printing Information
- Operation Time
- S/C Log

Initiallizing Record and S/C Log.



(1) Maintenance Record



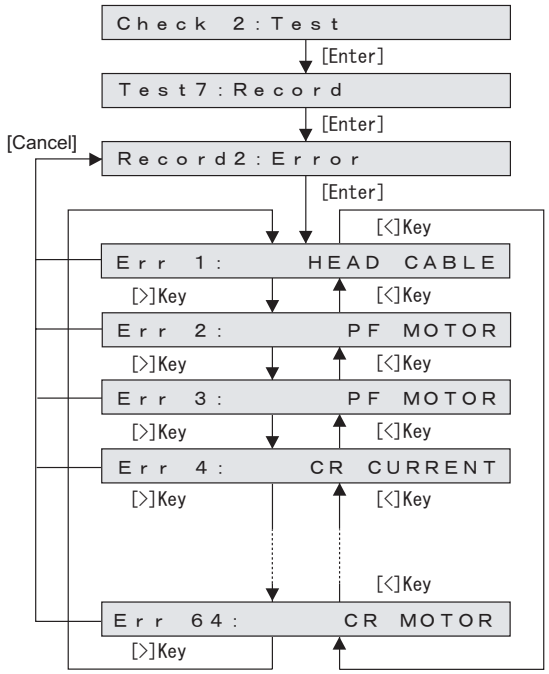
The number of ink discharge is the average of per nozzle, which was calculated by accumulated total number/180.

(2) Serious Error Record

This menu is used to display serious error record on Operation panel.

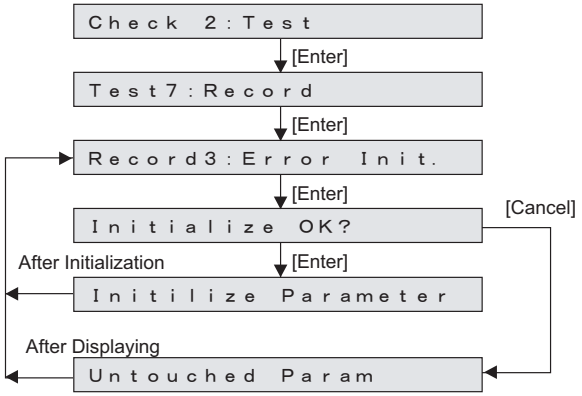
NOTE

- The serious error history does not include CPU error.
- The serious error history menu indicates up to 64 history of items.



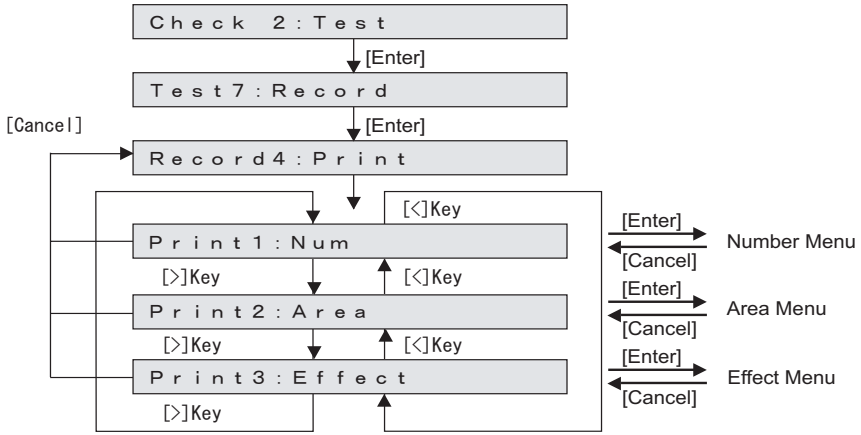
(3) Error Initialization

This menu is used to initialize the serious error record.



(4) Printing Information

Check printing information (number of printed copies of each print mode, print area, and number of printed copies of each effect). The inner pattern will not be accumulated.

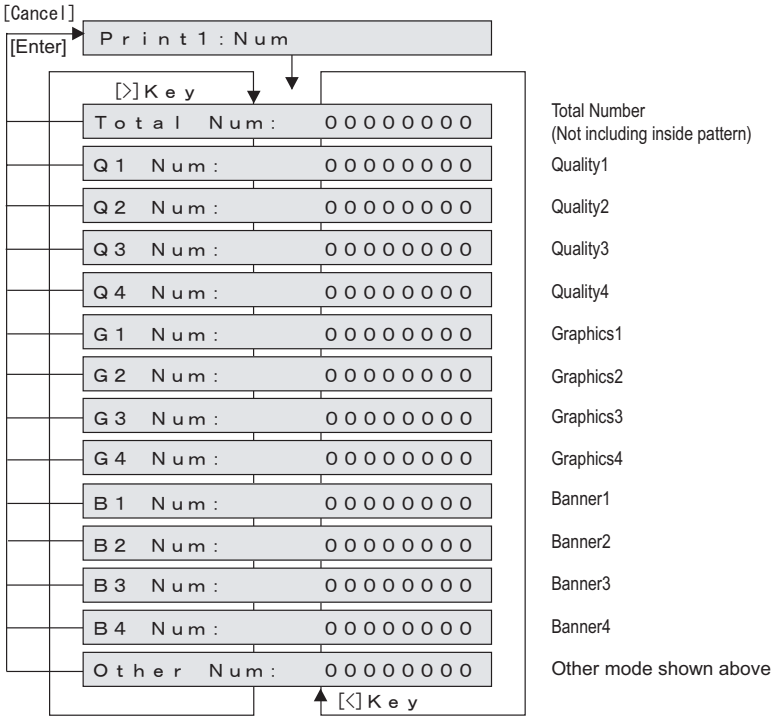


TIP

Displayed as a decimal.

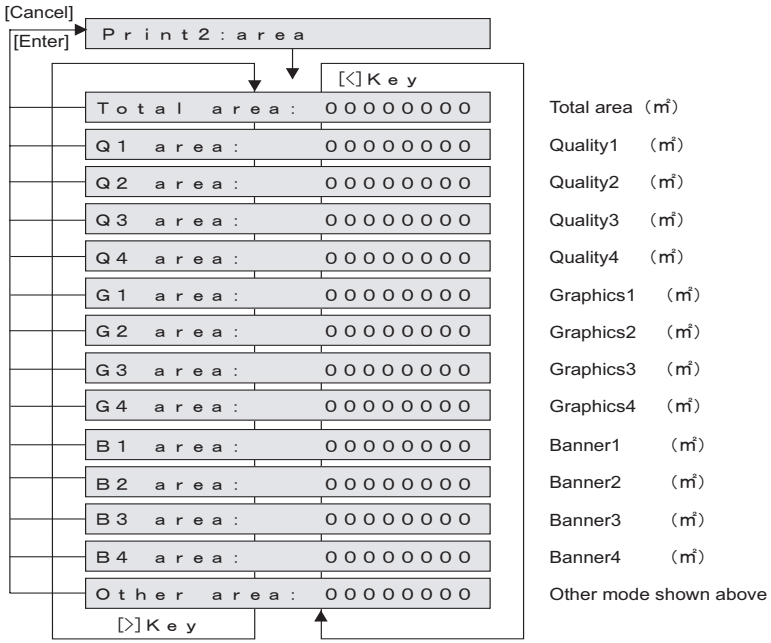
(4-a)Number

Check the number of printed copies of each print mode.



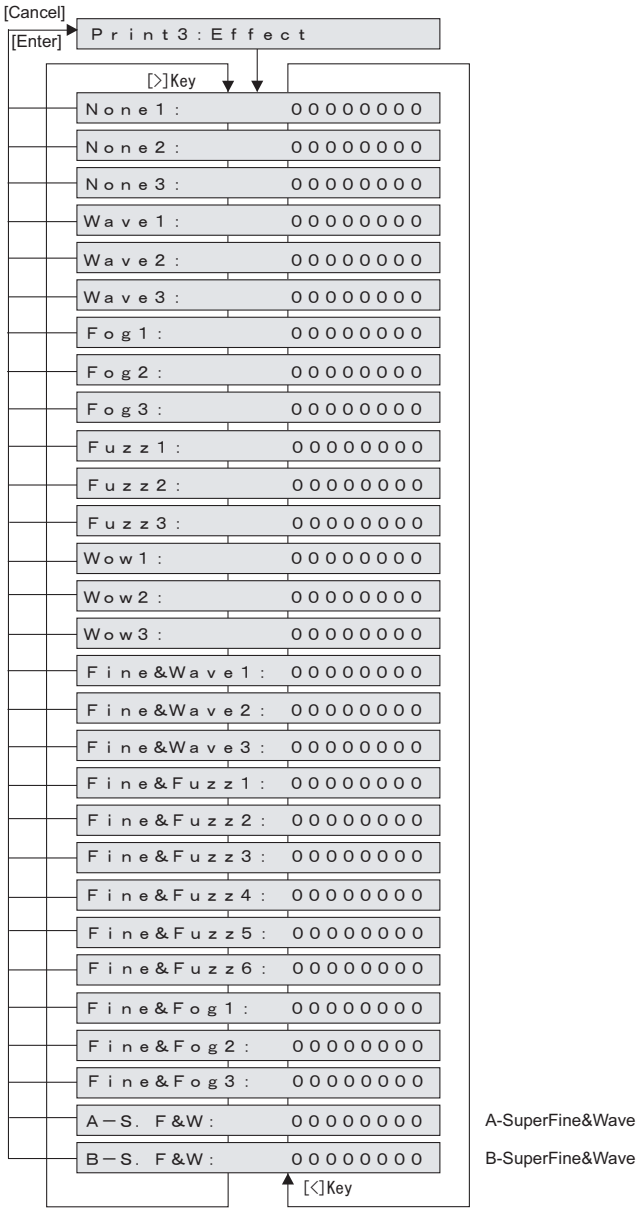
(4-b)Area

Check the number of printed copies of each effect



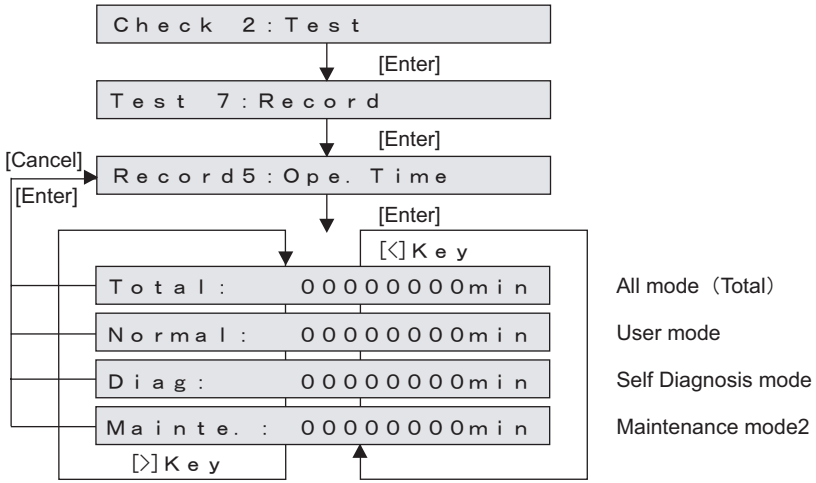
(4-c)Effect

Check the number of printed copies of each print effect.



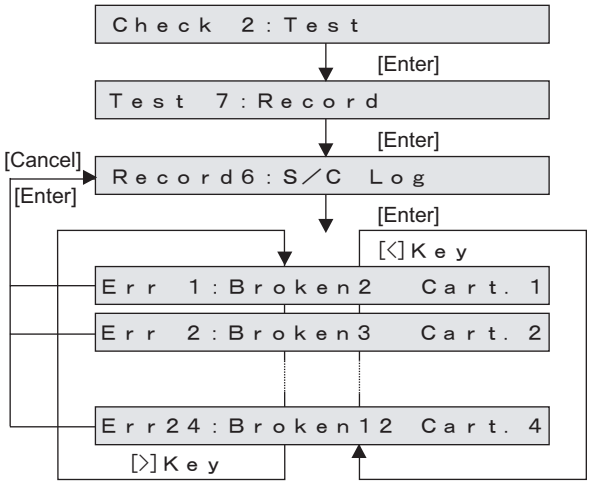
(5) Operation Time

Check the accumulated operation time of each activation mode.



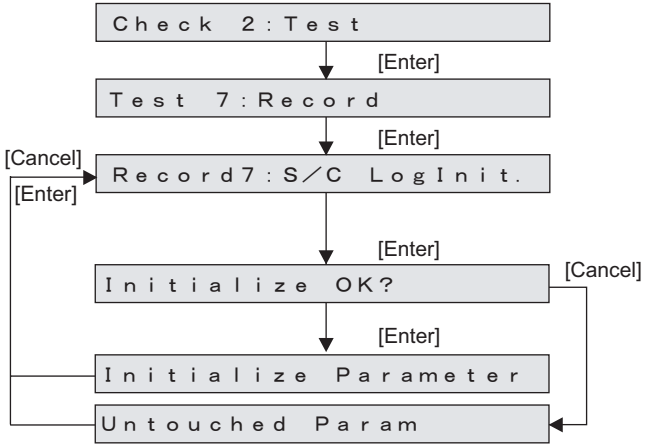
(6) S/C Log

Check the Smart chip log.
It Displays up to error 24.



(7) Initialization of S/C Log

Initialize the Smart chip log.

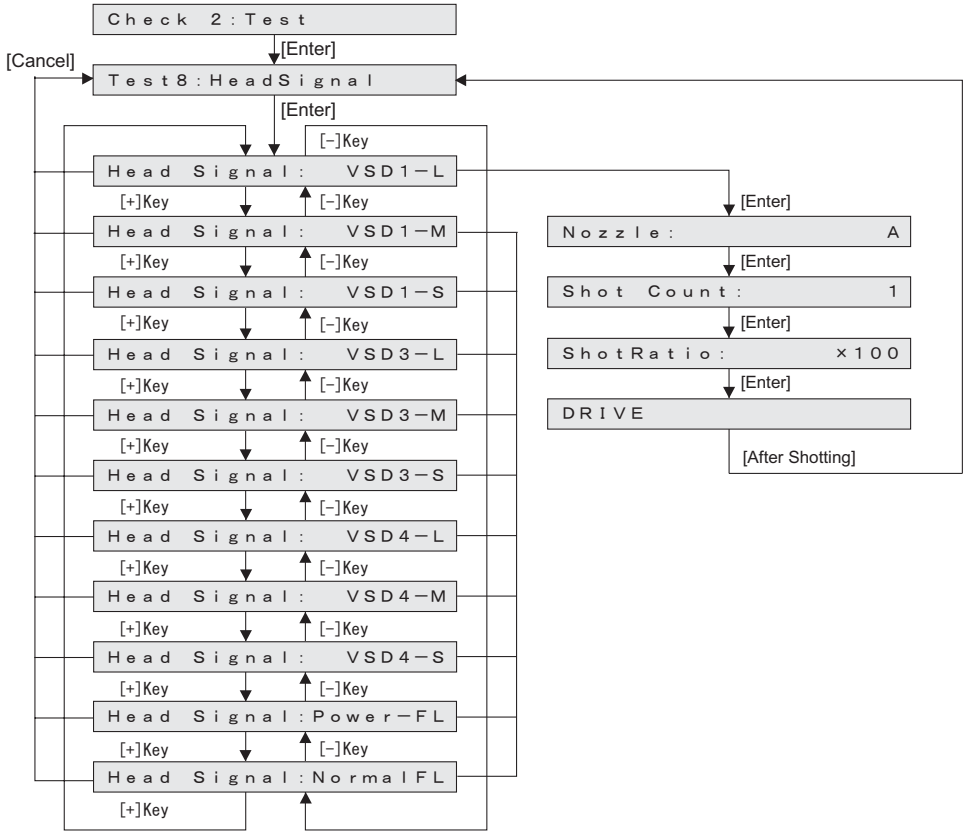


5.5.8 Head Waveform Menu

This menu is used to check the head-driving waveform.

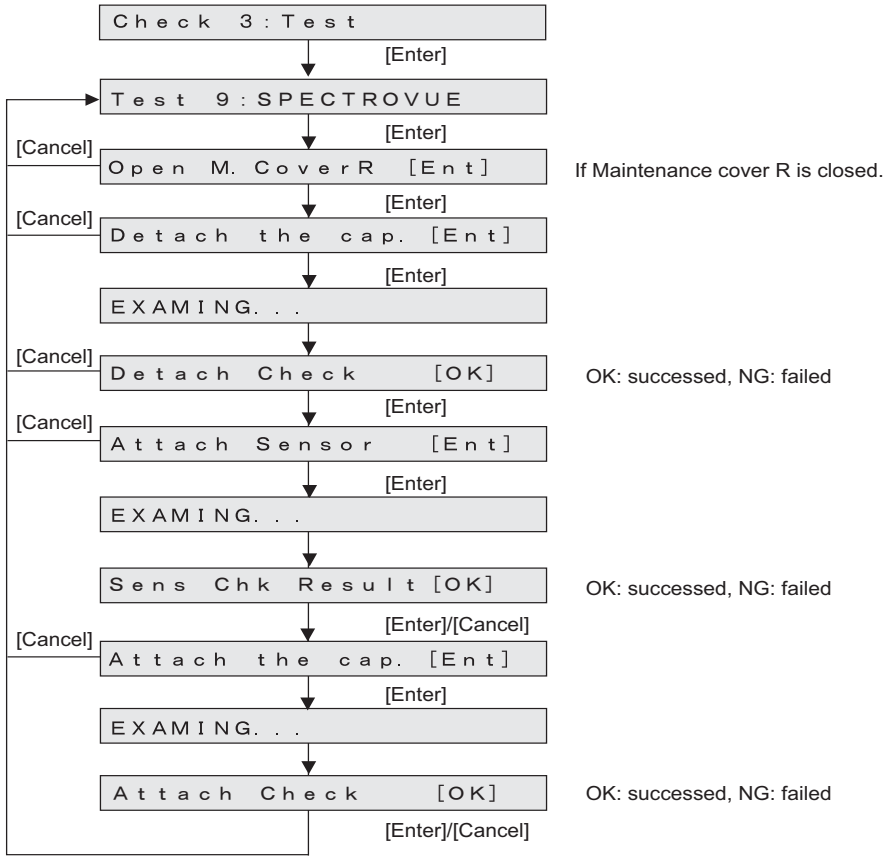
NOTE

- The number of shots can be selected in a range from 1 to 655.
- Magnification can be selected from the × 1, × 100、 × 10000, × 1000000. Nozzles can be selected among A to H or ALL.
- This is a function that is not normally used in maintenance work.



5.5.9 SPECTROVUE Menu

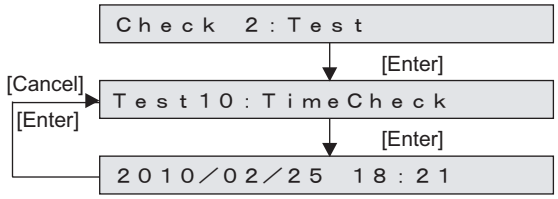
Check the connection of SPECTROVUE.



5.5.10 Time Check Menu

Check the date which is managed by RTC (Real Time Clock) on MAIN borad.

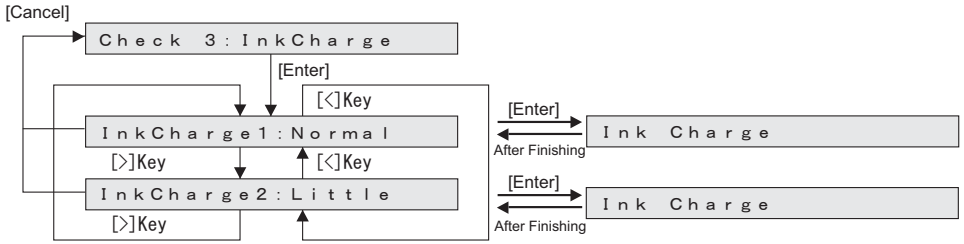
You can only check it in Self-diagnosis function. To setup, use Mutoh Service Assistance.



5.6 Ink Charging Menu

In the ink charging menu, you can execute the initial wash of Print head and ink charge.
The charging items of the ink charging menu are as follows:

Charging item	Contents
InitialCharge	Performs after initial washing.
LittleCharge	Performs after replacimg Solenoid head Assy .



5.7 Adjustment Menu

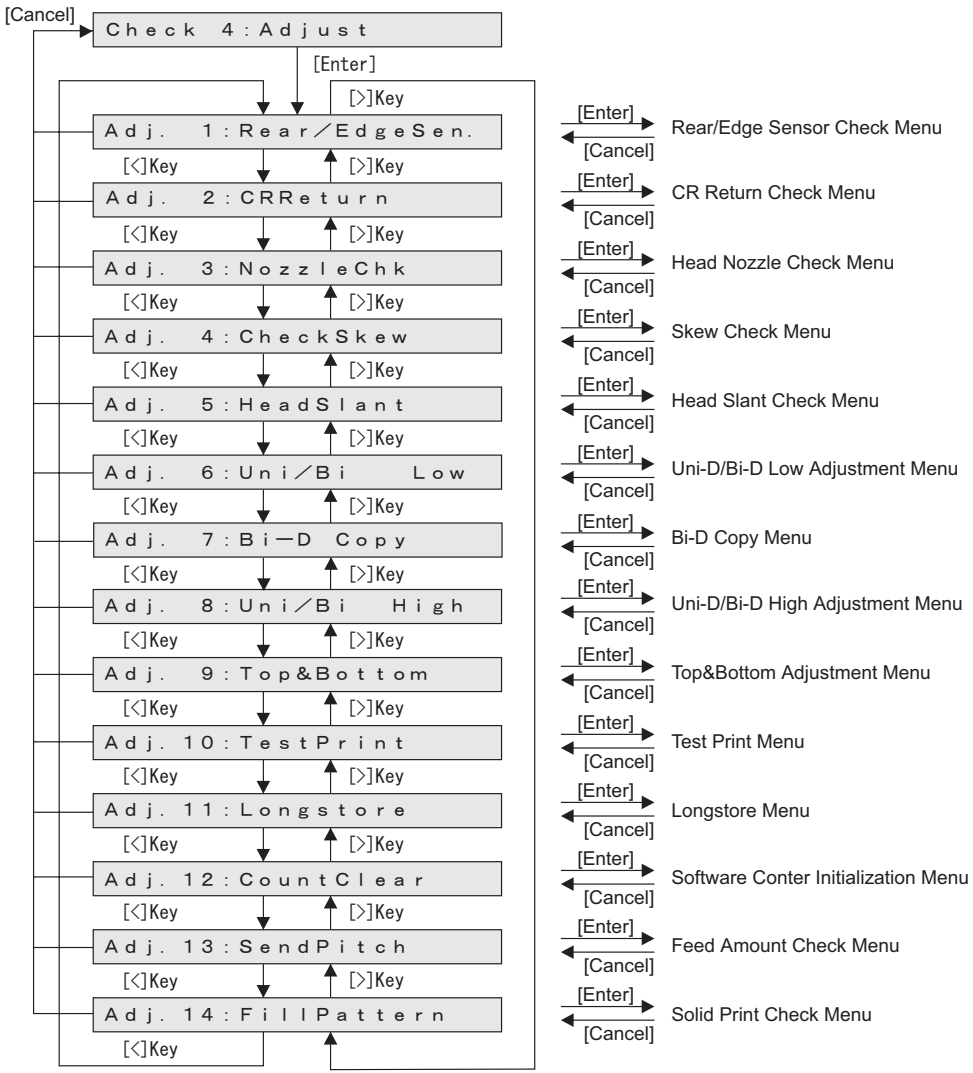
This menu is used to align the printing position and correct the media feed operation.
When replacing Head, perform head wash (after this, turn off the power and replace Head), head nozzle check,UniD adjustment、BiD adjustment、Side margin adjustment、Test pattern printing.

Table 5-3 Diagnosis Items in Adjustment Menu

Diagnosis item	Contents	Reference
Rear ／ Edge Sensor adjustment	Automatically adjusts the sensor sensitivity for Media detection.	☞"5.7.1 Rear/ Edge Sensor Adjustment" p.5-28
Head nozzle check	Checks whether the ink is normally discharged from Head nozzles from the printing results.	☞"5.7.2 Head Nozzle Check Menu" p.5-30
Skew check	Performs media feed and detects the degree of skew in media feed by Sensor.	☞"5.7.3 Skew Check Menu" p.5-33
Head slant check	Checks Print head slant (horizontal and vertical direction) from the printing results. Mechanical adjustment must be performed as necessary.	☞"5.7.2 Head Nozzle Check Menu" p.5-30
Uni-D / Bi-D adjustment Low	When PG_Low, performs adjustments of gaps between the nozzle rows and aligns the position in bi-directional printing.	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
Bi-D Copy	Copy All adjustment values form Bi-D Low to Bi-D High. (When Copying adjustment values, which are adjusted for Bi-D High.)	
Uni-D / Bi-D adjustment High	When PG_High, performs adjustments of gaps between the nozzle rows and aligns the position in bi-directional printing.	☞"5.7.5 Uni-D/Bi-D Adjustment Menu" p.5-39
Top & Bottom adjustment	Adjusts Top, bottom, and side margins.	☞"5.7.7 Top&Bottom adjustment Menu" p.5-47
Test printing	Prints out adjustment pattern ALL, adjustment parameters ALL, and serious error history.	☞"5.7.8 Test Printing Menu" p.5-48
Longstore	Cleans Ink tubes and Print heads using Cleaning liquid.	☞"5.7.9 Longstore Menu" p.5-50

Table 5-3 Diagnosis Items in Adjustment Menu (Continued)

Diagnosis item	Contents	Reference
Longstore2	Cleans Ink tubes and Print heads using Shipping fluid to maintain the condition at the time of shipping.	☞"5.7.10 Longstore2 Menu" p.5-51
Software counter initialization	Clears various software counters.	☞"5.7.11 Software Counter Initialization Menu" p.5-52
Feed amount check	Checks whether there is an error in feed amount per band from the printing results.	☞"5.7.12 Feed Pitch Check Menu" p.5-53
Solid print check	Performs solid nozzle print check (color selection, nozzle selection and print direction selection are available).	☞"5.7.13 Solid Print Menu" p.5-54

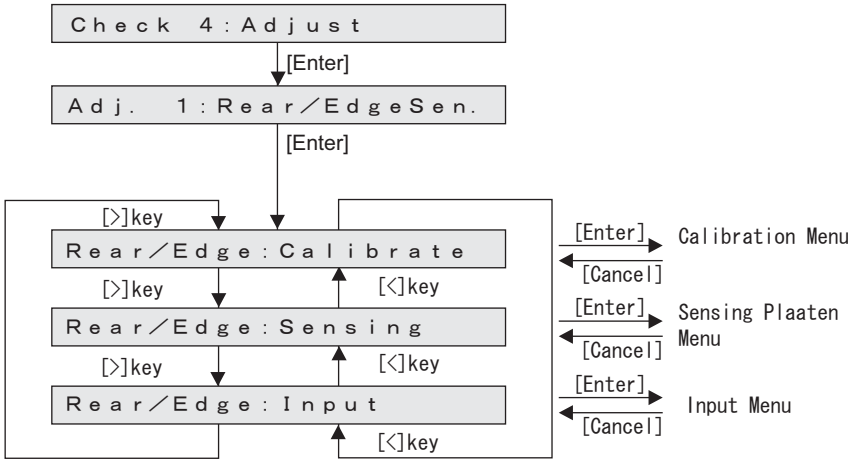

[Cancel]
Check 4:Adjust
[Enter]
[>]Key
Adj. 1:Rear/EdgeSen.
[<]Key
[>]Key
Adj. 2:CRReturn
Adj. 3:NozzleChk
Adj. 4:CheckSkew
Adj. 5:HeadSlant
Adj. 6:Uni/Bi Low
Adj. 7:Bi-D Copy
Adj. 8:Uni/Bi High
Adj. 9:Top&Bottom
Adj. 10:TestPrint
Adj. 11:Longstore
Adj. 12:CountClear
Adj. 13:SendPitch
Adj. 14:FillPattern
[Enter]
[Cancel]
Rear/Edge Sensor Check Menu
CR Return Check Menu
Head Nozzle Check Menu
Skew Check Menu
Head Slant Check Menu
Uni-D/Bi-D Low Adjustment Menu
Bi-D Copy Menu
Uni-D/Bi-D High Adjustment Menu
Top&Bottom Adjustment Menu
Test Print Menu
Longstore Menu
Software Conter Initialization Menu
Feed Amount Check Menu
Solid Print Check Menu

5.7.1 Rear/ Edge Sensor Adjustment

TIP

- Automatically Adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values.
- After adjusting, measuring AD values when paper is not set.
  Confirming threshold that is used to judge whether paper is set.
- Measuring AD values of Edge sensor at four positions of Platen.
- Using MF-3G for adjusting sensor.

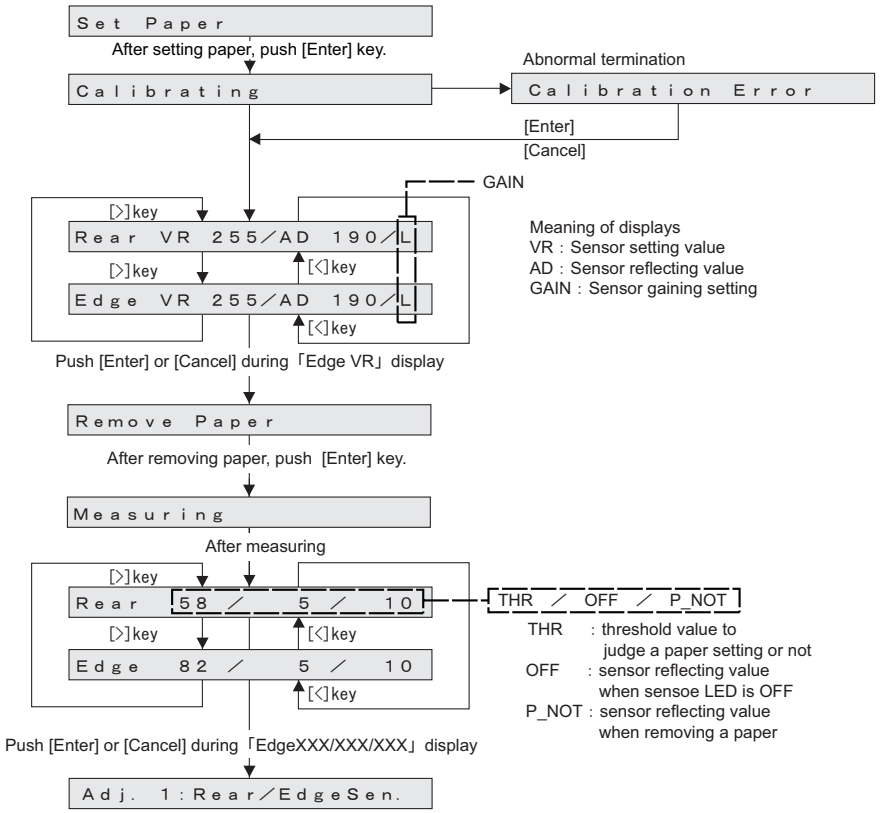
☞"5.7.1 Rear/ Edge Sensor Adjustment" p.5-28



(1) Calibration

TIP

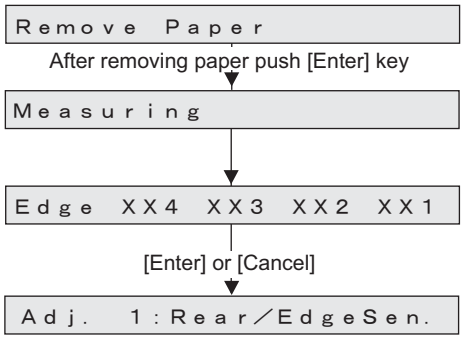
- After adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values, panel displays results.
- When abnormal termination, panel displays the VR values that is final state of adjusting process.



(2) Measuring Platen reflecting value（Sensing Platen）

TIP

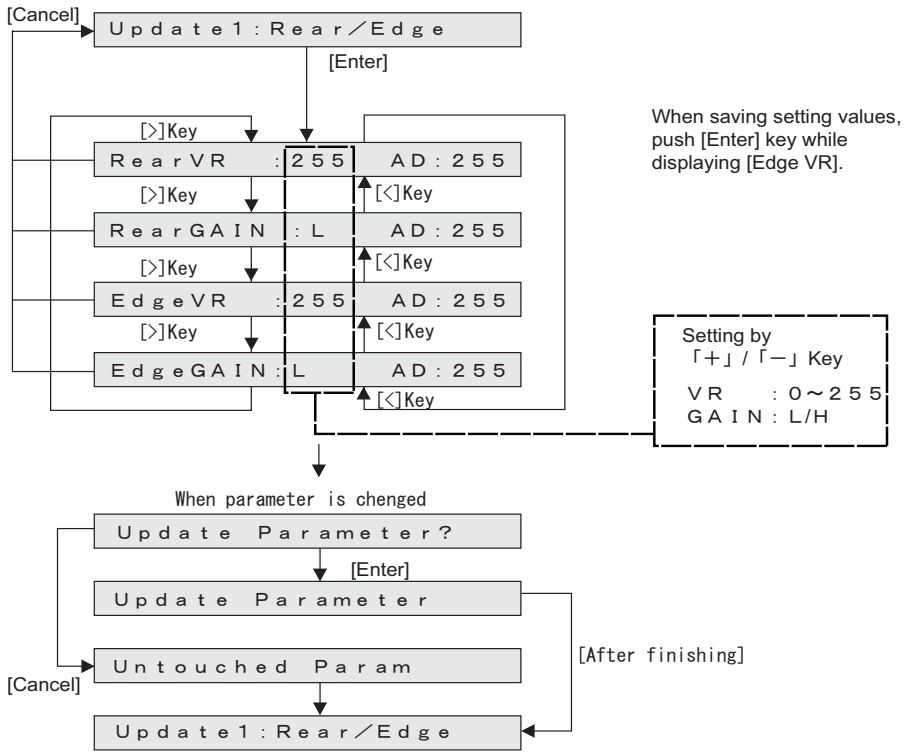
- Measuring AD values of Edge sensor at four positions of Platen.
- Measuring AD values at the four positions as shown below, and the AD values is displayed on the panel.



(3) Input

NOTE

- Do not usually use this function.
  - Use only in:
    When any problems are occured at paper recognition, while adjusting the sensor at Calibration.
    When adjustment is needed for using environment (environment light , media type and so on) of user.
- You can Set the sensor parameter manually which was adjusted automatically at Calibration.
- Setting values are displaye immediately.
  ＡＤ（Sensor reflecting value）：０～２５５



5.7.2 Head Nozzle Check Menu

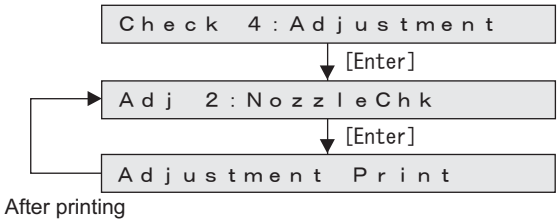
This menu is used to check if Head nozzles can discharge ink correctly from the printing results.

TIP

- CW : In this manual, it indicates the direction from origin to opposite side of the origin.
- CCW : In this manual, it indicates the direction from opposite side of the origin to origin.

To check Head nozzles, follow the procedure below.

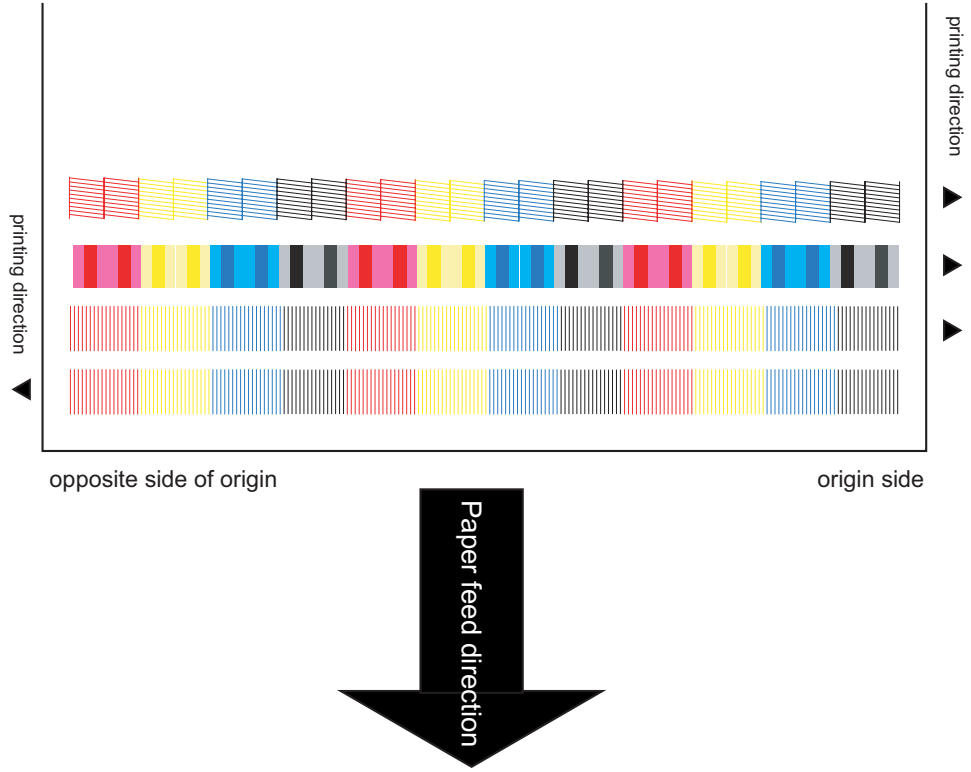
1. Set media as necessary.
2. After media is set, the machine prints out head nozzle check patterns in the following modes:
   - 1 pass, Uni-D
   - PF: 360 dpi
   - CR: 360 dpi
3. Nozzle check patterns will be printed from the media origin, in the order of A to H.



Display during adjustment pattern

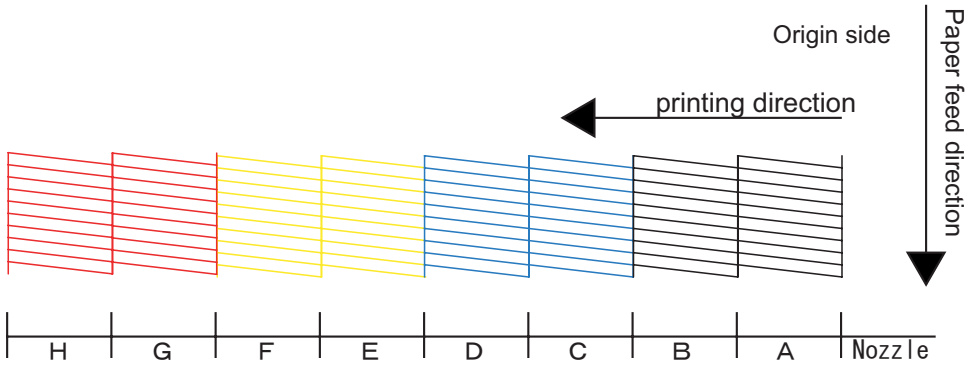
TIP

- The following pattern will be printed.

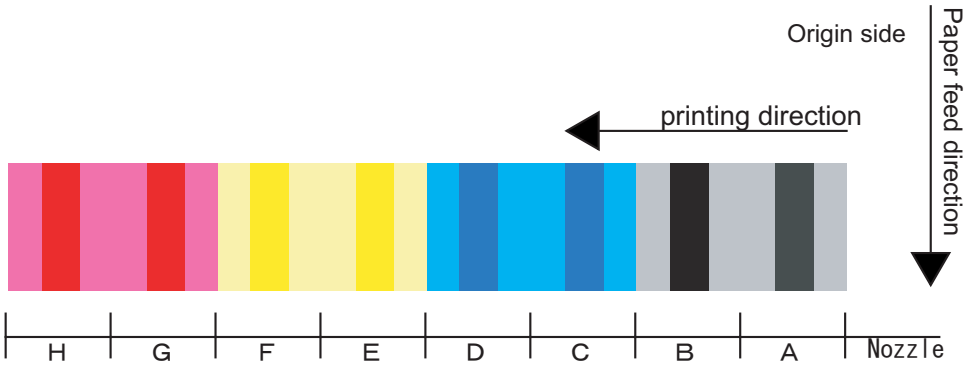


4. Check the printed head nozzle check patterns for the following points:
   - Ink nozzle discharge (missing dots, discontinuity, meandering)
   - Satellite
   - Nozzle alignment in the vertical direction
   - Nozzle alignment in the horizontal direction

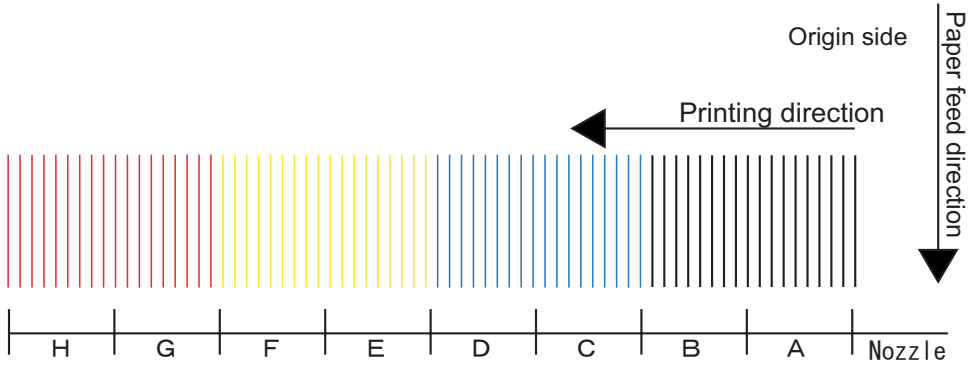
Nozzle check: Prints out the pattern in the order of A to H from the paper origin side.



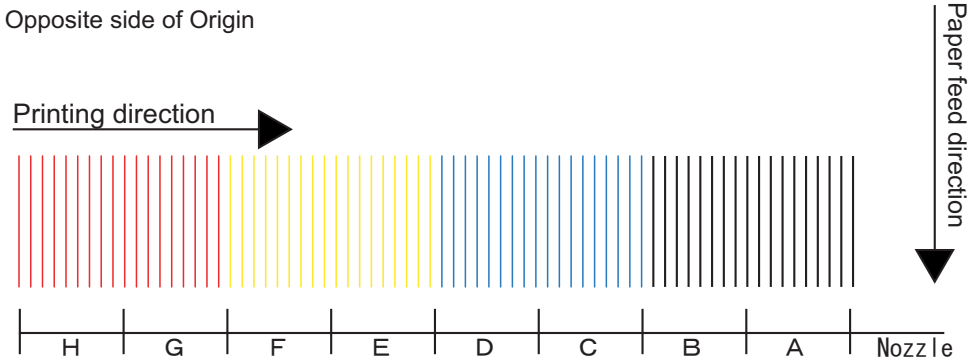
Nozzle alignment in the vertical direction: Prints out the pattern in the order of A to H from the paper origin side.



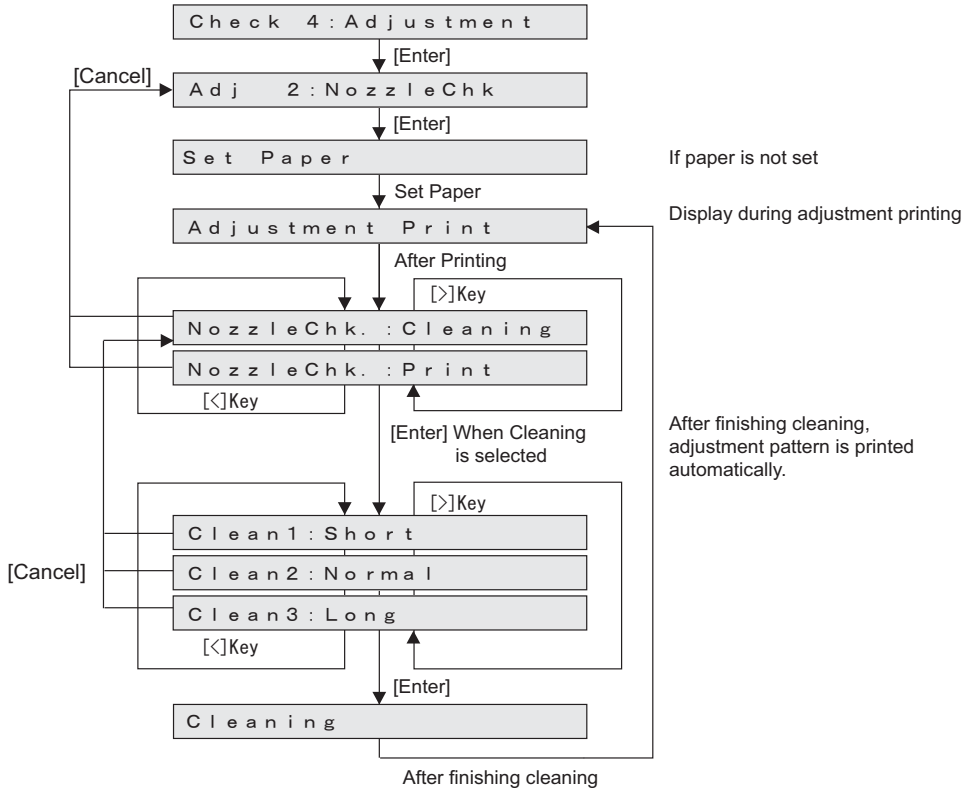
Nozzle alignment in the horizontal direction (CW direction): Prints out the pattern in the order of H to A from the paper origin side.



Nozzle alignment in the horizontal direction (CCW direction): Prints out the pattern in the order of A to H from the paper origin side.



5. If any abnormal conditions are found in the ink discharge status of Head nozzles, perform cleaning.



6. After cleaning, print out head nozzle check patterns again.

5.7.3 Skew Check Menu

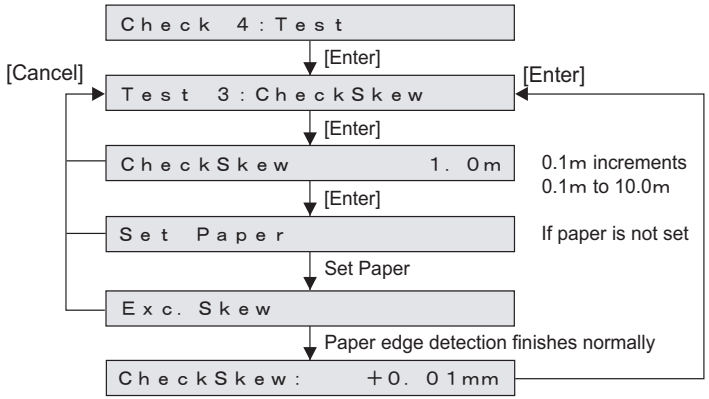
Feed the paper to check the skew size using Sensor.

When you select this item from the Adjustment Menu, the printer feeds the loaded media by one pass and checks difference of the media edge positions before and after the media feed detected by Sensor.

NOTE

Before performing skew check, ensure that the media is set correctly.
The printer determines the media setting reference position during the first detection of media left edge. Therefore, the media that is not set correctly may cause errors as below:

- Media error occurs during skew check and printer operation stops.
- During media initial operation after power is turned on, "Undefined Paper" is frequently displayed.



5.7.4 Head Slant Check Menu

This menu is used to check print head slant (horizontal direction, vertical direction) from a sample printing. And performs mechanical adjustment if necessary.

The printer has 8 nozzle rows per head. This menu adjusts the slant of each nozzle row evenly.

TIP

- Uni-D (Uni-Direction) indicates uni-directional printing.
- Bi-D (Bi-Direction) indicates bi-directional printing.

The items for head slant is as follows

Items	Contents
Head slant slant1	Head slant check in the horizontal direction
Head slant slant2	Head slant check in the vertical direction

NOTE

- When printing "Head slant: Slant1" adjustment pattern, the pattern for vertical adjustment is also printed.
- You can use the printed "Head slant: Slant2" adjustment pattern to adjust the head slant (vertical).

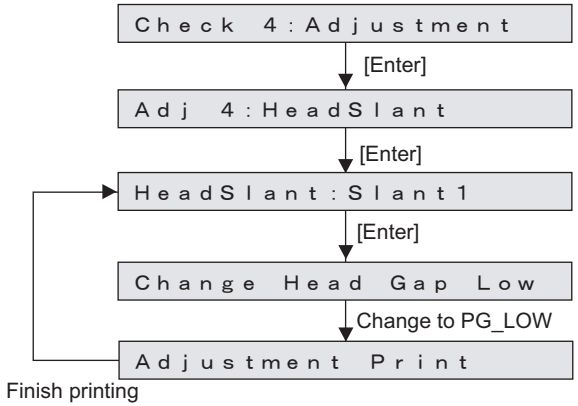
(1) Printing in 「Head slant : slant1」

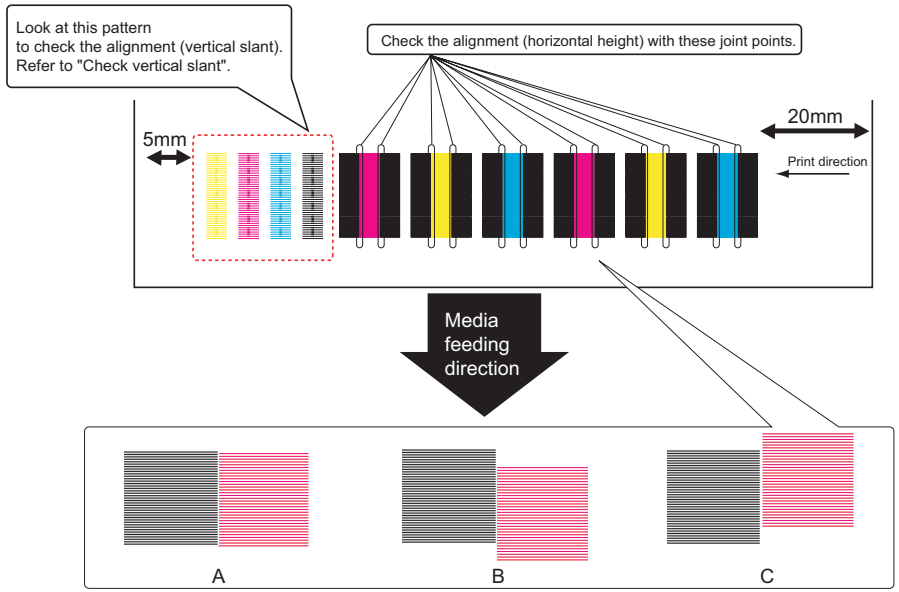
The printer prints out head slant check patterns in the following modes:

- 1 pass, Uni-D/Bi-D
- PF: 360 dpi, CR: 360 dpi
- According to the width of media,the right pattern is printed on three places or less.

TIP

When printing "Head slant: Slant1" adjustment pattern, the adjustment patterns for Head slant (horizontal height) and Head slant (vertical) are also printed.





(1-a)Check Head slant (horizontal height).

Items to check are as follows.

A : OK

B : On a "Black" basis, shift Magenta upward.

C : On a "Black" basis, shift Magenta downward.

1. When the print result has misalignment, perform machine adjustment.
☞"4.6.1 Head Alignment (Horizontal Height)" p.4-54

TIP

From the media origin side, each path is printed in the combination shown below.
1st path: Nozzle lines A/C
2nd path: Nozzle lines A/C, A/E, and A/G
3rd path: Nozzle lines B/D, B/F, and B/H

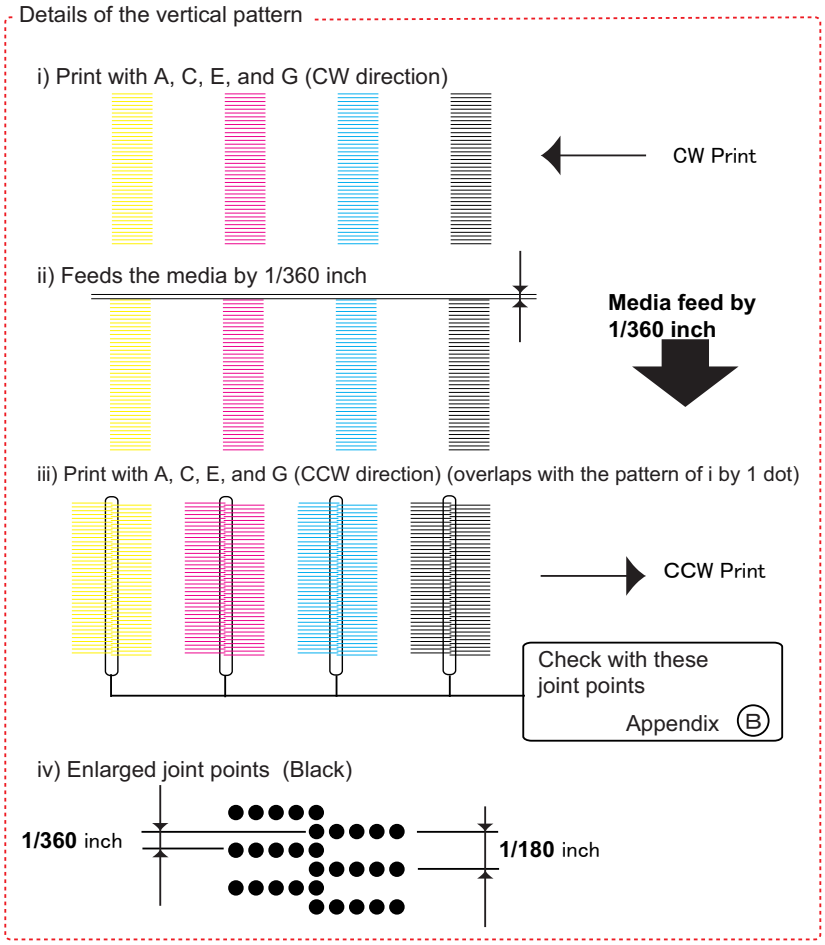
2. After machine adjustment, print the comfirmation pattern of Head slant again.
3. When Head slant is still misaligned, perform adjustment.

(1-b)Check the vertical direction

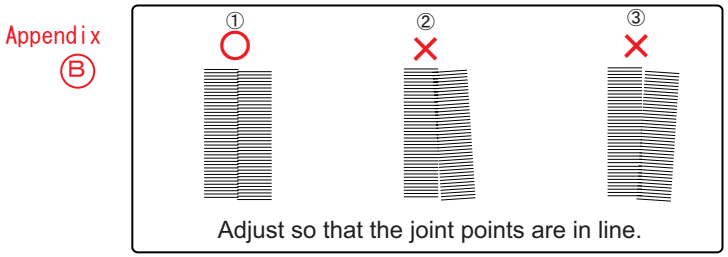
Check if Head is slanted in a horizontal direction from the print result.

Follow the procedure below and check the head slant.

1. Check the print result of the head slant confirmation pattern. The items to check are as follows.
   - Head slant



2.Refer to Appendix B to check the print result.



① : No adjustment required.
② : Move Head base mounting plate downward.
③ : Move Head base mounting plate upward.

☞"4.6.2 Head Alignment (Vertical Slant)" p.4-56

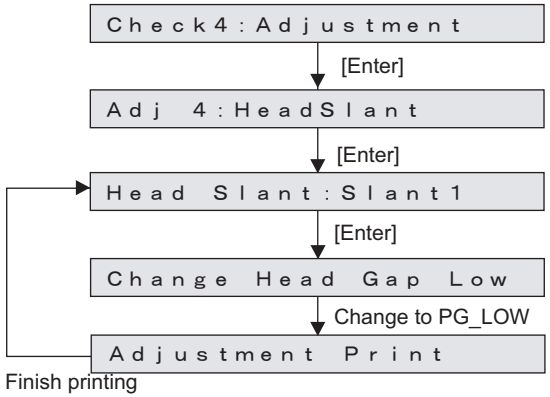
3.After adjusting Head base mounting plate,confirmation pattern again.

4.If Head slant is still not adjusted, repeat printing and adjusting.

(2) Printing in 「Head slant：slant2」

This menu is used to print out a sample printing to check for head slant in the vertical direction.
To perform head slant check, follow the procedure below.

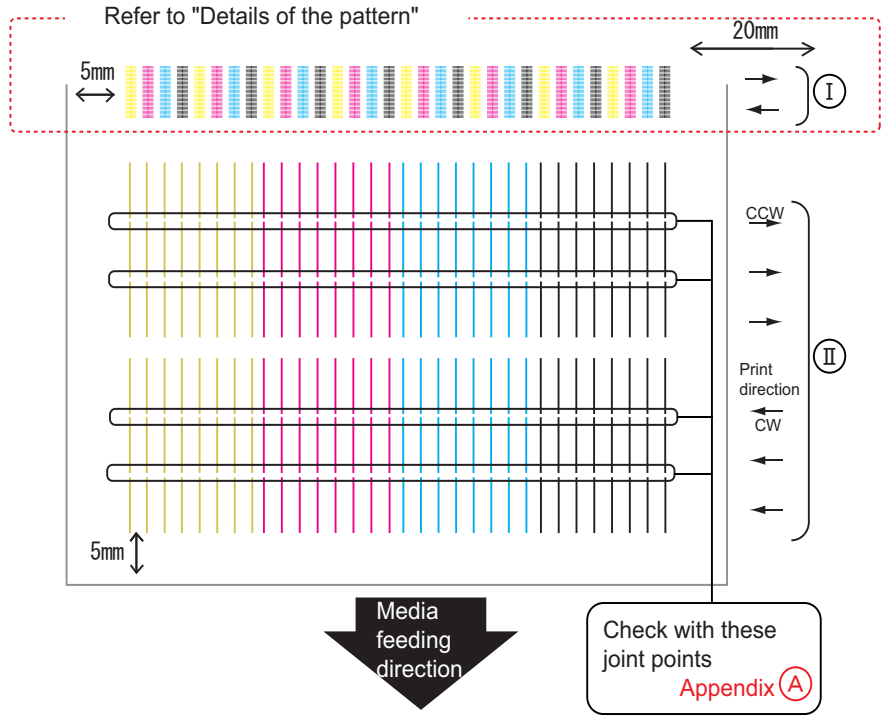
1. The Printer prints out head slant check patterns in the following modes:
   - 1 pass, Uni-D
   - PF: 360 dpi, CR: 360 dpi
   - II onthe right : VSD 1, small dot.
   - I on the right : VSD 1, Large dot.
   - For I on the right, it will be printed from the Origin point in the order of A to H.
   - For II on the right, it will be printed from the Origin point in the order of A to C to E to G, with CW/CCW.

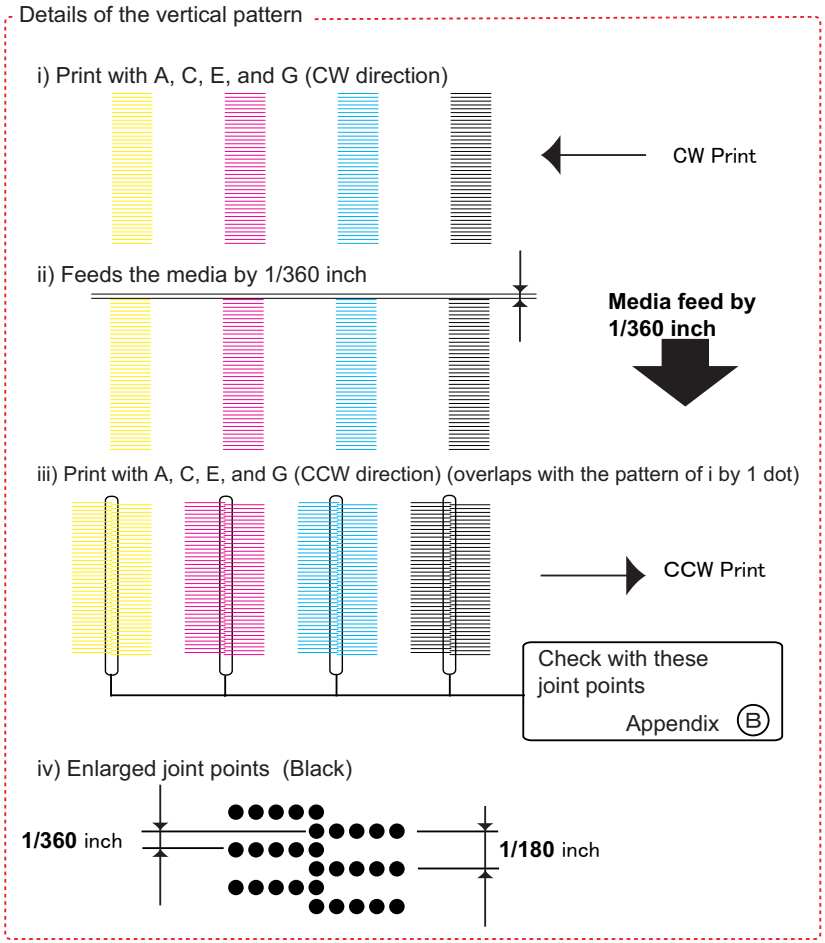


TIP

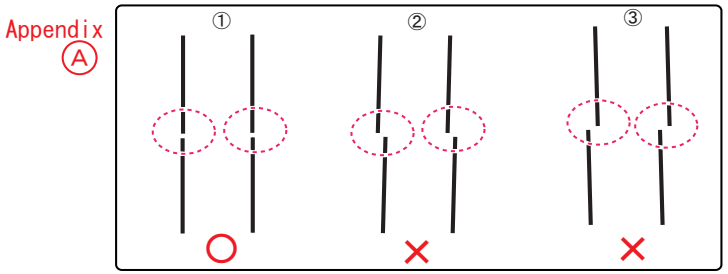
For the details on the following pattern II, refer to "Details of the vertical pattern".

Head slant (vertical) pattern



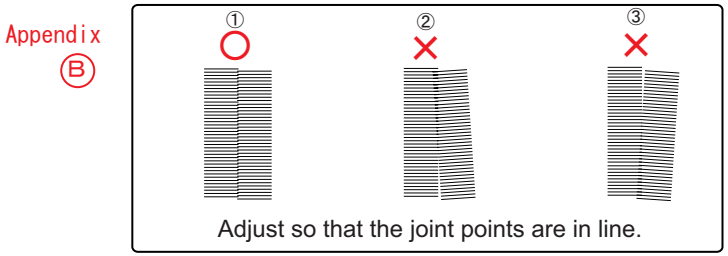


2. Refer to Appendix A to check the print result.



① : No adjustment required.
② : Move Head base mounting plate downward.
③ : Move Head base mounting plate upward.
☞"4.6.2 Head Alignment (Vertical Slant)" p.4-56

3. Refer to Appendix B to check the print result.



① : No adjustment required.
② : Move Head base mounting plate downward.
③ : Move Head base mounting plate upward.
☞"4.6.2 Head Alignment (Vertical Slant)" p.4-56

4. After adjusting Head base mounting plate,confirmation pattern again.
5. If Head slant is still not adjusted, repeat printing and adjusting.

5.7.5 Uni-D/Bi-D Adjustment Menu

This menu is used to adjust the gap of the nozzle rows and perform the print position of the bi-directional printing.

- For the gap of the nozzle rows, check the printing results of the Uni-D adjustment check patterns and adjust the gaps.
- For the print position of the bi-directional printing, check the printing results of the Bi-D adjustment check patterns and adjust the positions.

TIP

- Uni-D (Uni-Direction) indicates uni-directional printing.
- Bi-D (Bi-Direction) indicates bi-directional printing.
- Because of the Print head specification, only one adjustment value corresponds to all nozzle rows.
- The cps (Characters Per Second) is the unit of printing speed.

Item	Contents
Uni-D 320 VSD1	Uni-D Adjustment confirmation pattern of 320cps, VSD1, and PG LOW/HIGH value
Uni-D 320 VSD3	Uni-D Adjustment confirmation pattern of 320cps, VSD3, and PG LOW/HIGH value
Uni-D 320 VSD4	Uni-D Adjustment confirmation pattern of 320cps, VSD4, and PG LOW/HIGH value
Uni-D 460 VSD1	Uni-D Adjustment confirmation pattern of460cps, VSD1, and PG LOW/HIGH value
Uni-D 460 VSD3	Uni-D Adjustment confirmation pattern of 460cps, VSD3, and PG LOW/HIGH value
Uni-D 460 VSD4	Uni-D Adjustment confirmation pattern of 460cps, VSD4, and PG LOW/HIGH value
Bi-D 320 VSD1	Bi-D Adjustment confirmation pattern of 320cps, VSD1, and PG LOW/HIGH value
Bi-D 320 VSD3	Bi-D Adjustment confirmation pattern of 320cps, VSD3, and PG LOW/HIGH value
Bi-D 320 VSD4	Bi-D Adjustment confirmation pattern of 320cps, VSD4, and PG LOW/HIGH value
Bi-D 460 VSD1	Bi-D Adjustment confirmation pattern of 460cps, VSD1, and PG LOW/HIGH value
Bi-D 460 VSD3	Bi-D Adjustment confirmation pattern of 460cps, VSD3, and PG LOW/HIGH value
Bi-D 460 VSD4	Bi-D Adjustment confirmation pattern of 460cps, VSD3, and PG LOW/HIGH value
Bi-D ALL	Adjust all Bi-D pattern.

Item	Contents
Set up	Parameters setup for the items selected as shown on the left.
Print (Only when Uni-D is selected)	Prints out the patterns of the items selected on the left, with the current parameters.
Print 1 (Only when Bi-D is selected)	Prints out the patterns of the items selected on the left, with the current parameters and the parameters with ± 2, ± 4, ± 6, and ± 8 (1 vertical line in turn, with each parameters). Check the current amount of misalignment.
Print 2 (Only when Bi-D is selected)	Prints out the patterns of the items selected on the left, with the current parameters.
Print3 (Only when Bi-D ALL is selected)	Prints all Bi-D pattern in current parameter.

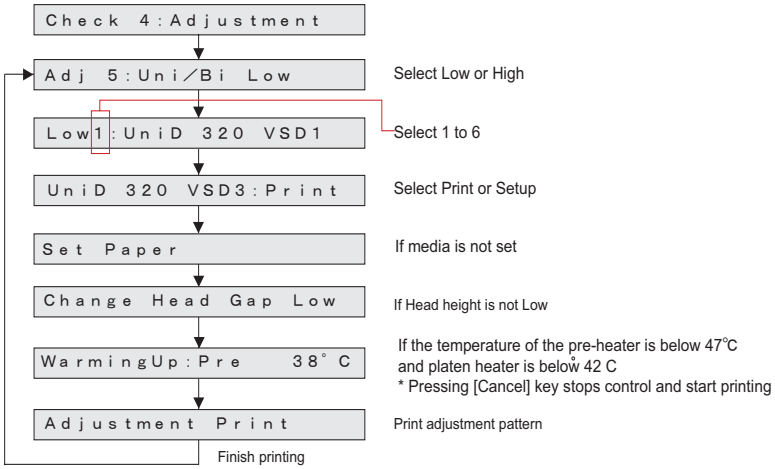
To adjust the Uni-D/Bi-D, follow the procedure below.

(1) Set media as necessary.

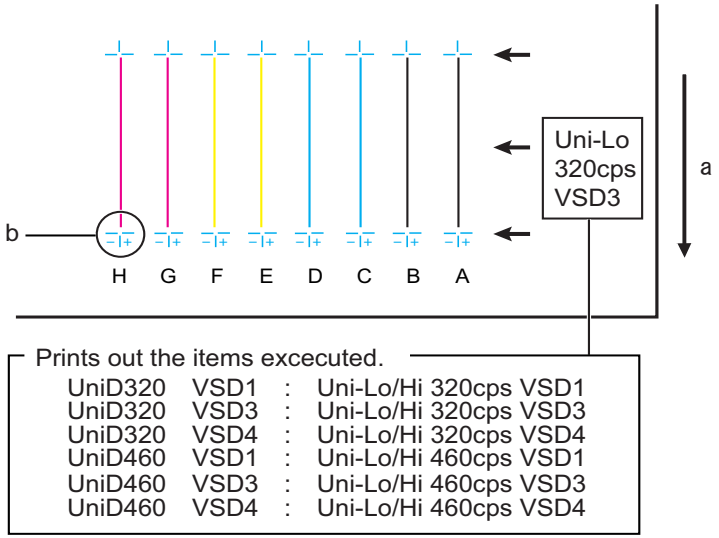
(2) The printer prints the adjustment check patterns.

Uni-D adjustment → (2-a) → (2-e)
Bi-D adjustment → (2-b) → (2-c) → (2-e)

(2-a) Uni-D adjustment patterns (when Print is selected)



1. Prints out the pattern from the origin side, in the order of A to H. (Uni-D 320 VSD3)



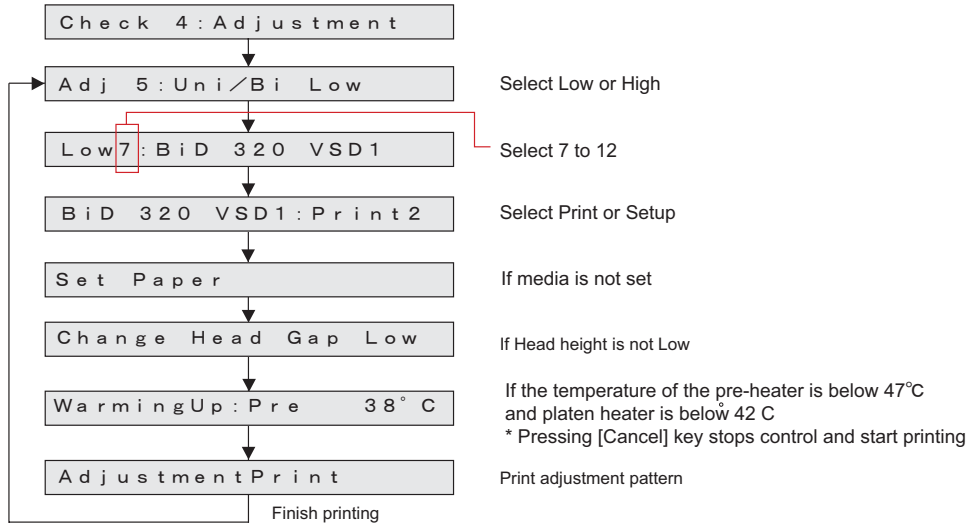
a:Media feed direction
b: Adjust the setting value so that these points match.

2. If connecting points above do not match, enter adjust values under 'setup'.
☞"(2-e) Setup menu" p.5-44

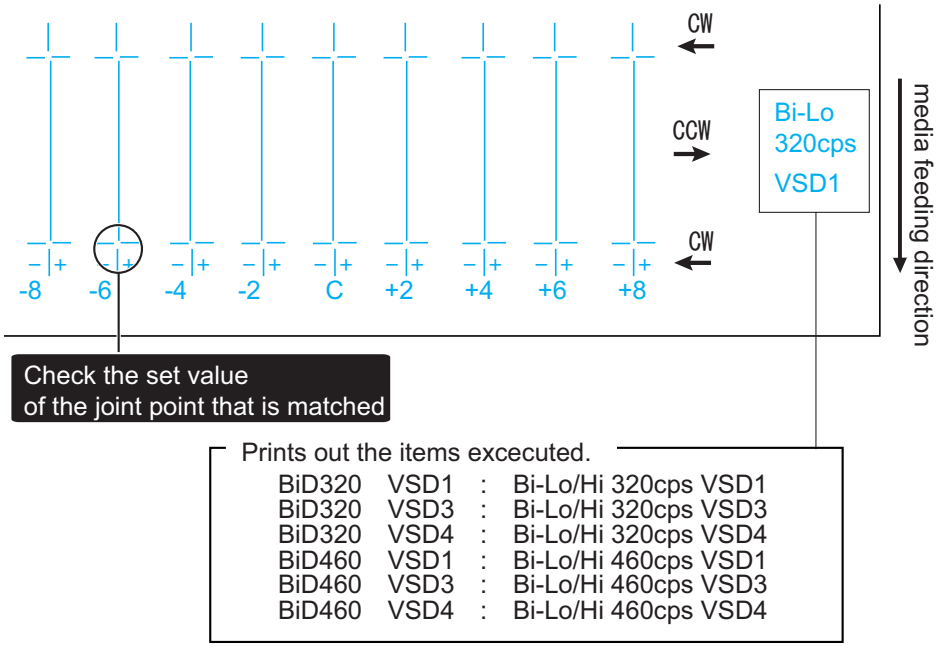
3. Repeat steps 1 through 3 until connecting points match.

(2-b) Bi-D adjustment pattern (when Print 1 is selected)

(Bi-D 320 VSD3)

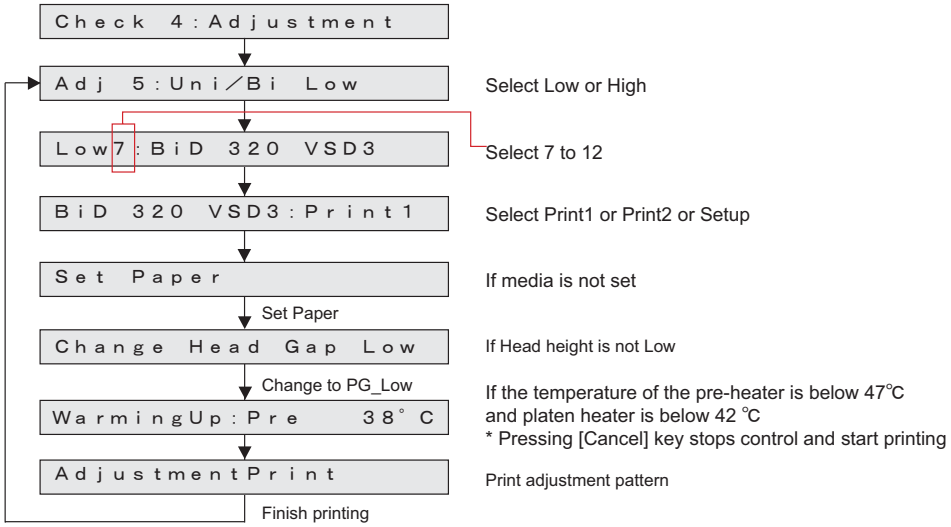


1. Prints out the pattern on the basis of Nozzle line C. (Bi-D 320 VSD1)

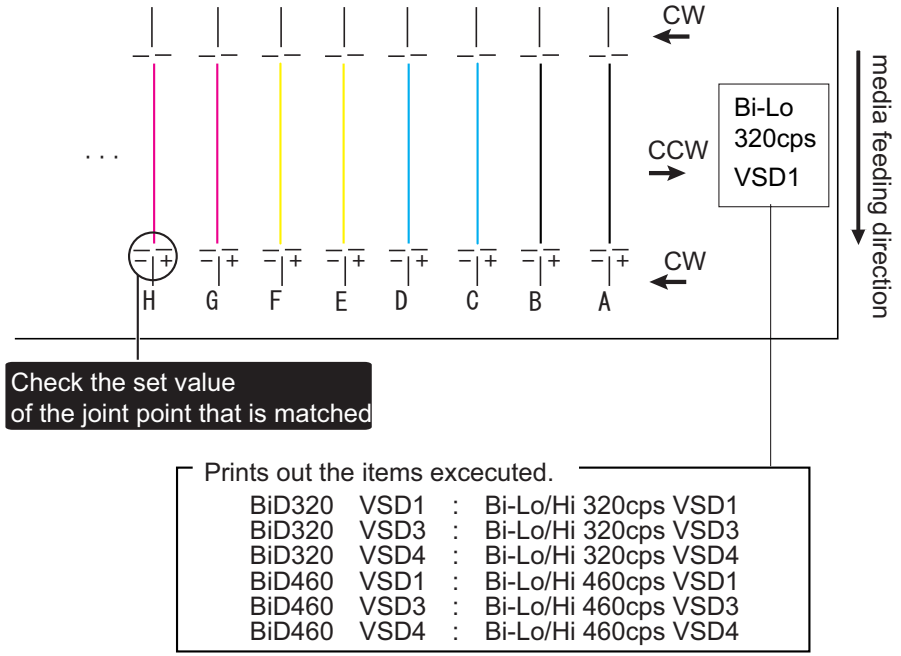


2. After printing patterns, enter adjust values under 'setup'.
☞"(2-e) Setup menu" p.5-44
3. After entering adjustment values, print again adjustment patterns, and check.
4. Repeat steps 1 through 3 until points match at “C”.

(2-c)Bi-D adjustment pattern （ When Print2 is selected）(Bi-D 320 VSD3)

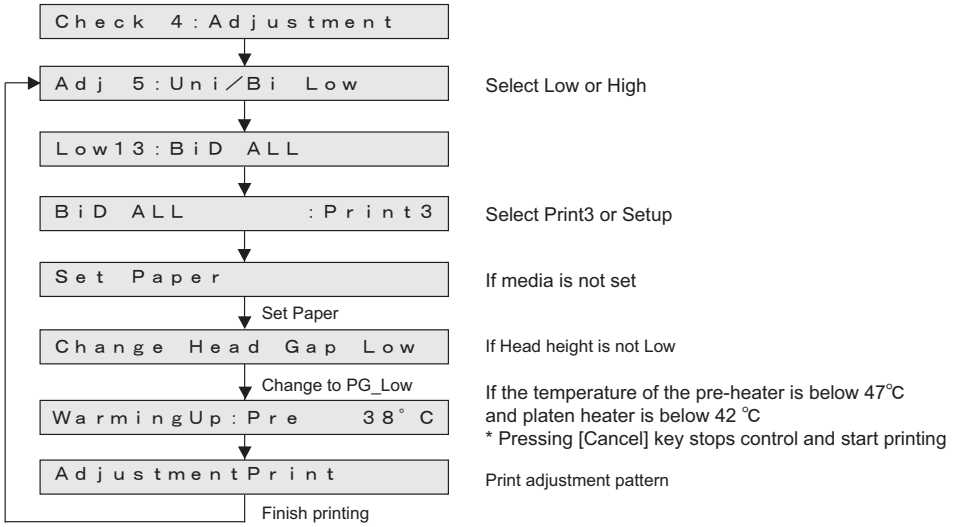


1. Prints out the pattern from the origin side, in the order of A to H. (Uni-D 320 VSD1)



2. After printing patterns, enter adjust values under 'setup'.
☞"(2-e) Setup menu" p.5-44
3. After entering adjustment values, print again adjustment patterns, and check.
4. Repeat steps 1 through 3 until each connecting points matches.

(2-d)Bi-D adjustment pattern（When Print3 is selected）



Printing speed is different in each item.

Prints out all adjustment patterns (Print2).
Printing items are as shown below.

Item	Contents
Bi-D 320 VSD1	Bi-D Adjustment confirmation pattern of 320cps, VSD1, and PG LOW/HIGH value
Bi-D 320 VSD3	Bi-D Adjustment confirmation pattern of 320cps, VSD3, and PG LOW/HIGH value
Bi-D 320 VSD4	Bi-D Adjustment confirmation pattern of 320cps, VSD4, and PG LOW/HIGH value
Bi-D 460 VSD1	Bi-D Adjustment confirmation pattern of 460cps, VSD1, and PG LOW/HIGH value
Bi-D 460 VSD3	Bi-D Adjustment confirmation pattern of 460cps, VSD3, and PG LOW/HIGH value
Bi-D 460 VSD4	Bi-D Adjustment confirmation pattern of 460cps, VSD4, and PG LOW/HIGH value

About adjustment pattern, refer to ☞**"(2-c) Bi-D adjustment pattern（When Print2 is selected）（Bi-D 320 VSD3）" p.5-42**

(2-e)Setup menu

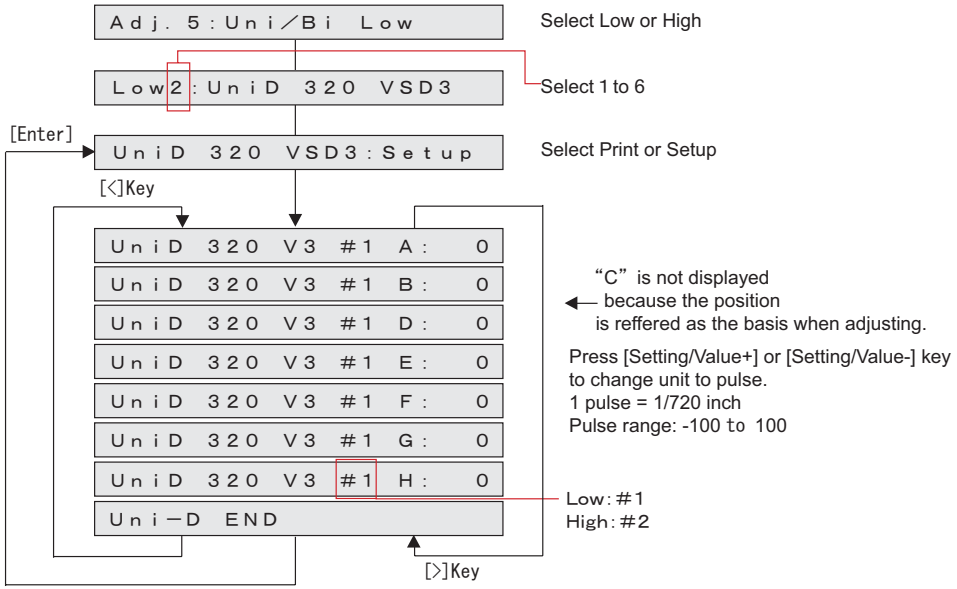
Select the Setup menu for parameters, and then press [Enter] to renew the parameters.

NOTE

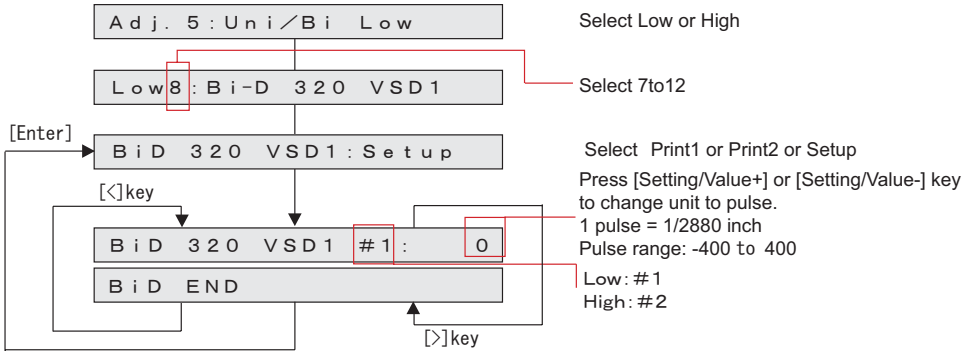
The initial value is set to values that are suited for the manufacturer genuine ink.

Enter setting values from panel.

Inputting Uni-D Adjusted value (Uni-D 320 VSD3)



Inputting Bi-D Adjusted value (Bi-D 320 VSD1)



- After entering adjustment values, print again adjustment patterns, and check.

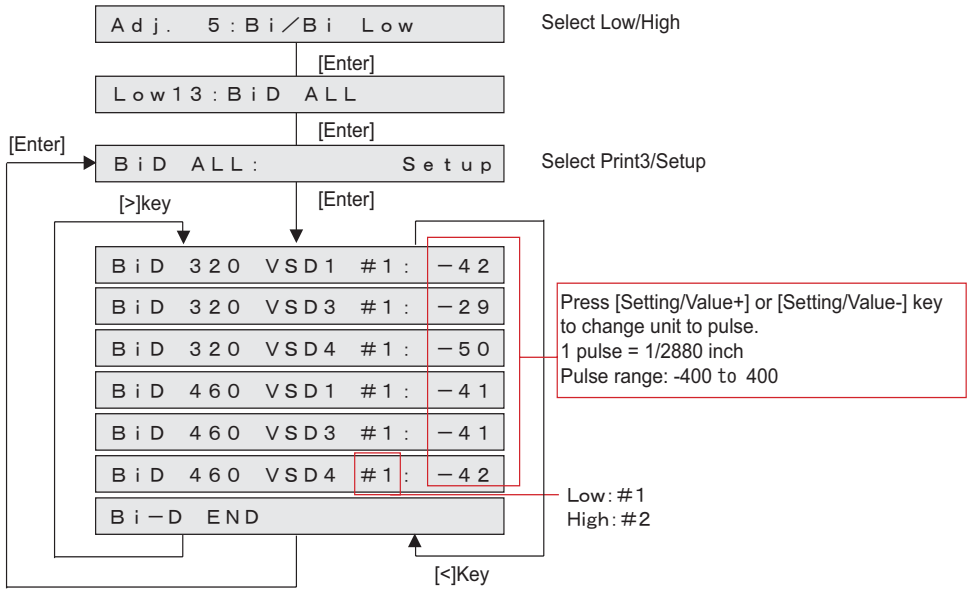
(2-f)Setup menu(Bi-D ALL)

Select the Setup menu for parameters, and then press [Enter] to renew the parameters.

NOTE

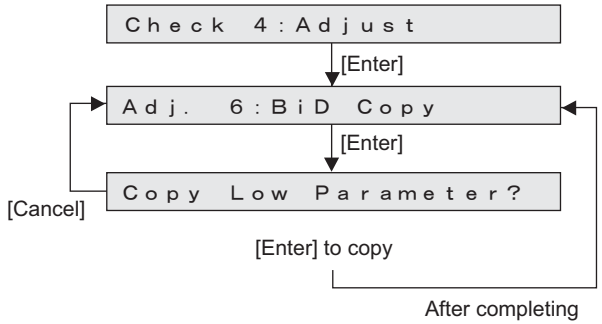
- The initial value is set to values that are suited for the manufacturer genuine ink.
- Bi-D ALL adjusts all setting values.

Enter setting values from panel.



5.7.6 Bi-D Copy

Copy All adjustment values form Bi-D Low to Bi-D High.
(When Copying adjustment values, which are adjusted for Bi-D High.)

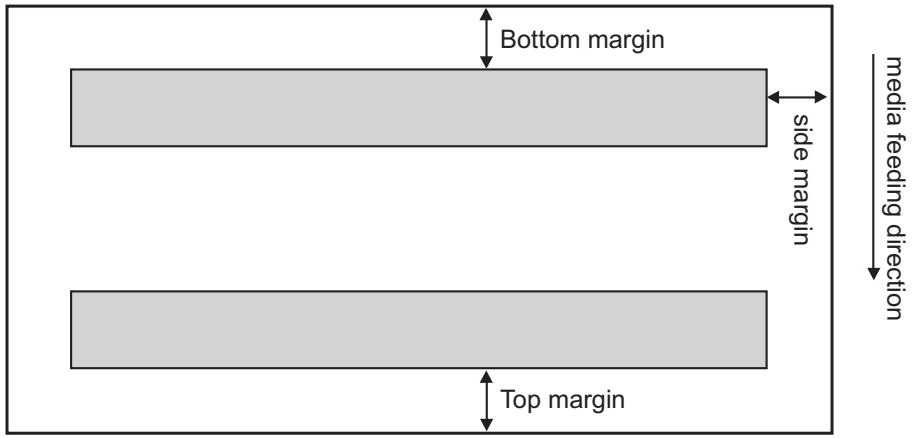


5.7.7 Top&Bottom adjustment Menu

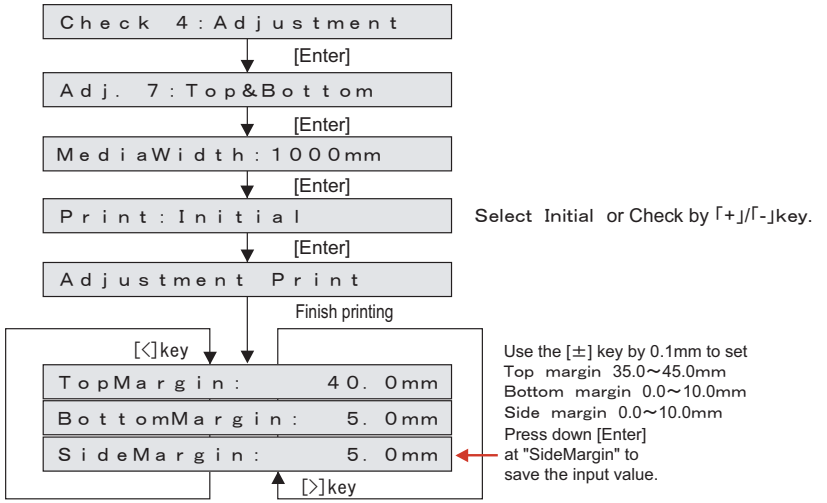
After printing and cutting the media, enter the distances of between Front sensor and Head (Top margin), Cutter and Head (Bottom margin), and Media edge sensor and Head (print start location), and adjust Top, Bottom, and Side margins.

Follow the procedure below to adjust.

1. Set media as necessary.
2. After media is set, the detected width of the set media is displayed.
3. After media is set, the printer prints out band feed correction adjustment patterns in the following modes.
   - Black, 1 pass, Uni-D, 360 dpi
   - If "check" is selected, black replaces magenta.
4. Check the printed top & bottom adjustment patterns for the measurement.
   Measue each margins with a scale and so on.



5. Enter each measured value as the parameter.



6. Perform "Print: Check", print out the Top&Bottom adjustment pattern, and cut the media.
7. Measure the followings on the print result and check that the print margins are adjusted.

   1 : Top margin
   2 : Bottom margin
   3 : Side margin

8. If the margins are not adjusted, repeat (3) to (7).

5.7.8 Test Printing Menu

This menu is used to print out the following terms.

Item	Contents
Adjustment pattern ALL	Prints adjustment patterns.
Parameter ALL	Prints each adjustment parameter setting value.
Log info.	Prints the serious error history.
S/C Log info.	Prints S/C Log history

NOTE

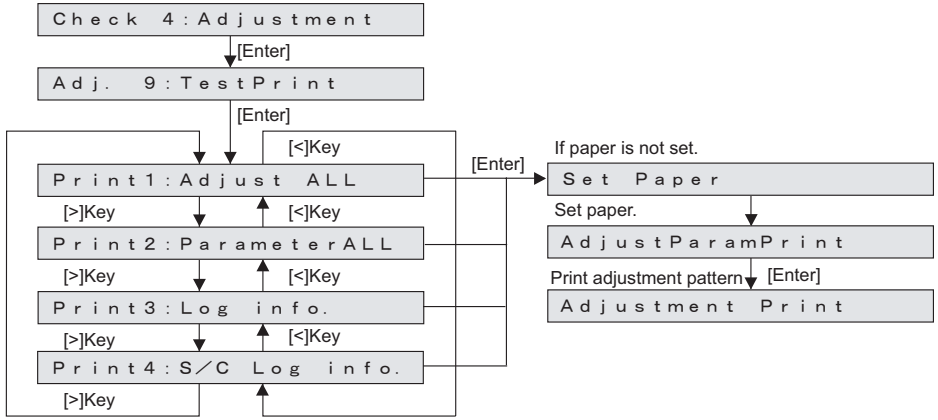
If you have not registered the serial number of the machine, you must enter the number before you can start the parameter ALL printing.

TIP

This menu provides the same functions with "5.9 Sample Printing Menu" p.5-56.

Print out the adjustment patterns to check the adjustment items.
Follow the following procedure to perform adjustment:

1. Set media as necessary.
2. After media is set, the machine prints out the following test printings.
   - Adjust ALL: Prints adjustment patterns.
   - Parameter ALL: Prints adjustment parameters.
   - Log info.: Prints the serious error history.
   - S/C Log info.:Prints theS/C Log history.
3. Press [Enter] key in the operation panel to start the selected test printing.



TIP

Sample printing (parameter ALL print)

```
Adjust Parameters
No.G06U******      Date 2011/01/14  Celsius  24
Name                          Ver 1.00   Dipsw 03h

*Rear VR                  = ?
*Edge VR                  = ?
 Head Rank                = 19**********************
                            [1]      [2]      [3]      [4]
*UniD 300 VSD2 A  -#1-  =     0       --        0        0
*UniD 300 VSD2 B  -#1-  =     0        0        0        0
*UniD 300 VSD2 A  -#2-  =     0       --        0        0
*UniD 300 VSD2 B  -#2-  =     0        0        0        0
*UniD 320 VSD1 A  -#1-  =     0       --        0        0
*UniD 320 VSD1 B  -#1-  =     0        0        0        0
*UniD 320 VSD1 A  -#2-  =     0       --        0        0
*UniD 320 VSD3 B  -#2-  =     0        0        0        0
*UniD 320 VSD3 A  -#1-  =     0       --        0        0
*UniD 320 VSD3 B  -#1-  =     0        0        0        0
*UniD 320 VSD3 A  -#2-  =     0       --        0        0
*UniD 320 VSD4 B  -#2-  =     0        0        0        0
*UniD 320 VSD4 A  -#1-  =     0       --        0        0
*UniD 320 VSD4 B  -#1-  =     0        0        0        0
*UniD 320 VSD4 A  -#1-  =     0       --        0        0
*UniD 460 VSD2 B  -#1-  =     0        0        0        0
*UniD 460 VSD2 A  -#1-  =     0       --        0        0
*UniD 460 VSD2 B  -#1-  =     0        0        0        0
*UniD 460 VSD2 A  -#1-  =     0       --        0        0
*UniD 460 VSD3 B  -#1-  =     0        0        0        0
*UniD 460 VSD3 B  -#1-  =     0        0        0        0
*UniD 460 VSD3 B  -#1-  =     0        0        0        0
*UniD 460 VSD3 B  -#1-  =     0        0        0        0
*UniD 460 VSD4 B  -#1-  =     0        0        0        0
*UniD 460 VSD4 B  -#1-  =     0        0        0        0
*UniD 460 VSD4 B  -#1-  =     0        0        0        0
*UniD 460 VSD4 B  -#1-  =     0        0        0        0
 BiD  300 VSD2    -#1-  =  -19
 BiD  300 VSD2    -#2-  =  -32
 BiD  320 VSD1    -#1-  =  -30
 BiD  320 VSD1    -#2-  =  -45
 BiD  320 VSD3    -#1-  =  -18
 BiD  320 VSD3    -#2-  =  -26
 BiD  320 VSD4    -#1-  =  -26
 BiD  320 VSD4    -#2-  =  -37
 BiD  460 VSD2    -#2-  =  -47
 BiD  460 VSD2    -#2-  =  -56
 BiD  460 VSD3    -#2-  =  -56
 BiD  460 VSD3    -#2-  =  -56
 BiD  460 VSD4    -#2-  =  -56
 BiD  460 VSD4    -#2-  =  -56
 Top Margin               = 30.00mm
 Bottom Margin            = 4.40mm
 Side Margin              = 7.20mm
*Company Code               = 0x1
*Servo 320 Cw   gp       = 0x3000
*Servo 320 Cw   gi       = 0x0060
*Servo 320 Cw   glpf     = 234
*Servo 320 Cw   scale    = 13
*Servo 320 Cw   wc       = 45
*Servo 320 Ccw  gp       = 0x3000
*Servo 320 Ccw  gi       = 0x0060
*Servo 320 Ccw  glpf     = 232
*Servo 320 Ccw  scale    = 13
*Servo 320 Ccw  wc       = 45
*Servo 460 Cw   gp       = 0x3000
*Servo 460 Cw   gi       = 0x0060
*Servo 460 Cw   glpf     = 234
*Servo 460 Cw   scale    = 13
*Servo 460 Cw   wc       = 45
*Servo 460 Ccw  gp       = 0x3000
*Servo 460 Ccw  gi       = 0x0060
*Servo 460 Ccw  glpf     = 232
*Servo 460 Ccw  scale    = 13
*Servo 460 Ccw  wc       = 45
```

When adjustment values are initial values, "*" is displayed at the head of the adjustment variable.

TIP

Sample printing (error record)

```
Log Information
No.G06U******      Date 2011/01/06  Celsius  13
Name                          Ver 1.00   Dipsw 03h

Log0  : E74     CR2 CURRENT 2010/12/26 11:59
Log1  : E74     CR2 CURRENT 2010/12/26 11:59
Log2  : E74     CR2 CURRENT 2010/12/26 11:57
Log3  : E74     CR2 CURRENT 2010/12/26 11:52
Log4  : E68     CR2 ENCODER 2010/11/26 10:26
Log5  : E74     CR2 CURRENT 2010/11/26 10:25
Log6  : E92   CR OVER LOAD 2010/10/26 10:23
Log7  : E92   CR OVER LOAD 2010/10/26 10:22
Log8  : E92   CR OVER LOAD 2010/10/26 10:20
Log9  : E92   CR OVER LOAD 2010/10/26 10:19
Log10 : NO Data
```

5.7.9 Longstore Menu

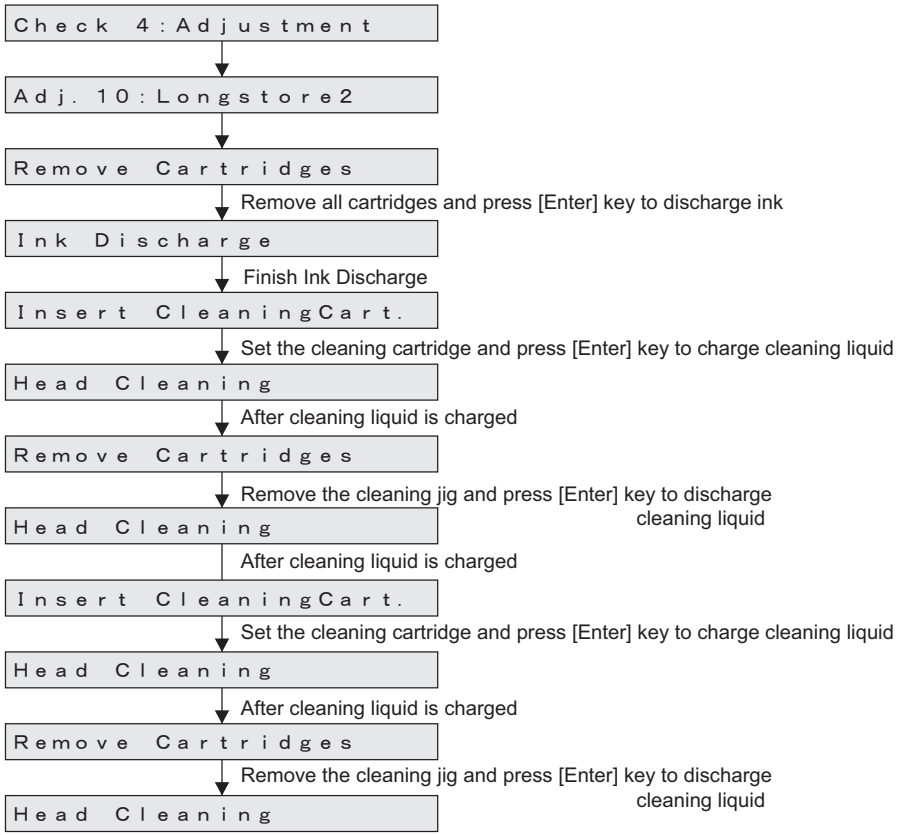
This menu is used to clean the ink tube and print head with cleaning liquid.
Follow the procedures below when cleaning..

1. Press [Enter] key in the operation panel to determine the Head Cleaning Menu.
2. Remove all ink cartridges.
3. Press [Enter] key in the operation panel to discharge ink.

NOTE

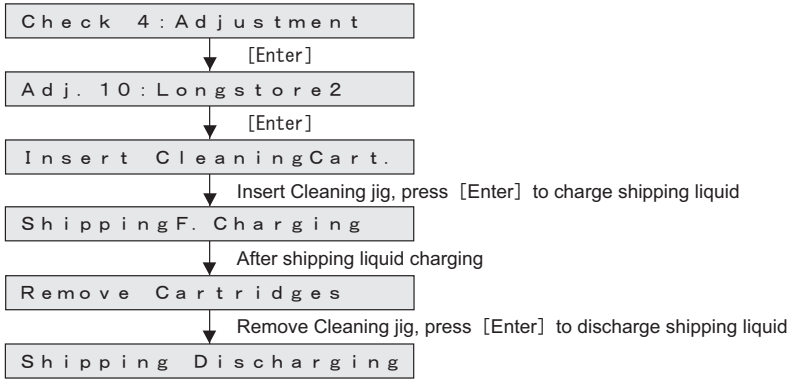
When performs the ink discharge only for maintenance parts replacement (Solenoid head Assy, head FFC, Carriage Assy, etc.), turn OFF the power now.

4. After ink is discharged, install the cleaning cartridge.
5. Press [Enter] key in the operation panel to charge cleaning liquid.
6. After cleaning liquid is charged, remove the head cleaning jig.
7. Press [Enter] key in the operation panel to charge cleaning liquid.
8. After ink is discharged, install the cleaning cartridge.
9. Press [Enter] key in the operation panel to charge cleaning liquid.
10. After cleaning liquid is charged, remove the head cleaning jig.



5.7.10 Longstore2 Menu

This menu is used to maintain the conditions of the heads at the time of shipping by cleaning ink tubes and print heads with shipping fluid.
* This function is not usually used in maintenance work.



5.7.11 Software Counter Initialization Menu

This menu is used to initialize various software counters.

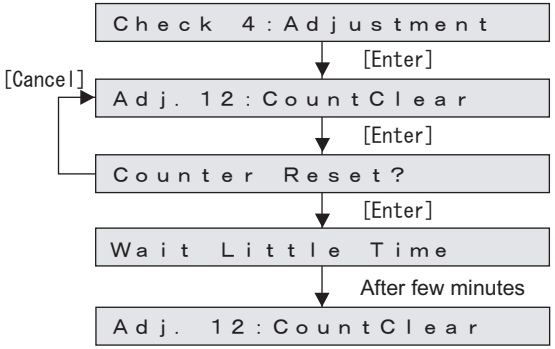
NOTE

The counters are initialized before delivery. Do not initialize them during maintenance.

The software counters that can be initialized through this menu are as follows.

Counters to be initialized	Initial value
Cumulative print timer	0
Ink consumption counterK	0
Ink consumption counterC	0
Ink consumption counterM	0
Ink consumption counterY	0
Ink amount count in the cap	0
Waste ink count	0
User not-filled flag	0
Not-filled flag	1
User First Start up flag	1
Counter for plugging/unplugging 1L adapter	0

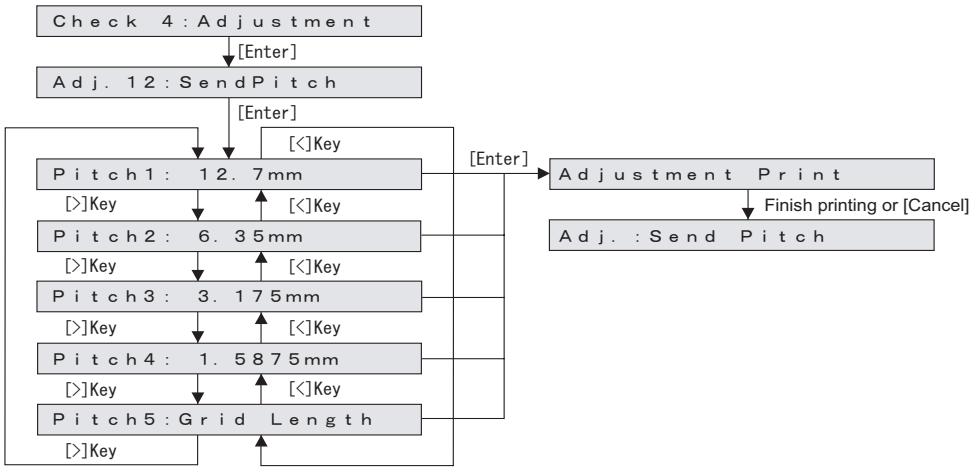
Pressing [Enter] key on Operation panel in the “Counter Reset?” screen performs the software counter initialization.



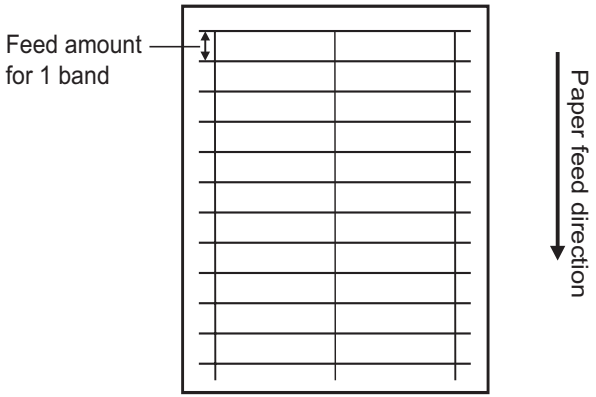
5.7.12 Feed Pitch Check Menu

This menu is used to check whether there is an error in the media feed amount for one band by reviewing a sample printing. There are no adjustment items.
To check the feed pitch, follow the procedure below.

1. Set media as necessary.
2. Select "Adj 12: SendPitch".
3. Select the feed pitch.



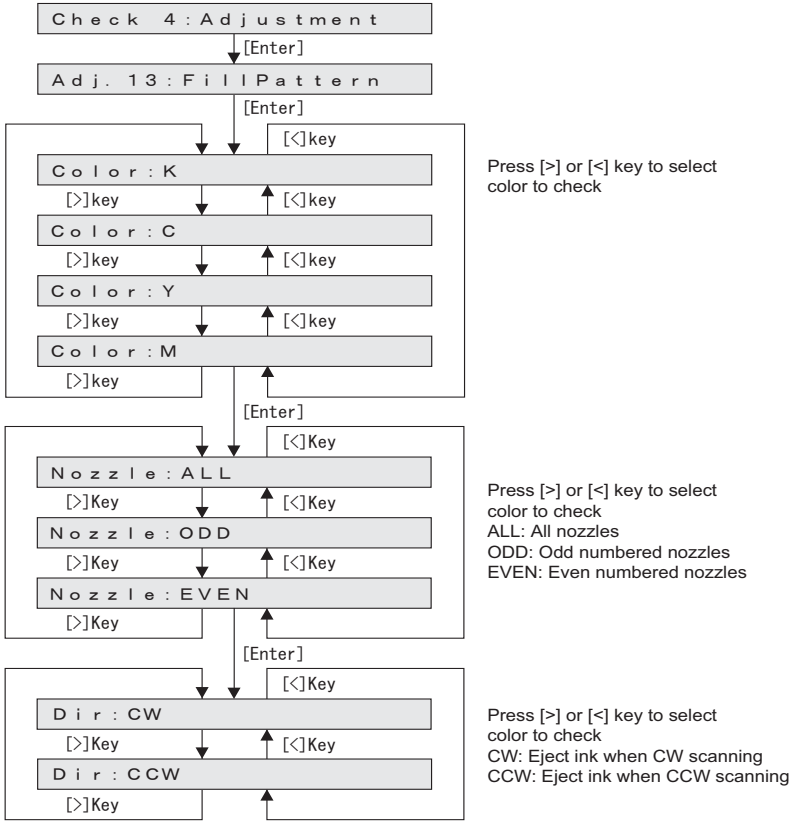
4. Print out with 320cps, VSD4, and Large dots.



5.7.13 Solid Print Menu

This menu is used to perform solid nozzle print check (color selection, nozzle selection and print direction selection are available).

※ The pattern is printed in order of series A and series B, series B only, series A only.

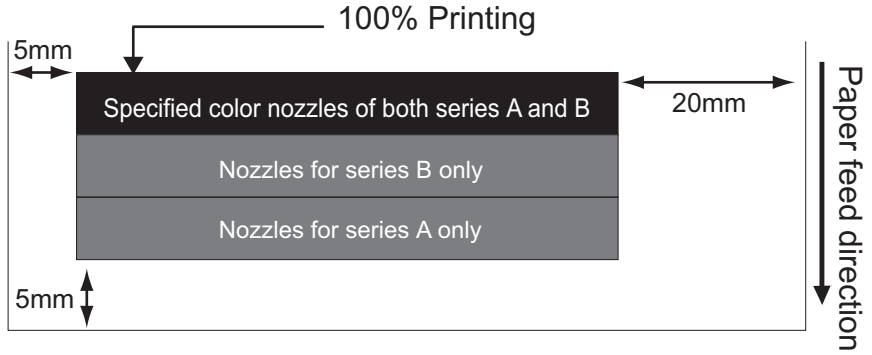


Press [>] or [<] key to select color to check

Press [>] or [<] key to select color to check
ALL: All nozzles
ODD: Odd numbered nozzles
EVEN: Even numbered nozzles

Press [>] or [<] key to select color to check
CW: Eject ink when CW scanning
CCW: Eject ink when CCW scanning

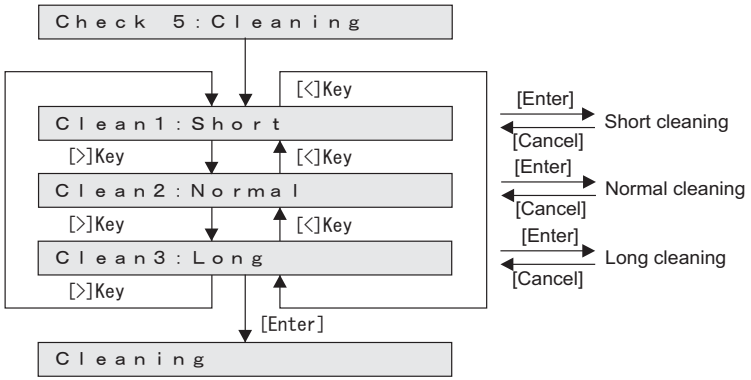
- A printed pattern is as follows.



5.8 Cleaning Menu

This menu is used to clean Print heads.
The cleaning menu includes the following diagnosis items.

Diagnosis item	Contents
Short	Performs economy cleaning
Normal	Performs normal cleaning
Long	Performs strong cleaning



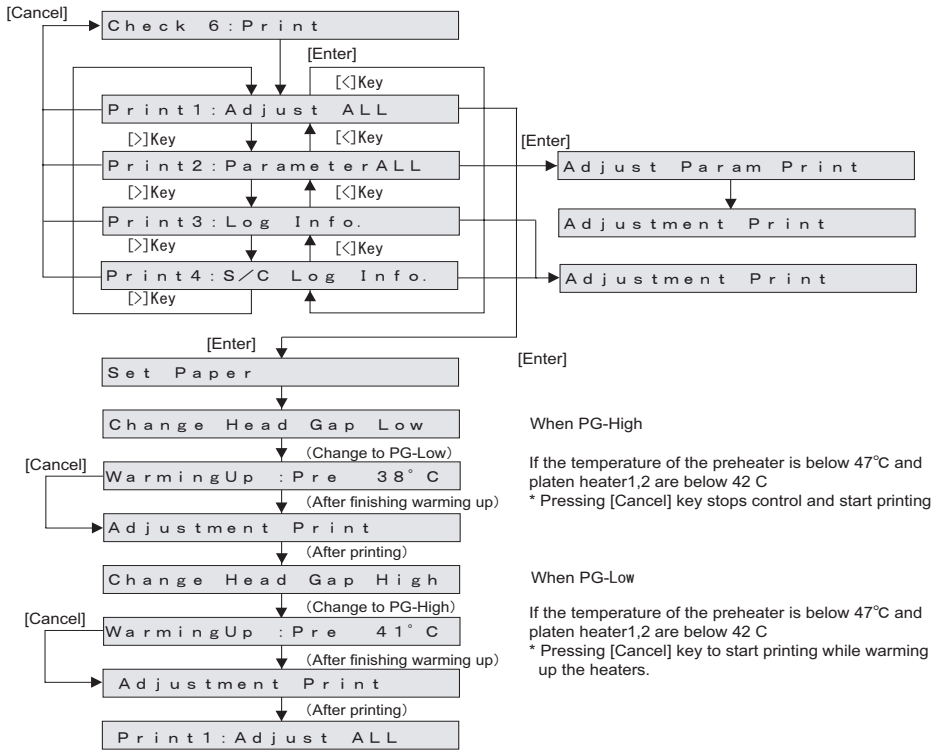
5.9 Sample Printing Menu

This menu is used to print out a sample printing.

Diagnosis item	Contents
Adjust ALL	Prints adjustment patterns.
Parameter ALL	Prints out the set values of various adjustment parameters.
Log info.	Prints the serious error history and smart chip log.
S/C Log info.	Prints the smart chip Log

NOTE

If you have not registered the serial number of the machine, you must enter the number before you can start the Parameter All printing.



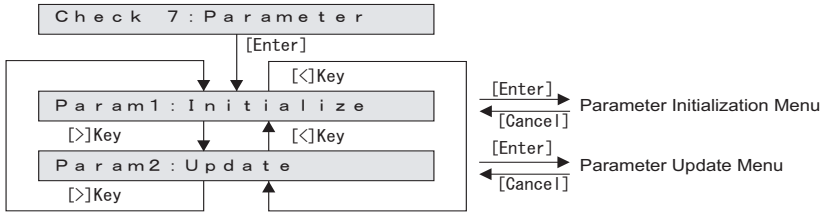
TIP

This is the same function as the"5.7.8 Test Printing Menu" p.5-48.
For the screen and sample print of each item, refer to"5.7.8 Test Printing Menu" p.5-48.

5.10 Parameter Menu

This menu is used to set the adjustment parameter and perform initialization.
The parameter menu includes the following items.

Diagnosis item	Contents	Reference
Initialization	Initializes the adjustment parameters.	☞"5.10.1 Parameter Initialization Menu" p.5-57
Update	Updates the adjustment parameters.	☞"5.10.2 Parameter Update Menu" p.5-59



NOTE

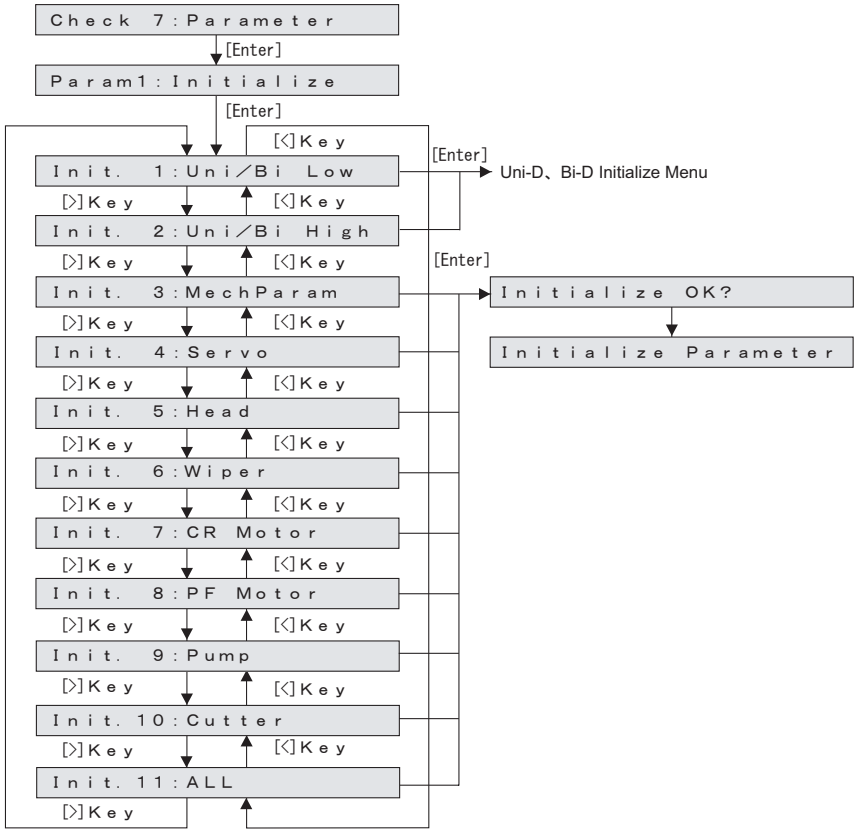
To backup the parameter or recover the backup parameter, start up the printer with “Board Manager Mode” and use the printer with Mutoh Service Assistance installed on, via LAN cable.

☞"4.3 Working with MUTOH Service Assistance Software" p.4-5

5.10.1 Parameter Initialization Menu

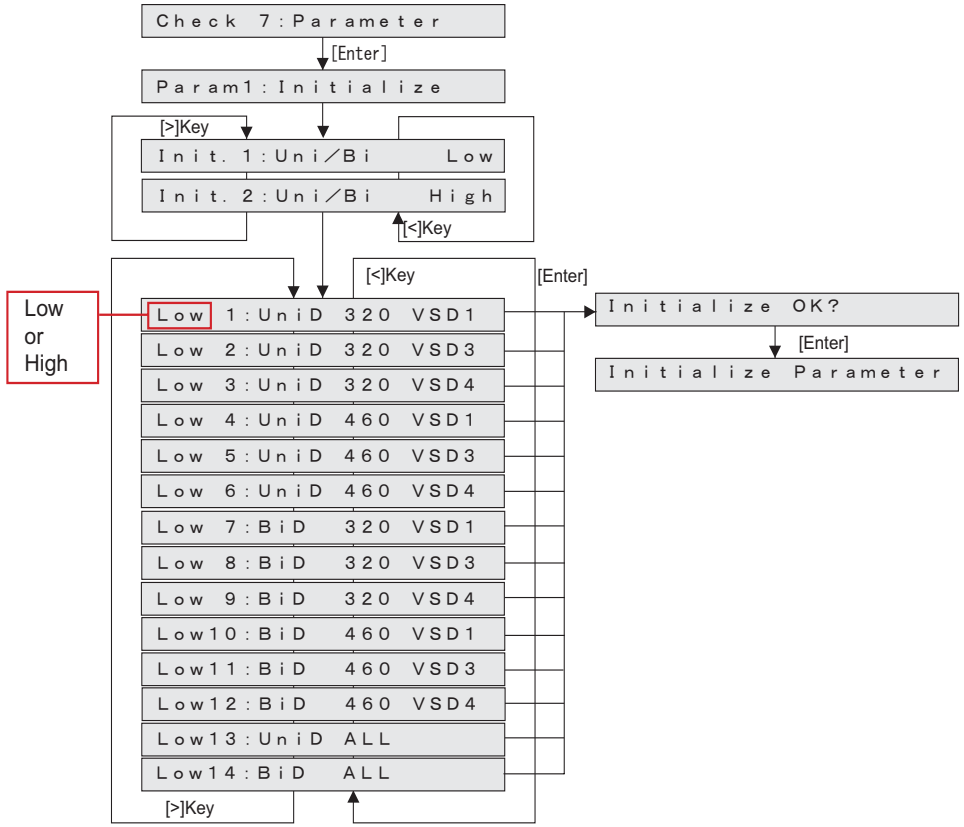
This menu is used to initialize the adjustment parameters. The parameters that can be initialized through this menu are as follows.

- Uni-D/ Bi-D Parameter、Mechanical parameter、Servo、Printhead、Wiper、CR motor、PF motor、Pump、Cutter
- Initialization of all items



(1) Uni-D/Bi-D

This menu is used to perform the initizlization of the Uni-D/Bi-D adjustment parameters.



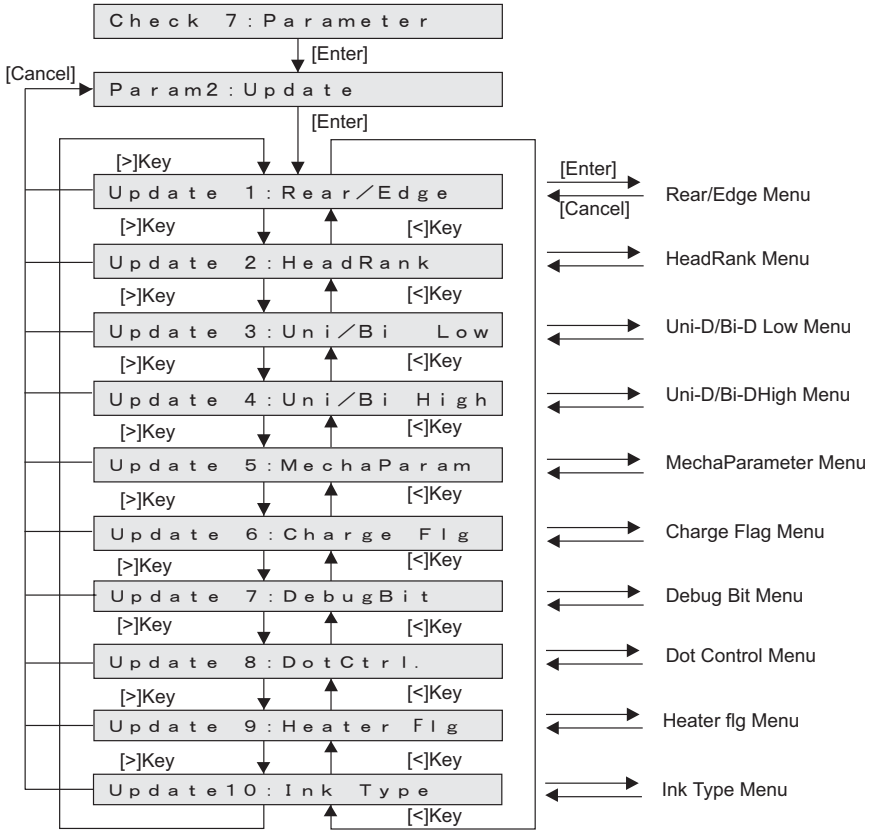
5.10.2 Parameter Update Menu

This menu is used to update the adjustment parameters. The parameters that can be updated through this menu are as follows.

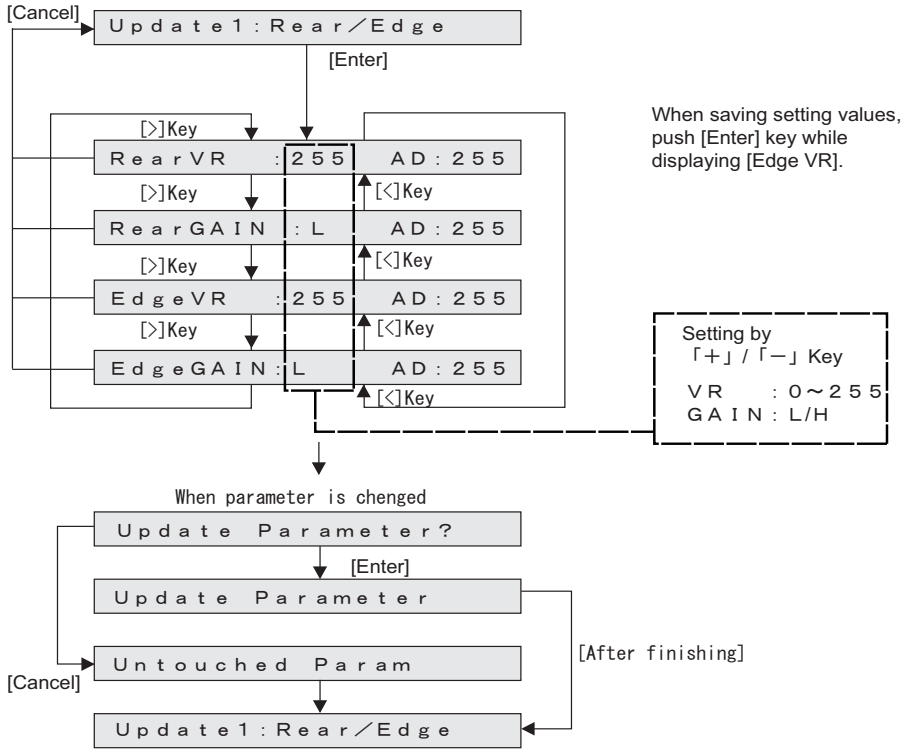
Rear/Edge sensor,Head rank,Uni-D/ Bi-D,Mechanical parameter,filled flag,Serial No.,DebugBit,Dot control,Heater flag,Ink type

NOTE

The updated parameters will not be stored in the flash memory unless the system power is turned OFF.

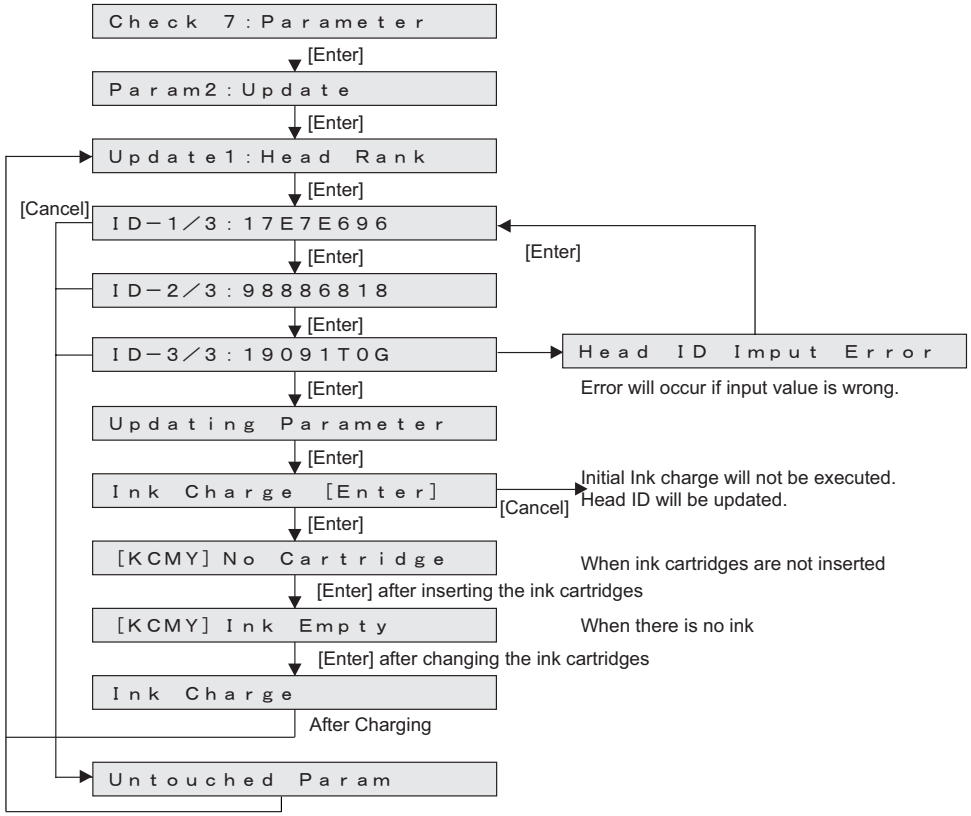


(1) Rear/Edge Sensor



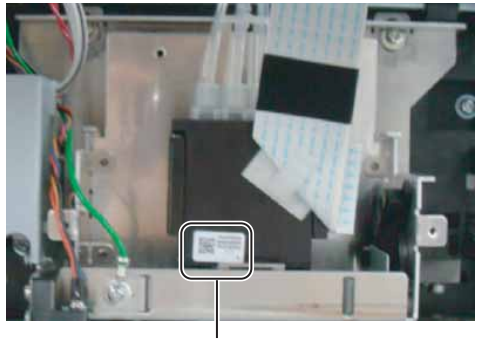
(2) Head Rank

This menu is used to update the head rank parameters.
The head rank is used to determine Print head driving voltage and correct the head temperature.
After head rank is entered, the system shifts to the Ink Charge Menu.



NOTE

- When entering the head rank, once the eight-digit number is entered, it will proceed to the next screen.
- The sticker of head rank information is attached to the part shown below.

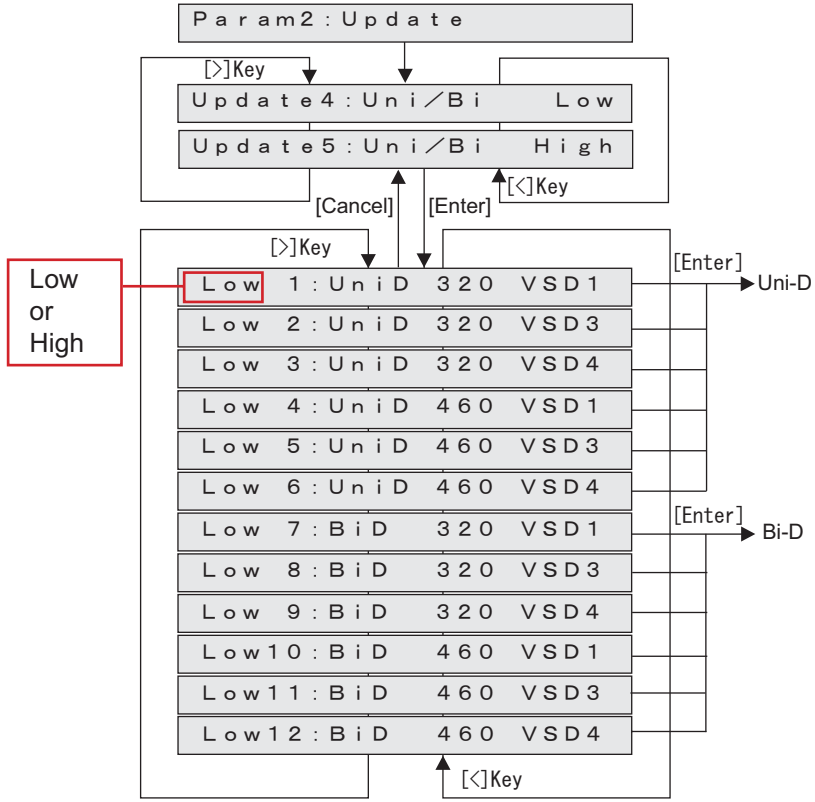


Sticker of Head Rank

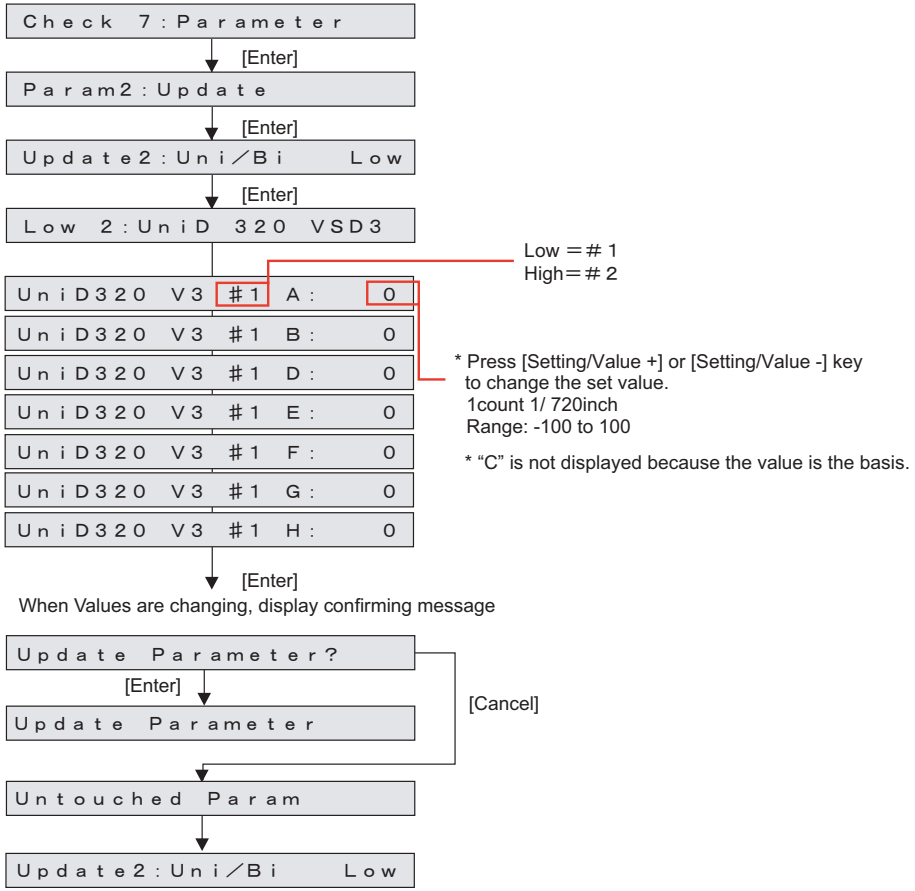
(3) Uni-D/Bi-D

This menu is used to update the Uni-D/Bi-D adjustment parameters.
The setting items for update menu for Uni-D/Bi-D adjustment parameters are as follows

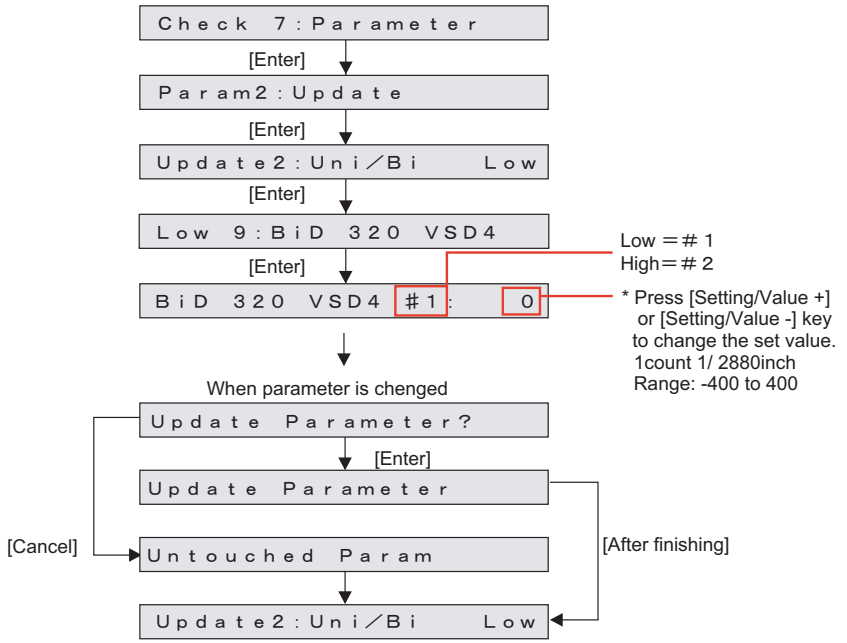
Item	Contents
Uni-D 320 VSD1	Uni-D adjustment PG_Low/High of 320cps and VSD1
Uni-D 320 VSD3	Uni-D adjustment PG_Low/High of 320cps and VSD3
Uni-D 320 VSD4	Uni-D adjustment PG_Low/High of 320cps and VSD4
Uni-D 460 VSD2	Uni-D adjustment PG_Low/High of 460cps and VSD1
Uni-D 460 VSD3	Uni-D adjustment PG_Low/High of 460cps and VSD3
Uni-D 460 VSD4	Uni-D adjustment PG_Low/High of 460cps and VSD4
Bi-D 320 VSD1	Bi-D adjustment PG_Low/High of 320cps and VSD1
Bi-D 320 VSD3	Bi-D adjustment PG_Low/High of 320cps and VSD3
Bi-D 320 VSD4	Bi-D adjustment PG_Low/High of 320cps and VSD4
Bi-D 460 VSD2	Bi-D adjustment PG_Low/High of 460cps and VSD1
Bi-D 460 VSD3	Bi-D adjustment PG_Low/High of 460cps and VSD3
Bi-D 460 VSD2	Bi-D adjustment PG_Low/High of 460cps and VSD4



(The following shows a case when “Uni-D 320 Low VSD3” is selected.)

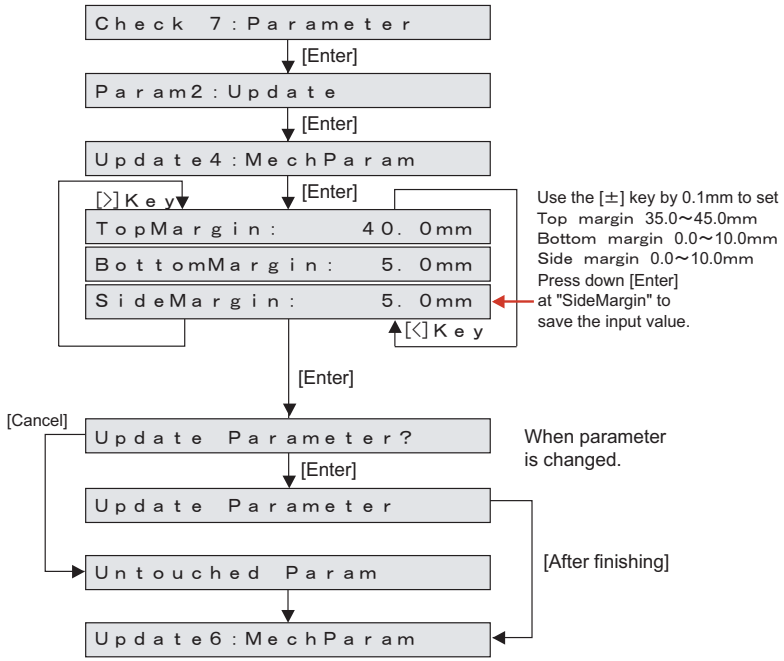


(The following shows a case when “Bi-D 320 Loe VSD4” is selected.)



(4) Mechanical Parameter

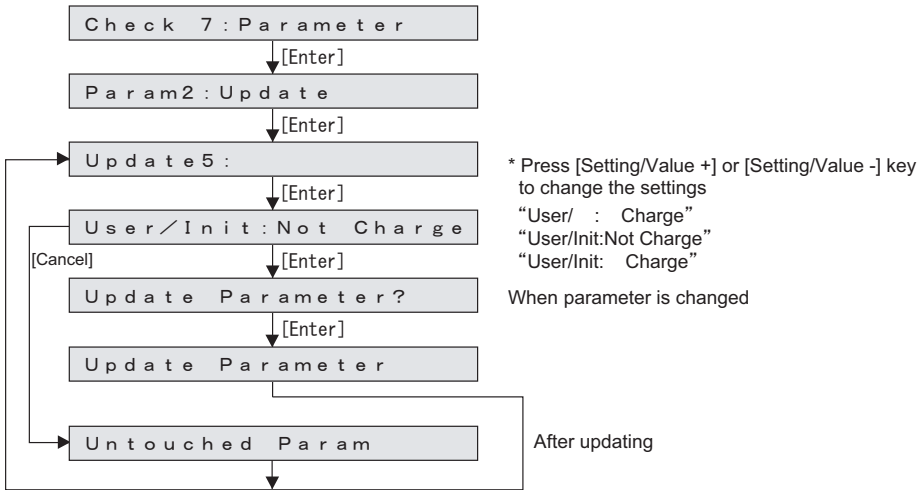
Update the machine position parameters.



(5) Ink filled flag

This menu is used to update the ink parameters. The setting items are as follows.

Item	Initial wash	Initial Charge
User/Init:Not Charge	×	×
User/ : Charge	○	×
User/Init: Charge	○	○



NOTE

Before selecting "Reset", make sure that Ink cartridges are installed.

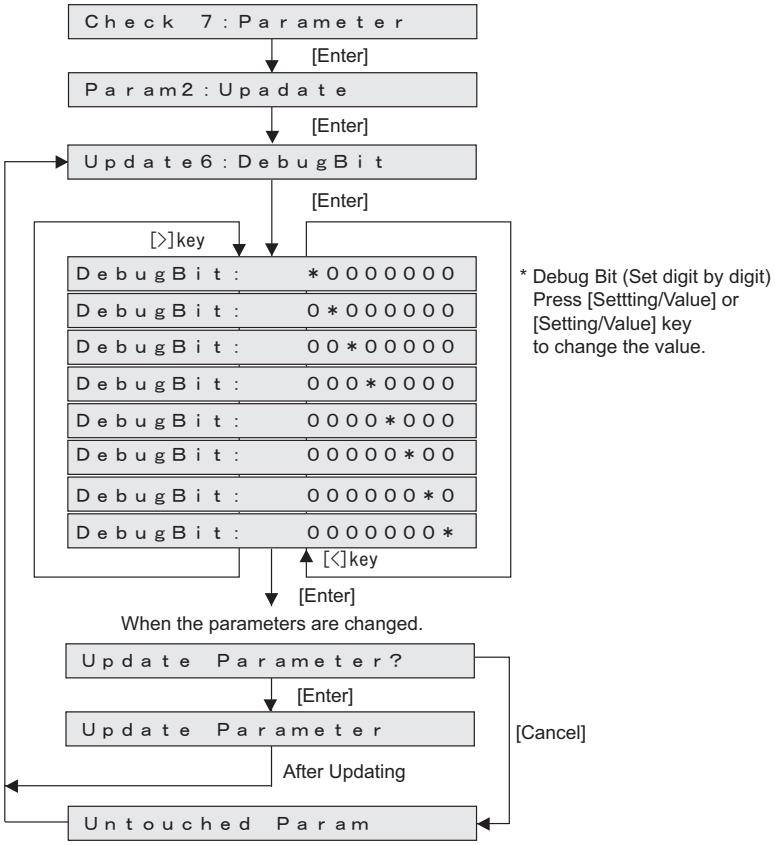
(6) Debug Bit Update

This menu is used to update the debug bit.
The debug bit is used for testing.

TIP

The debug bit is displayed in binary digits. The setting values and initial values at the time of shipping are as follows:

- At the time of shipping: 00000000
- Initial value: 00000000



NOTE

This menu is not used for maintenance operation.

(7) DotCtrl.

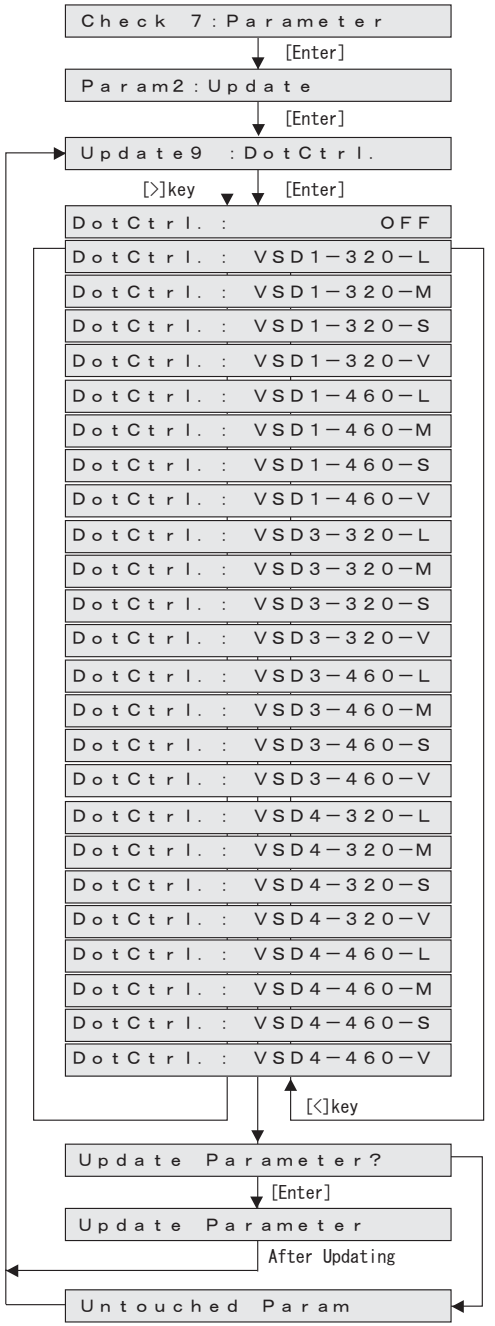
Setup the waveform and dot size when printing.
When OFF is set, they are determined automatically to match printing.

NOTE

This menu is not used for maintenance operation.

TIP

- L : Large (1bit ／ dot)
- M : MIddle(1bit ／ dot)
- S : Small(1bit ／ dot)
- V : Variable(2bit ／ dot)

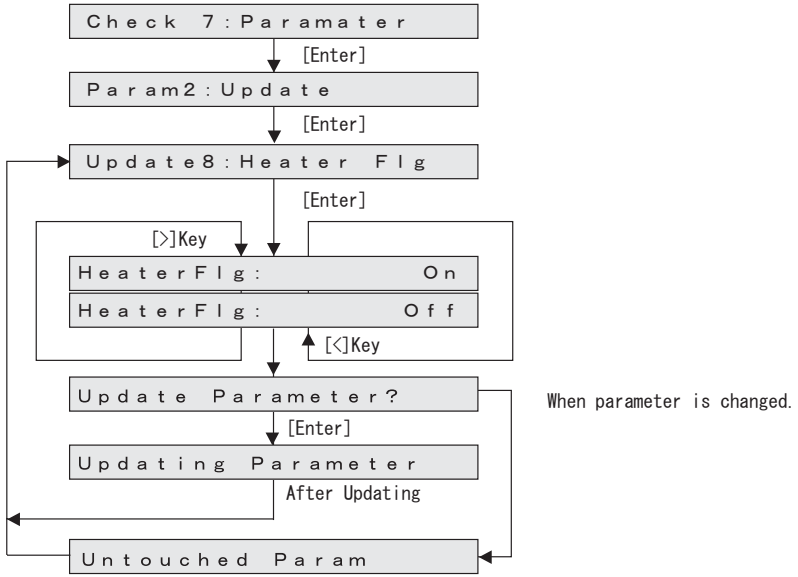


(8) Heater Flag Update

This menu is used to update the heater flag.

NOTE

- When setting the heater flag “Off,” heater warmup is not performed during adjustment printing or waiting.
- Since the setting of the heater flag is not saved, the setting returns to "Flag On" every time the power is turned off.

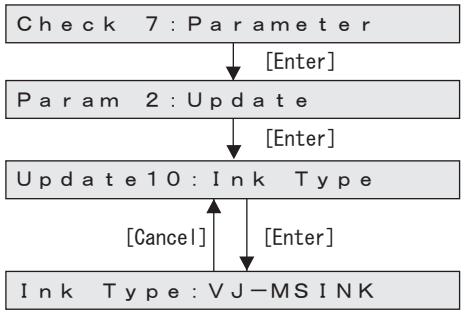


(9) Ink type

This menu displays the ink currently used.

TIP

Initial value : VJ-MSINK.



5.11 Servo Setting Menu

This menu is used to change the servo settings.

NOTE

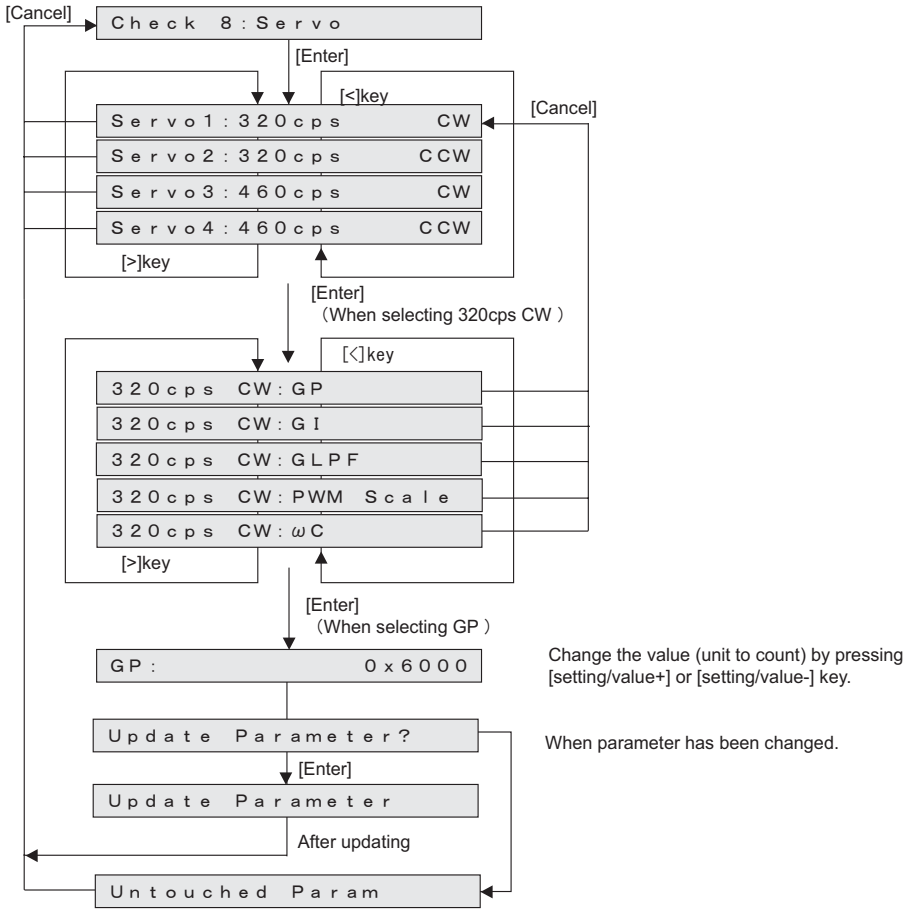
Because this is a menu for evaluating problems of the printer (noise, vibration) and improving the image quality (measures for vertical unevenness), basically do not change these parameters.

The menu items for servo setting are as follows.

Servo setting items	
Items	Contents
320cps CW	Servo setting of CR CW direction 、320cps
320cps CCW	Servo setting of CR CCW direction 、320cps
460cps CW	Servo setting of CR CW direction 、460cps
460cps CCW	Servo setting of CR CCW direction 、460cps

Servo Adjustment Items	
Items	Contents
Proportional gain	Proportional gain setting
Integral gain	Integral gain setting
Low path filter	Low path filter setting
PWM scale	PWM scale setting
ωC	ωC setting

Initial values of Servo setting Items					
Item	GP	Gi	GLPF	PWM	ωC
320cps CW	0 x 5000	0 x 0050	220	13	45
320cps CCW	0 x 5000	0 x 0050	220	13	45
460cps CW	0 x 7000	0 x 0020	220	13	45
460cps CCW	0 x 7000	0 x 0020	220	13	45



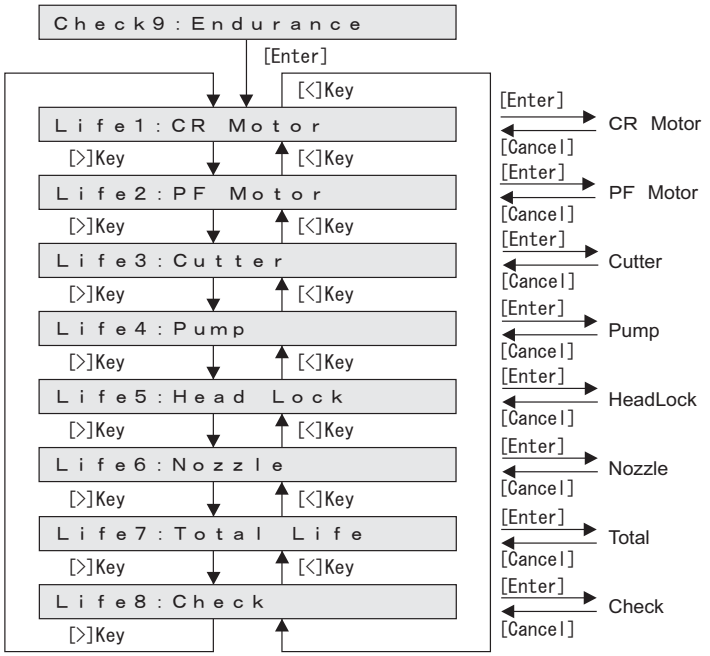
The minimum / maximum / count value for each item is shown below.

Values of Setting Items			
Items	Min.	Max.	Count
GP (Propotional gain)	0x2000	0x7800	0x200
GI (Integral gain)	0x0002	0x0800	1
GLPF (Low-pass filter)	0	255	1
PWM (PWM scale)	10	15	1
ωC (wC)	30	60	5

5.12 Endurance Running Menu

This menu is used to perform endurance running of printer mechanicals.
The endurance running menu includes the following items.

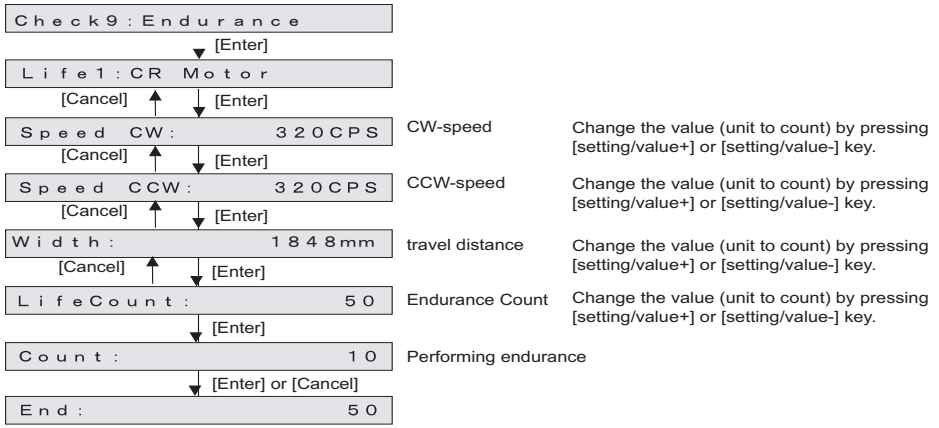
Diagnosis item	Contents	Reference
CR Motor Assy	Performs carriage stroke to perform the endurance running of CR motor Assy.	☞"5.12.1 CR Motor Assy Endurance Menu" p.5-70
PF Motor Assy	Performs media feeding operation to perform the endurance running of PF motor Assy.	☞"5.12.2 PF Motor Assy Endurance Menu" p.5-71
Cutter	Performs cutter driving endurance	☞"5.12.3 Cutter Endurance Menu" p.5-72
Pump	Performs endurance running of Pump motor Assy.	☞"5.12.4 Pump Endurance Menu" p.5-73
Head lock	Performs endurance running of Carriage lock.	☞"5.12.5 Head Lock Menu" p.5-74
Nozzle print	Performs sequential printing to perform the endurance running of Print head.	☞"5.12.6 Print Head Endurance (Nozzle Print) Menu" p.5-75
General endurance	Performs endurance running on CR axis (CR motor Assy, Bearing, Tube, etc) and PF axis (PR motor Assy, etc) simultaneously.	☞"5.12.7 General Endurance Menu" p.5-76
Confirmation	Confirms the number of endurance running cycles.	☞"5.12.8 Endurance Running Check Menu" p.5-77



5.12.1 CR Motor Assy Endurance Menu

This menu is used to perform carriage stroke to perform the endurance running of CR motor Assy .
The available settings are shown below.

Item	Contents	Values	Remark
Running speed (CW, CCW)	Set Carriage running speed (CW direction, CCW direction).	320、460、600	Unit : cps
Travel distance	Travel distance of Carriage	800 ～ 1848	mm
Number of endurance running cycles	Set the number of endurance running cycles.	－ 1 ～ 10000	-



CAUTION

When performing the CR motor Assy endurance running, install Ink cartridges.
If the CR motor Assy endurance running is performed without ink cartridges, ink inside the tube may leak through the ink holder during Carriage movement.

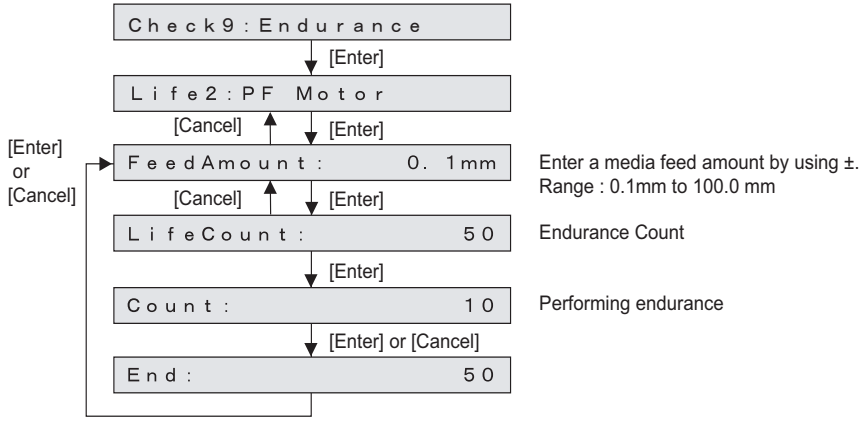
TIP

- If the number of endurance running cycles is set to -1, Carriage continuously repeats endurance running until it is canceled from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.

5.12.2 PF Motor Assy Endurance Menu

This menu is used to perform media feeding operation to perform the endurance running of PF motor Assy .
The available settings are shown below.

Set item	Contents	Set value	Remark
Media feed amount	Set the media feed amount per endurance running cycle.	0.1 to 100	Unit: mm
Number of endurance running cycles	Set the number of endurance running cycles.	-1 to 10000	-



TIP

- The following table shows the motor transfer parameters to media feed amount.

Speed	35cps
Acceleration	0.1G
Deceleration	0.1G

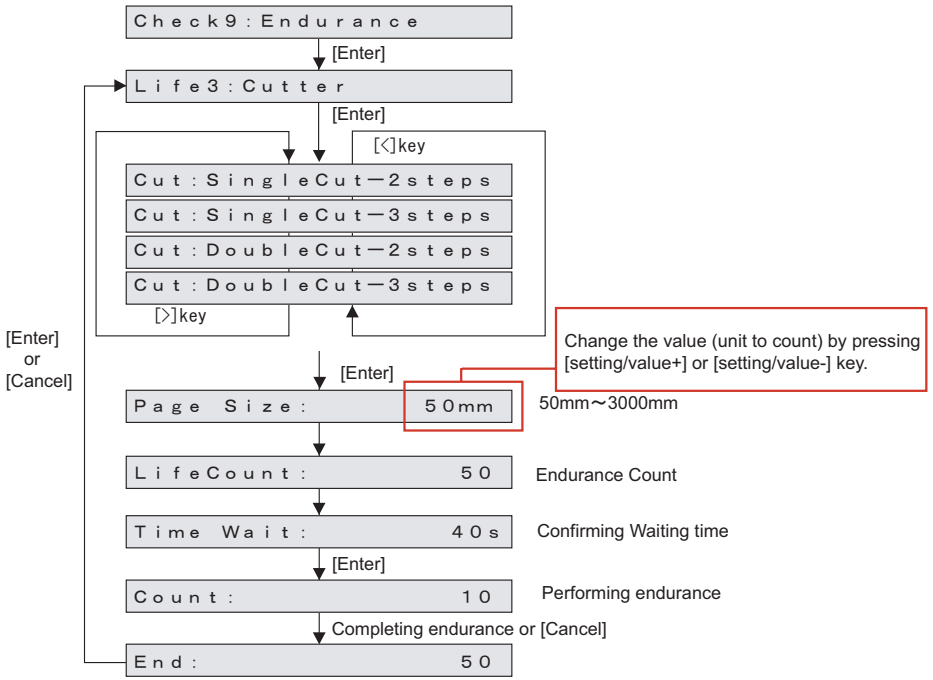
- If the number of endurance running cycles is set to -1, the PF motor Assy continuously repeats endurance running until cancel input is given from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.

5.12.3 Cutter Endurance Menu

Performs media cutting by the designated cut method for the designated number of times.

TIP

- If the number of endurance running cycles is set to -1, Cutter continuously repeats endurance running until it is canceled from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.



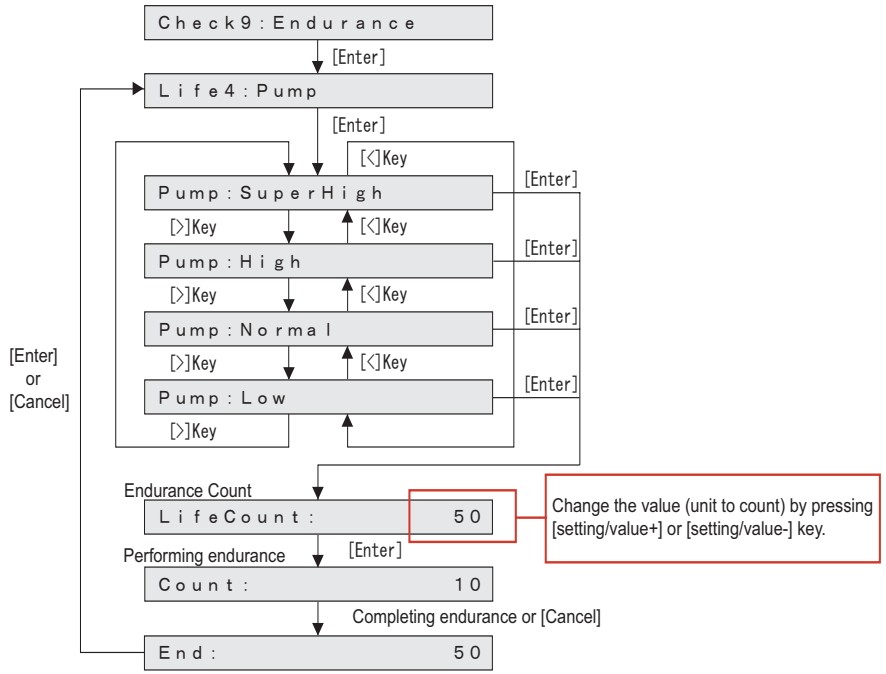
5.12.4 Pump Endurance Menu

This menu is used to perform endurance running for Pump motor Assy .
You can drive Pump motor Assy according to your desired settings.
The available settings are shown below.

Set item	Contents	Set value
Running speed	Set the running speed of Pump motor Assy .	Super high / High / Normal / Low
Number of endurance running cycles	Set the number of endurance running cycles.	-1 to 10000

TIP

- If the number of endurance running cycles is set to -1, Pump motor Assy continuously repeats endurance running until cancel input is given from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.



Pump motor Assy endurance running sequence is as follows.

1. Pump motor Assy endurance running starts.
2. Pump phase detection is performed.
3. Rotates at the specified suction speed. This rotation is counted as one cycle.
   Step 2 above is repeated the number of times specified as follows:
   Super high : 4000 step
   High : 3000 step
   Normal : 2000 step
   Low : 1000 step
4. Pump release is performed.
5. Pump motor Assy endurance running ends.

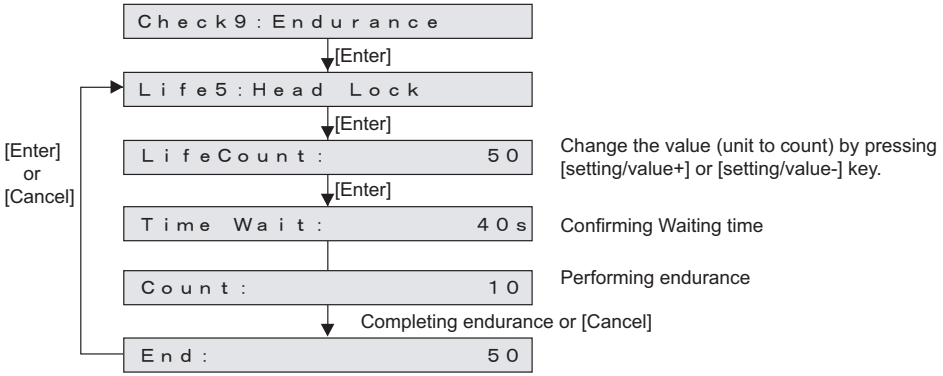
5.12.5 Head Lock Menu

This menu is used to perform endurance running of Carriage lock.
The available settings are shown below.

Set item	Contents	Set value	Remark
Number of endurance running cycles	Set the number of endurance running cycles.	-1 to 10000	-

TIP

- If the number of endurance running cycles is set to -1, Carriage rock continuously repeats endurance running until cancel input is given from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.



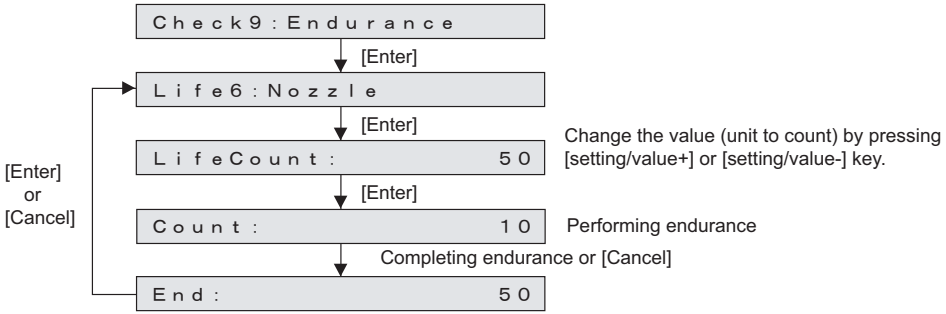
5.12.6 Print Head Endurance (Nozzle Print) Menu

This menu is used to perform sequential printing to perform the endurance running of Print head.
The available settings are shown below.

Set item	Contents	Set value	Remark
Number of endurance running cycles	Set the number of endurance running cycles.	-1 to 10000	-

TIP

If the number of endurance running cycles is set to -1, Print head repeats endurance running until [Cancel] is pressed.



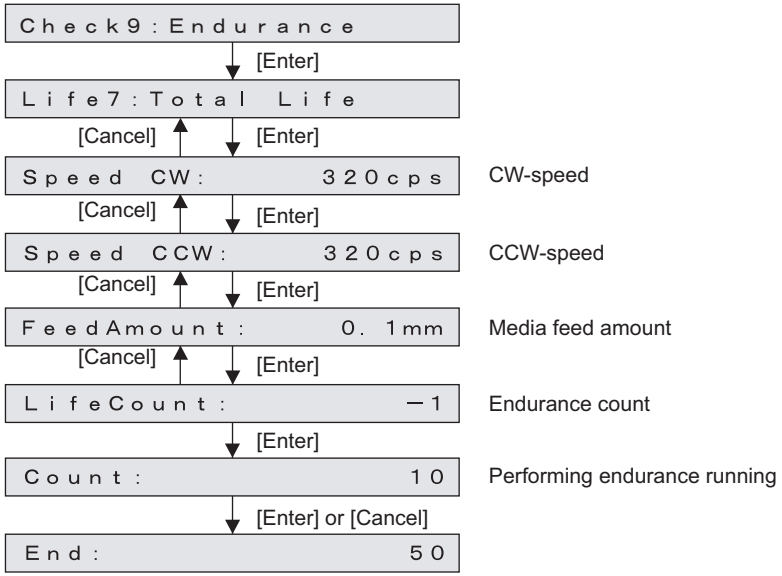
5.12.7 General Endurance Menu

This menu is used to perform endurance running on the CR line (CR motor Assy , Bearing, Tube, etc) and PF line (PR motor Assy , etc) simultaneously.
The available settings are shown below.

Set item	Contents	Set value	Remark
Running speed (CW, CCW)	Set Carriage running speed (CW direction, CCW direction).	320,460,600	Unit: cps
Media feed amount	Set the media feed amount per endurance running cycle.	0.1 to 100	Unit: mm
Number of endurance running cycles	Set the number of endurance running cycles.	-1 to 10000	-

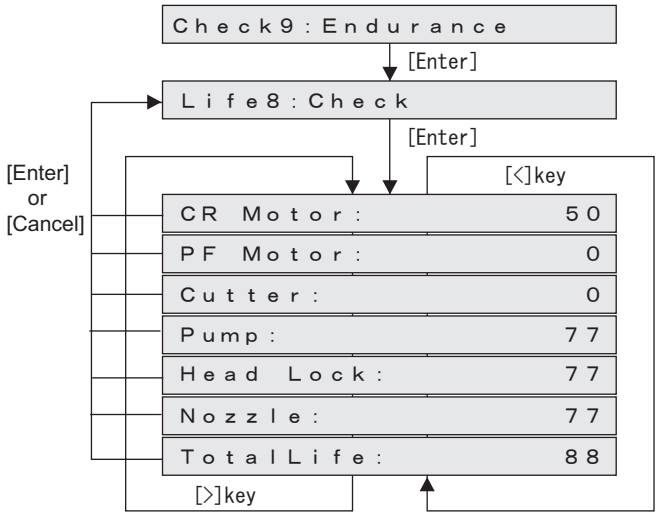
TIP

- In the general endurance menu, the following operations are performed as one cycle of endurance running:
  The counter indicates above-mentioned set number, and the count number counts the same value as the only CR motor assemby endurance, etc.
  - Carriage stroking: 1 stroke
  - Media feed: 1 cycle
- If the number of endurance running cycles is set to -1, Carriage continuously repeats stroking until it is canceled from Operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter displays 99999999.



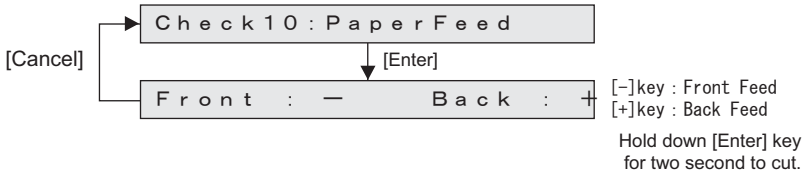
5.12.8 Endurance Running Check Menu

This menu is used to confirm the number of endurance running cycles.
The number of endurance running cycles is stored in NVRAM in the system. Therefore, even if a serious error occurs during endurance running, you can confirm the number of the performed cycles just before the occurrence of the serious error.



5.13 Media Feed Menu

This menu is used to feed media into the printer frontward or backward.
The mechanical initialization should be done if it is not performed yet.
Hold down a[Enter] key for two second to cut media.



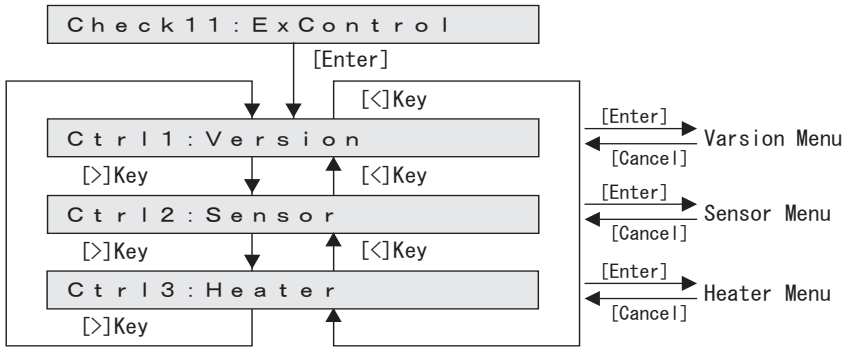
TIP

This is the same function as the**"6.3.4 Paper Feed Menu" p.6-13**.

5.14 ExControl Menu

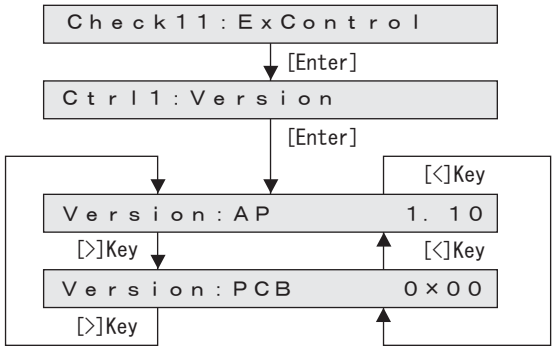
This menu is used to diagnose the following items on HEATER CONT board Assy .

Items	Contents Items
Version	Firm、Board Rev.
Sensors	Pre-Heater thermistor,Platen Heater thermistor1/2、After Heater Thermistor 1/2
Heater	Pre-Heater,Platen Heater,After Heater,ALL



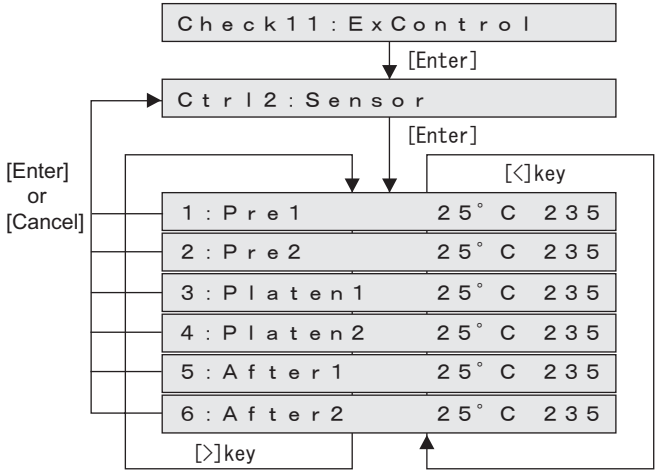
5.14.1 Version Menu

This menu is used to check the firmware version of the controller side, and the version of Controller board. The firmware version (AP version) is displayed as “XX.XX”. The controller board version is displayed in hex format (2 digits).



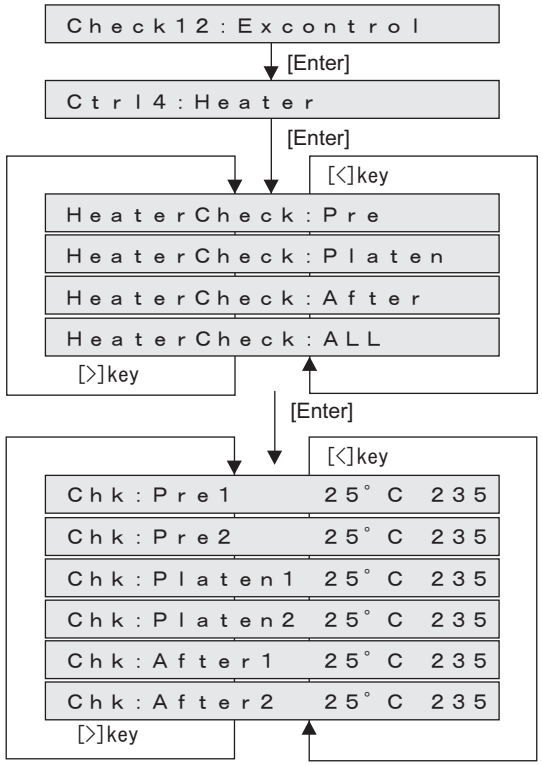
5.14.2 Sensor Menu

This menu is used to display the status of the following sensors on Controller board.



5.14.3 Heater Menu

This menu is used to check if Pre heater, Platen heater, and Drier (After heater) correctly operate.
When selecting Pre, Platen, After, or ALL (Pre, Platen, and Driers are controlled simultaneously), the heater temperature is controlled with the target temperature of 50°C.
When the temperature reaches the target, the temperature will be maintained.



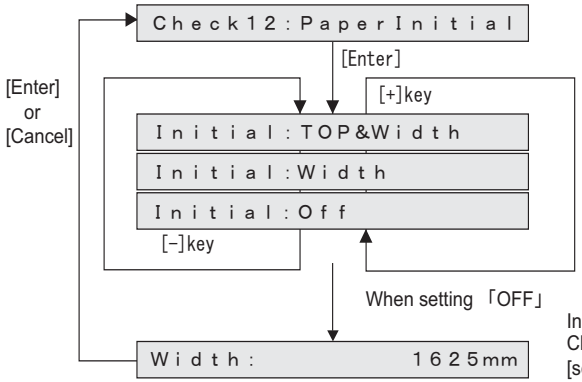
5.15 PaperInitial Menu

This menu is used to set the media detection.
The default value is the same as that of the normal operation mode (chart mode).

Select either Top & Width, Width, or Off. When Off is selected, you can set the media width in the media width setting menu.

The available settings are shown below.

Items	Contents
Top & Width	Normal media detection mode
Width	Detects media width.
Off	Does not detect media.



Input media width
Change the value (unit to count) by pressing [setting/value+] or [setting/value-] key.
1000mm to 1625mm

6 Maintenance Mode 2

6.1 Introduction

This chapter provides information on the maintenance mode 2.

The maintenance mode 2 provides the user with functions of displaying and initializing the life counters. It is used in the manufacturing process, adjustment, and maintenance.
The maintenance mode 2 is implemented in the system firmware. All functions are available from the operation panel.

☞"8.2.3 Operation Panel" p.8-4

TIP

This manual is made based on firmware Ver.2.00.

6.2 Operations in Maintenance Mode 2

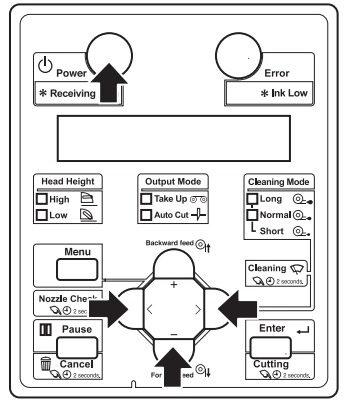
This section explains how to start up and operate the maintenance mode 2 as well as provides the list of available diagnosis items.

6.2.1 Starting Up the Maintenance Mode 2

Before using the maintenance mode 2, make sure that the maintenance menu is displayed on Operation panel.
To run the maintenance menu, switch the display to the normal operation status or setup menu display status.

1. If the system is in the operation mode or the setup menu mode, press the [Power] key to turn the power off.
2. While holding down [<] key, [Setting/Value-] key and [>] key on Operation panel simultaneously, press [Power] key.

   The operation panel displays the maintenance mode 2 menu.



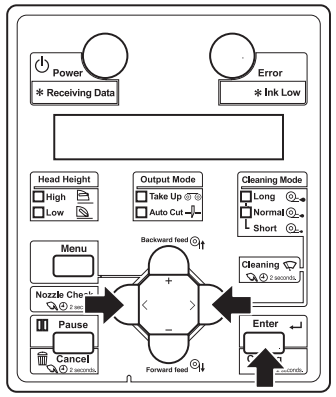
6.2.2 Operating Maintenance Mode 2

Before using the maintenance mode 2, make sure that the maintenance menu is displayed on Operation panel.
To run the maintenance menu, switch the display to the normal operation status or setup menu display status.

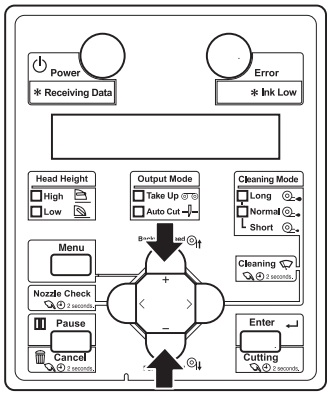
TIP

For details of operating procedure, refer to the flow chart of each diagnosis item.

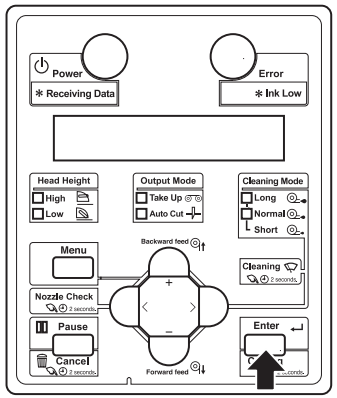
1. Press either [<] or [>] of Operation panel to select the item to be diagnosed, and press [Enter] key.
   - Determine the diagnosis item
   - When the diagnosis item has a submenu, shift to the next hierarchy of menus.



2. If the set value is displayed on the LCD of Operation panel, the value can be changed.
   Press either [Setting/value +] or [Setting/value -] to change the value.



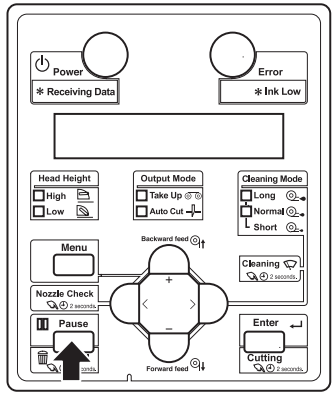
3. To save the changed setting, press [Enter] key on Operation panel.
   *The setting is saved and the next diagnosis item is displayed.



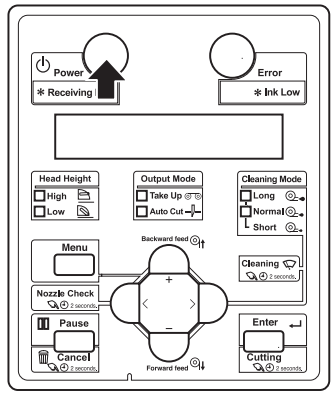
NOTE

If you press [Cancel] key, or, [Setting/value +] key or [Setting/value -] key, instead of [Enter] key, the modification is not stored.

4. To quit diagnosis, press [Cancel] key on Operation panel.
   *The system returns to an upper hierarchy of the diagnosis menu.



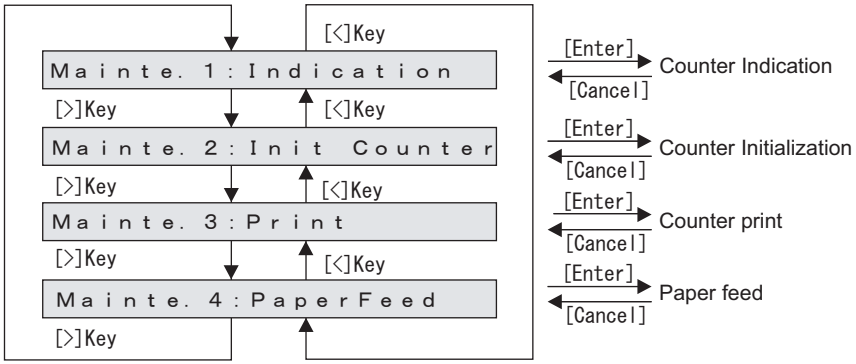
5. When quitting Self-diagnosis menu, press [Power] key.



6.3 Maintenance Mode 2 Menu

The maintenance mode 2 menu includes the following diagnosis items.

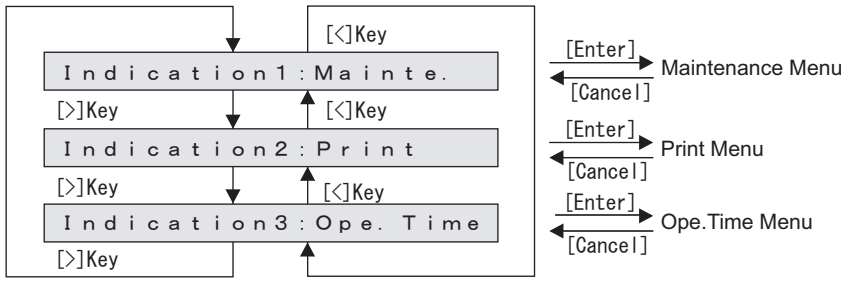
Diagnosis item	Contents	Reference
Indication	Displays the life counter.	☞"6.3.1 Counter Indication Menu" p.6-5
Init Counter	Initializes the life counter.	☞"6.3.2 Counter Initialization Menu" p.6-11
Print	Prints the life counter.	☞"6.3.3 Counter Print Menu" p.6-12
MediaFeed	Feeds media into the printer frontward or backward.Cut media.	☞"6.3.4 Paper Feed Menu" p.6-13



6.3.1 Counter Indication Menu

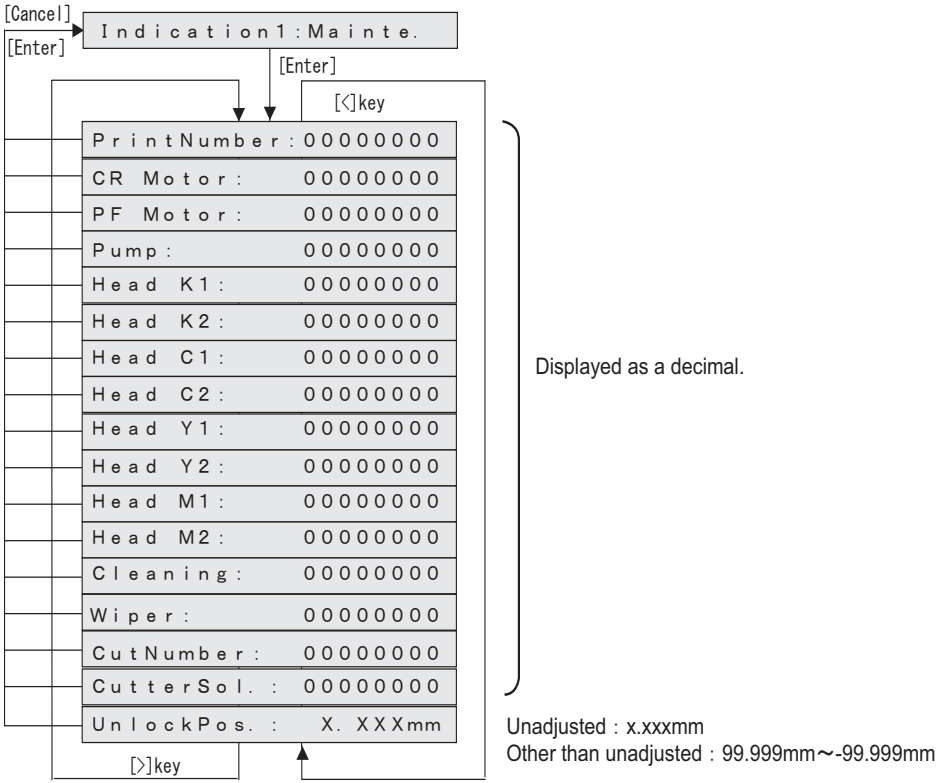
This menu is used to display the life counters.
It consists of the following diagnosis items.

Diagnosis item	Contents	Reference
Mainte.	Print Number,CR Motor,PF Motor,Pump ,Head,Cleaning,Wiper,CutNumber,Cutte rSol,UnlockPos.	☞"6.3.1 Counter Indication Menu" p.6-5
Print	Num,Area,Effect	☞"6.3.2 Counter Initialization Menu" p.6-11
Ope.Time	Running time for each activation mode Normal Diag Mainte	☞"6.3.3 Counter Print Menu" p.6-12



(1) Maintenance Menu

This menu is used to display the life counters.



NOTE

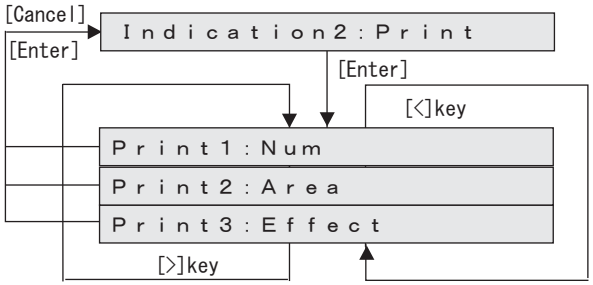
- Cleaning count does not rely on the cleaning type. (Including ink charge and economy ink charge)
- CR motor is counted every time the print head moves sideways (left to right, right to left).
- Number of Pump wheel rotations: The conversion of the number of Pump wheel rotations from the number of Wiper motor driving steps is as follows:
  1 rotation of Pump wheel = 330 steps (2-phase excitation conversion)

Diagnosis item	Contents	Unit
PrintNumber	Displays the total number of printed copies.	copy
CR Motor	Displays the life counter of CR motor.	scanning count
PF Motor	Displays the life counter of PF motor.	10m
Pump	Displays the life counter of Pump unit.	Number of rotation
HeadK1、K2	Displays the life counter of Head unit (K).	Number of average discharge shots per nozzle (mega dot)
HeadC1、C2	Displays the life counter of Head unit (C).	
HeadY1、Y2	Displays the life counter of Head unit (Y).	
HeadM1、M2	Displays the life counter of Head unit (M).	
Cleaening	Displays the life counter of Cleaning unit.	Number of cleanings
Wiper	Displays the life counter of Wiper.	Number of wiping
CutNumber	Displays the life counter of Cutter.	Number of cutting
CutteSol.	Displays the life counter of Solenoid.	Number of Solenoid downing
UnlockPos.	Displays the position of Unlocking the Head lock..	0.001mm

(2) Print Menu

Confirming printing information.

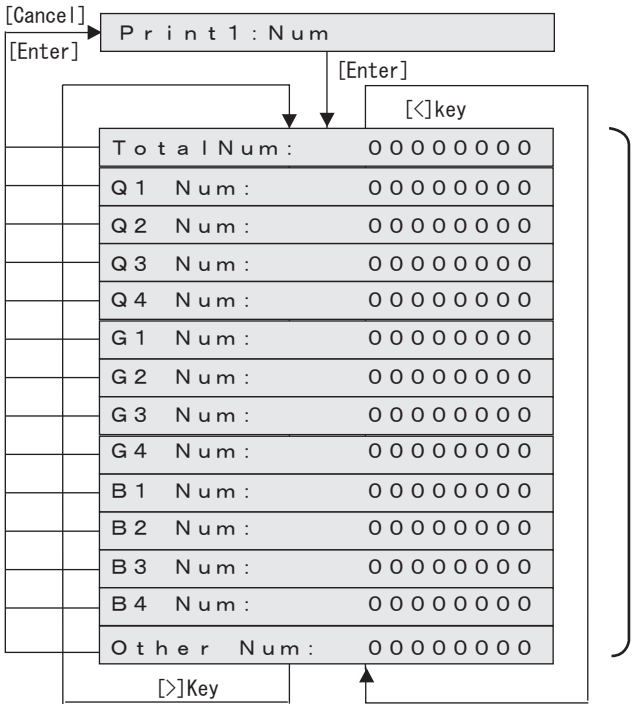
Diagnosis item	Contents
Num	Displays the counter value of the number of printed copies per mode
Area	Displays the counter value of the print area per mode
Effect	Number of the printed copies per effect



(2-a)Num

Check the number of printed copies per print mode. (Excluding the inner patterns.)

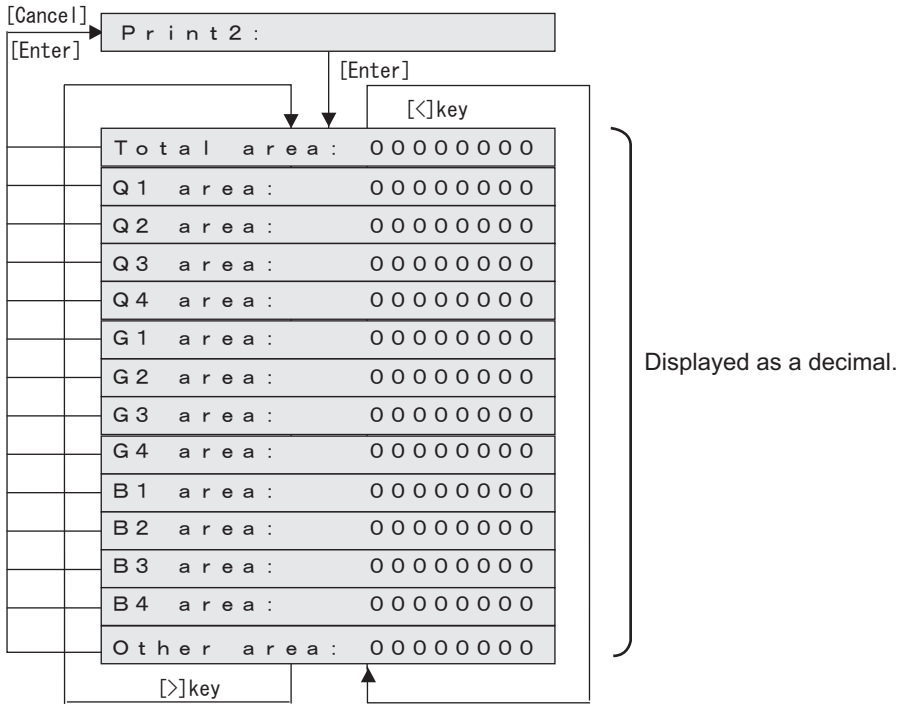
Diagnosis item	Contents	Unit
Total Num	Displays the counter value of the total number of printed copies of all modes	Copies
QX Num	Displays the counter value of the number of printed copies of Quality 1 to 4	Copies
GX Num	Displays the counter value of the number of printed copies of Graphics1 to 4	Copies
BX Num	Displays the counter value of the number of printed copies of Banner 1 to 4	Copies
Other Num	Displays other counter values of the number of printed copies	Copies



(2-b)Area

Check the print area per print mode. (Excluding the inner patterns.)

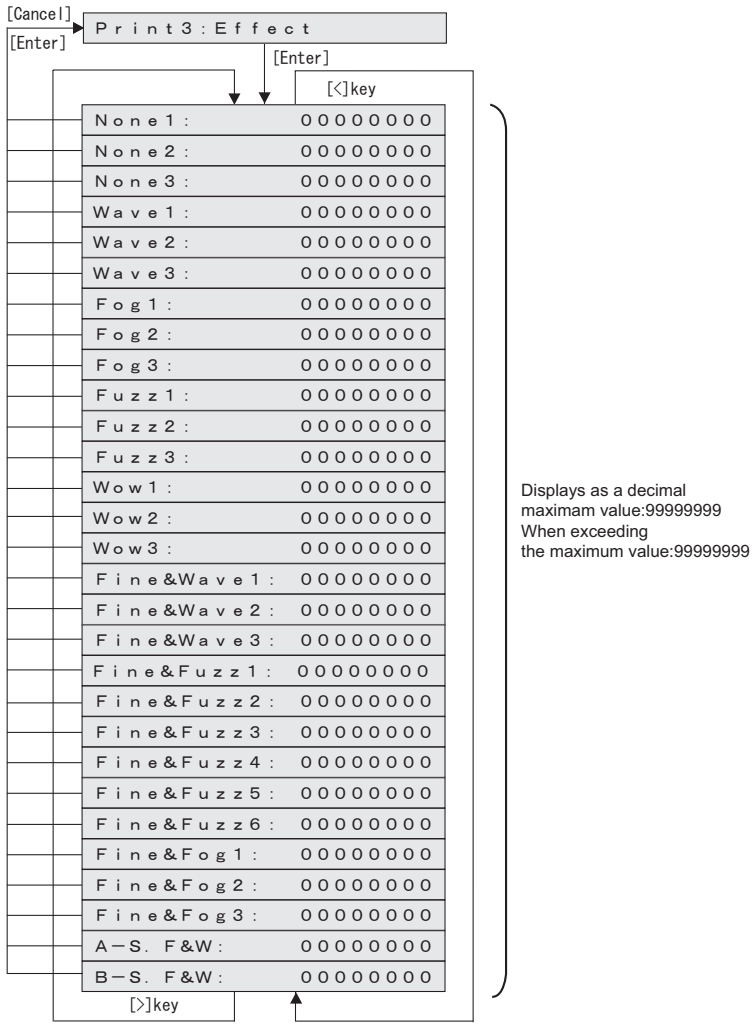
Diagnosis item	Contents	Unit
Total area	Displays the counter value of the total print area of all modes	㎡
QX area	Displays the counter value of the print area of Quality 1 to 4	㎡
GX area	Displays the counter value of the print area of Graphics 1 to 4	㎡
BX area	Displays the counter value of the print area of Banner 1 to 4	㎡
Other area	Displays other counter values of the print area	㎡



(2-c)Effect

Check the number of the printed copies per effect. (Excluding the inner patterns.)

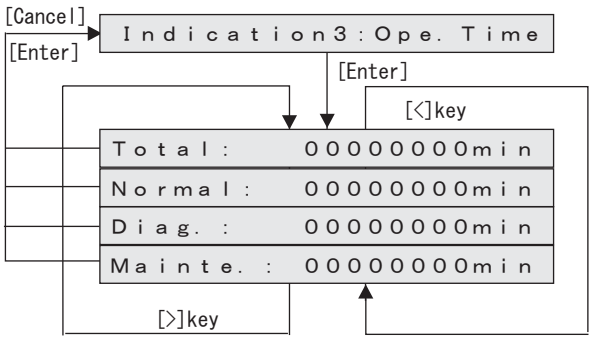
Diagnosis item	Contents	Unit
None 1	Number of printings in None1	copies
None2	Number of printings in None2	
None3	Number of printings in None3	
Wave1	Number of printings in Wave1	
Wave2	Number of printings in Wave2	
Wave3	Number of printings in Wave3	
Fog1	Number of printings in Fog1	
Fog2	Number of printings in Fog2	
Fog3	Number of printings in Fog3	
Fuzz1	Number of printings in Fuzz1	
Fuzz2	Number of printings in Fuzz2	
Fuzz3	Number of printings in Fuzz3	
Wow1	Number of printings in Wow1	
Wow2	Number of printings in Wow2	
Wow3	Number of printings in Wow3	
Fine&Wave1	Number of printings in Fine&Wave1	
Fine&Wavw2	Number of printings in Fine&Wave2	
Fine&Wavw3	Number of printings in Fine&Wave3	
Fine&Fuzz1	Number of printings in Fine&Fuzz1	
Fine&Fuzz2	Number of printings in Fine&Fuzz2	
Fine&Fuzz3	Number of printings in Fine&Fuzz3	
Fine&Fuzz4	Number of printings in Fine&Fuzz4	
Fine&Fuzz5	Number of printings in Fine&Fuzz5	
Fine&Fuzz6	Number of printings in Fine&Fuzz6	
Fine&Fog1	Number of printings in Fine&Fog1	
Fine&Fog2	Number of printings in Fine&Fog2	
Fine&Fog3	Number of printings in Fine&Fog3	
A-S.F&W	Number of printings in A-S.F&W	
B-S.F&W	Number of printings in B-S.F&W	



(3) Ope.Time

Confirming Operation time.

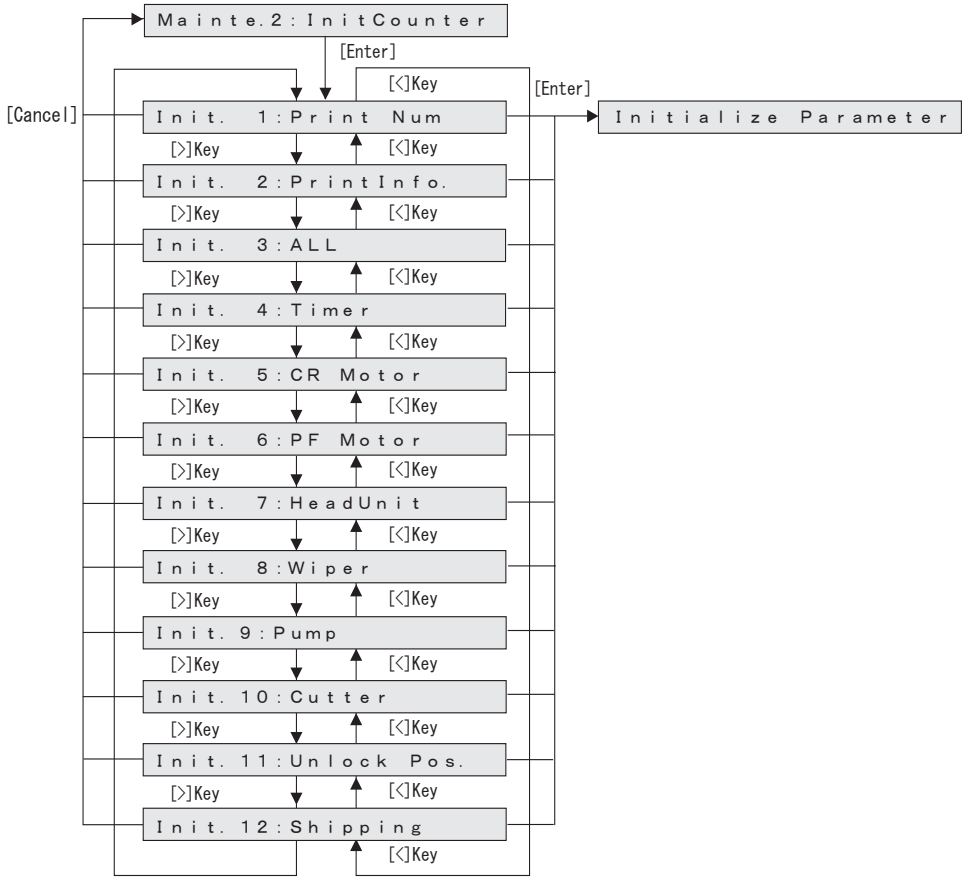
Diagnosis item	Contents	Unit
Total	Operation time of All modes.	minutes
Normal	Operation time of User mode.	
Diag.	Operation time of Self Diagnostic mode.	
Mainte.	Operation time of Maintenance mode 2.	



6.3.2 Counter Initialization Menu

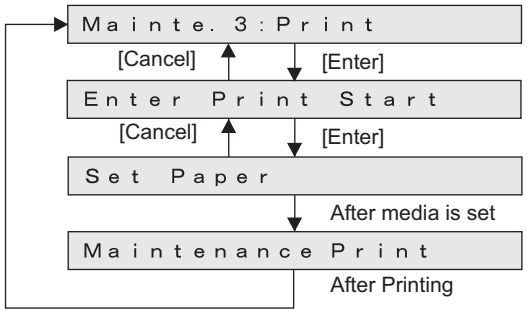
This menu is used to initialize the life counters.
The parameters that can be initialized in this menu are as follows.

Diagnosis item	Contents
Print Num	Initializes the total print counter.
PrintInfo.	Initializes the number of printed copies per mode, print area per mode, and the number of printed copies per effect
All	Initialize Timer,Life counter,Mechanical counter,Mechanical adjustment values,Head ID.
CR Motor	Initializes the CR motor life counter.
PF Motor	Initializes the PF motor life counter.
HeadUnit	Initializes the head nozzle life counter.
Wiper	Initializes the wiper life counter.
Pump	Initializes the Pump unit life counter.
Cutter	Initializes the Cutter life counter.
Unlock Pos.	Initializes the position of unlocking Head lock.
Shipping	Batch initializing only before shipping



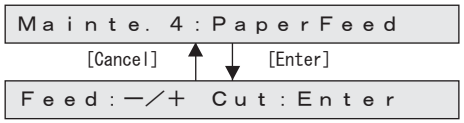
6.3.3 Counter Print Menu

This menu is used to print the life counter values.



6.3.4 Paper Feed Menu

This menu is used to feed media into the printer frontward or backward.
To cut media, press down the [Enter] key for more than two seconds.
The mechanical initialization should be performed, if it is not performed yet.



[–] key: Feeds frontward
[+] key: Feeds backward
Press down the [Enter] key for more than two seconds to cut the media

TIP

This is the same function as the**"5.13 Media Feed Menu" p.5-78**.

7 Maintenance

7.1 Introduction

This chapter provides information about the periodical services, part life, lubrication/bonding, and transport.

WARNING

Before starting any maintenance work, always perform the following operations.

- Turn the printer power OFF.
- Remove Power cable from Power outlet.
  Not doing so may cause electric shock or damage to the electric circuit.
- Unplug the cables connected to the printer.

Failure to do so could result in damage to the printer.

CAUTION

- Make sure there is sufficient space around the printer when performing maintenance work.
- When servicing the machinery inside with some covers removed, pay special attention not to be injured by the driving mechanisms.
- Maintenance must be done by two or more persons for the following work.
  - When disassembling or reassembling the printer and Dedicated stand
  - When packing the printer for transportation

7.2 Periodical Services

This section describes the periodical services required for this printer.
The periodical services ensures stable plotting quality of the printer.
Perform periodical inspections according to "7.2.1 Periodic Replacement Parts" p.7-3 and perform cleaning and part replacement as necessary.

TIP

- ☞Operation manual
- ☞Exploded View

7.2.1 Periodic Replacement Parts

The parts in the following table require replacement once per year.

Maintenance part names (Maintenance part numbers)	Contents	Q'ty	Replacement procedure
VJ1614 Regular Period Maintenance Kit (DG-41555)	Joint screw M6	8	☞"3.7.9 Replacing Solenoid Head Assy" p.3-143
	O ring M6	8	
	Connector Valve Head	8	
	Valve Head	4	
	Pump Cap assembly	1	☞"3.8.5 Replacing Maintenance Assy" p.3-168
	Cap Head assembly	1	
	Cap spring		
	Cap slider	1	
	Flam , Cap	1	
	Cap spring	1	
	Cleaner Head	1	☞" A necessary jigs and tools are as follows." p.3-166

7.2.2 Parts Which Require Inspection/Replacement

Table 7-1 Periodical Inspection Part List

Part	Timing	Check point	Action
Media guide F Platen front surface	Several times per year	• Media dust accumulation • Foreign objects • Damages	Clean it. If ink deposits are present, remove them with a dampened cloth and wipe the area with a clean dry cloth.
Timing fence (CR encoder detection slit plate)	Several times per year	• Media dust accumulation • Foreign objects • Damages	Clean it. If any damage is found, replace the part.
Paper rear sensor front surface	Several times per year	• Media dust accumulation • Foreign objects	Clean it.
Daily maintenance check point by the user (Platen, pressure roller, wiper, outer surface of the print head)	Several times per year	• Ink deposits • Foreign objects • Damages • Daily cleaning	If the stain is left, tell the user to clean it periodically according to the explanation of the User's Manual. (Parts should be replaced more often if stain is left.)
Pressure roller	Several times per year	• Ink deposits • Foreign objects • Damages • Lubrication	Clean it. Refer to **"7.5 Lubrication/ Bonding" p.7-8** for lubrication if necessary.

7.3 Part Life Information

This section shows how to check the life of the service parts.
To know the life of the service parts, check the maintenance counter from the counter display menu in the maintenance mode.

TIP

☞"6.3.1 Counter Indication Menu" p.6-5

Part life information of this printer is shown in the table below.

Table 7-2 List of Parts Life Expectancy

Part	Life expectancy	Warning display	How to restore	Replacement parts	References
CR motor	4,370,000 passes	Check Life [CR motor]	Counter clear	At the first warning: • CR motor • CR Return pulley (Check Ink tube as well.) At the next warning: • Replace CR cable after above parts is replaced.	☞"3.6.2 Replacing CR Motor Assy" p.3-104 "3.6.3 Replacing CR Return Pulley Assy" p.3-108 "3.6.9 Replacing Ink tube" p.3-121 "3.6.8 Replacing CR_FFC" p.3-117
PF motor	21Km	Check Life [PF motor]	Counter clear	Replace as necessary	☞"3.5.3 Replacing PF Motor Assy" p.3-77
Print head	6×10^9 (6 thousand million) dots	Check Life [Head]	Counter clear	Replace as necessary	☞"3.7.10 Replacing Print Head" p.3-148

Table 7-2 List of Parts Life Expectancy (Continued)(Continued)

Part	Life expectancy	Warning display	How to restore	Replacement parts	References
Cap Pump Unit	172,900 steps	Check Life [Pump]	Counter clear	Replace as necessary	☞"3.8.5 Replacing Maintenance Assy" p.3-168

7.4 Jigs and Tools

This section provides lists of jigs and tools required for service operations.

7.4.1 Required Tools

(1) Tools for Part Replacement

Table 7-3 Tools for Part Replacement

No.	Name	Part number	Remarks
1	Phillips driver No.2	Generic product	More than 250 mm shaft length is recommended.
2	Phillips driver No.2	Generic product	Less than 50 mm shaft length is recommended.
3	Phillips driver No.1	Generic product	-
4	Flat-head driver	Generic product	For replacing E rings
5	Box driver	Generic product	For replacing CR board assemblies
6	Ratchet	Generic product	-
7	Long-nose pliers	Generic product	-
8	Tweezers	Generic product	-
9	Hex wrench (1.5 to 6 mm)	Generic product	-
10	Hex wrench （2.5mm）	Generic product	For screws retaining Head base. More than 150mm shaft length and not L-tyoe are recommended.
10	E ring holder (E-2.5)	Generic product	Name: JIS E-2.5 Manufacturer: Iwata Denko Co., Ltd

Table 7-3 Tools for Part Replacement(Continued)

No.	Name	Part number	Remarks
11	E ring holder (E-6)	Generic product	Name: JIS E-56 Manufacturer: Iwata Denko Co., Ltd
11	Penlight	Generic product	-
12	Tube cutter	Generic product	For replacing solenoid heads and ink tubes
13	Scale	Generic product	For replacing Steel belt. Longer than 3 meters is recommended.

(2) Tools for Adjustment

Table 7-4 Tools for Adjustment

No.	Name	Part number	Remarks
1	Personal computer	Generic product	Network interface connector (RJ-45) should be equipped. (10M/100M Ethernet I/F)
2	Network interface cable	Generic product	Cross-type cable * Use stratight-type cable to connect HUB.
3	Dedicated network software	-	MUTOH Service Assistance
4	Tension gauge	Generic product	Max. 40 N (4,080gf) for measurement Manufacturer: Ohba Keiki Seisakusho Co., Ltd.
5	Tension gauge	Generic product	Max. 2N (204gf) for measurement Manufacturer: Ohba Keiki Seisakusho Co., Ltd.
6	MF-3G	Exclusive use media	For Paper edge sensor, for print accuracy adjustment
7	PG height check tool	DG-43196	For Print head height adjustment (1.3mm/1.4mm) (Exploded View : Other)
8	Steel belt tension attachment	DG-43197	For adjusting Steel belt tension (Exploded View : Other)
9	Cutter adjustment Jig	DG-43194	For Installiing Cutter (Exploded View : Other)
10	Photometer Bracket adjuating Jig	DG-43195	For Installing Photometer Bracket. (Exploded View : Other)
11	level	Generic product	For confirming Installation Environment

7.5 Lubrication/Bonding

This section covers the lubrication/bonding information.
After disassembling/assembling this printer, always perform necessary lubrication/bonding referring the following table.

CAUTION

- Only use specified lubricants to the printer. The use of unauthorized lubricants may damage the components and shorten the printer life.
- Pay attension not to lubricate too much on a part.

Table 7-5 Lubricant List

Parts		Item	Manufacturer	Type
PF drive section	Up/down gear on pressure lever	Apply to gear.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
CR drive section	Y rail machining diagram	Apply to the hole securing Y drive base.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
		Apply to the hole securing the return pulley bracket.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	Y rail and Roller guide	While inserting Roller guide, apply to the downside of Roller guide.	Dow Corning Toray Co.,Ltd.	MOLYKOTE E PASTE
	Pressure level adjustment gear	Apply to the contact surface of Pressure level adjustment rack on Y rail.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE

Table 7-5 Lubricant List (Continued)

Parts		Item	Manufacturer	Type
CRdrive section (Continued)	Pressure cam	Apply to cam part.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	Roller guide	Apply to the front surface of Roller guide.	Dow Corning Toray Co.,Ltd.	MOLYKOTE E PASTE
	Drive pulley	Apply to Drive pulley.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
Cursor section	Head U/D collar	Apply to head U/D collar.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	Head U/D cam	Apply to head U/D cam.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	Rack	Apply to Gear.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	PG warm wheel	Apply to Gear.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE

Table 7-5 Lubricant List (Continued)

Parts		Item	Manufacturer	Type
Head base section	Head mouting plate	Apply to the position of the screw hole securing shoulder screw.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
	Head slide base	Apply to the part contacting with the CR cursor.	Dow Corning Toray Co.,Ltd.	MOLYKOTE(R)EM-60L GREASE
PF drive section	Set screw	Apply screw-locking agent to the coupling set screw.	Three Bond Co., Ltd.	1401
CR drive section	CR Following Movement Belt pulley adjusting screw	After adjusting Steel belt, apply screw-locking agent.	Three Bond Co., Ltd.	1401
Others	Screw	Apply to the area screw-locking agent is applied.	Three Bond Co., Ltd.	1401
	The areas sharpened edge is likely to emerge	Attach acetate tapes to the tape wires or harnesses where sharpened edge is likely to emerge.	Not specified	-

7.6 Transportation of Product

This section describes how to transport the product.
Before transporting the product, you must package it in the same manner as it was delivered using protective materials and packaging materials so that the product will not be subject to excessive impact and vibrations during the transportation.
Refer to ☞Installation Manual

8 Product Overview

8.1 Introduction

This chapter explains the features, part names and functions of this printer.

8.2 Part Names and Functions

Part names and functions are explained below.

8.2.1 Front Section

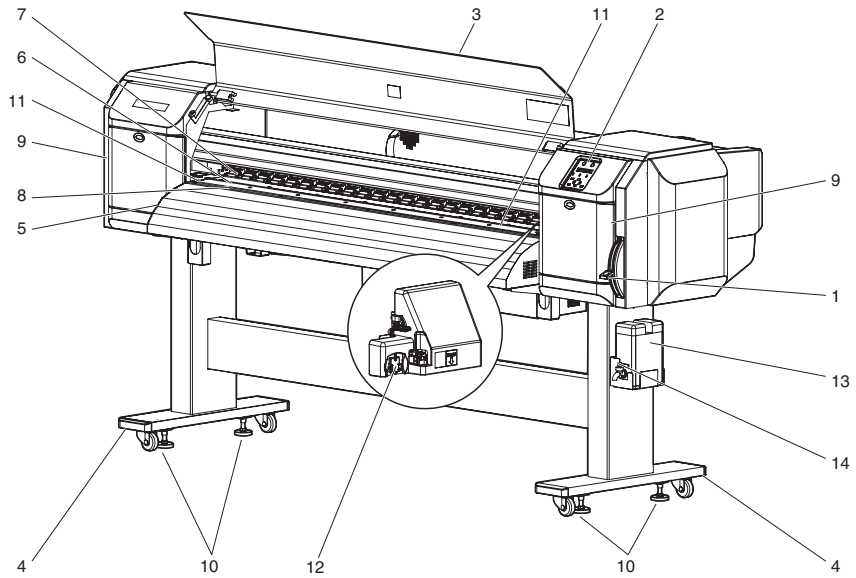


Table 8-1 Part Names and Functions of Front Section

No.	Name	Function
1	Media set lever	Fixes or releases the media. • Lower the lever to fix the media. • Raise the lever to release the media.
2	Operation panel	Used for setting operational conditions, the status of the printer, and other functions.

Table 8-1 Part Names and Functions of Front Section (Continued)

No.	Name	Function
3	Front cover	Keeps the operator safe from the drive parts of the printer while it is operating. Opened and closed when media is set or jammed. It is normally closed.
4	Dedicated stand	Used to set the printer on the level surface of the floor.
5	Media guide	Feeds the media smoothly when printing and/or setting the media. The heater (Dryer) for drying ink is installed inside.
6	Platen	Installed inside the front cover. The heater (platen heater) for drying ink is installed.
7	Pressure roller	Installed inside the front cover. Presses the media from above and holds it when printing.
8	Media cut groove	Installed inside of the front cover. Used to cut printed media straight.
9	Maintenance cover	Protects users from the mechanical parts inside the printer in the following cases: - Cleaning the cleaning wiper - Cleaning around the print head This cover must usually be closed.
10	Adjuster	Used to keep the printer level.
11	Media holding plate	Installed inside of the front cover.
12	Connector	Used to install spectrophotometer (SPECTROVUE VM-10).
13	Waste fluid Tank	Used for collecting waste ink discharged from the printer.
14	Waste fluid valve	Open and close when discharging the waste fluid from the waste fluid tank. It is normally closed.

8.2.2 Rear Section

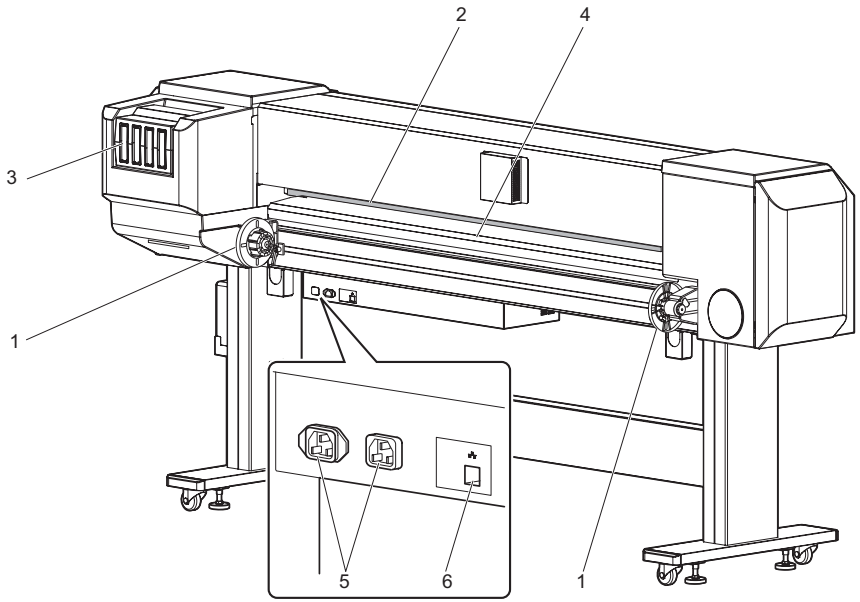


Table 8-2 Part Names and Functions of Rear Section

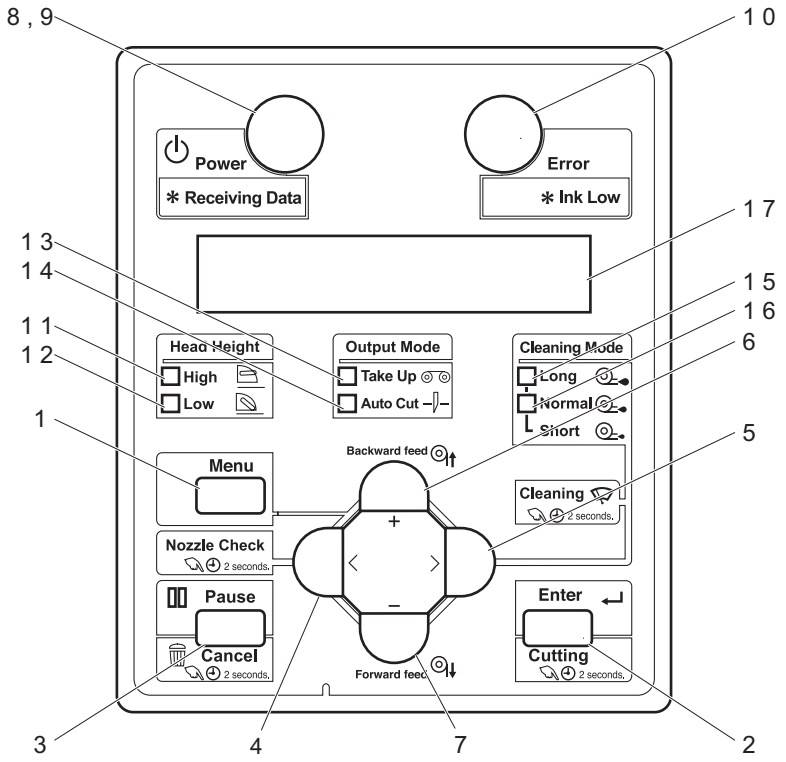
No.	Name	Function
1	Roll media holders	Holds the roll media. Includes flanges where roll media is attached, and the levers that fixes the roll media holders.
2	Media feed slot	Insert media from here when feeding media.
3	Ink cartridge slot	Install the ink cartridges.
4	Media guide	Used for feeding media smoothly when the media is set or printed. The heater (Pre-heater) to warm media is installed.
5	AC inlet	Connector toconnect a Network Interface connector.
6	Networa interface connector	Not used for this printer.

8.2.3 Operation Panel

Operation panel is used to set operational conditions, display the status of the printer, and set other functions.
The names and functions of the operation keys and status lamps are explained below.

TIP

☞Operation manual



(1) Operation Keys

TIP

Some keys have multiple functions and names depending on the printer status (normal or setup menu display). See "8.3 Printer Status" p.8-6 for more details.

No.	Name	Normal	Setup menu display
1	[Menu] key	Changes LCD monitor display to setup menu status.	Changes the setup menu display status to normal status.
2	[Enter] key	Restarts printing when it is pressed while the printer pauses printing.	- Selects the menu to be set and shifts to the next hierarchy. - Determines and saves the parameter value.
	[Cleaning] key	Hold down the key for over 2 seconds to start cleaning the printer head.	-
3	[Pause] key	Pauses printing.	—
	[Cancel] key	.When printing: When pressed for more than two seconds, forcefully terminates printing and deletes one file of the remaining data. .When receiving or analyzing data: When pressed for more than two seconds, deletes the data already received and analyzed.	Returns to the previous menu hierarchy. Changes made in the setting are discarded. .Shifts from Setup menu display to Normal.
4	[<]Key	—	—
	[Nozzle Check]Key	Press and hold this key for two seconds or more to perform Nozzle Check printing.	—
5	[>]Key	Sets Cleaning Mode. .The lamp of Cleaning Mode that you set lights up in green.	Down the menu level in the directory tree.
	[Cleaning] Key	When pressed for more than two seconds, cleaning starts.	—

No.	Name	Normal	Setup menu display
6	[Backward ↑]Key	Media is fed in the reverse direction.	—
	[+]Key	—	Changes to the previous item in the displayed menu. .The setting is changed to the reverse direction. .The numeric value is increased during numerical input.
7	[Forward↓] Key	Media is fed in the forward direction.	—
	[–]Key	—	.Changes to the previous item in the displayed setting. .The setting is changed to the forward direction. .The numeric value is decreased during numerical input.
8	[Power]Key	Turns the printer ON and OFF.	Turns the printer ON and OFF.

(2) LCD Monitor and Status Lamps

No.	Name	Color	Status	Function
9	Powerlamp	Blue	On	The printer is switched on.
			Blinking	An error has occurred. The contents will be displayed on LCD monitor.
			Off	The printer is switched off.
10	Errorlamp	Orange	On	- The printer is analyzing received data. - The printer is printing data.
			Blinking	The printer is receiving data.
			Off	The printer is not receiving, analyzing or printing data.
11	Highlamp	Green	Lamp ON	The head height is set to High.
			Lamp OFF	The head height is set to Low.
12	Lowlamp	Green	Lamp ON	The head height is set to Low.
			Lamp OFF	The head height is set to High.
13	Take Uplamp	Green	Lamp ON	Media ejection mode is set to "Take-up".
			Lamp OFF	Media ejection mode is set to "Off" or "Auto cut".
14	Auto Cutlamp	Green	Lamp ON	Media ejection mode is set to "Auto cut".
			Lamp OFF	Media ejection mode is set to "Off" or "Take-up".
15	Longlamp	Green	Lamp ON	Cleaning mode is set to Long. When the Normal lamp is also on, Cleaning mode is set to Short.
			Lamp OFF	Cleaning Mode is set to Normal.
16	Normallamp	Green	Lamp ON	.Cleaning Mode is set to Normal. When the Long lamp is also on, Cleaning mode is set to Short.
			Lamp OFF	Cleaning Mode is set to Strong.
17	LCD display section	—	—	Displays operation status of the printer or an error message.

8.3 Printer Status

The status of the printer is explained below.

8.3.1 Operating Status Type

(1) Normal

Indicates that the printer can print when media is loaded.
Each setup concerning printing can be operated by using Operation panel.

TIP

☞『Operation manual

(2) Setup Menu

Each setup concerning printing can be operated by using Operation panel.
The settings required for normal printing are usually made on the printer driver or application, but can also be made using Operation panel.

TIP

☞『Operation manual

(3) Self-Diagnosis Function

Indicates that each settings concerning printing using Operation panel. Names and functions of Operation panel keys are the same as those of setup menu display.

TIP

☞"5.3 Operations in Self-Diagnosis Mode" p.5-4

(4) Maintenance Mode 2

Indicates that each setup concerning to the life counter on this printer can be operated by using Operation panel. Names and functions of Operation panel keys are the same as those of setup menu display.

TIP

☞"6.2.1 Starting Up the Maintenance Mode 2" p.6-2

8.3.2 Switching Operating Status

Follow the steps below to switch the operation conditions.

(1) Normal Status → Setup menu display

Press the [Menu] key of Operation panel when the printer is in a normal status.

- [Menu 1: Setting>] is displayed on Operation panel and transits to a setup menu status.

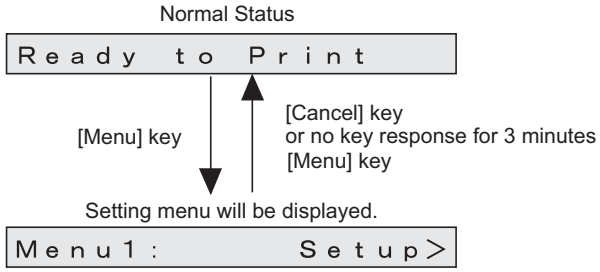
TIP

☞Operation manual

(2) Setup Menu display → Normal Status

When the setup menu is displayed, operate either of the following. Operation panel transits to the normal status display.

- Press [Cancel] key on Operation panel.
- When in the setup menu status, leave the printer without any key operations for 3 minutes.



TIP

Despite of the operation described as above, while displaying the CR maintenance menu, Operation panel does not go back to the normal status.

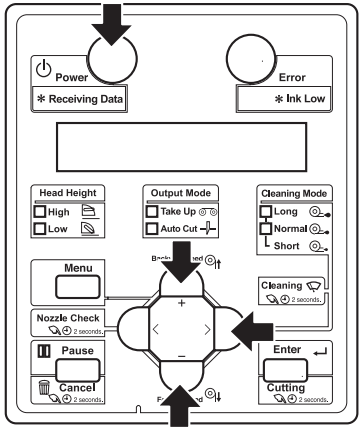
☞Operation manual

(3) Self-Diagnosis Function

Display the self-diagnosis menu on Operation panel to use the self-diagnosis function.
The self-diagnosis menu is completely independent from the normal operation mode or setup menu display mode. Switch to the self-diagnosis menu display mode, following the steps below:

1. When the printer is in the operation mode or in the self-diagnosis menu mode, press the [Power] key to turn off the printer.
2. While holding down the [Setting value -], [Setting value +], and [>] keys on Operation panel simultaneously, press the [Power] key.

   The system will transit to the self-diagnosis menu display mode.

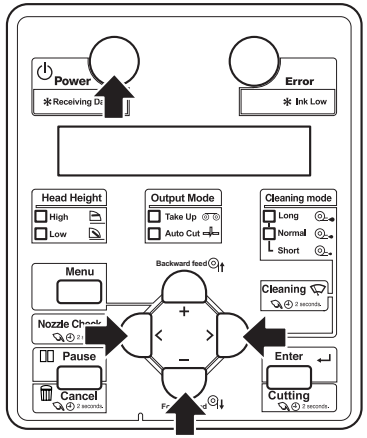


(4) Maintenance Mode 2 Display status

Display the maintenance mode 2 menu on Operation panel to use the maintenance mode.
The maintenance mode 2 is completely independent from the normal operation mode and setup menu display mode. Switch to the maintenance mode menu display mode, following the steps below.

1. When the printer is in the operation mode or in the setup menu mode, press the [Power] key to turn off the printer.
2. While holding down the [>], [Setting value -], and [<] keys on Operation panel simultaneously, press the [Power] key.

   The system will transit to the maintenance mode 2 menu display mode.



8.3.3 Selecting Panel Language

This section explains how to select the language displayed on Operation panel.
Follow the steps below to select the language.

NOTE

For this printer, you can choose the following:

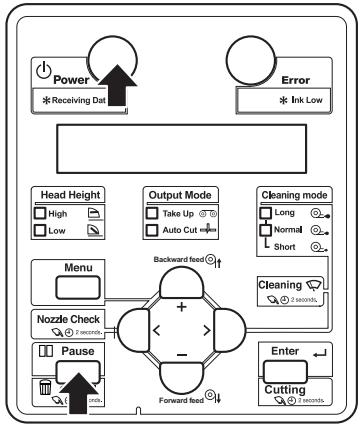
Language: Japanese or English

Temperature: Celsius (°C) or Fahrenheit (°F).

Length:mm or inch

- Selecting mode is displayed in only first start up.

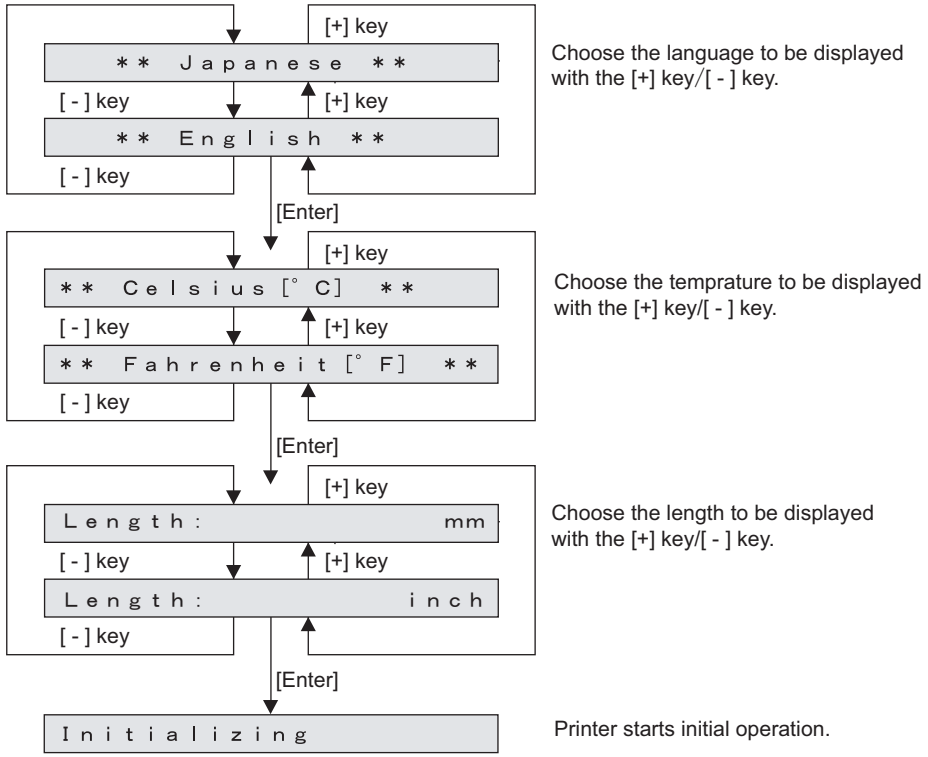
1. Press [Power] key on Operation panel while pressing [Cancel] key.



2. Select the language either from English or Japanese then press [Enter] to determine.

3. Select the temperature either from Celsius or Fahrenheit then press [Enter] to determine.

4. Select the length either from mm or inch then press [Enter] to determine.



5. The printer starts initial operation.

9 Specifications

9.1 Introduction

This chapter explains the specifications of the product, optional parts, supplies, and user support.

9.2 Product Specifications

9.2.1 Main Unit Specifications

Item		Specifications
Model name		VJ-1624
printing method		On-demand piezo drive
Motor driving method		Firmware servo / DC motor drive
Media feeding method		Multi-point pressure grid roller method
Media fixing method		Pressurizing roller manual-down method
Media supply and ejection		Roll media: Rear feeding / front ejection
Roll media	Outer diameter	150 mm (5.91 inch) or less
	Media core diameter	2inch/3 inch
	Weight	30 kg (66.14 lb.) or less
	Max. length	50 m (1969 inch)
	Max. width	1625 mm (64 inch)
	Max. thickness	0.3mm（PG_Low） 1.3ｍｍ（PG_High）
	Max. print length	1615mm
Printing margins		Top: 15 mm, Bottom: 5 mm, Left: 5-25 mm, Right: 5-25 mm
Media cutting method		Horizontal manual cut system
Head height adjustment		Two adjustable positions of Normal/High
CPU		64Bit RISC CPU
Menory		128MB
Command		MH-RTL（RTL-PASS）
Interface		Network Interface (Ethernet IEEE802.3)
Ink	Supply method	Supplied through tubes from four-color independent cartridges
	Cartridges	Black, Cyan, Magenta, Yellow: 220ml ± 5ml each or 440ml ± 5ml (1000ml ± 5ml when the optional high capacity pack adapter is used)
Environmental conditions	Operation environment	Temperatures: 20 ° C to 32 ° C Humidity: 40 % to 60 %, No condensation
	Printing accuracy warranty range	Temperatures: 22 ° C to 30 ° C Humidity: 40 % to 60 %, No condensation
	Rate of change	Temperature: within 2° C per hour Humidity: within 5 % per hour
	Archiving condition (Ink not filled)	Temperature: -20 ° C to 60 ° C Humidity: 20 % to 80 %, No condensation Storage life: six months
	Archiving condition (Ink filled)	Temperature: -10 ° C to 40 ° C Humidity: 20 % to 80 %, No condensation Storage life: four days (32 ° C or higher)
Power source	Voltage	AC 90V ～ 132V
	Frequency	50Hz / 60Hz ± 1Hz
Power consumption	During printing	MAIN：under 1100W HEATER：under 1200W
	During standby	55W
Outer dimensions	Height	1261mm（Including dedicated Stand）
	Width	2698mm
	Depth	885mm
Weight		160kg（Including dedicated Stand）

9.3 Interface Specifications

This section explains the specification of the interfaces Supported for this printer.

9.3.1 Network Interface Specifications

Item	Specifications
Network type	Ethernet IEEE802.3
Network I/F	10BASE-T / 100BASE-TX Auto-switching (RJ-45 connector twist pair cable) MDI / MDI-X Auto-switching
Corresponding protocol	TCP/IP

9.4 Options/Supplies List

9.4.1 Supplies

(1) Ink Cartridges

NOTE

- For more information about the options and the supply items, contact your local MUTOHdealer.☞『Operation Manual』
- For problems resulting from using a non-genuine ink will exempt the warranty.

(2) Roll Media

NOTE

- For more information about the options and the supply items, contact your local MUTOHdealer.☞『Operation Manual』
- For problems resulting from using a non-suggested media will exempt the warranty.

(3) Other

NOTE

- For more information about the options and the supply items, contact your local MUTOHdealer.☞『Operation Manual』

9.5 Choosing a Place for the Printer

WARNING

- Do not place the printer in a location under the following conditions. Doing so may cause the product to fall, become damaged, or cause injury.
  - Unstable surfaces
  - Slanted areas
  - Locations that are subject to vibration from other product

Confirm the horizontal with a level when installation envbironment might inclined, and set up the printer in horizontal place.

- Do not stand on the printer or place any heavy objects on it.
  Doing so may cause it to fall over, become damaged, or cause injury.
- Do not cover the ventilation hole of the printer with cloth, such as a blanket or table cloth. Doing so could prevent the printer from ventilating and cause fire.
- Keep the printer away from humid and dusty areas. Failure to do so may result in electrical shock or fire.

NOTE

- Avoid the following temperature and humidity conditions. Otherwise, printed images may appear different from what you expectation.
  - Places where sudden changes in temperature and humidity are expected, even though the condition is within the range specified
  - Places where direct sunlight or excessive lighting are expected
  - Places where air conditioners blow directly
- MUTOH recommends that the printer should be installed where air conditioning can be adjusted easily.

(1) Installation Environment Requirements

Choose a place for printer installation following the requirements of the table below.

Floor loading capability		2940Pa (300kgf/m²) or over
Electrical specifications	Voltage	AC90V ～ 132V
	Frequency	50/60Hz ± 1Hz
Environmental conditions	Operation environment	Temperatures: 20 ° C to 32 ° C Humidity: 40 % to 60 %, No condensation
	Printing accuracy warranty range	Temperatures: 22 ° C to 30 ° C Humidity: 40 % to 60 %, No condensation
	Rate of change	Temperature: within 2° C per hour Humidity: within 5 % per hour
	Storage environment (when ink is filled)	Temperature: -10 ° C to 40 ° C Humidity: 20 % to 80 %, No condensation Storage life: four days (32 ° C or higher)

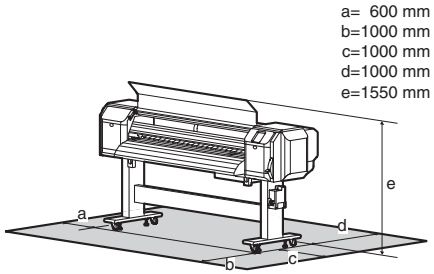
(2) Required Space

Install the printer on a flat surface that fulfills the following conditions.

- The place to install printer with the dedicated stand should have enough loading capacity.

NOTE

For the printer and the dedicated stand, refer to"9.2 Product Specifications" p.9-2.



* Do not use the printer without dedicated stand.

10 Appendix

10.1 Introduction

This chapter provides referential information such as service data.

10.2 Maintenance Part List

The following table lists the maintenance parts per unit (as of Jan 23th, 2012).

The part number below is identical to that of the exploded view.

Table 10-1 X Rail Assy (Board box)

Part Name	No.	Exploded View	Remark
AC Inlet Assy	DG-43177	A-299	-
AC Inlet. Large 15A	DF-48402	A-293	-
AC Inlet (Main side)-Fuse Box Cable Assy	DG-43039	A-305	including 1 piece
Fuse-Terminal Block Cable Assy	DG-43025	A-320	-
Terminal Block-Power Cable Assy	DG-43030	A-323	-
Power Board Assy	DG-43172	A-321	-
Cooling FAN (24V)Assy	DG-42943	A-313	-
MAIN Board Assy	DG-42958	A-316	-
SODIMM 128M Assy	DF-49715	A-318	-
Fuse	DF-49683	A-303 A-297	including1piece
Terminal Block-CNT Cable Assy	DG-43029	A-190	-
MAIN DC Cable Assy	DG-43178	A-319	-
CNT_PS Cable Assy	DG-43035	A-191	-
MAIN-CNT Cable Assy	DF-49672	A-192	-
Fuse(H side)-RLY AC Cable Assy	DG-43040	A-195	-

Table 10-2 X Rail Assy2

Part Name	No.	Exploded View	Remark
Flushing Sponge	DG-40318	A-282	including1set
Lever Sensor Cable Assy	DG-43026	A-259	-
CR HP Sensor. Lever Sensor	DF-49471	A-255	For Lever sensor

Table 10-3 X Rail Assy3（PF Section）

Part Name	No.	Exploded View	Remark
PF_ENC scale	DG-40320	A-65	-
PF Speed Reduction Pulley Assy	DG-42991	A-64	-
X speed Reduction Belt	DF-43883	A-90	-
PF Encoder Assy	DG-43011	A-98	-
PF Motor Relay　Assy	DG-43042	A-85	-
PF Motor Assy	DF-49020	A-81	-

Table 10-4 X Rail Assy4（Platen）

Part Name	No.	Exploded View	Remark
Vacuum Fan Assy	DG-40311	A-123	including 1 piece
Platen Non-Reflecting Tape(9mm)	DG-42222	A-141	Including 2 pieces
Media Holder 2 Assy	DG-43181	A-157	Including 1 piece

Table 10-5 XRailAssy5

Part Name	No.	Exploded View	Remark
VJ16 After Heater Assy	DG-40350	A-208	Including 1 set
		A-214	
		A-222	
Thermistor Assy	DG-43001	A-210	For After Heater (Including 1 set)
		A-217	
AFT_T1 Relay Assy	DG-43018	A-212	-
AFT_T2 Relay Assy	DG-43019	A-213	-
AFT_H Relay Assy	DG-43017	A-209	-
Cooling Fan 24V Assy	DF-49022	A-200	-
HEATER RELAY 3 Board Assy	DG-43169	A-193	-
HEATER CONT Board 2 Assy	DG-41105	A-188	-
CNT-relay FFC1(VJ26)	DG-40321	A-196	-
PRE_T2 Relay Assy	DG-43023	A-238	-
Thermistor Assy	DG-43001	A-236	For Pre Heater (Including 1 set)
		A-239	
P_REAR Sensor Assy	DG-43010	A-170	-
PRE_T1 Relay Assy	DG-43022	A-237	-
VJ16 Pre Heater Assy	DG-40351	A-233	-
		A-240	-
		A-241	-
PRE_H1 Relay Assy	DG-43020	A-234	-
PRE_H2 Cable Assy	DG-43021	A-235	-
CTL Board-HEATER Relay Board ACCableAssy	DG-43041	A-197	-

Table 10-6 YRail Assy

Part Name	No.	Exploded View	Remark
CR Return Pulley Assy	DF-43868	B-86	-
		B-87	-
		B-88	-
		B-89	
		B-90	-
T Fence (64)	DF-43901	B-39	-
CR HP Sensor. Lever Sensor	DF-49471	B-43	For CR Origin sensor
CR Origin Sensor Cable Assy	DG-43004	B-45	-
CR Motor (Direct Pulley) Assy	DG-43182	B-69	-
CR_FFCAssy	DG-42992	B-119	Including 1 piece
Steel Bare Assy (VJ-1604)	DG-41917	B-118	-
Pressure Roller	DF-46666	B-26	Including 1 piece
VJ1624_CR Belt Assy	DG-43002	B-97	-

Table 10-7 Cursor Assy1

Part Name	No.	Exploded View	Remark
VJ Cursor Roller Arm Assy	DG-40326	C-21	Including 1set
		C-22	
		C-23	
		C-24	
CR HP Sensor. Lever Sensor	DF-49471	C-33	For PG_origin Sensor (Including 1 piece)
PG Origin Sensor Cable Assy	DG-43012	C-34	-
VJ1624_Cursor Assy	DG-42995	C-1	-
		C-6	-
		C-7	-
		C-8	-
		C-13	-
		C-14	-
		C-15	-
		C-16	-
		C-27	-
		C-28	-
		C-25	-
		C-22	-
		C-23	-
		C-24	-
		C-26	-
		C-39	-
		C-43	-
		C-44	-
		C-46	-
		C-45	-
		C-40	-

Table 10-7 Cursor Assy1(Continued)

Part Name	No.	Exploded View	Remark
VJ1624_Cursor Assy(Continued)	DG-42995	C-41	-
		C-42	-
		C-51	-
		C-53	-
		C-54	-
		C-55	-
		C-56	-
		C-57	-
		C-58	-
		C-59	-
		C-60	-
		C-65	-
		C-66	-
		C-76	-
Head Assy	DG-42987	C-101	-
		C-100	-
		C-102	-
		C-106	-
		C-105	-
Solenoid Head Assy	DG-41543	C-104	-
		C-107	-
		C-108	-
		C-109	-
Connector_Solenoid Head Assy_Maintenance	DG-41915	C-107	-
O Ring M6	DF-46671	C-108	Including 100 pieces
Head FFC (VJ-1608H)	DG-42385	C-112	Including 1 piece

Table 10-8 CursorAssy2

Part Name	No.	Exploded View	Remark
CR Encoder Assy	DG-42947	C-163	-
CR Board Assy	DG-42959	C-177	-

Table 10-9 Cursor Assy3

Part Name	No.	Exploded View	Remark
Photometer Junction Board Assy(VJ1624)	DG-43038	C-146	-
		C-147	-
		C-148	-
		C-148	-
		C-149	-
		C-150	-
		C-151	-
		C-152	-
		C-153	-
Cutter Solenoid Cable Assy	DG-43024	C-130	-
Cutter Solenoid Spring Assy	DF-49062	C-129	-
Cutter Solenoid Assy	DF-42234	C-127	-
P_EDGE Sensor Assy	DG-42946	C-140	-
Cutter Spring	DG-43484	C-134	-
VJ1624_Cursor Assy	DG-42995	-	☞Table 10-7"Cursor Assy1"(p.5)

Table 10-10 Maintenance

Part Name	No.	Exploded View	Remark
VJ16 Wiper Assy	DG-41001	D-2	-
Cap Head Assy	DG-41179	D-51	-
VJ16 Flushing Box Assy	DG-40355	D-25	-
		D-26	-
		D-27	-
		D-61	90mm × 1
		D-64	-
Wiper Origin Sensor Cable Assy	DG-43027	D-3	-
Pump Motor Cable Assy	DG-43036	D-55	-
VJ16 Maintenance Assy	DG-41000	D-1	-
		D-51	-
		D-52	-
		D-53	-
		D-54	-

Table 10-11 I/HAssy1(Cartridge）

Part Name	No.	Exploded View	Remark
O RingM6	DF-46671	E-100	Including 100 piece
Cartridge Holder Assy1	DG-42997	E-59	Common parts
Cartridge Holder Assy2	DG-42998	E-84	
Cartridge Holder Assy3	DG-42999	E-85	
Cartridge Holder Assy4	DG-42300	E-86	
		E-87	
		E-88	
		E-89	
		E-90	
		E-91	
		E-92	
		E-97	
		E-98	
		E-99	
		E-103	
		E-95	
		E-110	Dedicated part for Cartridge Holder Assy 1
		E-111	Dedicated part for Cartridge Holder Assy 2
		E-112	Dedicated part for Cartridge Holder Assy 3
		E-113	Dedicated part for Cartridge Holder Assy 4
		E-106	Dedicated part for Cartridge Holder Assy 1
		E-107	Dedicated part for Cartridge Holder Assy 2
		E-108	Dedicated part for Cartridge Holder Assy 3
		E-109	Dedicated part for Cartridge Holder Assy 4

Table 10-11 I/HAssy1(Cartridge）(Continued)

Part Name	No.	Exploded View	Remark
Ink ID Board Assy	DF-43968	E-84	-
		E-85	

Table 10-12 IHAssy2（SubTank）

Part Name	No.	Exploded View	Remark
2 way solenoid Assy(VJ16)	DG-41092	E-55	-
		E-56	-
		E-57	-
		E-49	20mm × 4 pieces、 25mm × 4 pieces
Sub Tank Assy	DG-41093	E-21	-
		E-22	-
		E-23	-
		E-24	-
		E-25	-
		E-26	-
		E-27	-
		E-28	-
		E-30	-
		E-31	-
		E-32	-
		E-33	-
		E-34	-
		E-40	-
		E-47	-
Sub Tank Under Spoge Assy	DG-41096	E-14	-
		E-15	
CR HP Sensor. Lever Sensor	DF-49471	E-28	Including 1piece （For SubTankHigh/Low Sensor）
O Ring M6	DF-46671	E-27 E-31	Including 100 pieces
JUNC_ID Cable Assy	DG-43009	E-159	-
JUNCTION Board Assy	DG-42966	E-157	-

Table 10-12 IHAssy2（SubTank）(Continued)

Part Name	No.	Exploded View	Remark
JUNC_FFCAssy	DG-43037	E-160	-
TANK_H/L Cable Assy1	DG-43005	E-35	For K
TANK_H/L Cable Assy2	DG-43006	E-36	For C
TANK_H/L Cable Assy3	DG-43007	E-37	For M
TANK_H/L Cable Assy4	DG-43008	E-38	For Y
Two-way Solenoid Cable Assy	DG-43003	E-61	-

Table 10-13 Cover Assy1（Front）

Part Name	No.	Exploded View	Remark
Cover Switch Assy	DG-42956	H-207 H-184	For Front Cover Sensor R,L （Including 1 piece ）
Cover R Cable Assy	DG-43034	H-192	-
Cover L Cable Assy	DG-43033	H-215	-
Vacuum Fan Assy	DG-40311	H-16	For Exhaust Fan
Exhaust Fan Cable Assy	DG-43032	H-21	-

Table 10-14 Cover Assy2（R side）

Part Name	No.	Exploded View	Remark
Cover Switch Assy	DG-42956	H-39	For Maintenance Cover Sensor R
Panel FFCAssy	DG-42994	H-66	-
Panel Unit Assy	DG-42984	H-63	-
Cover R Cable Assy	DG-43034	H-192	-

Table 10-15 Cover（L side）

Part Name	No.	Exploded View	Remark
Cover Switch Assy	DG-42956	H-117	For Maintenance Cover L
Cover L Cable Assy	DG-43033	H-215	-

Table 10-16 Roll Media Holder Assy

Part Name	No.	Exploded View	Remark
VJ16 Roll media holder R Assy 2	DG-41174	G-1	-
		G-2	-
		G-3	-
		G-4	-
		G-5	-
		G-6	-
		G-7	-
		G-8	-
		G-9	-
		G-12	-
		G-13	-
		G-14	-
		G-15	-
		G-18	-
		G-19	-
		G-20	-
VJ16 Roll media holder L Assy 2	DG-41173	G-1	-
		G-2	-
		G-3	-
		G-4	-
		G-5	-
		G-6	-
		G-7	-
		G-8	-
		G-9	-
		G-12	-
		G-13	-

Table 10-16 Roll Media Holder Assy

Part Name	No.	Exploded View	Remark
VJ16 Roll media holder L Assy 2 (Continued)	DG-41173	G-14	-
		G-15	-
		G-18	-
		G-19	-
		G-20	-

Table 10-17 Stand

Part Name	No.	Exploded View	Remark
Waste Fluid Sensor Cable Assy	DG-43031	A-341	-
Waste Fluid Level Switch (VJ16)	DG-41091	K-28	-
Waste Fluid Bottle Assy	DG-43501	K-27	-
Caster Assy	DG-42207	F-4 F-11	Including 50 pieces

Table 10-18 Other

Part Name	No.	Exploded View	Remark
VJ Tube3-4(3m)	DG-42724	-	-
VJ Tube3-4(1m)	DG-42722	-	-
VJ Tube 2-3(1m)	DG-42725	-	-
Solenoid Head Washing Kit (VJ Ink)	DG-41787	-	-
VJ1614 Regular Period Maintenance Kit	DG-41555	C-109	Including 8 pieces
		C-108	Including 8 pieces
		C-107	Including 8 pieces
		C-104	Including 4 pieces
		D-1	The Exploded view (separate sheet) is under Maintenance
		D-51	
		D-52	
		D-53	
		D-54	
		D-2	
PG height check tool	DG-43196	-	Jig for Print head height adjustment (1.3mm/1.4mm)
Steel belt tension attachment	DG-43197	-	Jig for adjusting Steel belt tension
Cutter adjustment Jig	DG-43194	-	Jig for Installiing Cutter
Photometer Bracket adjuating Jig	DG-43195	-	Jig for Installing Photometer Bracket.

The following is the list of the maintenance parts for take-up unit .
The maintenance numbers correspond to those of the Exploded view's.

Table 10-19 Take-up unit 1

Part Name	No.	Exploded View	Remark
VJ take-up motor Assy	DG-40471	M-10	-
		M-11	-
		M-12	-
		M-14	-
Drive roller	DG-40472	M-28	-
		M-29	-
Holder roller	DG-40473	M-35	-
		M-36	-
		M-37	-
		M-38	-
		M-39	-
		M-40	-
Drive Collar	DG-40475	M-166	-
		M-167	-
CR_HP Sensor、Lever Sensor	DF-49471	M-86	-
VJ take-up CNT board Assy	DG-40478	M-92	-
Power Supply（External Take Up)	DF-44506	M-93	-
VJ take-up SW board Assy	DG-40479	M-99	-
W_ON sensor Relay Assy	DG-40480	M-105	-
W_OFF sensor Relay Assy	DG-40481	M-106	-
AC Cable Assy	DG-40482	M-107	-
DC Cable Assy	DG-40483	M-108	-

Table 10-20 Take-up unit 2

Part Name	No.	Exploded View	Remark
Holder roller L	DG-40474	M-124	Including 3 pieces
VJ Take up Scroller 16	DG-40477	M-165	-
		M-166	-
		M-167	-
		M-168	-
		M-170	-
		M-171	-
		M-172	-
Power Supply Cable 15A (USA)	DG-42392	M-203（A)	-