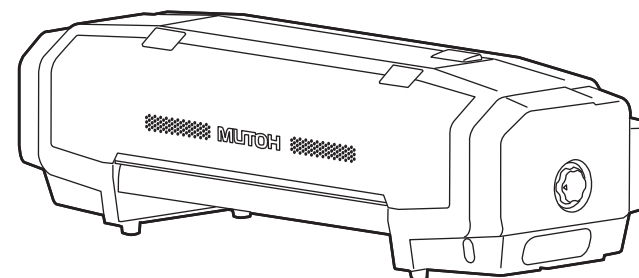


MUTOH

MAINTENANCE MANUAL

ValueJet

VJ-628X



VJ628XE-M-00

CONFIDENTIAL

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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.

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- MUTOH INDUSTRIES LTD. shall not be liable for any damages or troubles resulting from the use of this equipment or this manual.

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.

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-628X).

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 May 22 2015.

5. Firmware version covered by this document

Firmware version:1.00

Revision	Reason	Chapter	Section	Contents	Page No.	Errata	Remarks
00	-	-	-	New	-	-	-

1 Safety Instructions

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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.






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.

Table 1-1 Explanation of safety terms

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.

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.

1.3.1 Location and Type of Warning Labels

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

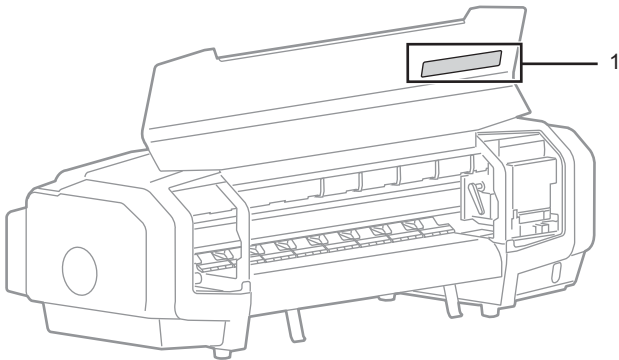


Table 1-2 List of the warning label types

No.	Types of Warning Labels
1	<div><div></div><div><div>△ 注意</div><div>カッター刃でけがをする 可能性がありますので、 指を入れないでください。</div></div><div><div>△ Caution</div><div>Do not insert your fingers the cutting blade inside may injure your fingers.</div></div><div><div>△ 注意</div><div>請勿伸進手指，以免刀片 割傷手指。</div></div><div><div>△ 주의</div><div>Cutting blade 내부로 손가락 을 넣지 마십시오. 손가락을 다칠 수 있습니다.</div></div><div><div>△ 注意</div><div>請勿將手指插入Cutting blade內，否則會割傷手 指。</div></div></div>



2 Troubleshooting

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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 ["2.2Troubleshooting with Error Messages"](#). If the machine is malfunctioning but no error messages are displayed, refer to ["2.3Troubleshooting Without Error Messages"](#). If 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.

No.	Trouble	Contents	Reference
1	When the message is displayed	Trouble with an error message displayed on Operation panel when the printer is malfunctioning.	 "2.2Troubleshooting with Error Messages"
2	When the message is not displayed	Trouble without an error message displayed on Operation panel even when the printer is malfunctioning.	 "2.3Troubleshooting Without Error Messages"

2.2 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.

2.2.1 Operation Status

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

Table 2-1 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.	 "3.3.4Replacing Cover R Cable Assy"  "Electric Wiring Diagram"
			2. Is Switch board installed facing down?	Reinstall it correctly.	
			3. Is Cover sensor wobbly?	Tighten the screw on Cover sensor.	
			4. Are the cables of F cover R sensor and F cover L sensor securely connected?	Securely connect the cable to connector. Check if the interlock cable is securely connected to MAIN board	
			5. Are F cover R sensor and F cover L sensor damaged?	Replace F cover R sensor and F cover L sensor.	 "5.4.4Sensor Menu"  "3.3.4Replacing Cover R Cable Assy"
			6. Check the operation of Front cover sensor in "Sen : Cover" in the self-diagnosis function.	Replace Front cover sensor if it is not working properly.	
			7. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
2	Set media	Pressure Handle is raised.	1. Does Pressure Handle move smoothly?	Lubricate pressure cam.	 "7.5Lubrication/Bonding"
			2. Is Lever sensor securely installed?	Clean the sensor portion with a cotton swab, etc.	 "3.6.6Replacing Lever Sensor Cable"
			3. Is the sensor portion of Lever sensor dirty?	Clean the sensor portion with a cotton swab, etc.	
			4. Is the cable of Lever sensor securely connected?	Securely connect Lever sensor cable.	
			5. Check the operation of Lever sensor in "Sen : Lever" in the self-diagnosis function.	Replace Lever sensor if it is not working properly.	 "5.4.4Sensor Menu"  "3.6.6Replacing Lever Sensor Cable"
			6. JUNCTION board may be damaged.	Replace JUNCTION board.	 "3.5.11Replacing JUNCTION Board"
			7. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

Table 2-1 Events and Check Items for Operation Status Messages (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
3	End of Roll	Media has run out.	1. Is the cable of P Rear Sensor placed under Paper guide R securely connected?	Securely connect it.	 "Electric Wiring Diagram"
			2. Check if there is paper in "Sen : Rear" in the self-diagnosis function.	If "No media" is displayed even when paper is loaded, check the item 5.	 "5.4.4Sensor Menu"
			3. P Rear Sensor may need adjustment or it may be damaged.	Adjust P Rear Sensor.	 "5.6.1Rear/ Edge Sensor Adjustment"
				If the same error continues to be displayed, replace P Rear Sensor.	 "3.6.14Replacing P_REAR Sensor"
			4. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
4	No media	Media is not loaded.	1. Check if there is paper in "Sen. : Rear" in the self-diagnosis function.	If "No media" is displayed even when paper is loaded, replace P Rear Sensor.	 "5.6.1Rear/ Edge Sensor Adjustment"  "3.6.14Replacing P_REAR Sensor"
			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 P Rear Sensor placed under Paper guide R securely connected?	Securely connect it.	 "Electric Wiring Diagram"
			4. P Rear Sensor may need adjustment or it may be damaged.	Adjust P_REAR sensor.	 "5.6.1Rear/ Edge Sensor Adjustment"
				If the same error continues to be displayed, replace P_REAR sensor.	 "3.6.14Replacing P_REAR Sensor"
			5. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

2.2.2 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 2-2 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 P_EDGE Sensor securely installed?	Install P_EDGE Sensor correctly.	 "3.8.6Replacing P_EDGE Sensor"
			3. Are there taint or any foreign substances on the surface of Platen and P_EDGE Sensor?	Remove any taint or foreign substances.	 Operation Manual
			4. Is the cable of P_EDGE Sensor connected securely?	Securely connect it to CR board connector	 "3.8.4Replacing CR Board"
			5. Is the cable of P Rear Sensor connected securely?	Securely connect it to MAIN board connector	 "Electric Wiring Diagram"
			6. Check the sensitivity of the sensor in "Sen : EdgeAD" in the self-diagnosis function.	Replace P_EDGE Sensor.	 "5.6.1Rear/ Edge Sensor Adjustment"
			7. Does the media in use have low reflectance?	Instruct the user that media with low reflectance cannot be used.	-
			8. Is CR_FFC obliquely inserted?	Correctly plug the CR_FFC again.	 "3.8.4Replacing CR Board"
			9. P_EDGE sensor may be damaged.	Replace P_EDGE Sensor.	 "3.8.6Replacing P_EDGE Sensor"
			10. CR_FFC may be damaged.	Replace CR_FFC.	 3.9.3 Replacing CR FFC
			11. CR board may be damaged.	Replace CR board.	 "3.8.4Replacing CR Board"
			12. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
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 "Test: Fan" – "Fan: Vacuum Fan" in the self-diagnosis function?	<ul style="list-style-type: none"> • Check the connection of the connectors of the Suction FAN • Replace Suction FAN Cable. • Replace Suction FAN. 	 "5.4.6Fan Menu"  "3.5.10Replacing MAIN Board"

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











No.	Message	Event/symptom	Check item	Action	Reference
3	[*] Ink Near End [*] Ink End *Ink color is displayed in the [*] .	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 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.	 "5.4.4Sensor Menu
			3. Check the connection of I/C Cables.	Make sure to connect it securely.	 "3.11Replacing IH
			4. Check the connection of JUNC_ID Cable.	Make sure to connect it securely.	
			5. Check the connection of JUNC_FFC/	Make sure to connect it securely.	
			6. Is there ink leakage or bleeding around the connection area of Ink tube?	Check the connection of Ink tube.	 "3.9.4Replacing Ink Tube
			7. I/C cable may be damaged.	Replace it.	 "3.11.3Replacing Cartridge Holder
			8. JUNC_ID cable may be damaged.	Replace it.	 "3.5.12Replacing JUNC_ID Cable
			9. JUNC_FFC may be damaged.	Replace it.	 "3.5.13Replacing JUNC_FFC
			10. JUNCTION Board may be damaged.	Replace it.	 "3.5.11Replacing JUNCTION Board
			11. MAIN board may be damaged.	Replace it.	 "3.5.10Replacing MAIN Board
4	[*] No cartridge *Ink color is displayed in the [*] .	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 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 I/C cable.	 "5.4.4Sensor Menu
			4. Check the connection of the connector of I/C cable.	Make sure to connect it securely.	 "3.11Replacing IH

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

























No.	Message	Event/symptom	Check item	Action	Reference
4	[*] No cartridge *Ink color is displayed in the [*].	Ink cartridge is not inserted.	5. Check the connection of JUNC_ID cable.	Make sure to connect it securely.	 "3.5.11Replacing JUNCTION Board"
			6. Check the connection of JUNC_FFC.	Make sure to connect it securely.	
			7. At the connection point of the ink tubes, ink leakage, or bleeding did not occur?	Check the connection of Ink tube.	 "3.11Replacing IH"
			8. I/C cable may be damaged.	Replace I/C cable.	 "3.11.3Replacing Cartridge Holder"
			9. JUNC_ID cable may be damaged.	Replace JUNC_ID cable.	 "3.5.12Replacing JUNC_ID Cable"
			10. JUNC_FFC may be damaged.	Replace JUNC_FFC.	 "3.5.13Replacing JUNC_FFC"
			11. Ink ID board Assy may be damaged.	Replace Ink ID board.	 "3.11.4Replacing INK ID Board Assy"
			12. JUNCTION Board may be damaged.	Replace it.	 "3.5.11Replacing JUNCTION Board"
			13. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
5	Broken Chip S/C Color Err S/C Ink Err S/CCode Err	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.	 Operation Manual
			2. Check if the dedicated Smart chip cards are used.	Replace with the dedicated Smart chip cards.	
			3. Check if the dedicated Smart chip cards are broken or the chip portion is damaged.		
			4. Check if ink ID is correctly recognized in the self-diagnosis function.		 "5.4.4Sensor Menu"
			5. Ink ID board Assy may be damaged.	Replace Ink ID board.	 "3.11.4Replacing INK ID Board Assy"
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.	Re-insert the connector of the waste liquid level switch.	 "3.5.11Replacing JUNCTION Board"
			3. JUNCTION board may be damaged.	Replace it.	 "3.5.11Replacing JUNCTION Board"
			4. MAIN board may be damaged.	Replace it.	 "3.5.10Replacing MAIN Board"

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

No.	Message	Event/symptom	Check item	Action	Reference
7	Life Times [Head]	The operational life of Head has almost expired.	Check the life counter in Maintenance mode 2.	Replace Head as necessary. Clear the counter after replacing it.	 3.8.15 Replacing Head  6.3.4 Counter Initialization Menu
8	Life Times [Pump]	The operational life of Pump has almost expired.		Replace Pump as necessary. Clear the counter after replacing it.	 "3.10.7 Replacing Maintenance Assy  6.3.4 Counter Initialization Menu
9	Life Times [CR Motor]	The operational life of CR motor has almost expired.		Replace CR motor as necessary. Clear the counter after replacing it.	 "3.6.1 Replacing CR Motor  6.3.4 Counter Initialization Menu
10	Life Times [PF Motor]	The operational life of PF motor has almost expired.		Replace PF motor as necessary. Clear the counter after replacing it.	 "3.7.1 Replacing PF Motor  6.3.4 Counter Initialization Menu
11	Smart/C End	Smart/C is End.	Explain to User that it needs to be Smart Charge.	-	 Operation Manual
12	Smart/C Low	Smart/C is Low.	Explain to User that it needs to be Smart Charge.	-	 Operation Manual

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.

2.2.3 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 2-3 Symptoms and Check items for CPU System Serious Errors



No.	Message	Event/symptom	Check item	Action	Reference
1	E016 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.	Replace MAIN board.	 Operation Manual  "3.5.10Replacing MAIN Board"
2	E016 TLB Modif [01]	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.	3. Check if the firmware is the latest one. 4. Check the serial number of the printer. 5. MAIN board may be damaged.		

Table 2-3 Symptoms and Check items for CPU System Serious Errors (Continued)



No.	Message	Event/symptom	Check item	Action	Reference
3	E016 TLB-L/I [02]	Data border exception/TLB exception error	1. Check AC power supply and printer peripherals.	<ul style="list-style-type: none"> Replace MAIN board. 	 Operation Manual  "3.5.10Replacing MAIN Board"
4	E016 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.	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 may be damaged.		
5	E016 AddErr-L/I [04]	Address exception error (load or command fetch): Address error is detected while loading or fetching command.			
6	E016 AddErr-S [05]	Address exception error (store): An address error is detected while escaping.			
7	E016 BusErr-I [06]	Pass exception error (command fetch): Address error is detected while loading or storing command.			

Table 2-3 Symptoms and Check items for CPU System Serious Errors (Continued)



No.	Message	Event/symptom	Check item	Action	Reference
8	E016 BusErr-L / S [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 may be damaged.	• Replace MAIN board.	 Operation Manual  "3.5.10Replacing MAIN Board"
9	E016 SystemCall [08]	System call exception error: An anomaly is detected in system call.			
10	E016 BreakPoint [09]	Break point exception error: An anomaly is detected in break point.			
11	E016 Reserved [10]	Reserved command exception error: An anomaly is detected in reserved command.			
12	E016 Copro [11]	Coprocessor disabled exception error: An anomaly is detected in coprocessor.			

Table 2-3 Symptoms and Check items for CPU System Serious Errors (Continued)

No.	Message	Event/symptom	Check item	Action	Reference
13	E016 Overflow [12]	Arithmetic overflow exception error: Overflow is detected.	<ol style="list-style-type: none"> 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 may be damaged. 	<ul style="list-style-type: none"> Contact your local MUTOH dealer. Replace MAIN board. 	Operation Manual "3.5.10Replacing MAIN Board"
14	E016 Trap [13]	Arithmetic overflow exception error: Overflow is detected.			
15	E016 Floating [15]	Floating decimal point exception error: An anomaly is detected in floating decimal point.			
16	E016 Watch [23]	Watch exception error: An anomaly is detected in Watch.			
17	E016 WatchDog [32]	Watchdog time-out exception error: A time-out is detected in Watchdog.			
18	E016 Abort Err [33]	Abort error: Abort is detected.			
19	E016 Exception Err [XX] E016 Abort Err [33]	EXC error (undefined) other than the above has occurred. XX stands for a number.			
20	CPU ERROR[35]	The content of flash ROM may be destroyed.	The contents of flash ROM may be destroyed.	<ul style="list-style-type: none"> Replace MAIN board. 	

NOTE

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

(2) Mechanical Serious Errors

Table 2-4 Symptoms and Check Items for Mechanical Serious Errors











No.	Message	Event/symptom	Check item	Action	Reference		
1	E 065Err PF motor	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.	• Remove paper jam.	 "5.4.7Record Menu  "3.5.10Replacing MAIN Board  "5.11Endurance Running Menu  "5.4.5Encoder Menu  "3.5.1Replacing Power Board		
2	E 067Err PF encoder		2. Check the error record in “Test : Record” in the self-diagnosis function.	Check the connection of the following connectors of MAIN board .			
			3. Set the endurance time to more than 50 times in “Life: PF Motor” in the self-diagnosis function to see if any errors related to PF motor such as “PF motor error” occurs.	• PF motor cable connector			
			4. Check “Encoder: PF” in “Check: Test” – “Test5: Encoder” in the self-diagnosis function.	• PF_ENC connector:			
			• Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows.	• Connector that is connecting PF motor and PF motor relay			
			• Front feed direction: Increase	If Main power board is damaged, replace it.			
			• Back feed direction: Decrease				
			5. Check if DC42V is correctly supplied from Power board, using the tester.				
			6. PF encoder may be damaged.	• Replace PF encoder.	 "3.7.2Replacing PF Encoder  "3.6.14Replacing P_REAR Sensor  "4.4X Speed Reduction Belt Tension Adjustment  "3.7.1Replacing PF Motor  "3.5.10Replacing MAIN Board		
			7. Check if PF encoder scale is installed facing the correct direction.	• Install PF encoder scale properly.			
			8. Check if PF encoder scale is dirty or misted over.	• Adjust PF belt tension.			
			9. Check if the tension of PF belt is appropriate.	• Replace PF motor.			
			10. PF encoder may be damaged.	• Replace MAIN board.			
			11. MAIN board may be damaged.				

Table 2-4 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.	<ol style="list-style-type: none"> 1. Check the error record in "Test : Record" in the self-diagnosis function. 2. Set the endurance time to more than 50 times in "Life: 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 "Check: Test" – "Test: Encoder" in the self-diagnosis function. <ul style="list-style-type: none"> • Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows. <ul style="list-style-type: none"> • Front feed direction: Increase • Back feed direction: Decrease 4. PF encoder may be damaged. 5. PF encoder may be damaged. 6. MAIN board may be damaged. 	<p>Check the connection of the following connectors of MAIN board.</p> <ul style="list-style-type: none"> • PF motor cable connector • PF_ENC connector: • Connector that is connecting PF motor and PF motor relay <ul style="list-style-type: none"> • Replace PF encoder. • If Main power board is damaged, replace it. • Replace PF motor. • Replace MAIN board. 	<p>  "5.4.7Record Menu  "3.5.10Replacing MAIN Board  "5.11Endurance Running Menu  "5.4.5Encoder Menu  "Electric Wiring Diagram </p> <p>  "3.7.2Replacing PF Encoder  "3.5.1Replacing Power Board  "3.7.1Replacing PF Motor </p>

Table 2-4 Symptoms and Check Items for Mechanical Serious Errors(Continued)








No.	Message	Event/symptom	Check item	Action	Reference
4	E071 Err PF Current E073 Err PF2 Current	An overload condition is detected in PF motor (X-axis) during printer operation.	<ol style="list-style-type: none"> Is the weight of the media used within the recommended weight? Is there paper jam around Grid roller? Check the error record in "Test : Life" in the self-diagnosis function. Set the endurance time to more than 50 times in "Life: PF Motor" in the self-diagnosis function to see if any errors related to PF motor such as "PF motor error" occurs. Check "Encoder: PF" in "Check: Test" – "Test5: Encoder" in the self-diagnosis function. <ul style="list-style-type: none"> Turn PF connecting axle by hand and see if the value displayed on the panel changes as follows. <ul style="list-style-type: none"> Front feed direction: Increase Back feed direction: Decrease PF encoder may be damaged. PF motor may be damaged. Power board may be damaged. MAIN board may be damaged. 	<ul style="list-style-type: none"> Explain the user about the recommended media weight. Remove paper jam, check if Media holder and Head are damaged, and check if the same error occurs. <p>Check the connection of the following connectors of MAIN board .</p> <ul style="list-style-type: none"> PF motor cable connector PF_ENC connector Connector that is connecting PF motor and PF motor relay <ul style="list-style-type: none"> Replace PF encoder. Replace PF motor. Replace Power board. Replace MAIN board. 	<p> "5.11.10Endurance Running Check Menu"</p> <p> "3.5.10Replacing MAIN Board"</p> <p> "5.11Endurance Running Menu"</p> <p> "5.4.5Encoder Menu"</p> <p> "3.7.2Replacing PF Encoder"</p> <p> "3.5.1Replacing Power Board"</p> <p> "3.7.1Replacing PF Motor"</p>

Table 2-4 Symptoms and Check Items for Mechanical Serious Errors(Continued)










No.	Message	Event/symptom	Check item	Action	Reference
5	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.	<ul style="list-style-type: none"> 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. <p>MAIN board :</p> <ul style="list-style-type: none"> CR motor connector CR_FFC connector <p>CR board :</p> <ul style="list-style-type: none"> CR_FFC connector <ul style="list-style-type: none"> Check the connection to CR motor is appropriate. Check if the tensions of CR speed reduction belt and Steel belt are appropriate. <p>Replace the following parts:</p> <ul style="list-style-type: none"> T fence CR encoder CR_FFC CR motor CR board MAIN board 	 "3.8.5Replacing CR Encoder"  "5.4.7Record Menu"  "3.6.8Replacing T Fence"
6	E068 Err CR Encoder	Displayed when there is a big difference between motor command value and feedback from encoder.	2. Check the error record in "Test: Record" in the self-diagnosis function.		 "7.5Lubrication/Bonding"
			3. Move Carriage from side to side while the printer is turned off and see if there is anywhere Carriage does not move smoothly.		 "3.5.10Replacing MAIN Board"  "5.11Endurance Running Menu"
			4. Set the endurance time to more than 50 times in "Life: CR Motor" in the self-diagnosis function to see if any errors related to PF motor such as "CR motor error" occurs.		 3.9.3 Replacing CR FFC  3.6.1 Replacing CR Motor
7	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.	5. Check if T fence is dirty or twisted.	<ul style="list-style-type: none"> 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. 	 "3.6.8Replacing T Fence"

Table 2-4 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 "Check: Test" – "Test: Encoder" in the self-diagnosis function. • Move 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 connector b) Replace the following parts. • CR encoder • T fence • CR motor • CR_FFC • CR board	 "5.4.5Encoder Menu  3.6.1 Replacing CR Motor  "3.8.5Replacing CR Encoder  3.9.3 Replacing CR FFC  "3.8.4Replacing CR Board
			7. 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.: CR Origin" in the self-diagnosis function.)	When Carriage lock solenoid is malfunctioning, replace it.	 "3.8.1Releasing Carriage Lock
			8. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board
8	E072 Err CR Current	An overload condition is detected in CR motor (Y-axis) during printer operation.			
9	E074 Err CR2 Current				
10	E092 Err CR Overload				
11	E075 Head Temp	This indicates that Heat transistor is malfunctioning.	Head FFC may be damaged. Head thermistor may be damaged.	1. Make sure to connect Head FFC surely. 2. Replace Head FFC. 3. Replace Head.	 3.8.16 Replacing Head FFC  3.8.15 Replacing Head
12	E076 Err Pre heat system	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 DRIVE board. 3. Replace HEATER DRIVE board. 4. Replace Heater.	-

Table 2-4 Symptoms and Check Items for Mechanical Serious Errors(Continued)















No.	Message	Event/symptom	Check item	Action	Reference
13	E077 Err Platen heat system	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 DRIVE board. 3. Replace HEATER DRIVE board. 4. Replace Heater.	-
14	E081 Err CR Origin	CR origin cannot be detected.	1. Check CR origin sensor in "Sen.: 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 connector.	 "5.4.4Sensor Menu
			2. CR origin sensor may be damaged.	Replace it.	 "3.6.4Replacing CR Origin Sensor
			3. JUNCTION board may be damaged.	Replace it.	 "3.5.11Replacing JUNCTION Board
15	E 085 Err Head Heat	An anomaly is detected in Head driver.	1. Check the connection of Head FFC. 2. Check the connection of CR_FFC.	1. Make sure to connect Head FFC surely. 2. Make sure to connect CR_FFC surely.	 3.8.16 Replacing Head FFC  3.9.3 Replacing CR FFC
16	E 087 Err H trans Th.	This indicates that Head transistor is malfunctioning. (The temperature of Head transistor of MAIN board may be abnormal, or the sensor of Thermistor may be malfunctioning.)	3. Head FFC may be damaged. 4. CR_FFC may be damaged. 5. Head may be damaged. 6. CR board may be damaged. 7. MAIN board may be damaged.	3. Replace Head FFC. 4. Replace CR_FFC. 5. Replace Head. 6. Replace CR board. 7. Replace MAIN board.	 3.8.15 Replacing Head  "3.5.10Replacing MAIN Board
17	E 090 Err Heater Volt.	An anomaly is detected in Heater Volt.	1. Check input voltage. 2. HEATER DRIVE board may be malfunction.	Replace HEATER DRIVE board.	 "3.11.6Replacing HEATER DRIVE Board
18	E097 Err NVRAM.	An anomaly is detected in NVRAM.	-	Replace MAIN board.	 "3.5.10Replacing MAIN Board
19	E140Err Pre heat Th.	An anomaly is detected in Pre Thermistor.	1. Pre Thermistor connector may be malfunctioning. 2. Thermistor may be disconnecting. 3. HEATER DRIVE board may be malfunctioning.	1. Make sure to connect thermistor connector securely. 2. Replace Pre Thermistor relay. 3. Replace Pre Thermistor. 4. Replace DRIVE board.	-

Table 2-4 Symptoms and Check Items for Mechanical Serious Errors(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
20	E141Err Platen heat Th.	An anomaly is detected in Platen Thermistor.	<ol style="list-style-type: none"> 1. Platen Thermistor connector may be malfunctioning. 2. Platen Thermistor may be disconnecting. 3. HEATER DRIVE board may be malfunctioning. 	<ol style="list-style-type: none"> 1. Make sure to connect thermistor connector securely. 2. Replace Thermistor relay. 3. Replace DRIVE board. 	 "3.11.6Replacing HEATER DRIVE Board"
21	E 154 Err AC Volt. Low	Interception of the power-supply to a printer or the supply voltage decreased.	1. AC cable may have unplugged.	Plug AC cable securely.	 Operation Manual
			2. Instantaneous power failure may have occurred.	Reboot the printer.	 Operation Manual
			3. Power board may be damaged.	Replace Power board.	 "3.5.1Replacing Power Board"
22	E227 Err Heater SSR	This indicates that "Heater Off " is not worked.	1. HEATER DRIVE board may be malfunctioning.	Replace HEATER DRIVE Board.	 "3.11.6Replacing HEATER DRIVE Board"

2.2.4 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 2-5 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
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 xxxxxxx	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.	
7	Transfer failed Flash erase error	ROM erase error is detected.	Board may be damaged.	Replace MAIN board.	 3.5.10 Replacing MAIN Board
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.	Replace MAIN board.	

Table 2-5 Error Messages During File Transmission(Continued)

No.	Message	Event/symptom	Check item	Action	Reference
12	Internal error Parameter save error	Parameter writing failed.	This should not normally happen. FROM may be damaged.	Replace MAIN board.	 3.5.10Replacing MAIN Board
13	Transfer failed Wrong year xxxx	Received wrong year data. (xxxx).	MAIN board may be damaged.		
14	Transfer failed Wrong month xx	Received wrong month data. (xx).			
15	Transfer failed Wrong day xx	Received wrong date data. (xx).			
16	Transfer failed Wrong hour xx	Received wrong time data. (xx).			
17	Transfer failed Wrong min xx	Received wrong minute data. (xx).			
18	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

2.3 Troubleshooting Without Error Messages

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

2.3.1 Initial Operation Problems

Table 2-6 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?	Connect Power cable securely.	 "3.5Replacing Board Base section"
		2. Is Power cable damaged?	If it is damaged, replace it.	
		3. Is Panel FFC cut or shorted out?	Replace Panel FFC.	 "3.3.1Replacing Panel Board"
		4. Panel unit may be damaged.	Replace Panel unit.	
		5. Inlet may be damaged.	Replace Inlet.	 "3.5.6Replacing AC Inlet"
		6. Power board may be damaged.	Replace Power board.	 "3.5.1Replacing Power Board"
		7. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
2	LCD display malfunction (When using Jig Panel)	1. Check the connection of Panel FFC connector area on the Panel unit side and MAIN board side. • Is Panel FFC obliquely inserted?	Correctly plug the following connectors again. • Panel FFC	 "3.5.10Replacing MAIN Board"
		2. Panel FFC may be damaged.	Replace Panel FFC.	
		3. Is LCD monitor of Panel unit damaged?	Replace Panel unit.	 "3.3.1Replacing Panel Board"
		4. MAIN board may be damaged.	Replace MAIN board.	
		5. Power board may be damaged.	Replace Power board.	 "3.5.1Replacing Power Board"

Table 2-6 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 "Cover open" displayed on LCD monitor while Front cover is closed?	<ul style="list-style-type: none"> Adjust the mounting position of Cover sensor. Replace Cover sensor. 	 "3.3.2Replacing Cover Switch Assy"
		2. Is "Lever up" displayed on LCD monitor while Prewssure Handle is lowered?	Check if Lever sensor is correctly operating in "Check: Test" - "Sen.: Sensor" - "Test: Lever" in the self-diagnosis function.	 "5.4.4Sensor Menu"
		3. Check the connection of MAIN board connector.	<ul style="list-style-type: none"> Correctly plug the connector again. 	
		4. Does the next self-diagnosis function correctly operate while specific ink bags are securely inserted? <ul style="list-style-type: none"> Ink detection in "Sen.: Ink END" 	<ul style="list-style-type: none"> Follow the same procedure as when "[*] Ink END" is displayed to take appropriate measures. After adjustment and replacement, perform Initial ink charge in "Check: InkCharg" - "InkCharge: Normal" in the self-diagnosis function. 	 "2.2.2Errors with Message"  "5.9.2Parameter Update Menu"
		5. Does the dedicated cartridge status properly operate in "Sen.: INK ID" in the self-diagnosis function, while specified ink bags are securely inserted?	<ul style="list-style-type: none"> Follow the same procedure as when "error about S/C card" is displayed to take appropriate measures. After adjustment and replacement, perform Initial ink charge in "Check: InkCharg" - "InkCharge: Normal" in the self-diagnosis function. 	 "2.2.2Errors with Message"  "5.9.2Parameter Update Menu"
		6. MAIN board may be damaged.	<ul style="list-style-type: none"> Replace MAIN board. After replacement, perform Initial ink charge in "Check: InkCharg" - "InkCharge: Normal" in the self-diagnosis function. 	 "3.5.10Replacing MAIN Board"  "5.5Ink Charging Menu"
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 tube damaged? 3. Is Tube disconnected from Maintenance Assy? 4. Is Pump motor connector securely connected? 5. Is Pump motor rotated? 6. Valve head may be damaged. 7. Head may be damaged.	<ul style="list-style-type: none"> If Tube is disconnected, connect it again. Replace Maintenance Assy. Replace Ink tube. Connect Pump motor connector securely. Replace Valve head. Replace Head. 	 "3.10Replacing Maintenance"  "3.11Replacing IH"  "3.8Replacing Cursor section"

Table 2-6 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	1. Is Capping position appropriate?	<ul style="list-style-type: none"> Once the ink flow is confirmed, perform initial charge again. 	 "5.5Ink Charging Menu"
		2. Is Ink tube in Maintenance Assy folded?	<ul style="list-style-type: none"> Replace Maintenance Assy and see if the cleaning operation makes the ink flow. When ink flow is confirmed, perform initial ink charge again. 	 "5.5Ink Charging Menu"
		3. Is Wiper operating properly? (Check On/OFF in "Check: Test" – "Test: Sensor" – "Sen.: Wiper" in the self-diagnosis function.)	<ul style="list-style-type: none"> Correctly plug the connector of MAIN board again. Replace Maintenance Assy. 	 "3.5.10Replacing MAIN Board"  "3.10.7Replacing Maintenance Assy"
		4. Is Pump working during cleaning operation?	<ul style="list-style-type: none"> Correctly plug the connector of MAIN board again. Replace Pump motor cable. Replace Pump. 	 "3.5.10Replacing MAIN Board"  3.10.1 Replacing Waste Fluid Pump
		5. Check the connection of Ink Tubes.	<ul style="list-style-type: none"> Connect Ink Tubes securely. 	 "3.9.4Replacing Ink Tube"
		6. Is Ink tube bent, or does it have scratches or air leakage?	<ul style="list-style-type: none"> 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. 	 "3.9.4Replacing Ink Tube"  "5.5Ink Charging Menu"
		7. Check the following points and connections and of Head FFCs on the CR board side and the head side. <ul style="list-style-type: none"> Is Head FFC obliquely inserted? 	Correctly plug Head FFC to the connector again.	 3.8.16 Replacing Head FFC  "3.8.4Replacing CR Board"
		8. Is Head FFC disconnected?	Replace Head FFC.	 3.8.16 Replacing Head FFC
		9. Check the connection of CR FFC.	Make sure connect Head FFC securely.	 3.8.16 Replacing Head FFC
		10. Is Head damaged?	Replace Head.	 3.8.15 Replacing Head
		11. Is CR board damaged?	Replace CR board.	 "3.8.4Replacing CR Board"
		12. Check the connections of CR_FFC connector areas on the CR board side and MAIN board side	Correctly plug the connector again.	 "Electric Wiring Diagram"
		13. Is CR_FFC broken?	Replace CR_FFC.	 3.9.3 Replacing CR FFC
		14. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

Table 2-6 Symptoms, Check Items and Actions for Initial Operation Problems(Continued)

No.	Symptom	Check item	Action	Reference
6	<ul style="list-style-type: none"> 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)	1. Is "Cover open" displayed on LCD monitor while Front cover is closed? Does Front cover sensor correctly operate in "Test: Sensor" – "Sen.: Cover" in the self-diagnosis function?	<ul style="list-style-type: none"> Check the connectors of MAIN board. Adjust the mounting position of Front cover sensor. Replace Front cover sensor. 	 "3.5.10Replacing MAIN Board"  "3.3.2Replacing Cover Switch Assy"  "Cover open"
		2. Check the connection of Panel FFC connector areas on the Panel unit side and MAIN board side. • Is Panel FFC obliquely inserted?	Correctly plug the following connectors again. • Panel FFC	 "3.5.10Replacing MAIN Board"
		3. Is "Set media" displayed on LCD with pressure arm lowered?	<ul style="list-style-type: none"> Check MAIN board connector. Replace Lever sensor. 	 "3.5.10Replacing MAIN Board"  "3.6.7Replacing Lever Sensor"
		4. Does P Rear Sensor correctly detect in "Test: Sensor" – "Sen.: Rear" in the self-diagnosis function	<ul style="list-style-type: none"> Check MAIN board connector. Replace P Rear Sensor. 	 "5.4.7Record Menu"  "3.5.10Replacing MAIN Board"  "3.6.14Replacing P_REAR Sensor"
		5. Is DC cable between Power board and MAIN board correctly connected?	<ul style="list-style-type: none"> Reconnect DC cable. Replace DC cable. 	 "3.5.1Replacing Power Board"
		6. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
		7. Power board may be damaged.	Replace Power board.	 "3.5.1Replacing Power Board"
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 "Sen.: Ink END" • Cartridge detection in "Sen.: Ink NOT"	Follow the same procedure as when "Ink END" is displayed to take appropriate measures.	 "2.2.Errors with Message"  "5.9.2Parameter Update Menu"
		2. Does the dedicated cartridge status properly operate in "Ctrl: Sensor" – "Sen.: etc" – "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.	 "2.2.Errors with Message"  "5.9.2Parameter Update Menu"
8	Nothing can be input from Operation panel	1. Check the connection of Panel FFC connector area on the Panel unit side and MAIN board side.	Connect Panel FFC securely.	 "3.5.10Replacing MAIN Board"
		2. Panel unit may be damaged.	Replace Panel unit.	 "3.3.1Replacing Panel Board"
		3. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
9	Printing does not start even after receiving data.	-	-	 "2.3.5Online Function Problems"

2.3.2 Media Feed Problems

Table 2-7 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 P Rear Sensor correctly detect in "Test: Sensor" – "Sen.: Rear" in the self-diagnosis function?	<ul style="list-style-type: none"> Correctly insert Flanges into the media tube of roll media. Check the connection of the following connectors. <ul style="list-style-type: none"> MAIN board: CR board: Replace P Rear Sensor . 	 Operation Manual  "3.5.10Replacing MAIN Board"  "3.8.4Replacing CR Board"  "3.6.14Replacing P_REAR Sensor"
2	Media skews or meanders during media initialization or printing.	3. Does Suction FAN correctly operate in "Test: Fan" in the self-diagnosis function?	<ul style="list-style-type: none"> Check the connection of the connectors of the following MAIN board. <ul style="list-style-type: none"> Suction FAN relay : Replace the Suction FAN. Replace the Suction FAN's cable which doesn't work properly. 	 "3.5.10Replacing MAIN Board"
3	Media wrinkles during media initialization or printing.			
4	Media tears during media initialization or printing.	4. Are you using media whose edges are curled up? 5. Does Pressure roller rotate smoothly while Pressure Handle is raised? 6. Is Platen greatly distorted, scratched, or containing any foreign substances?	<ul style="list-style-type: none"> Instruct the users to use the recommended media and how to use Media holder. If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth. <ul style="list-style-type: none"> If there are any foreign substances such as pieces of paper on Platen, remove them. Replace Paper guide. 	 Operation Manual
5	Media size is not correctly detected after media initialization.	Is the customer using recommendation media?	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.	

2.3.3 Printing Problems

Table 2-8 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
		3. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board
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
		3. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board
3	Nozzles are clogged during printing	1. 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.	2. Is cleaning sufficiently done?	Perform cleaning twice in a row.	 Operation Manual
		3. Is ink adhered on Wiper?	<ul style="list-style-type: none"> 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
		4. Check if Wiper correctly operates in "Sen.: Wiper" in the self-diagnosis function.		 "3.10.6Replacing Cap Head Assy
		5. Print out Nozzle check pattern in "Test : Adjustment" – "Adj : NozzleChk" in the self-diagnosis function.	If Nozzle check pattern is correctly printed, refer to the check item 4 for action.	 "5.6.8Test Printing Menu
		6. Is Pump rotating during cleaning operation?	<ul style="list-style-type: none"> Correctly plug the connectors of MAIN board again. Replace Maintenance Assy. Replace MAIN board. 	 "3.5.10Replacing MAIN Board  "3.10.7Replacing Maintenance Assy
		7. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	 "3.10.6Replacing Cap Head Assy
		8. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	 "5.9.2Parameter Update Menu

Table 2-8 Symptoms, Check Items and Actions for Printing Problems(Continued)








No.	Symptom	Check item	Action	Reference
3	Nozzles are clogged during printing (Continued)	9. Is ink adhered on Head surface or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in "Update: Head Rank". 3. Check the printing status again.	 "5.6.9Longstore Menu"  "5.9.2Parameter Update Menu"
4	Cleaning does not mend the clogged nozzles or skewed ink discharge.	10. Is Ink tube folded?	<ul style="list-style-type: none"> Replace Ink tube and see if the cleaning operation makes the ink flow. When ink flow is confirmed, perform initial ink charge again. 	 "3.9.4Replacing Ink Tube"  "5.5Ink Charging Menu"
		11. Is Head damaged?	Replace the damaged Head.	 3.8.15 Replacing Head
		12. CR board may be damaged.	Replace CR board.	 "3.8.4Replacing CR Board"
		13. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

Table 2-8 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 .	 "3.5.1Replacing Power Board"
		2. Is CR_FFC obliquely inserted?	Reinsert the connectors of CR_FFC.	 "3.5.10Replacing MAIN Board"  "3.8.4Replacing CR Board"
		3. CR_FFC may be damaged.	Replace CR_FFC.	 3.9.3 Replacing CR FFC
		4. Are Valve head , Ink tube, and joint screws loose? Is O-ring properly mounted?	<ul style="list-style-type: none"> Install the joint screw and the O-ring appropriately. 	 "3.8.2Removing Carriage Cover"  "3.2Removing Covers"
		5. Is Ink tube bent, or does it have scratches or air leakage?	<ul style="list-style-type: none"> Replace Ink tube and see if the cleaning operation makes the ink flow. When ink flow is confirmed, perform initial ink charge again. 	 "3.9.4Replacing Ink Tube"  "5.5Ink Charging Menu"
		6. Does the next self-diagnosis function correctly operate while specific cartridges are securely inserted? <ul style="list-style-type: none"> Ink detection in " Ink END" Cartridge detection in " Ink NOT" 	<ul style="list-style-type: none"> Follow the same procedure as when "Ink NOT" is displayed to take appropriate measures. After adjustment and replacement, perform Initial ink charge in "Update: Head Rank" in the self-diagnosis function. 	 "2.2.Errors with Message"  "5.9.2Parameter Update Menu"
		7. Is Pump rotating during cleaning operation?	<ul style="list-style-type: none"> Correctly plug the connectors of Pump again. 	 "3.5.10Replacing MAIN Board"  3.10.7 Replacing Maintenance Assy
		8. Check the connections of Head FFCs on the CR board side and the Head side. <ul style="list-style-type: none"> Is Head FFC obliquely inserted? 	Correctly plug Head FFC to the connector again.	 3.8.15 Replacing Head  "3.8.4Replacing CR Board"
		9. Valve head may be damaged.	Replace it.	 "3.8.14Replacing Valve head"

Table 2-8 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)	10. Head may be damaged?	Replace it.	 3.8.15 Replacing Head
		11. CR board may be damaged.	Replace it.	 3.8.4 Replacing CR Board
		12. MAIN board may be damaged.	Replace it.	 3.5.10 Replacing MAIN Board
6	The page is printed all black.	1. Check the connections of Head FFCs on the CR board side and the Head side. • Is Head FFC inserted obliquely?	Correctly plug Head FFC to the connector again.	 3.8.15 Replacing Head  3.8.4 Replacing CR Board
		2. Is CR_FFC obliquely inserted?	Reinsert the connectors of CR_FFC.	 3.5.10 Replacing MAIN Board  3.8.4 Replacing CR Board
		3. CR_FFC may be damaged.	Replace CR_FFC.	 3.9.3 Replacing CR FFC
		4. Head FFC may be damaged.	Replace Head FFC.	 3.8.15 Replacing Head
		5. Is Head damaged?	Replace the damaged Head.	 3.8.15 Replacing Head
		6. CR board may be damaged.	Replace CR board.	 3.8.4 Replacing CR Board
		7. MAIN board may be damaged.	Replace MAIN board.	 3.5.10 Replacing MAIN Board

Table 2-8 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 if he/she is performing maintenance.	If the plotter is used immediately after initial ink replenishment is complete, the following results may occur.	 "9.5 Choosing Place for the Printer"  Operation Manual
8	Images are printed unevenly.	2. Is the printer used in an environment within the range of operating conditions?		
9	Lines in the CR direction look split.	3. Did you print immediately after initial ink charge?	<p>If the plotter is used immediately after initial ink replenishment is complete, the following results may occur.</p> <ul style="list-style-type: none"> Printed lines become blurred. White lines appear in the printed media. <p>In such cases, perform cleaning two to three times before printing, and then check the printing result.</p> <p>If there is no improvement in the print result even after performing cleaning, leave the plotter unused for an hour or more.</p>	
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.	 "5.12 Media Feed Menu"
		5. Is Head adjusted correctly?	When replacing Head, adjust it using the self-diagnosis function (Excluding the input of Head rank.)	 "4.2 Adjustment Item"
		6. Are the nozzles of Head clogged?	Perform cleaning.	 "2.3.3 Printing Problems"
		7. Is a recommended print mode used? Have the effects been changed?	If the mode was set to Banner mode, instruct the user that it is not guaranteed	 Operation Manual
		8. Is the media contaminated?	Wipe it with dry cloth, or replace it.	 Operation Manual
		9. Does Suction FAN correctly operate in "Test: Fan" in the self-diagnosis function?	<ul style="list-style-type: none"> Check the connection of Suction FAN relay. Replace Suction FAN's cable which doesn't work properly. Replace Suction FAN. 	 "3.5.10 Replacing MAIN Board"
		10. If roll media is used, does Roll media holder rotate smoothly?	Adjust the mounting position of Roll media holder. Replace Roll media holder.	-
		11. Is the tension of X speed reduction belt adjusted to the specified value?	Adjust X speed reduction belt tension.	 "4.4X Speed Reduction Belt Tension Adjustment"

Table 2-8 Symptoms, Check Items and Actions for Printing Problems(Continued)











No.	Symptom	Check item	Action	Reference
7	The page is printed blocky. (Continued)	12. Is Cleaning wiper operating properly? 13. How is the condition of Cleaning wiper?	<ul style="list-style-type: none"> 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. 	 "5.11.10Endurance Running Check Menu"  Operation Manual  "3.10.7Replacing Maintenance Assy"
8	Images are printed unevenly. (Continued)	14. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	 "3.10.6Replacing Cap Head Assy"
9	Lines in the CR direction look split.(Continued)	15. Is T fence dirty?	<ul style="list-style-type: none"> Clean T fence. If T fence is still dirty after cleaning or damaged, replace it. 	 "3.6.8Replacing T Fence"
10	White or black lines appear on printed media(Continued)	16. 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
		17. Is Pump motor rotating during cleaning operation? Is ink discharged?	<ul style="list-style-type: none"> Correctly plug the connector of MAIN board again. Replace MaintenanceAssy. Replace MAIN board. 	 "3.5.10Replacing MAIN Board"  "3.10.7Replacing Maintenance Assy"
		18. Is Ink tube folded?	<ul style="list-style-type: none"> Replace Ink tube and see if the cleaning operation makes the ink flow. When ink flow is confirmed, perform initial ink charge again. 	 "3.9.4Replacing Ink Tube"
		19. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	 "5.9.2Parameter Update Menu"

Table 2-8 Symptoms, Check Items and Actions for Printing Problems(Continued)













No.	Symptom	Check item	Action	Reference
7	The page is printed blocky. (Continued)	20. Is ink adhered on the surface of Head or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in "Update: Head Rank". 3. Check the printing status again.	 "5.6.9Longstore Menu"  "5.9.2Parameter Update Menu"
8	Images are printed unevenly. (Continued)	21. Is Head damaged?	Replace the damaged Head.	 3.8.15 Replacing Head
9	Lines in the CR direction look split. (Continued)	22. CR board may be damaged.	Replace CR board.	 "3.8.4Replacing CR Board"
10	White or black lines appear on printed media (Continued)	23. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
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 Head correctly adjusted?	Perform the same adjustment as when changing Head.	 "4.2Adjustment Item"
		4. CR_FFC may be damaged.	Replace CR_FFC.	 3.9.3 Replacing CR FFC
		5. Is Head damaged?	Replace the damaged Head.	 3.8.15 Replacing Head
		6. CR board may be damaged.	Replace CR board.	 "3.8.4Replacing CR Board"
		7. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

Table 2-8 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.	 "9.5Choosing Place for the Printer"
		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. Head rank may be malfunctioning.	Check Head rank in the self-diagnosis function.	 "(2)Head Rank"
		5. Is Head adjusted correctly?	Perform the same adjustment as when changing Head.	 "4.2Adjustment Item"
		6. Perform test printing.	Nozzle check pattern is correctly printed, refer to the check item 7.	-
		7. 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
		8. Check if CR encoder and T fence are touching each other.	<ul style="list-style-type: none"> If they are touching, adjust the mounting positions of CR encoder and T fence. If the situation is not improved after adjustment, replace CR board and T fence. 	 "3.8.5Replacing CR Encoder"  "3.8.4Replacing CR Board"  "3.6.8Replacing T Fence"
		9. Is Cleaning wiper operating properly?	<ul style="list-style-type: none"> 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. 	 "5.11Endurance Running Menu"  Operation Manual  "3.10.6Replacing Cap Head Assy"
		10. How is the condition of Cleaning wiper?		

Table 2-8 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)	11. Is the nozzle surface correctly wiped?	Confirm the mounting status of Wiper, and fix it correctly.	 "3.10.6Replacing Cap Head Assy
		12. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	 "3.6.8Replacing T Fence
		13. Is Pump rotating during cleaning operation?	<ul style="list-style-type: none"> • Correctly plug the connector of MAIN board again. • Replace Pump. • Replace MAIN board. 	 "3.5.10Replacing MAIN Board  "3.10.7Replacing Maintenance Assy
		14. Is Ink tube folded?	<ul style="list-style-type: none"> • Replace Ink tube and see if the cleaning operation makes the ink flow. • When ink flow is confirmed, perform initial ink charge again. 	 "3.9.4Replacing Ink Tube  "5.5Ink Charging Menu
		15. Is ink adhered on the surface of Head or inside nozzles?	Follow the procedure below to perform Head cleaning. 1. Perform Head cleaning in "Adj.: HeadWash" in the self-diagnosis function. 2. Perform Initial ink charge in "Update1: Head Rank". 3. Check the printing status again.	 "5.6.9Longstore Menu  "(2)Head Rank
		16. Head may be damaged.	Replace Head.	 3.8.15 Replacing Head
		17. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board

Table 2-8 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.	 "5.9.2Parameter Update Menu"
		2. Is there a problem with Head alignment? Is there a problem with Head height adjustment?	Adjust Head alignment and Head height.	 "4.8Head Height Adjustment"  "4.7Head Adjustment"
		3. Is there a problem with CW adjustment?	Perform CW Alignment.	 "5.6.5Uni-D/ Bi-D Adjustment Menu"
		4. Is there a problem with bi-directional print alignment?	Adjust bi-directional print alignment.	
		5. Check if CR encoder and T fence are touching each other.	<ul style="list-style-type: none"> • If they are touching, adjust the mounting positions of CR encoder and T fence. • If the situation is not improved after adjustment, replace CR board and T fence. 	 "3.8.5Replacing CR Encoder"  "3.8.4Replacing CR Board"  "3.6.8Replacing T Fence"

Table 2-8 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 Place for the Printer"
		2. In printing, does Steel Bare bounce?	Reassemble Steel Bare.	 "3.9.1 Replacing Steel Bare"
		3. Is T fence dirty?	<ul style="list-style-type: none"> Clean T fence. If T fence is still dirty after cleaning or damaged, replace it. 	 "3.6.8 Replacing T Fence"
		4. The internal processing of MAIN board may be faulty.	Initialize parameters, re-input or readjust it, and then check the operation again.	-
		5. Does Suction FAN correctly operate in "Test: Fan" in the self-diagnosis function?	<ul style="list-style-type: none"> Check the connection of the connector of the Suction FAN. Replace Suction FAN cable. Replace Suction FAN. 	 "3.5.10 Replacing MAIN Board"
		6. Is the tension of CR Belt adjusted to the specified value?	Adjust CR Belt tension.	 "4.4X Speed Reduction Belt Tension Adjustment"
		7. If roll media is used, does Scroller rotate smoothly?	<ul style="list-style-type: none"> Adjust the mounting position of Roll media holder. Replace Roll media holder. 	-
		8. Does Pressure roller rotate smoothly while Pressure Handle is raised?	If paper dust or pieces of paper is adhered around Pressure roller, wipe it off with a soft damp cloth.	 Operation Manual
		9. CR Motor may be malfunctioned.	Replace CR Motor.	 3.6.1 Replacing CR Motor

Table 2-8 Symptoms, Check Items and Actions for Printing Problems(Continued)

No.	Symptom	Check item	Action	Reference
15	The printed results are uneven. (Horizontal 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 Place for the Printer"
		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.	 "3.7.1 Replacing PF Motor"
		4. Is the tension of X speed reduction belt adjusted to the specified value?	Adjust X speed reduction belt tension.	 "4.4X Speed Reduction Belt Tension Adjustment"
		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 peeled off?	If paper dust or pieces of paper is adhered around Grid roller, wipe it off with a nylon brush.	 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. Replace Roll media holder. Change the media.	-
		9. Is there a problem with Head alignment?	Adjust the head alignment.	 "4.7 Head Adjustment"
		10. Is there a problem with bi-directional print alignment?	Adjust bi-directional print alignment.	 "5.6.5 Uni-D/ Bi-D Adjustment Menu"
		11. Is T fence dirty?	Clean T fence. If T fence is still dirty after cleaning or damaged, replace it.	 "3.6.8 Replacing T Fence"
		12. Is the rank of Head actually installed the same as the registered rank?	Input the correct Head rank.	 "5.9.2 Parameter Update Menu"
		13. Check if the vertical lines printed in "Adj.: NozzleChk" in the self-diagnosis function are connected, while the nozzle check pattern printed in "Adj.: HeadSlant" shows it is properly adjusted.	Replace Steel bearer.	 3.9.1 Replacing Steel Bare
		14. Is Carriage wobbly?	Replace Carriage.	 3.8.17 Replacing Carriage Assy

2.3.4 Noise Problems

Table 2-9 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?	Check the damage of the cable and connection of the connector.	 "3.5.10Replacing MAIN Board
		2. Check the damage of the cable and connection of the connector.	If damaged, replace the part.	-
		3. Suction FAN itself may be faulty.	Replace Suction FAN.	-
		4. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board
		5. Power board may be damaged.	Replace Power board.	 "3.5.1Replacing Power Board
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 ?	<ul style="list-style-type: none"> • 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): <ul style="list-style-type: none"> • Power board • MAIN board • CR board • Head 	 "3.5.1Replacing Power Board  "3.5.10Replacing MAIN Board  "3.8.4Replacing CR Board  3.8.15 Replacing Head

Table 2-9 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.	-
		3. Does Bearing have any foreign substances on it?	• 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.	-
		4. Is the cause of the noise loose screw(s) on a cover?	Retighten the screw(s).	 3.2 Removing Covers
		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
		7. Is the cable connected to CR board 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.	 3.9.3 Replacing CR FFC
		8. Is the noise coming from Bearing of CR following movement pulley?	Replace CR following movement pulley.	 3.6.11 Replacing CR Return Pulley Assy
		9. Is the noise coming from CR motor?	Replace CR motor.	 3.6.1 Replacing CR Motor

Table 2-9 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.	 3.7.4 Replacing X Speed Reduction Belt
		2. Is the noise coming from PF motor ?	Replace PF motor.	
		3. Is the rough area on the surface of Grid roller partially peeled 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.	 "3.7.2 Replacing PF Encoder"

2.3.5 Online Function Problems

Table 2-10 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 may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
2	Printing position is incorrect	1. Is there a problem with CW adjustment?	Perform adjustment.	 "5.6.5Uni-D/ Bi-D Adjustment Menu"
		2. Is there a problem with P EDGE Sensor adjustment?	Perform adjustment.	 "5.6.1Rear/ Edge Sensor Adjustment"
		3. Is P EDGE Sensor correctly connected?	Connect it securely.	 3.8.6 Replacing P_EDGE Sensor
		4. P EDGE Sensor may be damaged.	Replace P_Edge sensor.	
		5. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
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
4	Part of the data is not printed (missing)	2. Check if T fence is dirty or twisted.	<ul style="list-style-type: none"> 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. 	 "3.6.8Replacing T Fence"
		3. Check "Encoder: CR" in "Check: Test" – "Test: Encoder" in the self-diagnosis function.	<ul style="list-style-type: none"> If NG, check the connection of the connector of CR board Replace T fence Replace CR_FFC Replace CR motor Replace CR board 	 "3.5.10Replacing MAIN Board"  "3.6.8Replacing T Fence"  "3.9.4Replacing Ink Tube"  "3.8.4Replacing CR Board"  3.9.3 Replacing CR FFC
		4. Main board may be malfunctioned.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"

2.3.6 Other Problems

Table 2-11 Symptoms, Check Items, And Actions













No.	Symptom	Check item	Action	Reference
1	The printer hangs up	1. The internal processing of MAIN board may be faulty.	Initialize parameters, re-input or readjust it, and then check the operation again.	 "5.9.2Parameter Update Menu"
		2. MAIN board may be damaged.	Replace MAIN board.	 "3.5.10Replacing MAIN Board"
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.	 "3.5.1Replacing Power Board"
		4. Power board 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. Are there any foreign substances or ink accumulated in Waste fluid tank.	Remove the foreign substances.	 "3.10.8Replacing Waste Fluid Tank"
5	Ink spills out of Maintenance Ink receiver	1. Are there any foreign substances or ink accumulated in Maintenance Ink receiver?	<ul style="list-style-type: none"> Remove the foreign substances. Replace Maintenance Assy. 	 "3.10.7Replacing Maintenance Assy"
		2. PVA sponge may not be able to absorb ink.	Replace PVA sponge.	 Operation Manual

Table 2-11 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.	<ul style="list-style-type: none"> • Check if Tubes of Flushing box or Maintenance Assy are disengaged. • Replace Maintenance Assy. • Replace Flushing box. 	 3.10 Replacing Maintenance
		2. Is Waste fluid tube bent?	Make sure that approximately 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.	 3.9.4 Replacing Ink Tube
		5. CR board may be damaged.	Replace CR board.	 3.8.4 Replacing CR Board
		6. Head may be damaged.	Replace Head.	 3.8.15 Replacing Head
		7. MAIN board may be damaged.	Replace MAIN board.	 3.5.10 Replacing MAIN Board

2.3.7 Problems in Using MUTOH Service Assistance

Table 2-12 Problems, Check Items, and Actions in Using MUTOH Service Assistance








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
		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).	 4.3 Working with MUTOH Service Assistance Software
		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
		5. Is the computer's IP address correct?	Yes : Proceed to (6). No: MAIN board may be faulty.	 4.3 Working with MUTOH Service Assistance Software
		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
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 2-12 Problems, Check Items, and Actions in Using MUTOH Service Assistance(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

3 Parts Replacement

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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 Cable s connected to the printer.
Otherwise, the printer may be damaged.

CAUTION

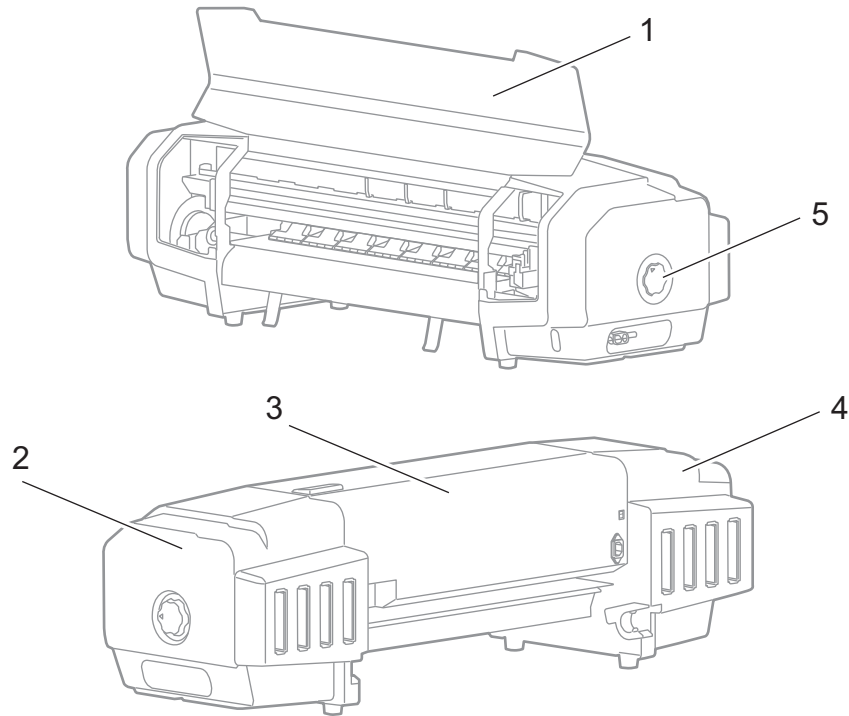
Components in the printer can be disassembled only if so instructed in this manual. Do not disassemble frame components and other components that are not instructed to disassemble in the manual. The printer has been assembled in MUTOH factory with extremely high precision up to 1/100mm. If disassembled 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.378](#)"
- 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.	Name
1	Front Cover
2	R Side Cover
3	Top Cover
4	L Side Cover
5	Pressure Handle

3.2.1 Removing Top Cover

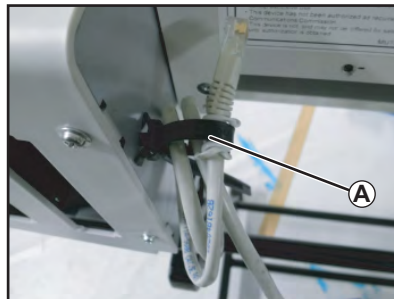
● Tools & Jigs

Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-

1 Open Front Cover.

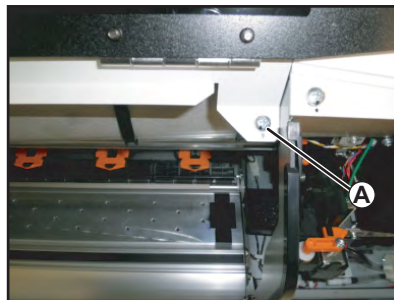
2 Remove Reuse Clamp from the main body.

A : Reuse Clamp



3 Remove the screws (2 pieces) retaining the front side of Front Cover.

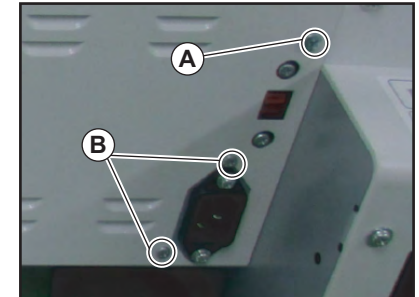
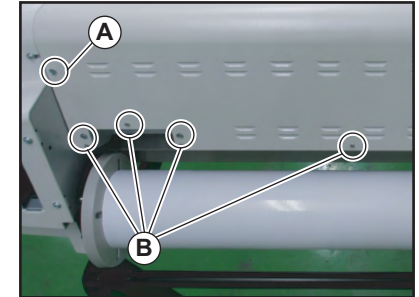
A : Tapping screw M4x8 S tight bind



4 Remove the screws (8 pieces) retaining the back side of Front Cover.

A : Tapping screw M4 x 8 S tight bind

B : Tapping screw M3 x 6 S tight bind



5 Remove Top Cover.

6 To reassemble unit, reverse the removal procedure.

3.2.2 Removing Side Cover

● Tools & Jigs

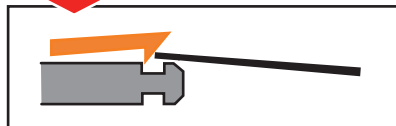
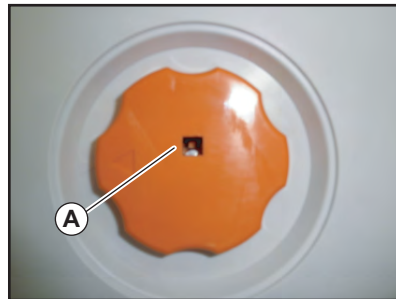
Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-
slotted screwdriver (precision)		-

NOTE

When removing R Side Cover, the work of Procedure 1~2 are required.
Other work is the same at R Side Cover and L Side Cover.
In this section, the photograph of R Side Cover is used.

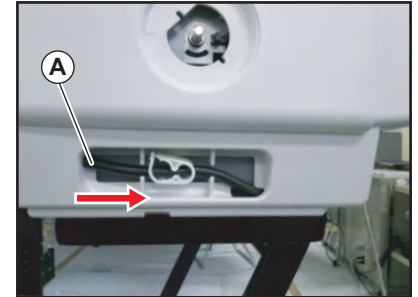
- 1** Remove Pressure Handle.
Insert slotted screwdriver to the hole of Pressure Handle, then release the hook.

A : hole



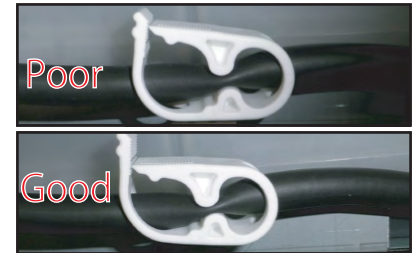
- 2** Remove the tip of Waste Fluid Tube from the main body.

A : Waste Fluid Tube



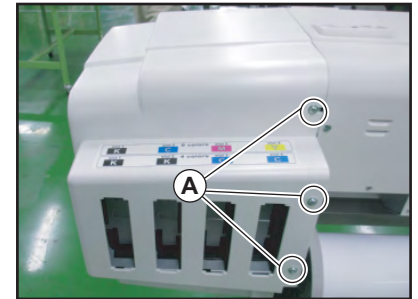
CAUTION

If the clamp is loosened, Ink may leak.



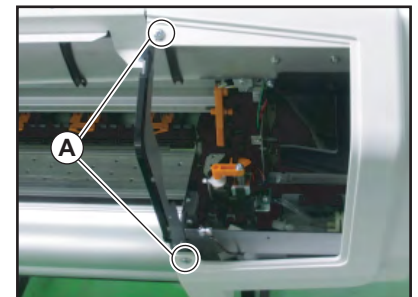
- 3** Remove the screws (3 pieces).

A : Tapping screw M4 x 10 S Tight cup



- 4** Remove the screws (2 pieces).

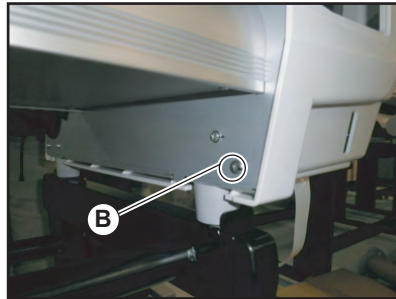
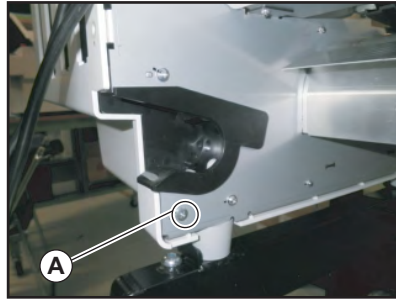
A : Tapping screw M4 x 8 S tight bind



5 Remove the screws (2 pieces).

A : Tapping screw M4 x 12 P tight bind

B : Tapping screw M4 x 8 S tight bind



6 Remove Slid Cover.

7 To reassemble unit, reverse the removal procedure.

NOTE

When assembling, make sure not to nip FFCs and cables.

3.3 Replacing Cover section

3.3.1 Replacing Panel Board

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Panel Board Assy	DG-44726	Exploded View Cover
Phillips screwdriver No.2	Generic products	-
Phillips screwdriverNo.1		-

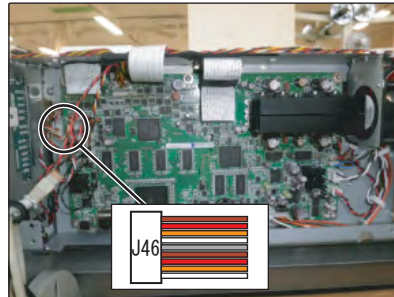
⚠ CAUTION

Before replacing Panel 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 residual electric charge.

1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Remove Switch Panel Cable Assy from MAIN Board.

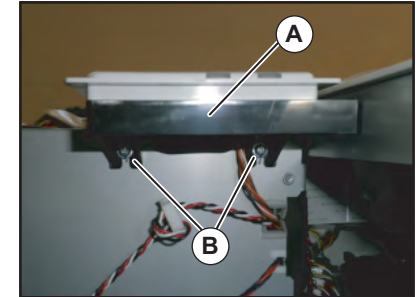


3 Remove the cable from the claps on the path.

4 Remove the screws (2 pieces) retaining SW Panel Bottom.

A : SW Panel Bottom

B : Tapping screw M3 x 8 S Tight cup

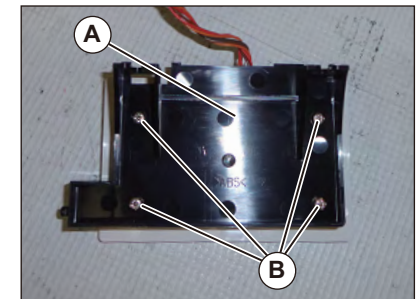


5 Remove SW Panel Bottom.

6 Remove the screws retaining Panel Board Assy.

A : Switch Panel Bottom

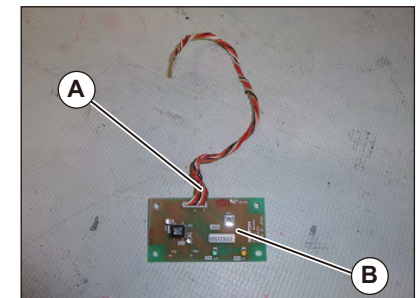
B : P tight pan M3 x 12



7 Remove Switch Panel Cable Assy from MAIN PANEL Board Assy.

A : Switch Panel Cable Assy

B : PANEL Board Assy



8 Replace Panel Board Assy.

9 To reassemble unit, reverse the removal procedure.

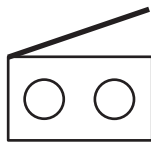
3.3.2 Replacing Cover Switch Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cover Switch Assy	DG-42956	Exploded View Cover
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		-

NOTE

Cover switch Assy looks like the following.



Open



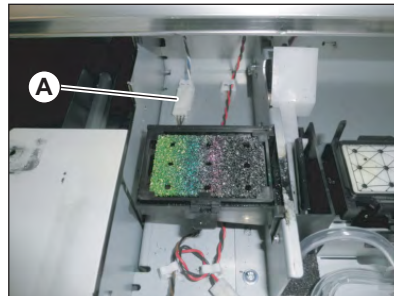
Closed

- 1** Move Carriage to left (the opposite side of origin).

[3.8.1 Releasing Carriage Lock](#)

- 2** Remove Cover R Cable Assy from Cover switch Assy.

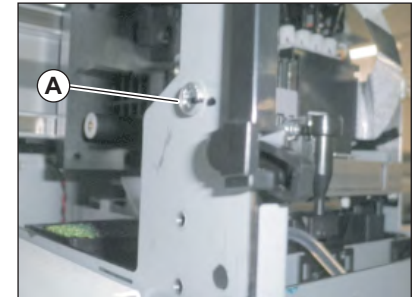
A : connecting point



- 3** Remove Cover switch Assy Cable from the clamps on the path.

- 4** Remove the screw retaining SW Mounting Plate.

A : Tapping screw M3 x 6 S tight bind

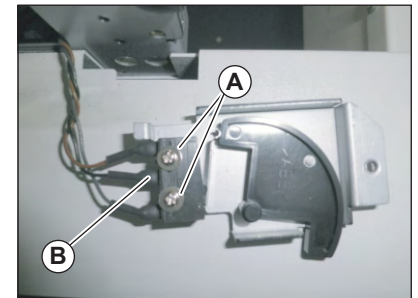


- 5** Remove SW Mounting Plate.

- 6** Remove the screws (2 pieces) retaining Cover Switch Assy.

A : Pan-head screw with spring washer and flat washer (polished) M2 x 12Ni-3

B : Cover Switch Assy



- 7** Replace Cover switch Assy.

- 8** To reassemble unit, reverse the removal procedure.

3.3.3 Replacing Switch Lever

● Tools & Jigs & Maintenance part

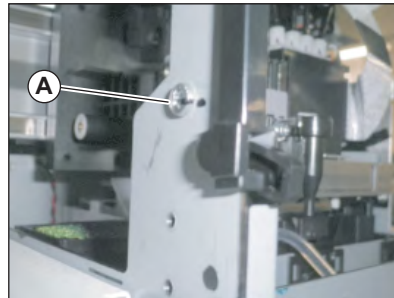
Name	No.	Remarks
Switch Lever Assy	DG-44728	Exploded View Cover
Phillips screwdriver No.2	Generic products	-

- 1** Move Carriage to left (the opposite side of origin).

 [3.8.1 Releasing Carriage Lock](#)

- 2** Remove the screw retaining SW Mounting Plate.

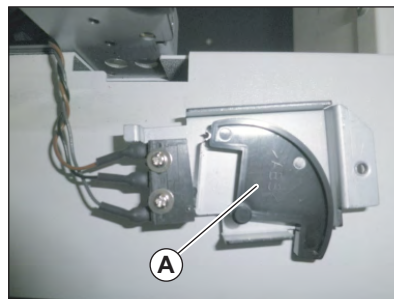
A : Tapping screw M3 x 6 S tight bind



- 3** Remove SW Mounting Plate.

- 4** Replace Switch Lever.

A : Switch Lever



- 5** To reassemble unit, reverse the removal procedure.

3.3.4 Replacing Cover R Cable Assy

● Tools & Jigs & Maintenance part


Name	No.	Remarks
Cover R Cable Assy	DG-44729	Exploded View Cover
Phillips screwdriver No.2	Generic products	-

7 Replace Cover R Cable Assy.

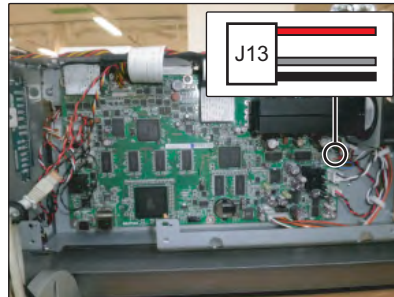
8 To reassemble unit, reverse the removal procedure.

1 Open Front Cover.

2 Remove R Side Cover.
 [3.2.2 Removing Side Cover](#)

3 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

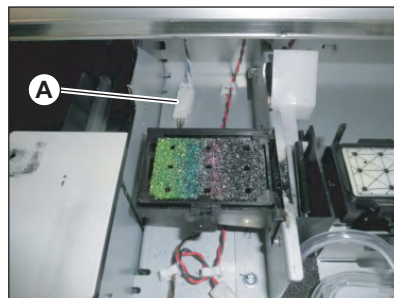
4 Remove Cover R Cable from MAIN Board.



5 Remove Cover R Cable Assy from the clamps on the path.

6 Remove Cover R Cable Assy from the clamps on the path.

A : Connecting point



3.3.5 Replacing Switch Panel Cable Assy

● Tools & Jigs & Maintenance part

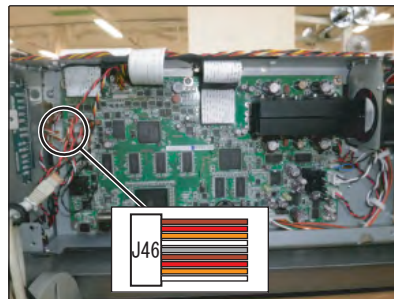
Name	No.	Remarks
Switch Panel Cable Assy	DG-44727	Exploded View Cover
Phillips screwdriver No.2	Generic products	-
Phillips screwdriverNo.1		-

CAUTION

Before replacing Panel 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 residual electric charge.

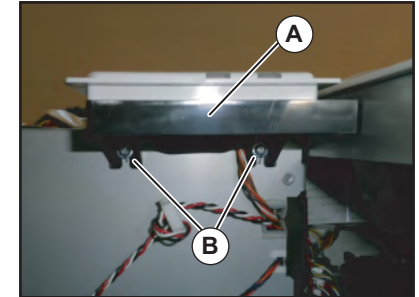
1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Remove Switch Panel Cable Assy from MAIN Board.**3** Remove the cable from the claps on the path.**4** Remove the screws (2 pieces) retaining SW Panel Bottom.

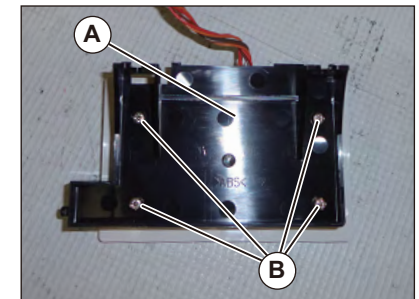
A : SW Panel Bottom

B : Tapping screw M3 x 8 S Tight cup

**5** Remove SW Panel Bottom.**6** Remove the screws retaining SW Panel Bottom.

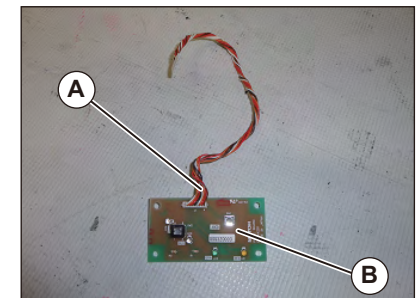
A : Switch Panel Bottom

B : P tight pan M3 x 12

**7** Remove Switch Panel Cable Assy from Panel Board.

A : Switch Panel Cable Assy

B : PANEL Board Assy

**8** To reassemble unit, reverse the removal procedure.

3.4 Replacing Frame section

3.4.1 Replacing Media Holder

- Tools & Jigs & Maintenance part

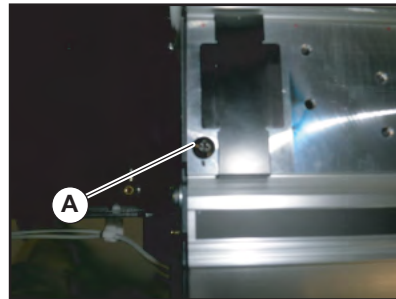
Name	No.	Remarks
Media Holder Assy	DG-44697	Exploded View Frame R•Heater
Phillips screwdriverNo.1	Generic products	-

TIP

This section describes the procedure to replace the maintenance part,Media Holder Assy.In this section, it is referred to as Media Holder.

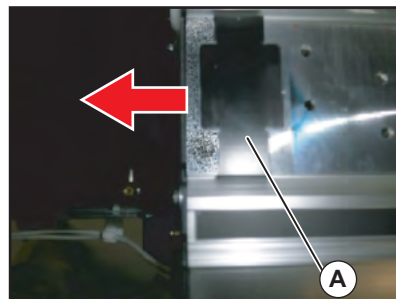
- 1 Remove the screw.

A : Pan head small screwM2 x 5



- 2 Remove Media Holder horizontally.

A : Media Holder



- 3 Replace Media Holder.

- 4 To reassemble unit, reverse the removal procedure.

3.4.2 Replacing Scroller Holder Roller Assy

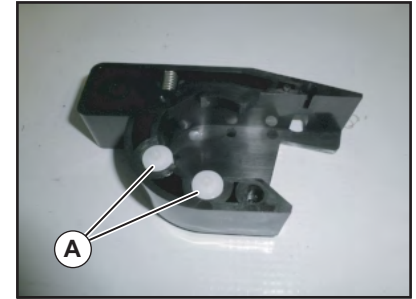
- Tools & Jigs & Maintenance part

Name	No.	Remarks
Scroller Holder Roller Assy	DG-44698	Exploded View Frame R•Heater Exploded View Frame L•Scroller
Phillips screwdriver No.2	Generic products	-

TIP

- This section describes the procedure to replace the maintenance part, Scroller Holder Roller Assy. In this section, it is referred to as Scroller Holder Roller.
- The replacement procedure is common to both R side and L side. This section describes the procedure to replace L.

5 Replace Scroller Holder Rollers.



6 To reassemble unit, reverse the removal procedure.

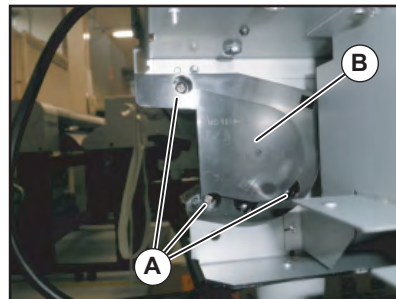
1 Removing L Side Cover.

☞ [3.2.2 Removing Side Cover](#)

2 Remove the screws (3 pieces) retaining Scroller Holder L.

A : P tight pan M3x12 Ni-3

B : Scroller Holder L

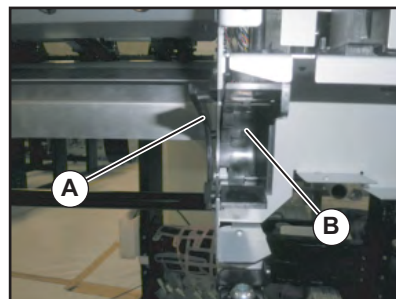


3 Remove Scroller Holder Cover L.

4 Remove Scroller Holder L.

A : Scroller Holder Cover L

B : Scroller Holder L



3.4.3 Replacing Adsorption Fan

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Adsorption Fan Assy	DG-42988	Exploded View Frame L•Scroller
Phillips screwdriver No.2	Generic products	-

TIP

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

In this section, it is referred to as Adsorption Fan.

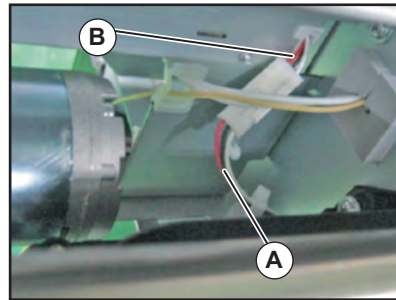
5 To reassemble unit, reverse the removal procedure.

1 Removing L Side Cover.

 [3.2.2 Removing Side Cover](#)

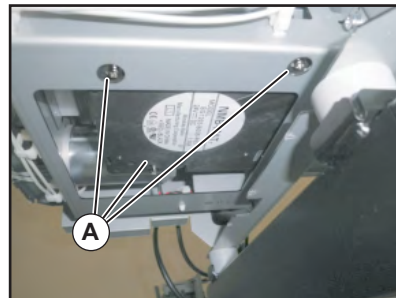
2 Remove Adsorption Fan Cable from Adsorption Fan.

A : the cable of Adsorption Fan
B : Adsorption Fan Cable



3 Remove the screws (3 pieces) retaining Adsorption Fan.

A : Pan-head screw with spring washer and flat washer (polished) M3x40 Ni-3



4 Replace Adsorption Fan.

3.4.4 Replacing Adsorption Fan Cable


● Tools & Jigs & Maintenance part


Name	No.	Remarks
Adsorption Fan Cable Assy	DG-44694	Exploded View Frame L•Scroller
Phillips screwdriver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Adsorption Fan Cable Assy.

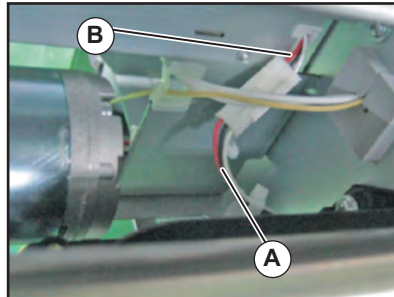
In this section, it is referred to as Adsorption Fan Cable Assy.

- 1 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2 Removing L Side Cover.
 [3.2.2 Removing Side Cover](#)

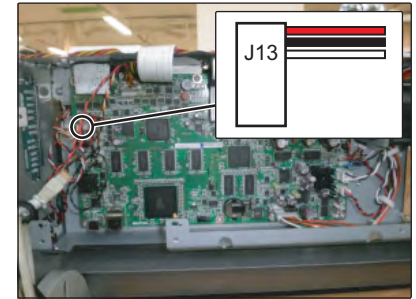
- 3 Remove Adsorption Fan Cable from Adsorption Fan.

A : the cable of Adsorption Fan
B : Adsorption Fan Cable



- 4 Remove Adsorption Fan Cable from the clamps on the path.

- 5 Remove Adsorption Fan Cable from MAIN Board.



- 6 Replace Adsorption Fan Cable.

- 7 To reassemble unit, reverse the removal procedure.

3.5 Replacing Board Base section

3.5.1 Replacing Power Board

- Tools & Jigs & Maintenance part

Name	No.	Remarks
Power Board Assy	DG-43172	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

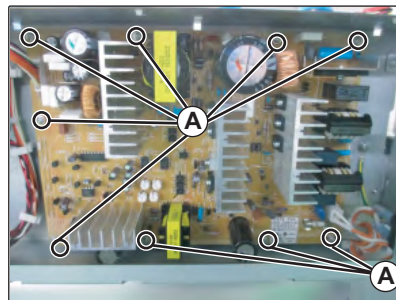
If Power board Assy needs to be removed, remove Power Cable and wait for 5 minutes or more before dismounting the Assy; this will discharge the residual electrical charge of the electrolytic capacitor.
Touching Board before capacitor discharges may cause electric shock.

- 1 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2 Remove connectors that are connected to Power Board.

- 3 Remove the screws (9 pieces) retaining Power Board.

A : Cup screw M3 x 6



- 4 Replace Power board.

- 5 To reassemble unit, reverse the removal procedure.

3.5.2 Replacing AC JUNC-Power Cable Assy

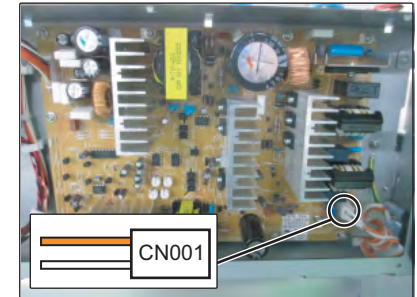
● Tools & Jigs & Maintenance part

Name	No.	Remarks
AC JUNC-Power Cable Assy	DG-44714	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

CAUTION

- Before replacing Board Assy and pulling or pushing 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.

- 5** Remove AC JUNC-Power Cable Assy from Power Board.



- 6** To reassemble unit, reverse the removal procedure.

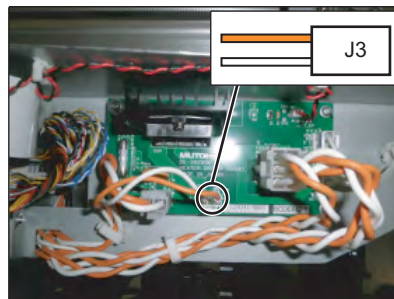
- 1** Remove Top Cover.

[3.2.1 Removing Top Cover](#)

- 2** Removing L Side Cover.

[3.2.2 Removing Side Cover](#)

- 3** Remove AC JUNC-Power Cable Assy from HEATER DRIVE Board.



- 4** Remove AC JUNC-Power Cable Assy from the clamps on the path.

3.5.3 Replacing IL Dummy Cable Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
IL Dummy Cable Assy	DG-44713	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

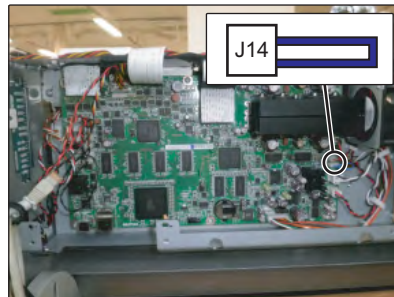
⚠ CAUTION

- Before replacing Board Assy and pulling or pushing 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.

1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Remove IL Dummy Cable Assy from MAIN Board.



3 Replace IL Dummy Cable.

4 To reassemble unit, reverse the removal procedure.

3.5.4 Replacing Main DC Cable Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
MAIN DC Cable Assy	DG-42993	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

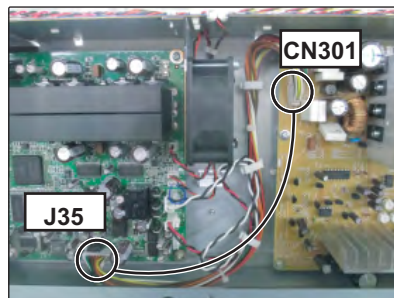
CAUTION

- Before replacing Board Assy and pulling or pushing 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.

1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Remove MAIN DC Cable Assy from MAIN Board and Power Board.



3 Remove MAIN DC Cable Assy from clamps on the path.

4 Replacing MAIN DC Cable Assy.

5 To reassemble unit, reverse the removal procedure.

3.5.5 Replacing FG Cable Assy

- Tools & Jigs & Maintenance part

Name	No.	Remarks
FG Cable Assy	DG-43741	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

- Before replacing Board Assy and pulling or pushing 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.

- 1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

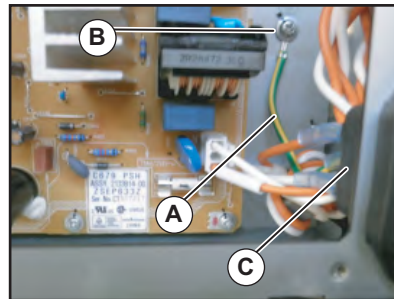
- 2 Remove the screw retaining FG Cable Assy.

A : FG Cable

B : Tapping screw M4 x 6S Tight cup

- 3 Remove FG Cable Assy from AC Inlet.

C : AC Inlet



- 4 Replacing FG Cable.

- 5 To reassemble unit, reverse the removal procedure.

3.5.6 Replacing AC Inlet

● Tools & Jigs & Maintenance part

Name	No.	Remarks
AC Inlet Assy	DG-43177	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

Unplug Power cable set before replacing AC inlet. There may be a risk of electric shock by standby electricity.

TIP

This section describes the procedure to replace the maintenance part, AC Inlet Assy. In this section, it is referred to as AC Inlet.

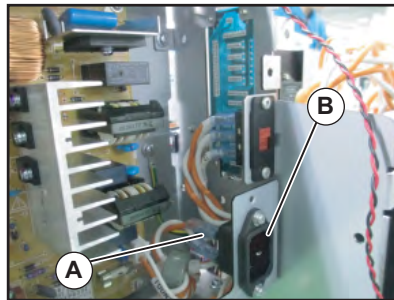
1 Remove Top Cover.

👉 [3.2.1 Removing Top Cover](#)

2 Remove the connectors (3 pieces) from AC Inlet.

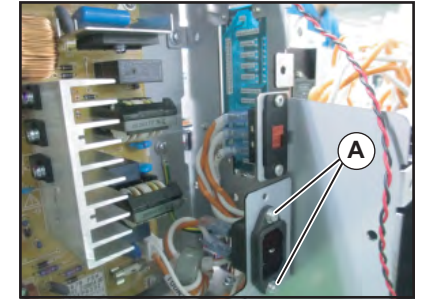
A : connector

B : AC Inlet



3 Remove the screws (2 pieces).

A : Countersunk head screw M3 x 6



4 Replace AC Inlet.

5 To reassemble unit, reverse the removal procedure.

3.5.7 Replacing Slide Switch

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Slide Switch Assy	DG-44719	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

Unplug Power cable set before replacing Slide Switch. There may be a risk of electric shock by standby electricity.

TIP

This section describes the procedure to replace the maintenance part, Slid Switch Assy. In this section, it is referred to as Slide Switch.

1 Remove Top Cover.

☞ [3.2.1 Removing Top Cover](#)

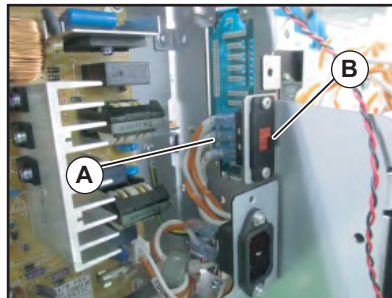
2 Remove the connectors (6 pieces) from Slide Switch.

A : connector

B : Slide Switch

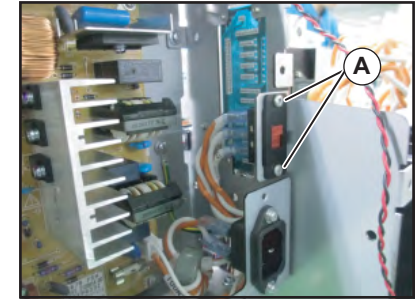
NOTE

When connecting, the number (2a, 1a, 2, 1, 2b, 1b) and switch number (2a, 1a, 2, 1, 2b, 1b) of a cable are made to agree.



3 Remove the screws (2 pieces).

A : Tapping screw M3 x 6 S tight bind



4 Replace Slide Switch.

5 To reassemble unit, reverse the removal procedure.

3.5.8 Replacing AC SEL SW Cable Assy

- Tools & Jigs & Maintenance part

Name	No.	Remarks
AC SEL SW Cable Assy	DG-44720	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

Unplug Power cable set before replacing AC SEL SW Cable. There may be a risk of electric shock by standby electricity.

TIP

This section describes the procedure to replace the maintenance part, AC SEL SW Cable Assy. In this section, it is referred to as AC SEL SW Cable.

- 1 Remove Top Cover.
☞ [3.2.1 Removing Top Cover](#)

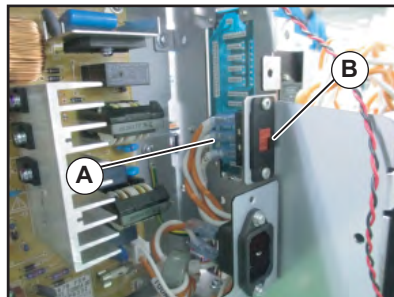
- 2 Removing L Side Cover.
☞ [3.2.2 Removing Side Cover](#)

- 3 Remove AC SEL SW Cable from Slide Switch.

A : AC SEL SW Cable
B : Slide Switch

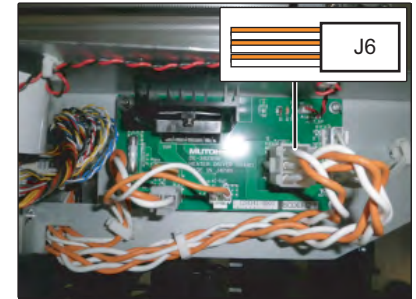
NOTE

When connecting, the number (2a, 1a, 2, 1, 2b, 1b) and switch number (2a, 1a, 2, 1, 2b, 1b) of a cable are made to agree.



- 4 Remove AC SEL SW Cable from the clamps on the path.

- 5 Remove AC SEL SW Cable from HEATER DRIVE Board.



- 6 Replace AC SEL SW Cable.

- 7 To reassemble unit, reverse the removal procedure.

3.5.9 Replacing Cooling FAN

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cooling FAN (24V)Assy	DG-45354	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

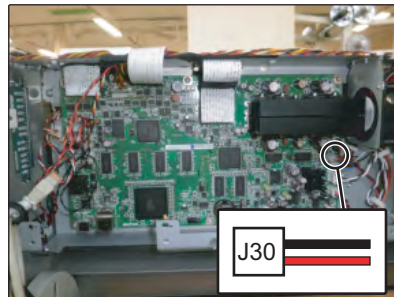
TIP

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 Top Cover.
 [3.2.1 Removing Top Cover](#)

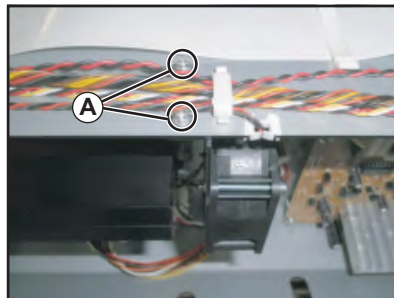
- 2 Remove connector of Cooling FAN from MAIN Board Assy.



- 3 Remove the cables from the clamps on the path.

- 4 Remove screws (2 pieces) retaining Cooling FAN Bracket.

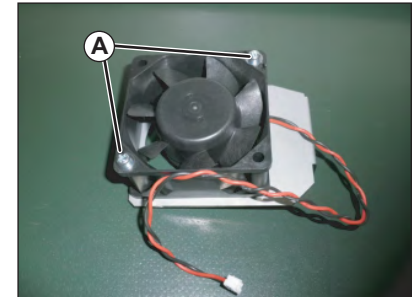
A : Tapping screw M3 x 6 S Tight cup



- 5 Remove Cooling FAN Bracket.

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

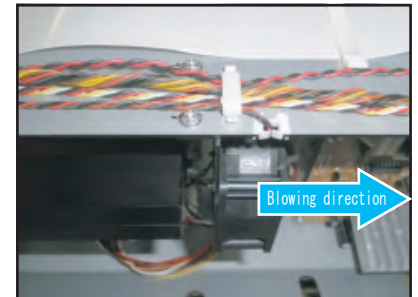
A : Pan-head screw with spring washer and flat washer M3 x 30



- 7 Replace Cooling FAN.

NOTE

When reassembling Cooling FAN, note the blowing direction.



- 8 To reassemble unit, reverse the removal procedure.

3.5.10 Replacing MAIN Board

● Tools & Jigs & Maintenance part

Name	No.	Remarks
MAIN Board Assy	DG-44712	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

CAUTION

- Before replacing Board Assy and pulling or pushing FFC type Cable s, 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.
- If the printer which is using the lithium battery is exchanged for a battery unsuitable type, there is danger of explosion. A used battery is disposed of according to related law and regulation.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

NOTE

- 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](#)
- Use the latest version of MSA.

2 Execute MSA.

👉 [4.3 Working with MUTOH Service Assistance Software](#)

3 Switch MSA to Technician mode.

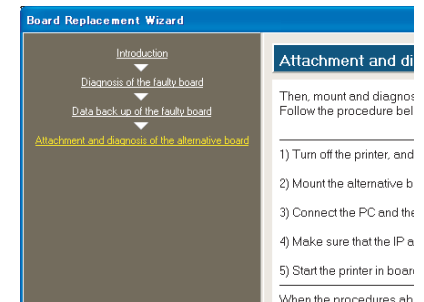
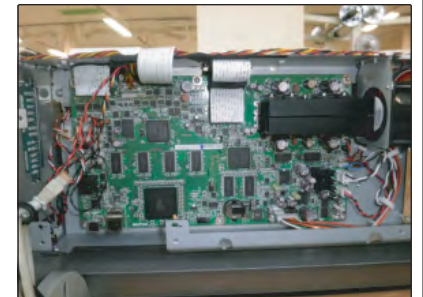
👉 [\(12\) Switching to Technician Mode](#)

4 Select “Board Replacement Wizard” othe main window of MSA.

👉 [4.3.10 Board Replacement Wizard](#)

Board Replacement Wizard

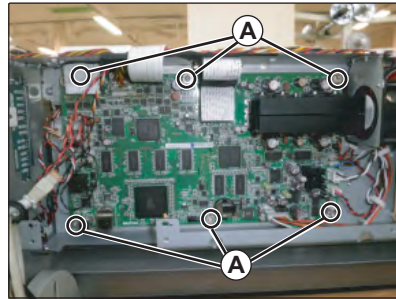
- Follow the “Board Replacement Wizard” afterwards.
Proceed **Step 5** when “**Attachment and Diagnosis of the alternative board**” window is displayed.

**5** Remove all connectors from the MAIN Board Assy.**1** Remove Top Cover.

👉 [3.2.1 Removing Top Cover](#)

- 6** Remove the screws (6 pieces) retaining MAIN Board.

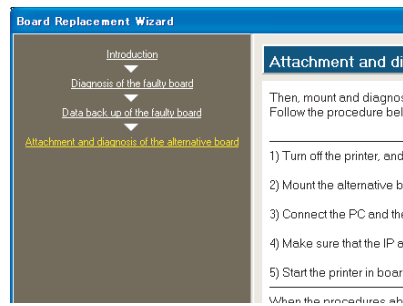
A : Cup screw M3 x 6



- 7** Replace MAIN Board Assy.

- After replacement, 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](#)



TIP

When “Termination” window is displayed, Board replacement wizard is completed.

- 8** 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](#)

3.5.11 Replacing JUNCTION Board

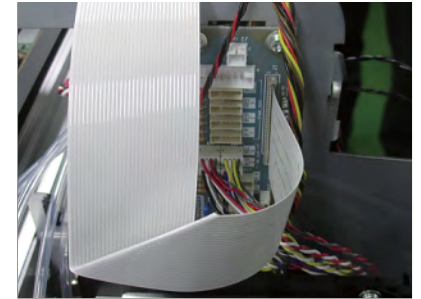
● Tools & Jigs & Maintenance part

Name	No.	Remarks
JUNCTION2 Board	DG-43396	Exploded View JUNCTION Board R,L
Phillips screwdriver 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.

- 3** Remove the connectors connected to JUNCTION Board (R side).

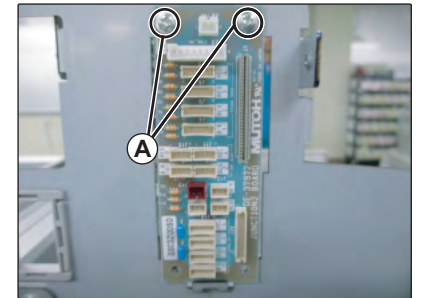


- 4** Remove the screws (4 pieces) retaining JUNCTION Board.

A : Tapping screw S Tight cupM3 x 6

NOTE

It is retained upper side only.



- 5** To reassemble unit, reverse the removal procedure.

- 1** Removing R Side Cover.

[3.2.2 Removing Side Cover](#)

- 2** Removing Pump Stay.

[3.11.1 Removing Pump stay](#)

NOTE

This procedure is needed for replacing R-side.

3.5.12 Replacing JUNC_ID Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
JUNC_ID Cable Assy	DG-44717	Exploded View Board Box (for R)
JUNC_ID Cable 2Assy	DG-44718	Exploded View Board Box (for L)
Phillips screwdriver No.2	Generic products	-

CAUTION

Unplug Power cable set before replacing parts. There may be a risk of electric shock by standby electricity.

TIP

This section describes the procedure to replace the maintenance part, JUNC_ID Cable Assy and JUNC_ID Cable 2 Assy. In this section, it is referred to as JUNC_ID Cable

1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Replace R Side Cover or L Side Cover.

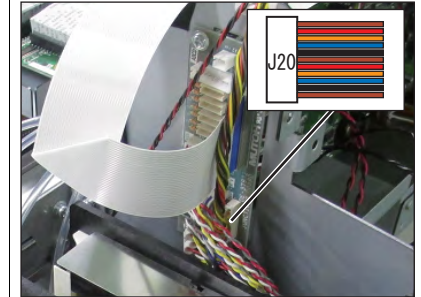
 [3.2.2 Removing Side Cover](#)

3 Removing Pump Stay.

 [3.11.1 Removing Pump stay](#)

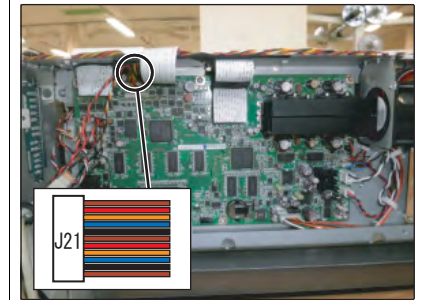
NOTE

This procedure is needed for replacing R-side.

4 Remove JUNC_ID Cable from JUNCTION board.**5** Remove JUNC_ID Cable from clamps on the path.**6** Remove JUNC_ID Cable from MAIN board.

R side: J21

L side: J22

**7** To reassemble unit, reverse the removal procedure.

3.5.13 Replacing JUNC_FFC

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Head Cable Assy	DF-49017	Exploded View Board Box (for R)
JUNC_FFCAssy	DG-44716	Exploded View Board Box (for L)
Phillips screwdriver 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.

NOTE

- This section describes the procedure to replace the maintenance part, Head Cable Assy (DF-49017) and JUNC_FFC Assy.
- The replacement procedure is common to both R side and L side. The procedure described here is that of R side.

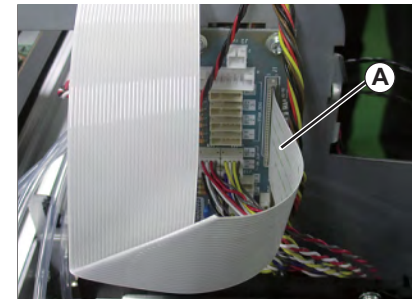
- 2** Remove R Side Cover or L Side Cover.

 [3.2.2 Removing Side Cover](#)

- 3** Remove JUNC_FFC from JUNCTION Board.

A : JUNC_FFC

- 4** Remove JUNC_FFC from the clamps on the path.



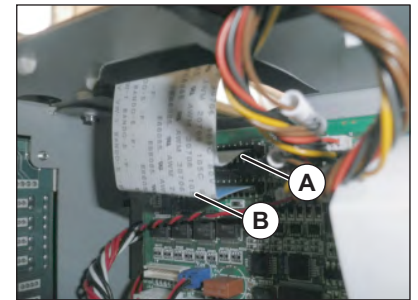
- 5** Remove JUNC_FFC from MAIN board.

A : JUNC_FFC (R side: J19)

B : JUNC_FFC (L side: J18)

- 6** Replacing JUNC_FFC.

 [Folding Direction](#) [JUNC FFC](#)



- 7** To reassemble unit, reverse the removal procedure.

- 1** Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

3.5.14 Replacing Inlet AC JUNC Cable Assy

- Tools & Jigs & Maintenance part

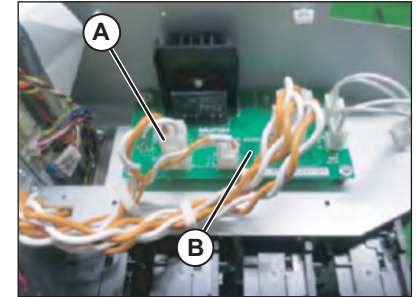
Name	No.	Remarks
Inlet-AC_JUNC Cable Assy	DG-44715	Exploded View Board Box
Phillips screwdriver No.2	Generic products	-

⚠ 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.

- Remove Inlet AC JUNC Cable Assy from HEATER DRIVE Board.

A : Inlet AC_JUNC Cable Assy
B : HEATER DRIVE Board



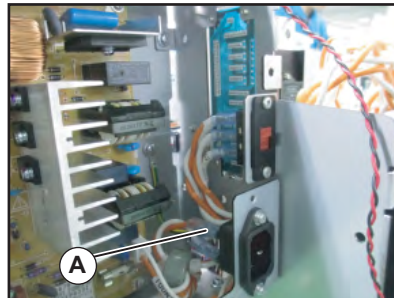
- To reassemble unit, reverse the removal procedure.

- Remove Top Cover.
☞ [3.2.1 Removing Top Cover](#)

- Removing L Side Cover.
☞ [3.2.2 Removing Side Cover](#)

- Remove Inlet AC JUNC Cable Assy from AC Inlet.

A : Inlet AC_JUNC Cable Assy



- Remove the cables from the clamps on the path.

3.6 Replacing Y Rail part

3.6.1 Replacing CR Motor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR Motor Assy	DG-44693	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Thread locker		Three bond 1401

NOTE

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

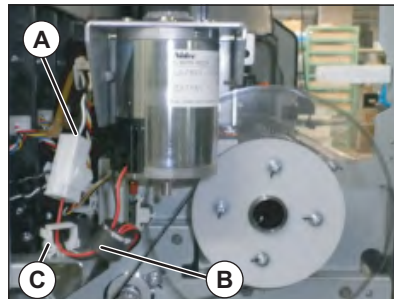
In this section, it is referred to as CR Motor.


- 1** Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2** Remove R Side Cover and L Side Cover.
 [3.2.2 Removing Side Cover](#)

- 3** Remove the cable of CR Motor from CR Motor relay Assy from the clamp.

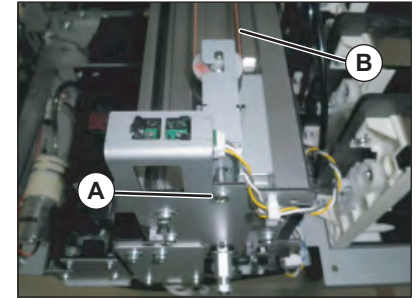
A : CR Motor Relay Assy
B : the cable of CR Motor
C : clamp



- 4** Move Carriage to the top of Platen.
 [3.8.1 Releasing Carriage Lock](#)

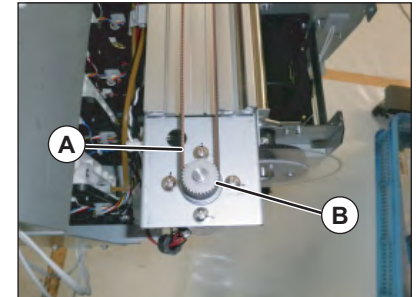
- 5** Loosen the adjusting screw (1 piece), and the loosen tension of CR Belt.

A : Pan head small screw M4 x 35
B : CR Belt



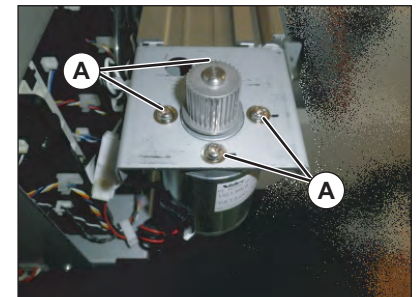
- 6** Remove CR Belt from CR Motor.

A : CR Belt
B : CR Motor



- 7** Remove the screws (4 pieces) retaining CR Motor.

A : Cup screw M4x8 Ni-3



- 8** Replace CR Motor.

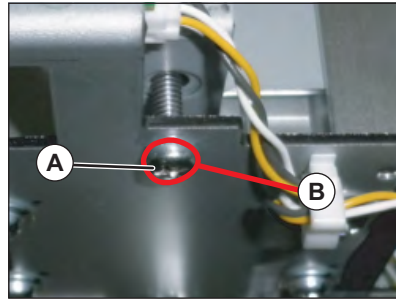
- 9** Assemble CR Belt to CR Motor.

- 10** Adjust so that a tension adjustment plate is located in a marking part.

- 11** After adjusting, apply Thread Locker to Tension adjusting screw.

A : Pan head small screwM4 x 30

B : applying point



- 12** To reassemble unit, reverse the removal procedure.

- 13** Perform various adjustments.

 [4.2 Adjustment Item](#)

3.6.2 Replacing CR Belt

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR Belt A1Assy	DF-49044	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Thread locker		-
Bubble wrapping		-

NOTE

This section describes the procedure to replace the maintenance part, CR Belt A1_Assy.

In this section, it is referred to as CR Belt.

- 1 Remove Top Cover.
👉 [3.2.1 Removing Top Cover](#)
- 2 Remove R Side Cover and L Side Cover.
👉 [3.2.2 Removing Side Cover](#)
- 3 Remove CR Board Cover.
👉 [3.8.3 Removing CR Board Cover](#)
- 4 Remove Carriage Cover.
👉 [3.8.2 Removing Carriage Cover](#)
- 5 Remove CR Board.
👉 [3.8.4 Replacing CR Board](#)

NOTE

Place the removed CR board on an bubble wrapping.

- 6 Pull out Head FFC to the front.

A : Head FFC

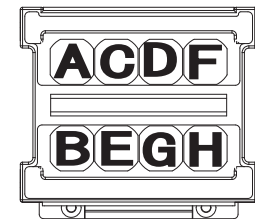


- 7 Mark on all the Joint screws.



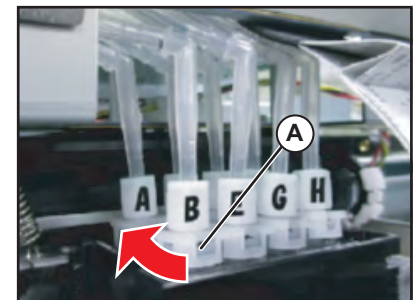
NOTE

Mark the place to which Tube is attached. (ABCDEFGH)



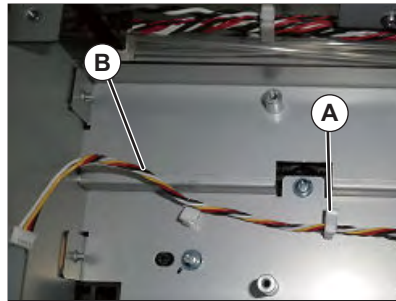
- 8 Turn Connector Valve Head 45 degrees, release the lock, and pull it out.

A : Connector Valve Head



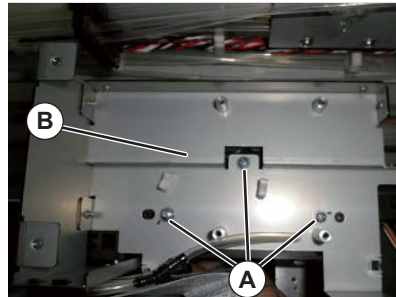
- 9** Remove CR encoder cable from the clamps on the path.

A : Clamp
B : Cable
C :



- 10** Remove the screws (3 pieces) retaining CR Board Base to Cursor.

A : Pan-head screw with spring washer and flat washer M3 x 6
B : CR Board Base



- 11** Remove CR Board Base from Cursor.

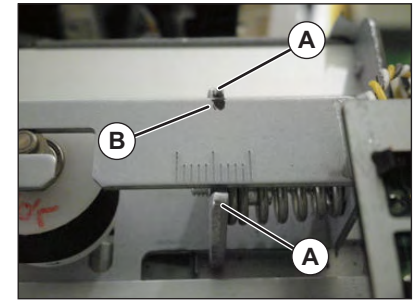
CAUTION

CR Board Base is removed while Steel Bare etc. are attached.
 As load should not be applied to Steel bare etc., place it on a bubble wrap.



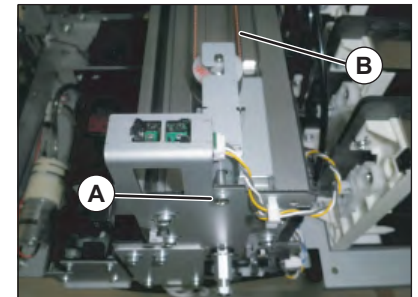
- 12** Mark the position of CB belt tension adjusting plate.

A : CR belt adjusting plate
B : Marking



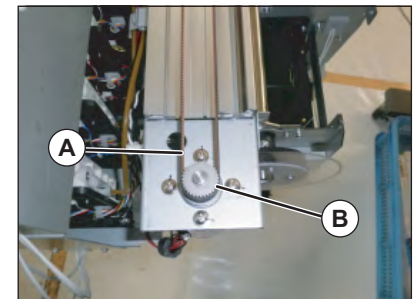
- 13** Loosen the adjusting screw, and the loosen tension of CR Belt.

A : Pan head small screw M4 x 30
B : CR Bel



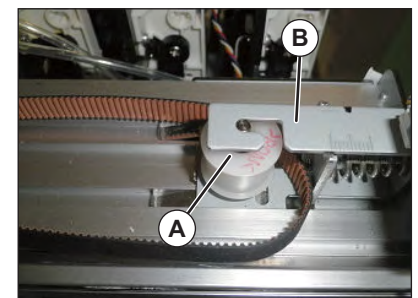
- 14** Remove CR belt from CR motor.

A : CR belt
B : CR motor



- 15** Remove CR Return Pulley from Return Pulley Base.

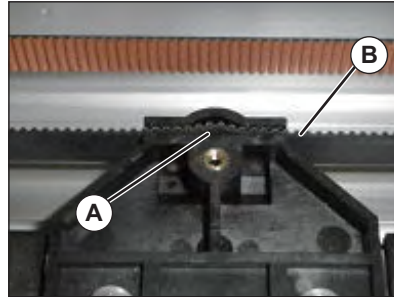
A : CR Return Pulley Assy
B : Return Pulley Base



16 Remove CR Belt from Cursor.

A : CR Belt

B : Cursor



17 Replace CR Belt.

18 Assemble CR Belt to Cursor.

19 Assemble CR Belt to CR Return Pulley.

20 Assemble CR Return Pulley to Return Pulley Base.

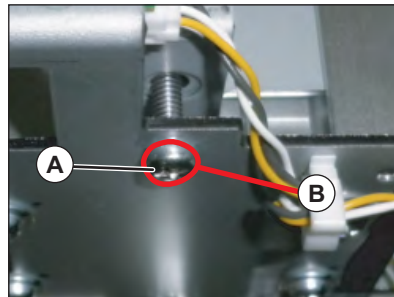
21 Assemble CR Belt to CR Motor.

22 Adjust so that a tension adjustment plate is located in a marking part.

23 After adjusting, apply Thread Locker to Tension adjusting screw.

A : Pan head small screwM4 x 35

B : applying position



24 Move Carriage to right and left by hand, and confirm that there are no abnormalities in a slide.

25 To reassemble unit, reverse the removal procedure.

3.6.3 Replacing CR Motor Relay Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR Motor Relay A1Assy	DF-48991	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

This section describes the procedure to replace the maintenance part, CR Motor Relay A1_Assy.

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

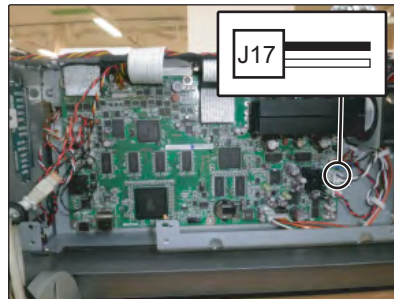
1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Removing L Side Cover.

 [3.2.2 Removing Side Cover](#)

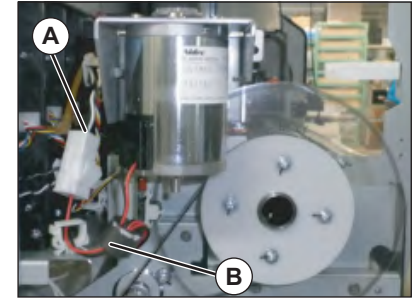
3 Remove CR Motor Relay Assy from MAIN Board.



4 Remove CR Motor Relay Cable from clamps on the path.

5 Remove CR Motor Relay Cable from the cable of CR Motor.

A : CR Motor Relay Assy
B : the cable of CR Motor



6 Replace CR Motor Relay Assy.

7 To reassemble unit, reverse the removal procedure.

3.6.4 Replacing CR Origin Sensor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR_HP Sensor, Lever Sensor	DF-49471	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Thread locker		Three bond401

NOTE

- This section describes the procedure to replace the maintenance part, CR_HP Sensor, Lever Sensor. In this section, it is referred to as CR Origin Sensor.
- CR Origin Sensor is locked with Thread locker.

1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

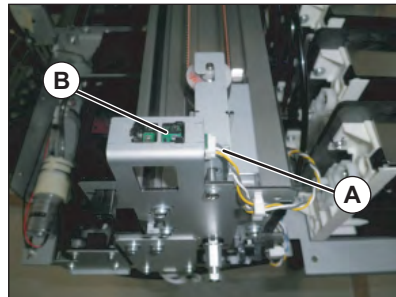
2 Move Carriage to the top of Platen.

 [3.8.1 Releasing Carriage Lock](#)

3 Remove CR Origin Sensor Cable from CR Origin Sensor.

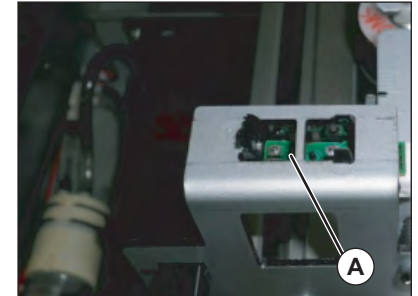
A : CR Origin Sensor Cable

B : CR Origin Sensor



4 Remove CR Origin Sensor.

A : CR Origin Sensor



5 Replace CR Origin Sensor.

6 To reassemble unit, reverse the removal procedure.

NOTE

Apply Thread Locker to the new CR Origin Sensor when installing it.

3.6.5 Replacing CR Origin Sensor Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR Origin Sensor Cable Assy	DG-44691	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

This section describes the procedure to replace the maintenance part, CR Origin Sensor Cable Assy.
In this section, it is referred to as CR Origin Sensor Cable.

1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

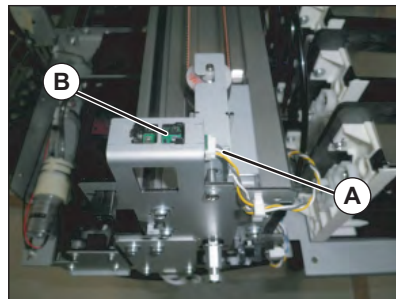
2 Move Carriage to the top of Platen.

 [3.8.1 Releasing Carriage Lock](#)

3 Remove CR Origin Sensor Cable from CR Origin Sensor.

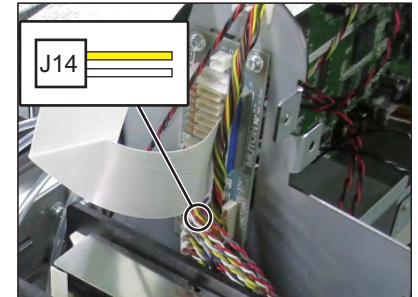
A : CR Origin Sensor Cable

B : CR Origin Sensor



4 Remove CR Origin Sensor Cable from the clamps on the path.

5 Remove CR Origin Sensor Cable from JUNCTION Board.



6 Replace CR Origin Sensor Cable.

7 To reassemble unit, reverse the removal procedure.

3.6.6 Replacing Lever Sensor Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Lever Sensor Cable Assy	DG-44692	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

This section describes the procedure to replace the maintenance part, Lever Sensor Cable Assy. In this section, it is referred to as Lever Sensor Cable.

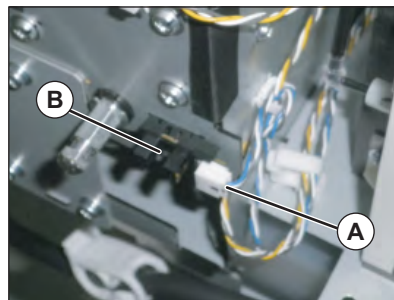
1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

2 Removing Pump Stay.
 [3.11.1 Removing Pump stay](#)

3 Move Carriage to the top of Platen.
 [3.8.1 Releasing Carriage Lock](#)

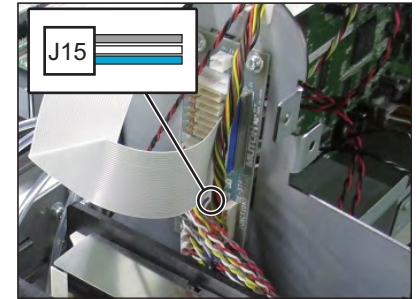
4 Remove Lever Sensor Cable from Lever Sensor.

A : Lever Sensor Cable
B : Lever Sensor



5 Remove Lever Sensor Cable from the clamps on the path.

6 Remove Lever Sensor Cable from JUNCTION Board.



7 Replace Lever Sensor Cable.

8 To reassemble unit, reverse the removal procedure.

3.6.7 Replacing Lever Sensor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR_HP Sensor, Lever Sensor	DF-49471	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Thread locker		Threebond 1401

NOTE

- This section describes the procedure to replace the maintenance part, CR_HP Sensor, Lever Sensor. In this section, it is referred to as Lever Sensor.
- Lever Sensor is locker with Thread locker.

1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

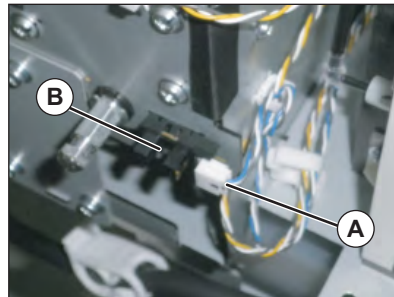
2 Move Carriage to the top of Platen.

 [3.8.1 Releasing Carriage Lock](#)

3 Remove Lever Sensor Cable from Lever Sensor.

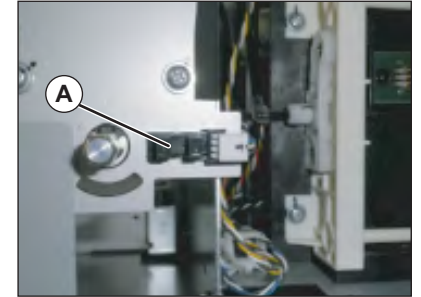
A : Lever Sensor Cable

B : Lever Sensor



4 Remove Lever Sensor.

A : Lever Sensor



5 Replace Lever Sensor.

6 To reassemble unit, reverse the removal procedure.

NOTE

Apply Thread locker to new Lever sensor, and bond to the bracket firmly.

3.6.8 Replacing T Fence

● Tools & Jigs & Maintenance part

Name	No.	Remarks
T Fence A1_Assy	DF-49024	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

This section describes the procedure to replace the maintenance part, T Fence A1_Assy. In this section, it is referred to as T Fence.

1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

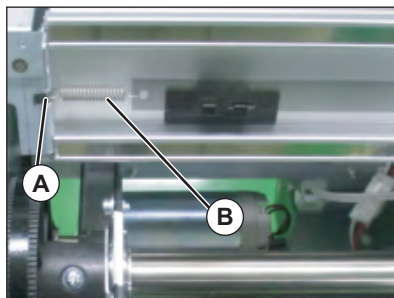
2 Move Carriage to the top of Platen.

 [3.8.1 Releasing Carriage Lock](#)

3 Remove T Fence Spring (L side) from T Fence Spring Hook.

A : T Fence Spring Hook

B : T Fence Spring



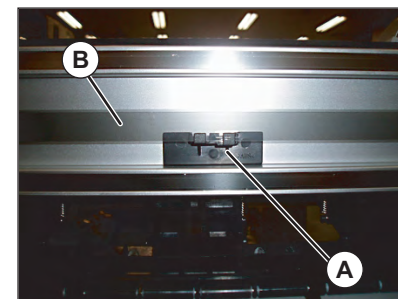
4 Remove T Fence from Fence Guide (3 pieces).

A : Fence Guide

B : T Fence

⚠ CAUTION

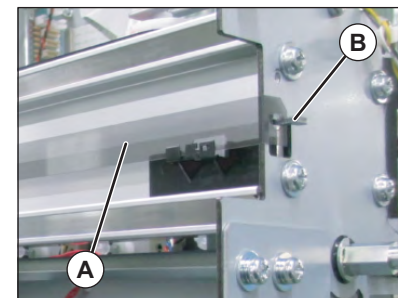
- Do not pull T Fence by force; the Fence Guide can be easily broken.
- Pay attention not to damage or break T Fence.



5 Remove T Fence from Hook.

A : T Fence

B : Hook



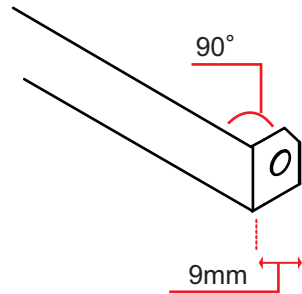
6 Replace T Fence.

NOTE

T fence as a maintenance part has a sticker on it. Remove the sticker completely before using it.

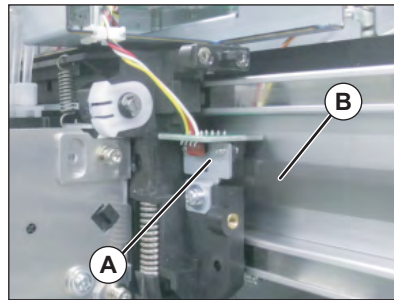


- 7** Mountain fold (at 90 degrees) the new T fence at 9mm from the tip and put it on a hook on the R side.(Do not fold the opposite side.)



- 8** Attach T fence to pass along the center of CR encoder.

A : CR Encoder
B : T Fence



- 9** To reassemble unit, reverse the removal procedure.

3.6.9 Replacing Fence Guide

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Fence Guide Assy	DF-49027	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

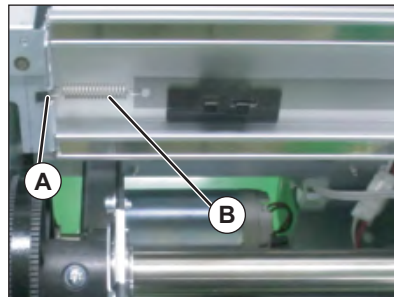
This section describes the procedure to replace the maintenance part, Fence Guide Assy. In this section, it is referred to as T Fence Guide.

1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

2 Move Carriage to the top of Platen.
 [3.8.1 Releasing Carriage Lock](#)

3 Remove T Fence Spring from T Fence Spring Hook.

A : T Fence Spring Hook
B : T Fence Spring

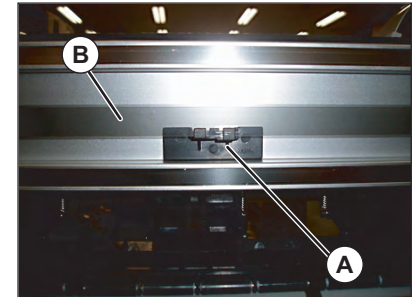


4 Remove T Fence from Fence Guide (3 pieces).

A : Fence Guide
B : T Fence

⚠ CAUTION

- Do not pull T Fence by force; the Fence Guide can be easily broken.
- Pay attention not to damage or break T Fence.



5 Replace Fence Guide.

6 To reassemble unit, reverse the removal procedure.

3.6.10 Replacing T Fence Spring

● Tools & Jigs & Maintenance part

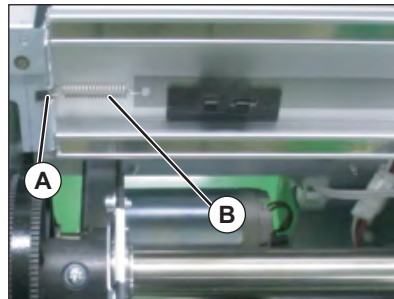
Name	No.	Remarks
T Fence Spring Assy	DG-44690	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-

NOTE

This section describes the procedure to replace the maintenance part, T Fence Spring Assy.
In this section, it is referred to as T Fence Spring.

- 1** Remove T Fence Spring from T Fence Spring Hook.

A : T Fence Spring Hook
B : T Fence Spring



- 2** Replace T Fence Spring.

- 3** To reassemble unit, reverse the removal procedure.

3.6.11 Replacing CR Return Pulley Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR Return Pulley Assy	DF-49047	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Thread locker		Threebond 1401

NOTE

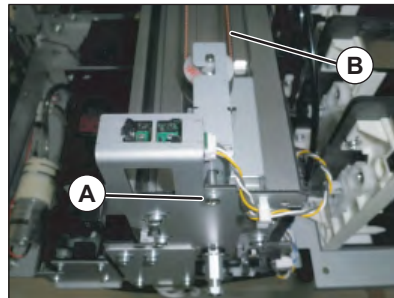
This section describes the procedure to replace the maintenance part, CR Return Pulley Assy. In this section, it is referred to as CR Return Pulley.

- 1** Remove R Side Cover and L Side Cover.

 [3.2.2 Removing Side Cover](#)

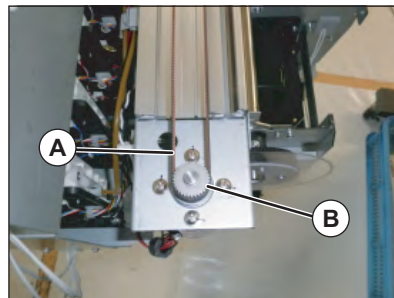
- 2** Loosen the adjusting screw, and the loosen tension of CR Belt.

A : Pan head small screw M4 x 30
B : CR Bel



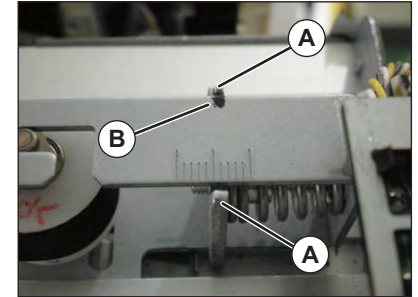
- 3** Remove CR belt from CR motor.

A : CR belt
B : CR motor



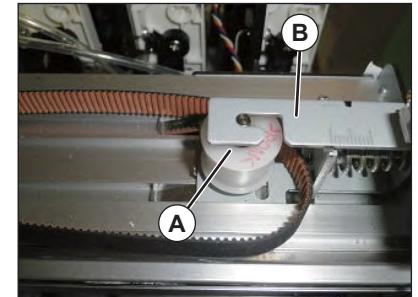
- 4** Mark the position of CB belt tension adjusting plate.

A : CR belt adjusting plate
B : Marking



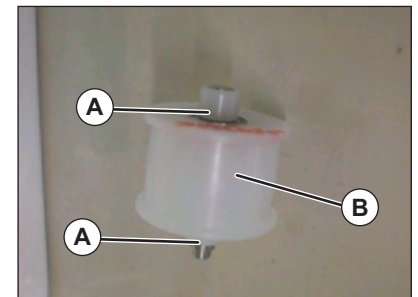
- 5** Remove CR Return Pulley from Return Pulley Base.

A : CR Return Pulley Assy
B : Return Pulley Base



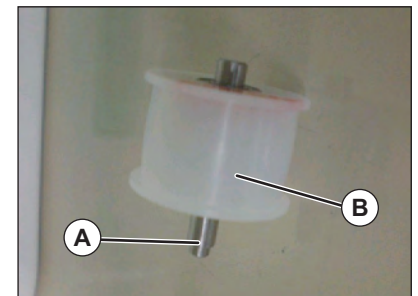
- 6** Remove Bearing Holder (2 pieces) from CR Return Pulley.

A : Bearing Holder
B : CR Return Pulley



- 7** Remove Return Pulley Axis from CR Return Pulley.

A : Return Pulley Axis
B : CR Return Pulley



- 8** Assemble Return Pulley Axis to New CR Return Pulley Assy.

A : Return Pulley Axis
B : CR Return Pulley
C : Bearing

Material notation (POM) at the top

Make sure that the bearing does not protrude from CR Return Pulley when installed



The thinner side of the axis at the bottom

- 9** To reassemble unit, reverse the removal procedure.

NOTE

After installing CR Return pulley, move Carriage with your hand from side to side, and check if CR belt is equally balanced on the pulley center section of CR Motor.

3.6.12 Replacing Pressure Roller Spring

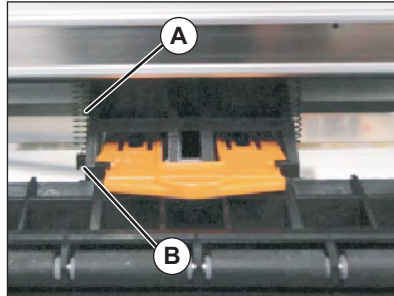
● Tools & Jigs & Maintenance part

Name	No.	Remarks
Pressure Roller Spring	DF-49691	Exploded View Y Rail Assy
longnose pliers	Generic products	-

- 1** Use a tool such as Long-nose Pliers and remove Pressure Roller Spring from the hooks (top and bottom, 2 places).

A : Hook

B : Pressure Roller Spring



- 2** Replace Pressure Roller Spring.

- 3** To reassemble unit, reverse the removal procedure.

3.6.13 Replacing Pressure Roller Assy and Pressure Roller Axis Assy

● Tools & Jigs & Maintenance part


Name	No.	Remarks
Pressure Roller Assy	DF-49053	Exploded View Y Rail Assy
Pressure Roller Axis Assy	DF-49054	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
longnose pliers		-

NOTE

This section describes the procedure to replace the maintenance part, Pressure Roller Assy, Pressure Roller Axis Assy.

In this section, it is referred to as Pressure Roller and Pressure Roller Axis.

- 1 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

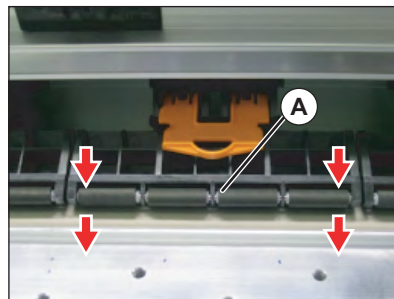
- 2 Remove Pressure Roller Spring (2 pieces).
 [3.6.12 Replacing Pressure Roller Spring](#)

- 3 Remove Pressure Roller Axis from Pressure Arm.

A : Pressure Roller Axis (Pressure Roller)

NOTE

While lifting up the Pressure Arm, and push the end of the Pressure roller axis to remove.



- 4 Replace Pressure Roller and Pressure Roller Axis.

- 5 To reassemble unit, reverse the removal procedure.

3.6.14 Replacing P_REAR Sensor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
P_REAR Sensor Assy	DG-42945	Exploded View Y Rail Assy
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		for M2 screw

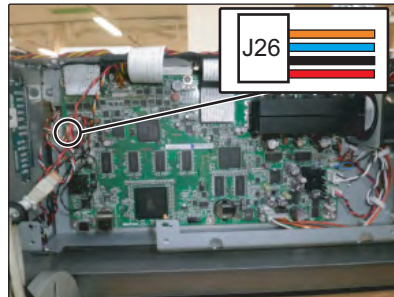
TIP

- 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_REAR sensor is located near the center of X rail.

1 Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

2 Remove P_REAR Sensor from MAIN Board.

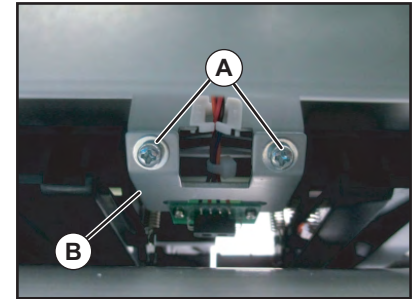


3 Remove the cable of P_REAR Sensor from the clamps on the path.

4 Remove the screws (2 pieces) fixing Sensor Plate.

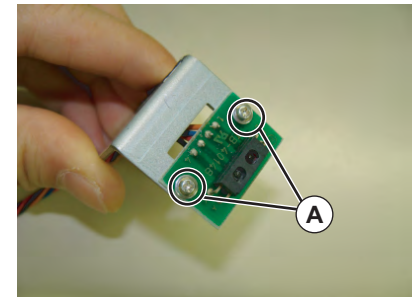
A : Pan-head screw with spring washer and flat washer M3 x 6

B : Sensor Plate



5 Remove the screws (2 pieces) retaining Sensor Plate.

A : Cup screw M2 x 4



6 To reassemble unit, reverse the removal procedure.

7 Perform various adjustments.

 [4.2 Adjustment Item](#)

3.7 Replacing PF section

3.7.1 Replacing PF Motor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
PF Motor Assy	DF-49020	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Tension gauge		Max 40N (4,080gf)

NOTE

This section describes the procedure to replace the maintenance part, PF Motor Assy. In this section, it is referred to as PF Motor.

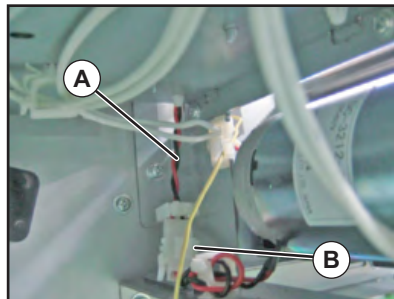
NOTE

Do NOT damage or bend PF Encoder scale or touch its outer circumference.

- 1 Removing L Side Cover.
👉 [3.2.2 Removing Side Cover](#)

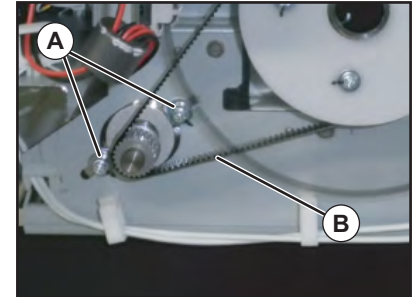
- 2 Remove PF Motor Cable from the connector of PF Motor.

A : PF Motor Cable
B : connecting point



- 3 Remove the screws (2 pieces) retaining PF Motor.
- 4 Remove X Speed Reduction Belt from PF Motor.

A : Pan-head screw with spring washer and flat washer M4 x 8
B : X Speed Reduction Belt



- 5 Replace PF Motor.

- 6 To reassemble unit, reverse the removal procedure.

NOTE

Move PF Speed Reduction Pulley with your hand to check if X Speed Reduction Belt is equally balanced on the pulley center section of PF Motor.

- 7 Perform various adjustments.
👉 [4.2 Adjustment Item](#)

3.7.2 Replacing PF Encoder

● Tools & Jigs & Maintenance part

Name	No.	Remarks
PF Encoder Assy	DG-44701	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		-

NOTE

This section describes the procedure to replace the maintenance part, PF Encoder Assy.
In this section, it is referred to as PF Encoder.

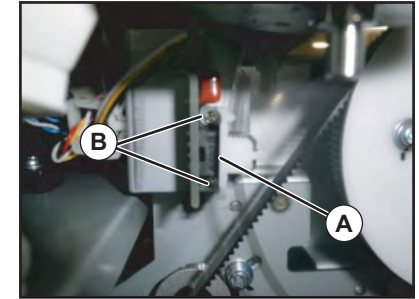
NOTE

Do NOT damage or bend PF Encoder scale or touch its outer circumference.

- 5** Remove the screws (2 pieces) retaining PF Encoder.

A : PF Encoder

B : Tapping screw M2 x 8



- 6** Replace PF Encoder.

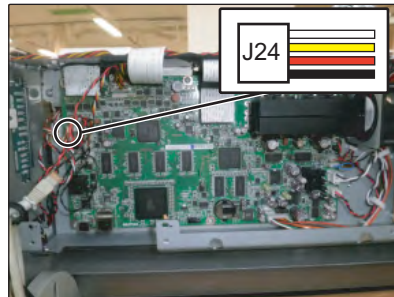
- 7** To reassemble unit, reverse the removal procedure.

- 8** Perform various adjustments.
👉 [4.2 Adjustment Item](#)

- 1** Remove R Side Cover and L Side Cover.
👉 [3.2.2 Removing Side Cover](#)

- 2** Remove Top Cover.
👉 [3.2.1 Removing Top Cover](#)

- 3** Remove PF Encoder from MAIN Board.



- 4** Remove the cable of PF Encoder from the clamps on the path.

3.7.3 Replacing PF Encoder Scale

● Tools & Jigs & Maintenance part

Name	No.	Remarks
PF ENC Scale Assy	DF-49028	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		-

NOTE

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

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

1 Removing L Side Cover.

☞ [3.2.2 Removing Side Cover](#)

2 Remove CR Motor.

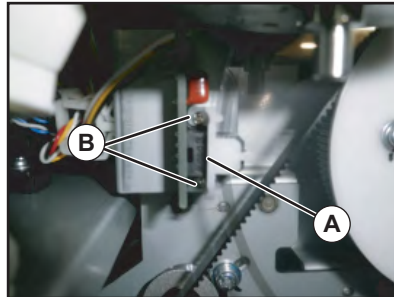
☞ [3.6.1 Replacing CR Motor](#)

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

A : PF Encoder

B : Tapping screw M2 x 8

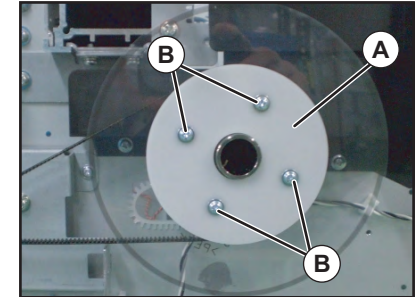
4 Remove PF Encoder.



5 Remove the screws (4 pieces) retaining ENC Holder.

A : ENC Holder

B : Tapping screw M3 x 8P Tight cup



6 Replace PF Encoder Scale.

NOTE

When handling PF Encoder scale, be careful with the following.

- Do NOT damage or bend PF Encoder scale or touch its outer circumference.
- Make sure that slit mounting flange has NO remaining double-sided tape.

Make sure that the letters >PET< can be seen reversely when installed.



Make sure that the letters >POM< can be seen when installed.



7 To reassemble unit, reverse the removal procedure.

8 Perform various adjustments.

☞ [4.2 Adjustment Item](#)

3.7.4 Replacing X Speed Reduction Belt

- Tools & Jigs & Maintenance part

Name	No.	Remarks
PF Timing Belt Assy	DG-44700	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Tension gauge		Max:40N(4,080gf)

NOTE

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

In this section, it is referred to as X Speed Reduction Belt.

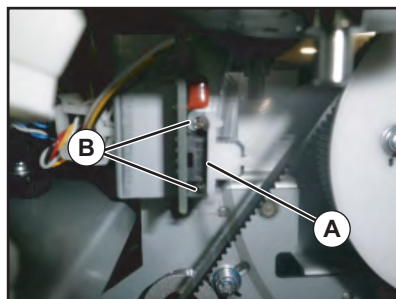
- 1** Removing L Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2** Remove CR Motor.
 [3.6.1 Replacing CR Motor](#)

- 3** Remove the screws (2 pieces) retaining PF Encoder.

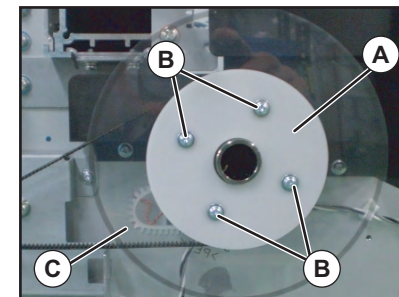
A : PF Encoder
B : Tapping screw M2 x 8

- 4** Remove PF Encoder.



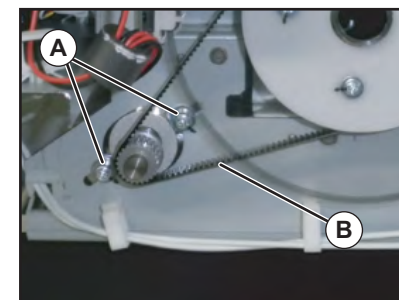
- 5** Remove the screws (4 pieces) retaining ENC Holder.

A : ENC Holder
B : Tapping screw M3 x 8P Tight cup
C : PF Encoder Scale



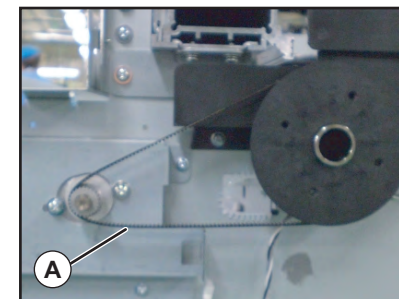
- 6** Loosen the screws (2 pieces) retaining PF Motor.

A : Pan-head screw with spring washer and flat washer M4 x 8
B : X Speed Reduction Belt



- 7** Remove X Speed Reduction Belt.

A : X Speed Reduction Belt



- 8** To reassemble unit, reverse the removal procedure.

- 9** Perform various adjustments.
 [4.2 Adjustment Item](#)

3.7.5 Replacing PF Speed Reduction Pulley

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Speed Reduction Pulley Assy	DF-49051	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Tension gauge		Max:40N(4,080gf)

NOTE

This section describes the procedure to replace the maintenance part, Speed Reduction Pulley Assy. In this section, it is referred to as PF Speed Reduction Pulley.

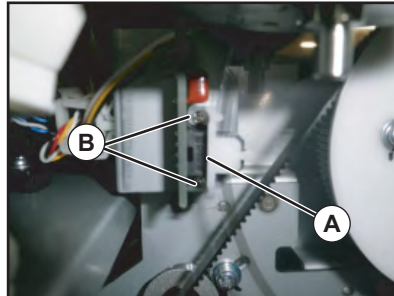
- 1 Remove L Side Cover.
☞ [3.2.2 Removing Side Cover](#)

- 2 Remove CR Motor.
☞ [3.6.1 Replacing CR Motor](#)

- 3 Remove the screws (2 pieces) retaining PF Encoder.

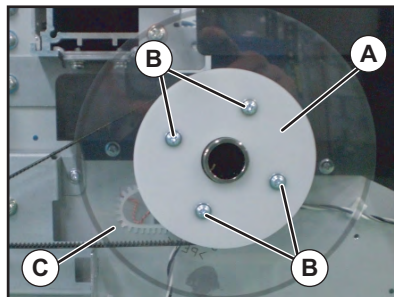
A : PF Encoder
B : Tapping screw M2 x 8

- 4 Remove PF Encoder.



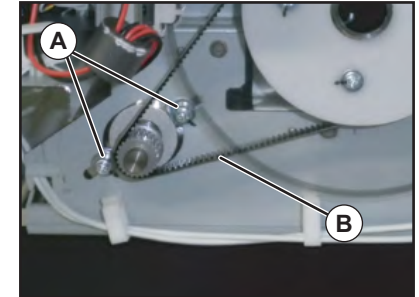
- 5 Remove the screws (4 pieces) retaining ENC Holder.

A : ENC Holder
B : Tapping screw M3 x 8P Tight cup
C : PF Encoder Scale



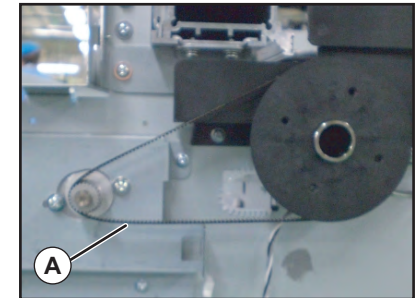
- 6 Loosen the screws (2 pieces) retaining PF Motor.

A : Pan-head screw with spring washer and flat washer M4 x 8
B : X Speed Reduction Belt



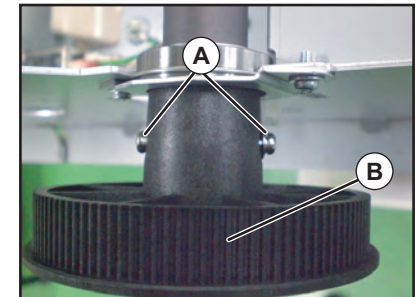
- 7 Remove X Speed Reduction Belt.

A : X Speed Reduction Belt



- 8 Remove the screws (2 pieces) retaining PF Speed Reduction Pulley.

A : Pan-head screw with spring washer and flat washer M3 x 8
B : PF Speed Reduction Pulley



- 9 PF Speed Reduction Pulley

- 10 To reassemble unit, reverse the removal procedure.

- 11 Perform various adjustments.
☞ [4.2 Adjustment Item](#)

3.7.6 Replacing PF Motor Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
PF Motor Cable Assy	DG-44699	Exploded View PF Motor
Phillips screwdriver No.2	Generic products	-
Tension gauge		Max:40N(4,080gf)

NOTE

This section describes the procedure to replace the maintenance part, PF Motor Cable Assy. In this section, it is referred to as PF Motor Cable.

- 1** Remove R Side Cover and L Side Cover.

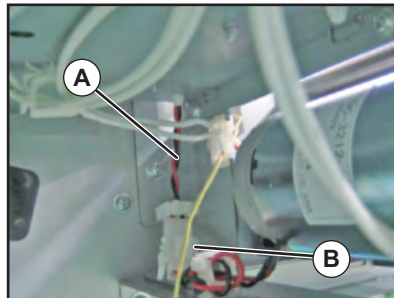
 [3.2.2 Removing Side Cover](#)

- 2** Remove Top Cover.

 [3.2.1 Removing Top Cover](#)

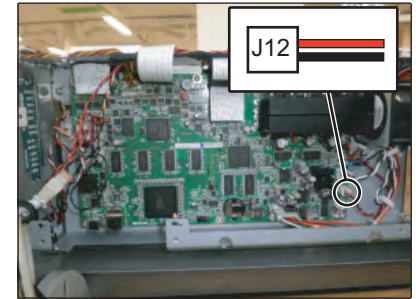
- 3** Remove PF Motor Cable from the connector of PF Motor.

A : PF Motor Cable
B : connecting point



- 4** Remove the cable of PF Motor Cable from the clamps on the path.

- 5** Remove PF Motor Cable from MAIN Board.



- 6** Replace PF Motor Cable.

- 7** To reassemble unit, reverse the removal procedure.

3.8 Replacing Cursor section

This section describes the procedure to replace Cursor section.

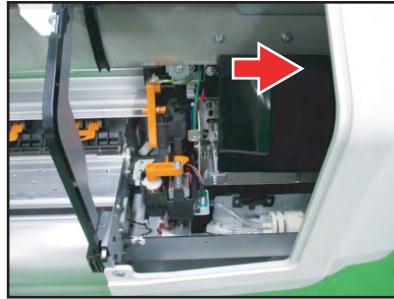
3.8.1 Releasing Carriage Lock

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 Push a carriage in the direction of an arrow by hand.

NOTE

When you change into a headlock state again, push Carriage in the direction of the arrow.



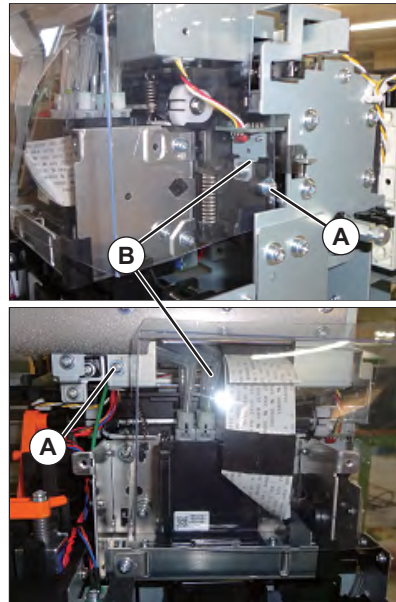
3.8.2 Removing Carriage Cover

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-

- 1** Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 2** Remove the screws (2 pieces) retaining Carriage Cover.
- A** : Pan-head screw with spring washer and flat washer M3 x 6
B : Carriage Cover



- 3** Remove Carriage Cover.

- 4** To reassemble unit, reverse the removal procedure.

3.8.3 Removing CR Board Cover

● Tools & Jigs & Maintenance part

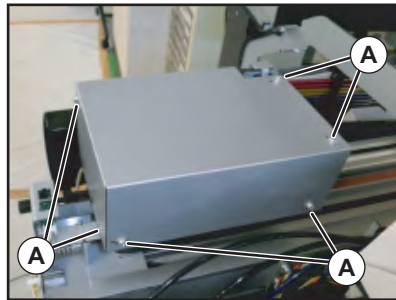
Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-

1 Removing R Side Cover.
👉 [3.2.2 Removing Side Cover](#)

2 Release the Carriage Lock.
👉 [3.8.1 Releasing Carriage Lock](#)

3 Remove the screws (6 pieces) retaining CR Board Cover.

A : Pan-head screw with spring washer and flat washer M3 x 6S Tight cup



4 Remove CR Board Cover.

5 To reassemble unit, reverse the removal procedure.

3.8.4 Replacing CR Board

● Tools & Jigs & Maintenance part

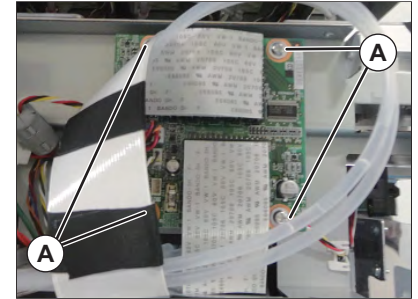
Name	No.	Remarks
CR Board Assy	DG-42959	Exploded View CR Board
Phillips screwdriver No.2	Generic products	-

⚠ CAUTION

- Before replacing Board Assy and pulling or pushing the FFC type Cable s, 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.

- 5** Remove the screws (4 pieces) retaining CR Board.

A : Cup screw M3 x 6



- 6** To reassemble unit, reverse the removal procedure.

- 1** Removing R Side Cover.
👉 [3.2.2 Removing Side Cover](#)

- 2** Release the Carriage Lock.
👉 [3.8.1 Releasing Carriage Lock](#)

- 3** Remove CR Board Cover.
👉 [3.8.3 Removing CR Board Cover](#)

- 4** Remove all the cables from CR Board.


3.8.5 Replacing CR Encoder

● Tools & Jigs & Maintenance part


Name	No.	Remarks
CR Encoder Assy	DG-42947	Exploded View CR Board
Phillips screwdriver No.1	Generic products	-
Phillips screwdriver No.2		-


TIP

This section describes the procedure to replace the maintenance part, CR Encoder Assy. In this section, it is referred to as CR Encoder.

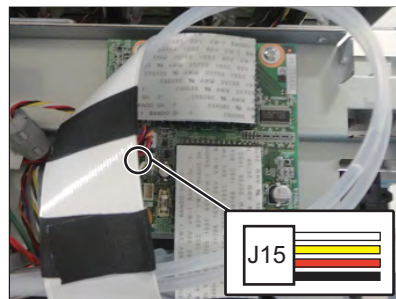
- 1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2 Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 3 Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

- 4 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

- 5 Remove CR Encoder from CR Board.



- 6 Remove CR Encoder from the clamps on the path.

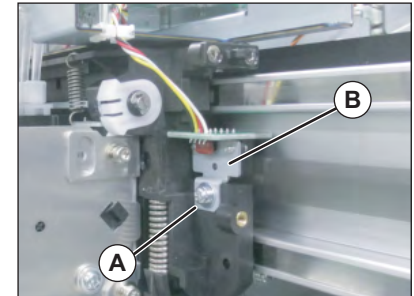
- 7 Remove the screw retaining CR Encoder mounting board.

A : Pan-head screw with spring washer and flat washer M3 x 8

B : CR Encoder Mounting Board

NOTE

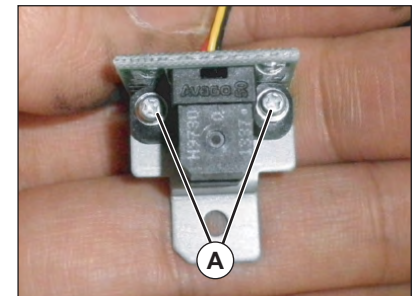
When removing CR Encoder, make sure not to damage T Fence.



- 8 Remove CR Encoder Mounting Board.

- 9 Remove the screws (2 pieces) retaining CR Encoder.

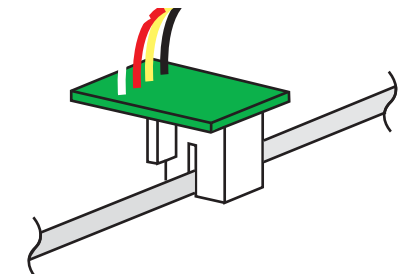
A : Pan-head screw with spring washer and flat washer (small) M2 x 6



- 10 Replace CR Encoder.

NOTE

When reassembling CR encoder Assy, refer to the following figure and make sure that T fence goes through CR encoder Assy sensor.



- 11 To reassemble unit, reverse the removal procedure.


3.8.6 Replacing P_EDGE Sensor

● Tools & Jigs & Maintenance part

Name	No.	Remarks
P-Edge Sensor Assy	DG-43319	Exploded View Cursor
Phillips screwdriver 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.

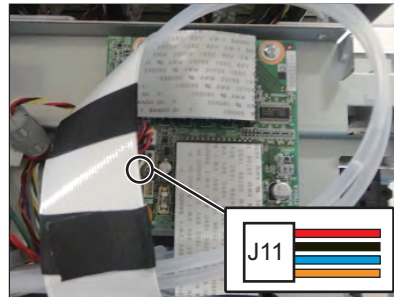
1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

2 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

3 Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

4 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

5 Remove P_EDGE Sensor from CR Board.

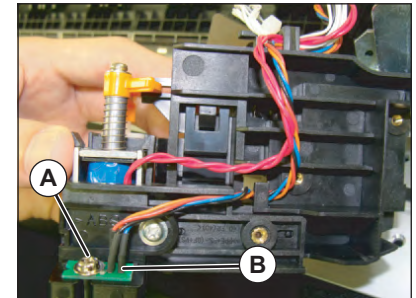


6 Remove P_EDGE Sensor from the clamps on the path.

7 Remove Cutter Holder Assy.
 [3.8.9 Replacing Cutter Holder Assy](#)


8 Remove the screw retaining P_EDGE Sensor.

A : Pan-head screw with spring washer and flat washer M3 x 6
B : P_EDGE Sensor



9 Replace P_EDGE Sensor.

10 To reassemble unit, reverse the removal procedure.


11 Perform various adjustments.
 [4.2 Adjustment Item](#)

3.8.7 Replacing Cutter Spring

● Tools & Jigs & Maintenance part

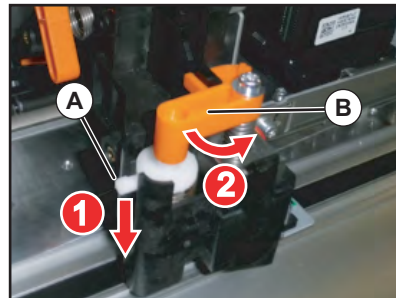
Name	No.	Remarks
Cutter Spring	DG-43484	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-

5 To reassemble unit, reverse the removal procedure.

1 Move Carriage to the opposite side of Origin.  [3.8.1 Releasing Carriage Lock](#)

2 Remove Cutter Cap from Cutter Blade. It moves in the direction of 2, lowering a few in the direction of 1.

A : Cutter Blade
B : Cutter Blade



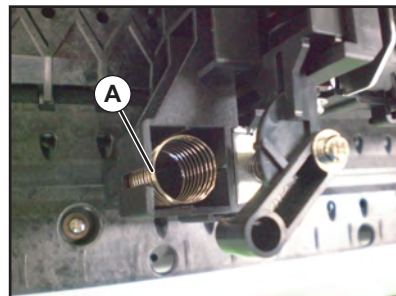
3 Remove Cutter Blade.

NOTE

Be careful not to cut a finger etc. with Cutter Braid.

4 Replace Cutter Spring.

A : Cutter Spring



3.8.8 Replacing PG Origin Sensor Cable

● Tools & Jigs & Maintenance part


Name	No.	Remarks
PG Origin Sensor Cable Assy	DG-43315	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-

TIP

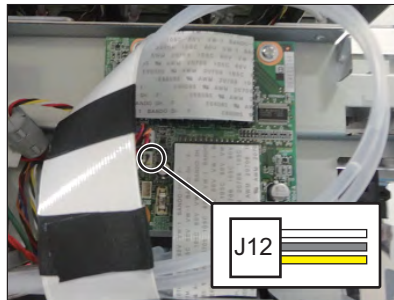
This section describes the procedure to replace the maintenance part, PG Origin Sensor Cable.

In this section, it is referred to as PG Origin Sensor Cable.

- 1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

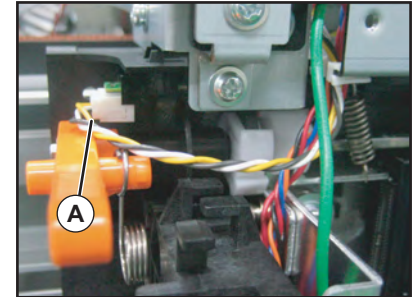
- 3 Remove PG Origin Sensor Cable from CR Board.



- 4 Remove PG Origin Sensor Cable from the clamps on the path.

- 5 Remove PG Origin Sensor Cable from PG Origin Sensor.

A : PG Origin Sensor Cable



- 6 Replace PG Origin Sensor Cable.


- 7 To reassemble unit, reverse the removal procedure.


3.8.9 Replacing Cutter Holder Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cutter Holder Adjusting Jig	DG-45003	Exploded View Other
Phillips screwdriver No.2	Generic products	-

1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

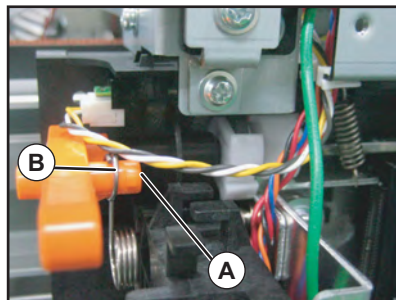
2 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

3 Remove P_EDGE Sensor and Cutter Solenoid from CR Board.
 [3.8.6 Replacing P_EDGE Sensor](#)

4 Remove P EDGE Sensor and Cutter Solenoid from the clamps on the path.

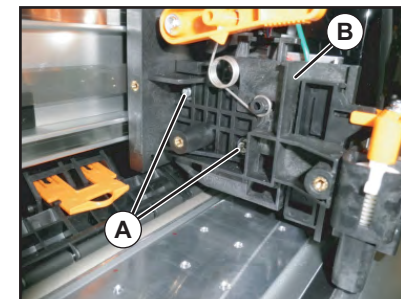
5 Remove Spring from Height Adjusting Lever.

A : Height Adjustment Lever
B : Height Adjustment Lever Spring



6 Remove the screws (2 pieces) retaining Cutter Holder Assy.

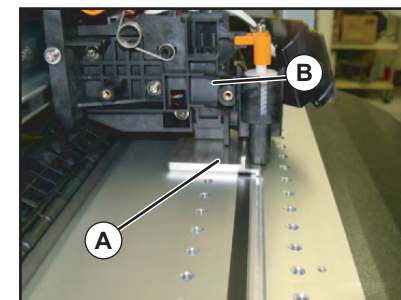
A : Pan-head screw with spring washer and flat washer M3 x 8
B : Cutter Holder Assy



7 Remove Cutter Holder Assy From Carriage.

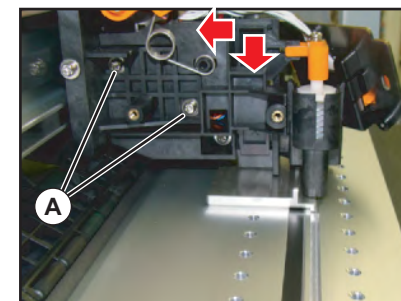
8 Set dedicated Jig on mounting position.

A : Cutter Holder Adjusting Jig
B : Cutter Holder Assy



9 Push Cutter Holder Assy down lightly to tighten the screws.

A : Pan-head screw with spring washer and flat washer M3 x 8




10 To reassemble unit, reverse the removal procedure.


3.8.10 Replacing Cutter Solenoid Assy


● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cutter Solenoid Assy	DF-42234	Exploded View Cursor
Cutter Solenoid Spring Assy	DF-49062	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-
slotted screwdriver		-

1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

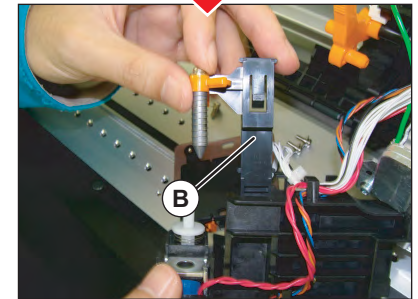
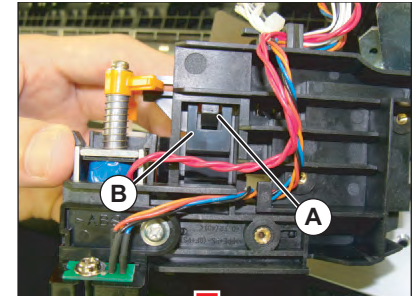
2 Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

3 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

4 Remove Cutter Holder Assy.
 [3.8.3 Removing CR Board Cover](#)

5 Push the tab of Lock Kicker with a driver, etc. to remove Lock Kicker.

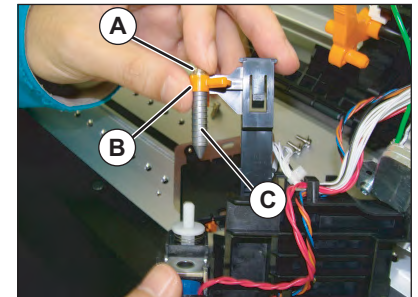
A : the tab of Lock Kicker
B : Lock Kicker



6 Remove the screw retaining Cutter Cap.

7 Remove Plunger.

A : Pan-head screw with spring washer and flat washer M3 x 6
B : Cutter Cap
C : Plunger (Solenoid Spring)



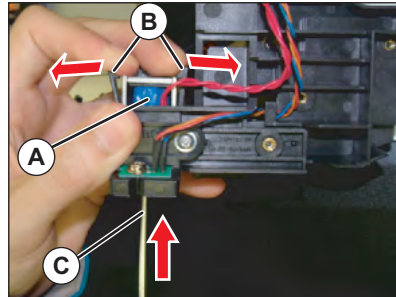
8 Replace Plunger.

NOTE

When replacing Cutter Solenoid spring itself, replace it at this stage. To reassemble the unit, reverse the removal procedure.

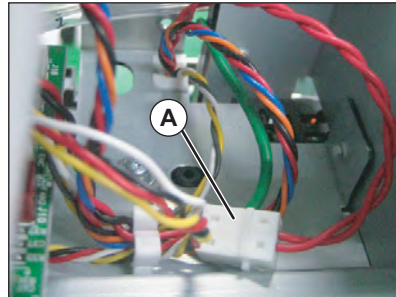
- 9** Push the tab of Lock Kicker with a driver, etc. to remove Cutter Solenoid Assy.

A : Cutter Solenoid Assy
B : the tab of Cutter Holder
C : Driver .etc



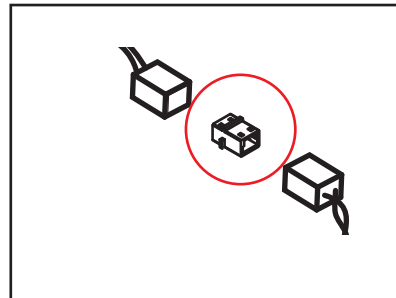
- 10** Remove Cutter Solenoid Cable from Cutter Solenoid.

A : Connecting point



NOTE

Cutter solenoid and Cutter Solenoid Cable are connected in the post header assembly. Do not lose the post header assembly.

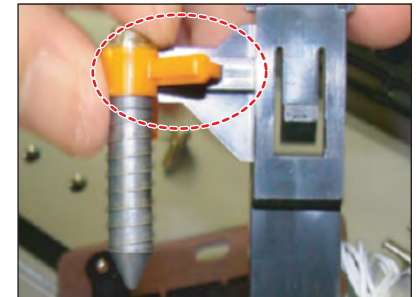


- 11** Replace Cutter Solenoid Assy.

NOTE

When installing the cutter solenoid, note the following.

- Joint the cutter cap and the CR lock kicker, push down the cutter cap and the CR lock kicker together to install them onto the cutter holder.
- Make sure to join the cutter cap and the CR lock kicker. Otherwise, when turning the power ON, the carriage cannot move from the origin point to the left.



3.8.11 Replacing Cutter Solenoid Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cutter SOL Cable Assy	DG-43318	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Cutter SOL Cable Assy.

In this section, it is referred to as Cutter Solenoid Cable.

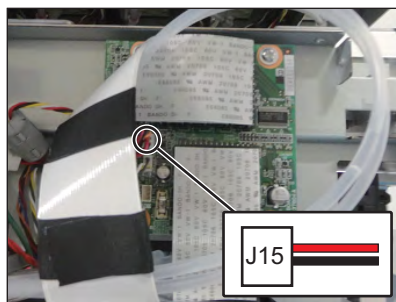
1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

2 Remove CR Board Cover.

 [3.8.3 Removing CR Board Cover](#)

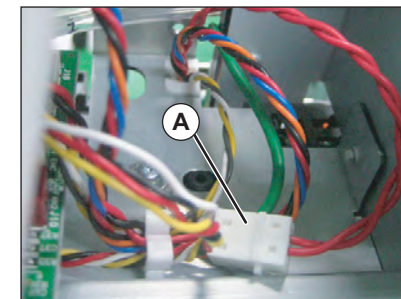
3 Remove Cutter Solenoid Cable from CR Board.



4 Remove Cutter Solenoid Cable from the clamps on the path.

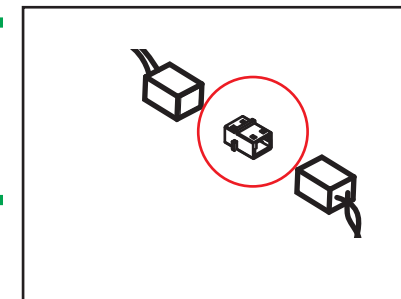
5 Remove Cutter Solenoid Cable from Cutter Solenoid.

A : Connecting point



NOTE

Cutter solenoid and Cutter Solenoid Cable are connected in the post header assembly. Do not lose the post header assembly.



6 Replace Cutter Solenoid Cable.

7 To reassemble unit, reverse the removal procedure.

3.8.12 Replacing Mini Latch

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Mini Latch S Assy	DG-44689	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-

TIP

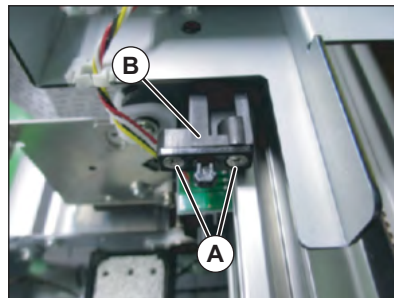
This section describes the procedure to replace the maintenance part, Mini Latch S Assy. In this section, it is referred to as Mini Latch.

1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

2 Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

3 Remove the screws (2 pieces) retaining Mini Latch.

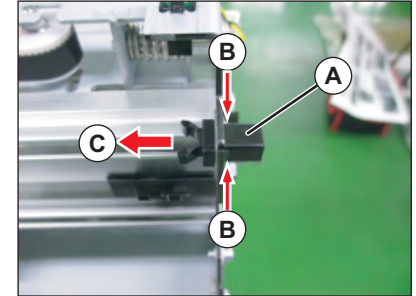
A : Countersunk head screw M2.5 x 4
B : Mini Latch



4 Remove Mini Latch.

5 Remove Mini Latch from sheet metal, pushing the tab of Mini Latch.

A : Mini Latch (receiver)
B : tab
C : removing direction



6 Replace Mini Latch.

7 To reassemble unit, reverse the removal procedure.

3.8.13 Replacing Roller Arm Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Roller Arm Assy	DF-49065	Exploded View Cursor
Phillips screwdriver No.2	Generic products	-
longnose pliers		-

(1) R side

- 1** Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 2** Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

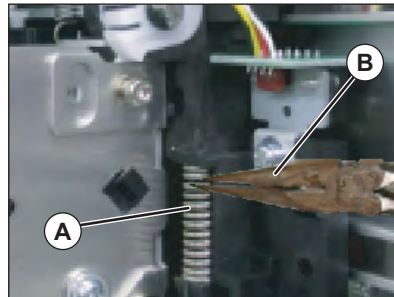
- 3** Replacing Cursor Roller Spring.

A : Cursor Roller Spring

A : longnose pliers

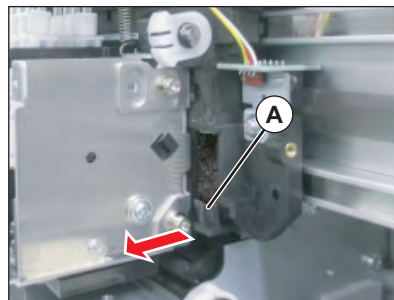
CAUTION

The tension of the spring is strong.
 In the case of removal, the spring should jump out and be careful not injured.



- 4** Remove Cursor Roller Arm.
 (Pull it out to forward.)

A : Cursor Roller Arm




- 5** Remove Roller Arm Assy.

- 6** To reassemble unit, reverse the removal procedure.

(2) L side

- 1** Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 2** Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

- 3** Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

- 4** Remove Cutter Holder Assy.
 [3.8.3 Removing CR Board Cover](#)

From this point on, do the same work as the (1) R side.

3.8.14 Replacing Valve head

(1) Pour Cleaning fluid into the new Valve Head and let it settle for a while.

(2) Replace the faulty Valve head Assy.

(1) Pouring Cleaning liquid

- Tools & Jigs & Maintenance part

Name	No.	Remarks
Valve Head Cleaning Kit (VJ Ink)	DG-41787	Exploded View Other
dedicated Cleaning fluid	-	Operation Manual

NOTE

Solenoid head Assy used for VJ-628 is shipped with Cleaning liquid inside for the purposes of inspection and quality assurance. Therefore, before replacing it, you will need to clean it using dedicated Cleaning liquid.

CAUTION

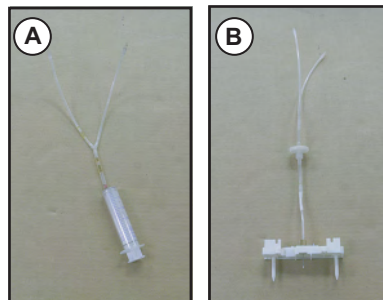
- Make sure to pour Cleaning liquid into the new Valve head.
If ink is charged before Cleaning liquid is poured in, Valve head might get damaged.
- Be careful not to get Cleaning liquid in your eyes. If Cleaning liquid gets in your eye, immediately wash your eye with running water for over 15 minutes and see your ophthalmologist.

TIP

For the following procedure, Valve head cleaning jigs are separated into two parts and called Valve head cleaning jig 1 and 2, for the sake of convenience.

A : Valve head cleaning jig1

B : Valve head cleaning jig2



- 1 Install Valve head cleaning jig on the new Valve head Assy.
Make sure that the filter (silver part) side of Valve head is connected to the Valve head cleaning jig 1 side.

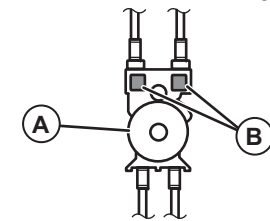
A : Valve head

B : part of silver

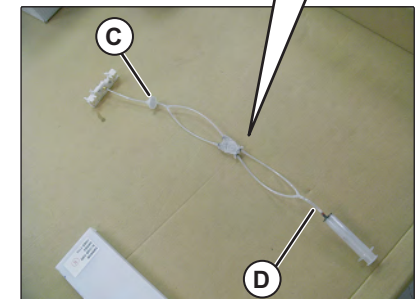
C : Valve head cleaning jig1

D : Valve head cleaning jig2

Connect Valve head cleaning jig 1



Connect Valve head cleaning jig 2

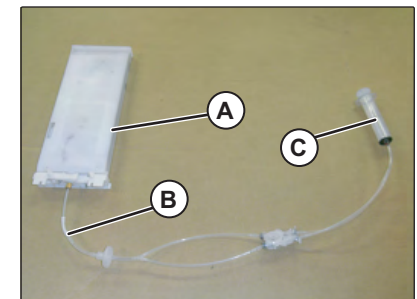


- 2 Attach the dedicated cleaning cartridge to the top of the Valve head cleaning jig 1.

A : Cleaning fluid cartridge

B : Valve head cleaning jig1

C : Valve head cleaning jig2



- 3** Pull Pump of Syringe attached to Valve 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 Valve head upside down to let Cleaning liquid settle in Valve head.

CAUTION

- Do not hold the transparent films on the sides of Valve head. Cleaning liquid inside Valve head inflows into the tube.
- Do not damage the transparent films on the sides of Valve head.

- 5** Remove the cleaning cartridge from the Valve head cleaning jig1.

- 6** Remove the cleaning liquid from the Valve head by pulling the syringe pump.

NOTE

Step 6 above is only for avoiding any leakage. You do not need to empty the Valve head completely.

- 7** Remove Valve head cleaning tools from Valve head.

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 Valve Head

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Valve Head Assy	DG-41543	Exploded View Head Base
O Ring M6	DF-46671	
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		-
slotted screwdriver		-
ball point hexagonal wrench(2.5mm)		-
longnose pliers		-
Plastic bag		Can be omitted

- 1** Perform ink discharge operation to discharge ink entirely from ink path.

 [5.6.9 Longstore Menu](#)

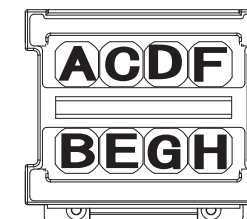
NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2** Mark on all the Joint screws.

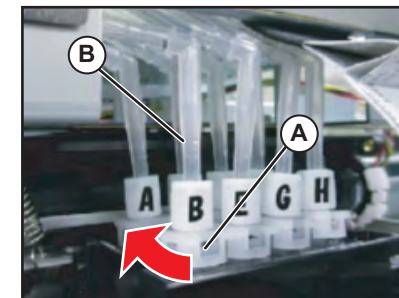
**NOTE**

Mark the place to which Tube is attached.
(ABCDEFGH)



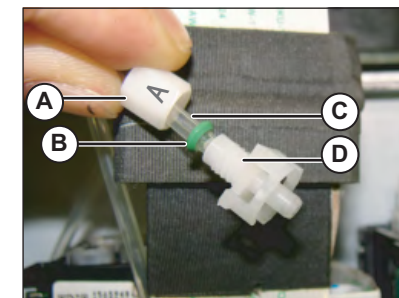
- 3** Turn Connector Valve Heads (8 pieces) 45 degrees, and pull it out.

A : Connector Valve Head
B : Fitting



- 4** Remove Joint Screw, O Ring and Connector Valve Head.

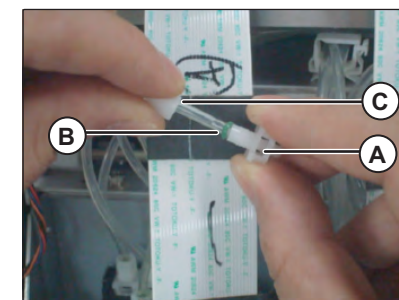
A : Joint Screw
B : O Ring
C : Fitting
D : Connector Valve Head



- 5** Install a new O Ring around the tip of Ink Tube.


- 6** Push the O Ring with Connector Valve Head to connect the Joint Screw and Connector Valve Head.

A : Connector Valve Head
B : O ring
C : Joint screw

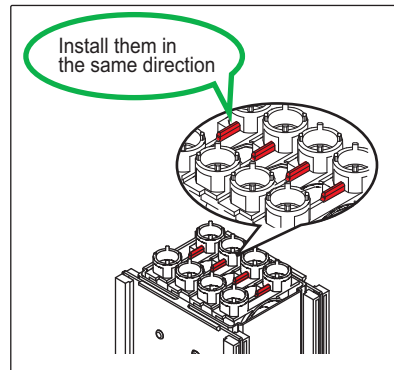


NOTE

- Not to reuse O ring. Change new one.
- Before installing O ring, dip it to dedicated cleaning fluid.

7 It refers to  [3.8.15 Replacing Head](#) and remove Valve Head from Head.

8 Install Valve Head to Head.
 [3.8.15 Replacing Head](#)



9 It refers to  [3.8.15 Replacing Head](#) and install Head.

10 To reassemble unit, reverse the removal procedure.

11 Charge Ink.
 [5.5 Ink Charging Menu](#)

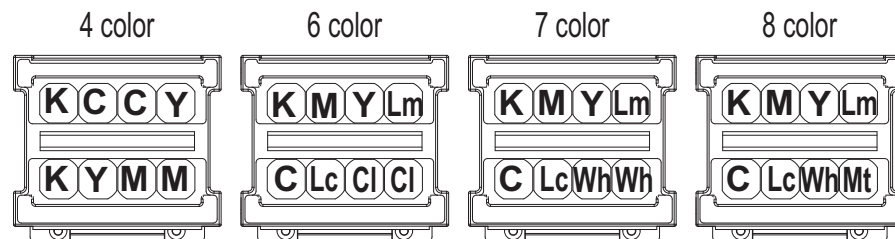
3.8.15 Replacing Head

● Tools & Jigs & Maintenance part

Name	No.	Remarks
IA5540 Head Assy	DG-43988	Exploded View CR (Head Base)
Phillips screwdriver No.2	Generic products	-
Phillips screwdriver No.1		-
slotted screwdriver		-
ball point hexagonal wrench(2.5mm)		-
Longnose pliers		-
Plastic bag		Can be omitted

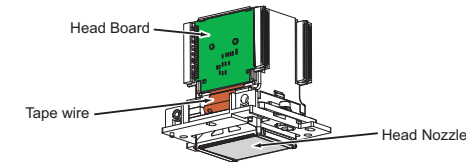
TIP

- This section describes the procedure to replace the maintenance part, Head Assy. In this section, it is referred to as Head.
- Ink pipings are as shown below.



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.
- Do not touch board and tape cable which are already assembled on print head. Moreover, do not touch around tape cable when assembling head cover.



- 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.
- 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 Perform ink discharge operation to discharge ink entirely from ink path.

☞ [5.6.9 Longstore Menu](#)

NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2 Removing R Side Cover.

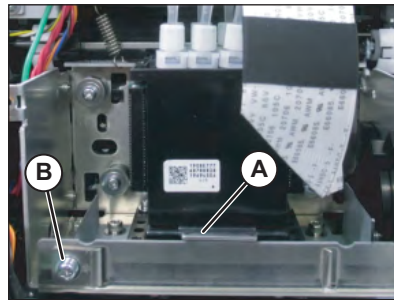
☞ [3.2.2 Removing Side Cover](#)

- 3 Release Carriage Lock.

☞ [3.8.1 Releasing Carriage Lock](#)

- 4** Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

- 5** Loosen the screw retaining Head Push Plate Spring
A : Head Push Plate Spring
B : Pan-head screw with spring washer and flat washer M3 x 6

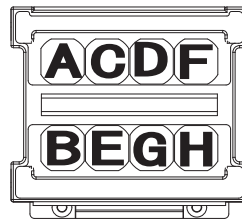


- 6** Mark on all the Joint screws.



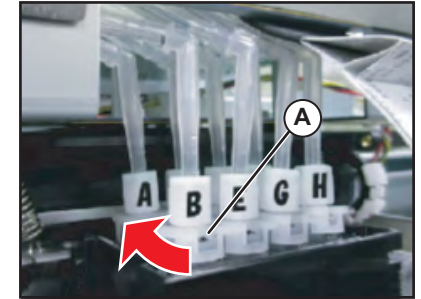
NOTE

Mark the place to which Tube is attached.
 (ABCDEFGH)



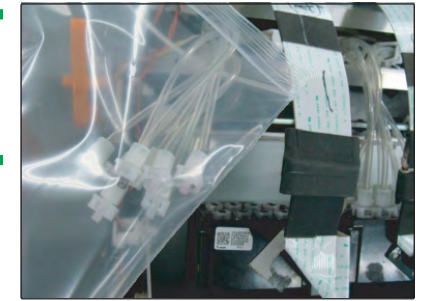
- 7** Turn Connector Valve head (8 pieces) 45 degrees, release the lock, and pull it out.

A : Connector Valve Head

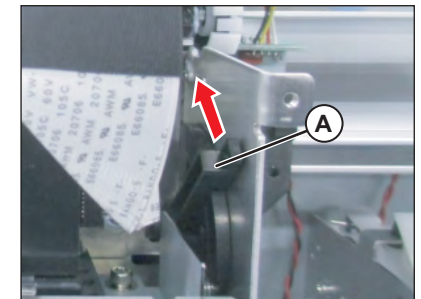


TIP

After pulling out connector Valve head from print head, put them into the plastic bag to prevent the ink from dripping.

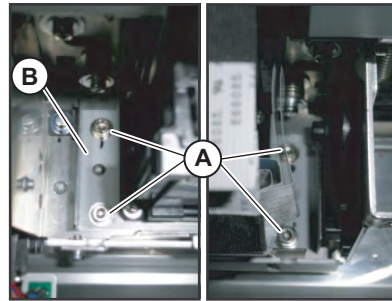


- 8** Raise the notch of Head adjustment cam to the top.



- 9** Remove the screws (4 pieces) retaining Head Base.

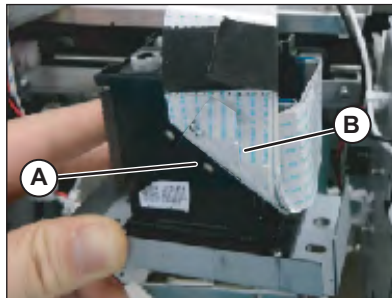
A : Hexagon Socket Pan Flat Head M3 x 6
B : Head Base



- 10** Remove Head (Head base is attached.).

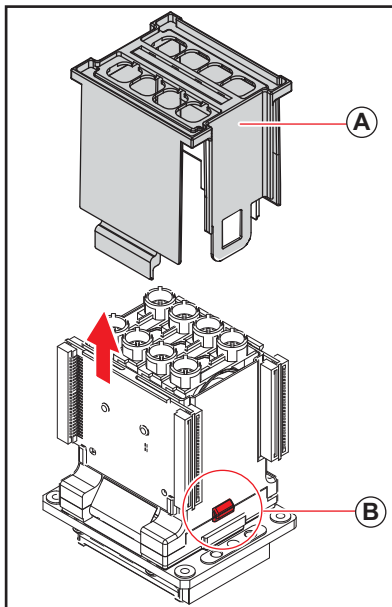
- 11** Remove Head FFC (4 pieces) from Head.

A : Head
B : Head FFC



- 12** Pull Head cover vertically and remove it.

A : Head cover
B : Tab

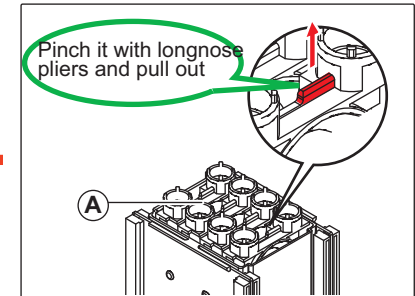


- 13** Remove Valve Heads.

A : Valve head

CAUTION

- Do not hold the transparent films on the sides of Valve head. The ink inside of S Valve head 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 Valve head or put Valve head into a plastic bag.



- 14** Replace Print Head.

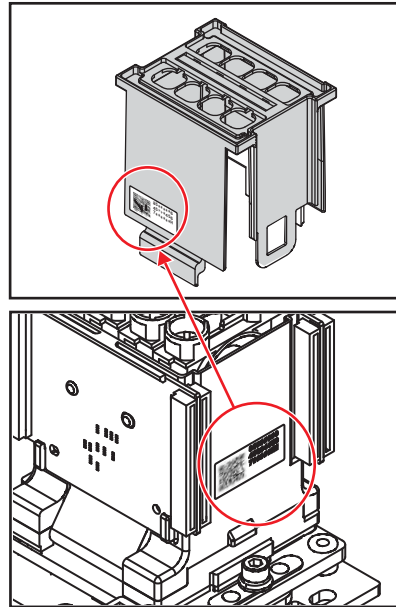
CAUTION

Be careful not to damage Head board, Head nozzles, and Head FFC connector.

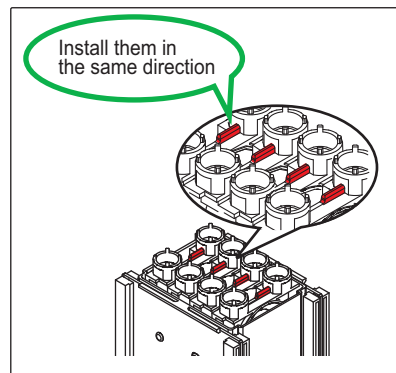
15 Swap Head Rank sticker with the sticker for the new Head.

NOTE

- Remove the old seal from a head cover and stick it on the removed printhead.
- Be careful for ink not to adhere to a seal. There is a possibility that it may become impossible to read a character.
- Remove a seal from a new print head and stick on a head cover.



16 Install Valve head to Head.



17 Assemble Head Cover.

18 Reassemble Head FFC.

CAUTION

- Do not let FFC terminal section get dirty, or let ink from the head surface touch it.
- Be careful not to damage the nozzle surface with FFC.
- 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.

19 Put Head back to the fixing position of Head mounting plate.

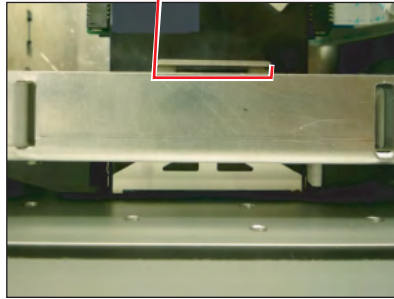
NOTE

Do not screw on Print head at this point.

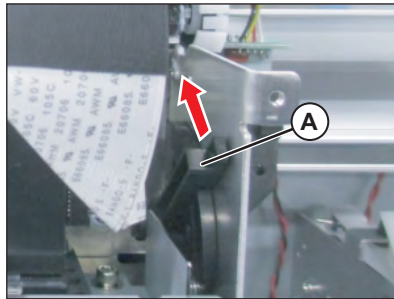
20 Reassemble Connector Valve Head.

- 21** Adjust so that Head Push Plate Spring is horizontal.


Insert a slotted screwdriver and adjust it.

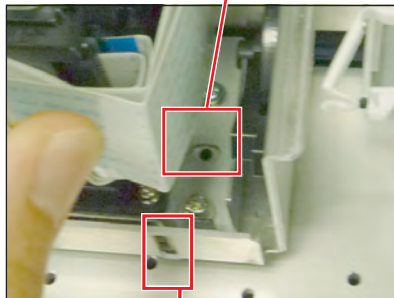


- 22** Make sure that the notch of Head Adjustment Cam is raised to the top.



- 23** Adjust the fixing position of Head.

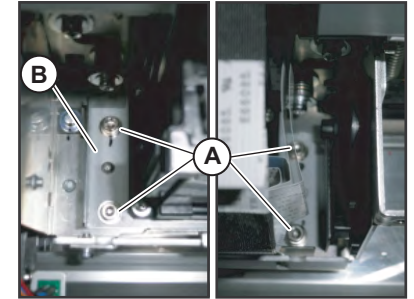
 Adjust so that the circular hole is positioned in front of the slotted hole.



Insert a slotted screwdriver to push Head in.

- 24** Tighten the screws (4 pieces) retaining Head Base.

A : Hexagon Socket Pan Flat Head M3 x 6
B : Head Base



- 25** To reassemble unit, reverse the removal procedure.

- 26** Perform various adjustments.

 [4.2 Adjustment Item](#)

3.8.16 Replacing Head FFC

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Head FFC Assy	DG-44687	Exploded View CR Board
Phillips screwdriver No.2	Generic products	-
ball point hexagonal wrench(2.5mm)		-

TIP

This section describes the procedure to replace the maintenance part, Head FFC Assy. In this section, it is referred to as Head FFC.

⚠ CAUTION

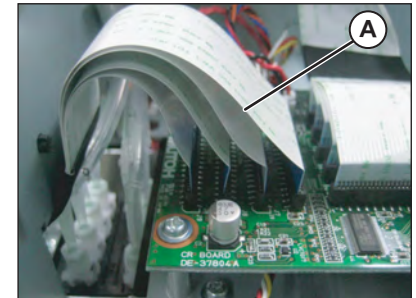
- Before replacing the board or plugging/unplugging FFC, unplug Power cable and leave it for a while. If operating with Power cable still plugged, Board may be damaged or operators may get an electric shock by standby electricity.
- When handling board, do not touch on-board devices with bare hands.
- 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.

4 Remove CR Board Cover.

 [3.8.3 Removing CR Board Cover](#)

5 Remove Head FFC from CR board.

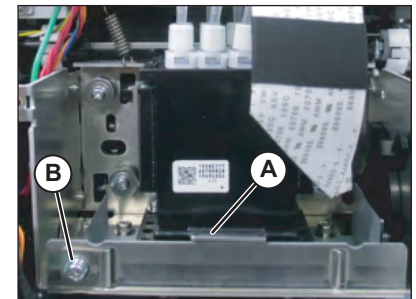
A : Head FFC



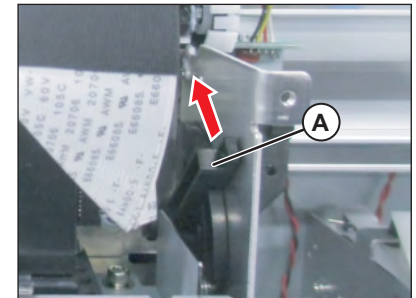
6 Loosen the screw retaining Head Push Plate Spring

A : Head Push Plate Spring

B : Pan-head screw with spring washer and flat washer M3 x 6



7 Raise the notch of Head adjustment cam to the top.



1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

2 Release the Carriage Lock.

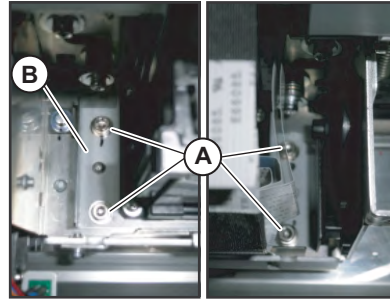
 [3.8.1 Releasing Carriage Lock](#)

3 Remove Carriage Cover.

 [3.8.2 Removing Carriage Cover](#)

- 8** Remove the screws (4 pieces) retaining Head Base.

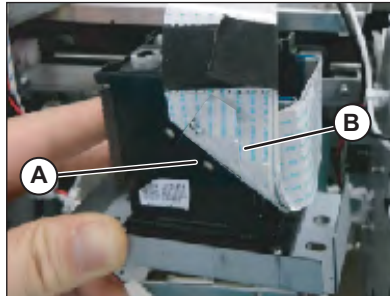
A : Hexagon Socket Pan Flat Head M3 x 6
B : Head Base



- 9** Remove Head (Head base is attached.).

- 10** Remove Head FFC (4 pieces) from Head.

A : Head
B : Head FFC




- 11** Replace Head FFC.

 **Folding Direction** **Head FFC**

- 12** To reassemble unit, reverse the removal procedure.

NOTE

When attach Head to the original location,
refer to  **3.8.15 Replacing Head.**

3.8.17 Replacing Carriage Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Carriage Assy	DG-44688	Exploded View Head Base
Cutter Holder adjusting Jig	DG-45003	Exploded View Other
PG adjusting Jig (1.1/1.3)	DG-43193	Exploded View Other
Phillips screwdriver No.2	Generic products	-
Ball point hexagonal wrench(2.5mm)		-
Stainless bat		-
Polyknit Wiper		-
Bubble Wrap		-
Thread locker		Threebond 1401
dedicated cleaning fluid	-	☞ Operation Manual

- 1** Perform ink discharge operation to discharge ink entirely from ink path.

☞ [5.6.9 Longstore Menu](#)

NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2** Removing L Side Cover.

☞ [3.2.2 Removing Side Cover](#)

- 3** Move Carriage to the opposite side of Platen.

☞ [3.8.1 Releasing Carriage Lock](#)

- 4** Remove CR Board Cover.

☞ [3.8.3 Removing CR Board Cover](#)

- 5** Remove Carriage Cover.

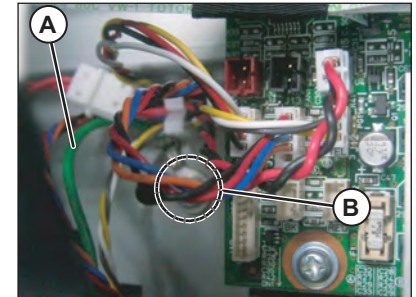
☞ [3.8.2 Removing Carriage Cover](#)

- 6** Remove the screw retaining Head FG Cable.

A : Head FG Cable

B : Pan-head screw with spring washer and flat washer M3 x 8

- 7** Remove Head FG Cable from the clamps on the path.



- 8** Remove all the cables from CR Board.

☞ [3.8.4 Replacing CR Board](#)

- 9** Remove the removed cables from the clamps on the path.

- 10** Remove CR Board.

☞ [3.8.4 Replacing CR Board](#)

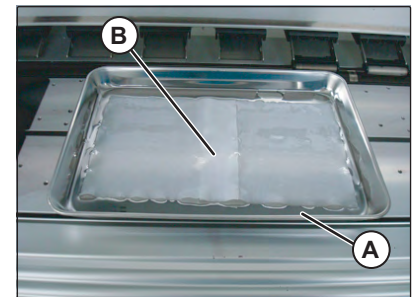
NOTE

Removed CR board is placed after an Bubble Wrapping.

- 11** Pave Poly-knit wipers in stainless pan and fill with cleaning fluid (dedicated cleaning fluid).

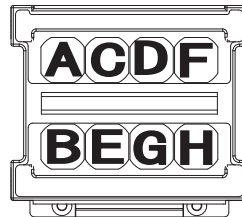
A : Stainless pan

B : Poly-knit wiper

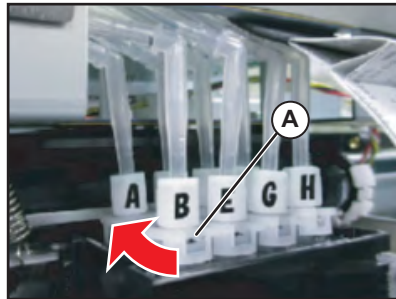


12 Mark on AIL Fitting Screw.**NOTE**

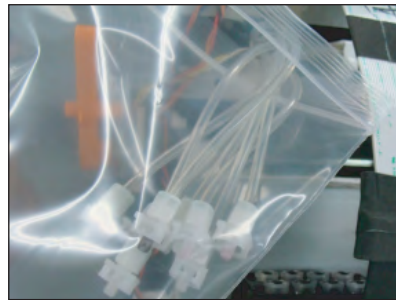
Mark the place to which Tube is attached.
(ABCDEFGH)

**13** Turn Connector Valve Head 45 degrees, release the lock, and pull it out.

A : Connector Valve Head

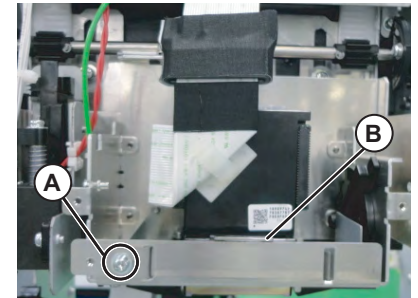
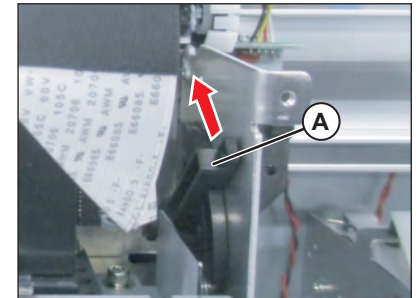
**TIP**

After pulling out Connector Valve Head from print head, put them into the plastic bag to prevent the ink from dripping.

**14** Loosen the screw (1 pieces) retaining Head Push Plate Spring.

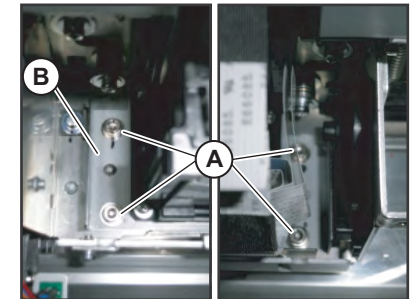
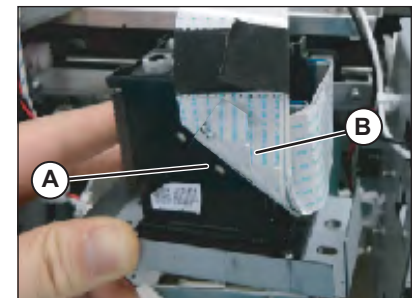
A : Pan-head screw with spring washer and flat washer M3 x 6

B : Head Push Plate Spring

**15** Raise the notch of Head adjustment cam to the top.**16** Remove screws (4 pieces) retaining Head base.

A : Pan-head screw with spring washer and flat washer M3 x 6

B : Head Base

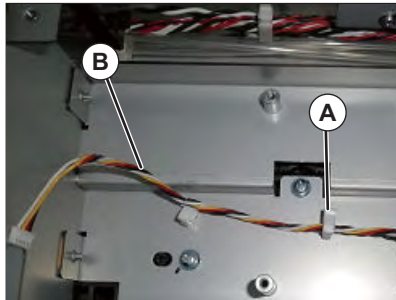
**17** Remove Print head (with Head base still attached).

- 18** Put the nozzle surface of the removed Print head facing down and carefully place it on top of the Poly-knit wiper in a stainless pan.



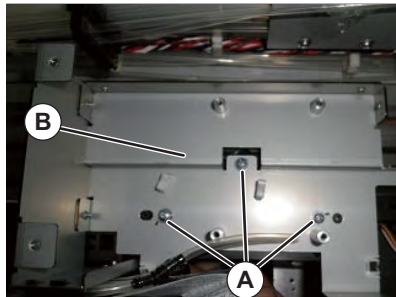
- 19** Remove CR encoder cable from the clamps on the path.

A : Clamp
B : Cable
C :



- 20** Remove the screws (3 pieces) retaining CR Board Base to Cursor.

A : Pan-head screw with spring washer and flat washer M3 x 6
B : CR Board Base



- 21** Remove CR Board Base from Cursor.

CAUTION

CR Board Base is removed while Steel Bare etc. are attached.

As load should not be applied to Steel bare etc. , place it on a bubble wrap.

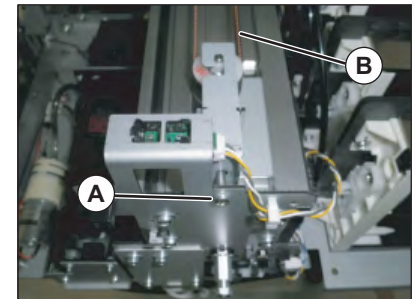


- 22** Remove Cutter Holder Assy.

[3.8.9 Replacing Cutter Holder Assy](#)

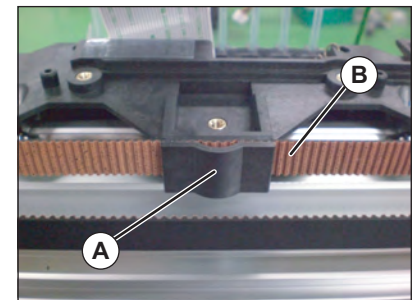
- 23** Loosen the adjusting screw (1 piece), and the loosen tension of CR Belt.

A : Pan head small screw M4 x 35
B : CR Belt



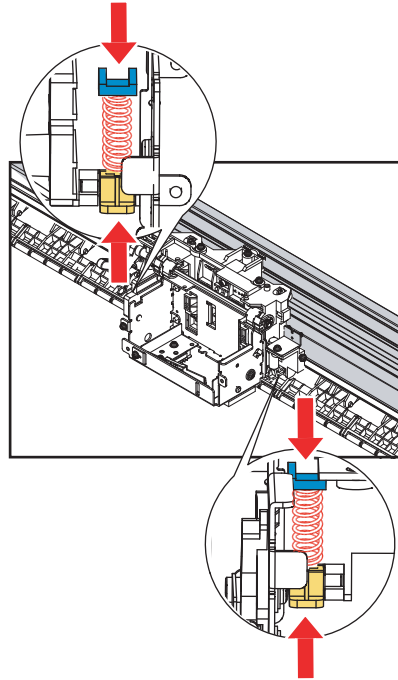
- 24** Remove CR Belt from Cursor.

A : Cursor
B : CR Belt



25 Remove Carriage Assy from Y rail in following steps.

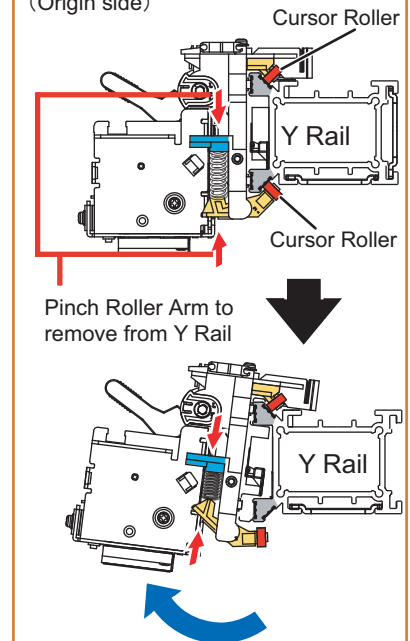
- Tightly hold cursor roller arm on both sides of Carriage Assy and CR cursor side arm with fingers to compress cursor arm spring and remove Carriage Assy from Y rail.
- Remove the both side of cursor roller from Y rail.
- Remove Carriage Assy from Y rail.



NOTE

- When removing Carriage Assy from Y rail, be careful not to scratch T fence.
- Rotate Carriage Assy, and remove it from Y Rail.
- Since the tension of Cursor arm spring is strong, be careful when removing it.
- When removing carriage Assy, be careful not to damage cursor roller with Y rail.
- When placing the removed Carriage Assy down, make sure that Cursor roller does not touch the floor.

Side View
(Origin side)



26 Replace Carriage Assy.

27 To reassemble unit, reverse the removal procedure.

NOTE

It refers to  [3.8.15 Replacing Head](#) and install Head.

28 Perform various adjustments.

 [4.2 Adjustment Item](#)

3.8.18 Replacing Head FG Assy

● Tools & Jigs & Maintenance part


Name	No.	Remarks
Head FG Assy	DF-49018	Exploded View Head Base
Phillips screwdriver No.2	Generic products	-
slotted screwdriver		-


6 Replace Head FG Assy.

7 To reassemble unit, reverse the removal procedure.

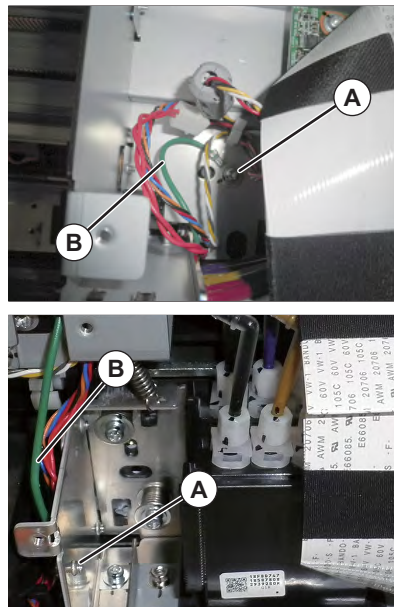
1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

2 Remove Carriage Cover.
 [3.8.2 Removing Carriage Cover](#)

3 Remove CR Board Cover.
 [3.8.3 Removing CR Board Cover](#)

4 Remove Cutter Holder Assy.
 [3.8.9 Replacing Cutter Holder Assy](#)

5 Removing the screws (2 pieces) retaining Head FG Assy.
A : Pan-head screw with spring washer and flat washer M3 x 6
B : Head FG Assy



3.9 Replacing Cable Guide section

3.9.1 Replacing Steel Bare

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Steel Bare Assy	DG-44704	Exploded View Cable Guide
Phillips screwdriver No.2	Generic products	-
slotted screwdriver (precision)	Generic products	-

⚠ CAUTION

Work not to cut a hand etc. with Steel Bare, wearing gloves.

TIP

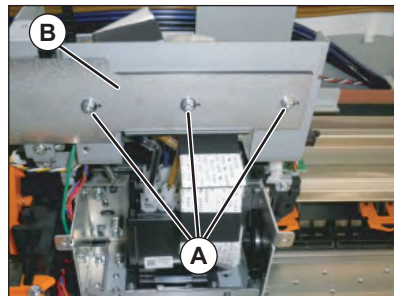
This section describes the procedure to replace the maintenance part, Steel Bare Assy. In this section, it is referred to as Steel Bare.

- 1 Remove Top Cover.
👉 [3.2.1 Removing Top Cover](#)

- 2 Release the Carriage Lock.
👉 [3.8.1 Releasing Carriage Lock](#)

- 3 Remove the screws (3 pieces) retaining Steel Bare.

A : Pan-head screw with spring washer and flat washer M3 x 8
B : Steel Bare

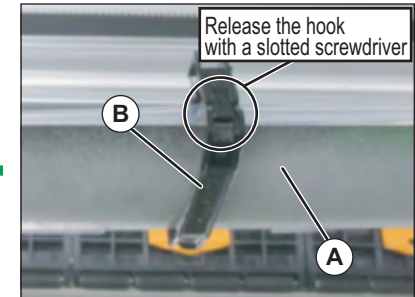


- 4 Remove Clamp Bare (7 pieces).

A : Steel Bare
B : Clamp Bare

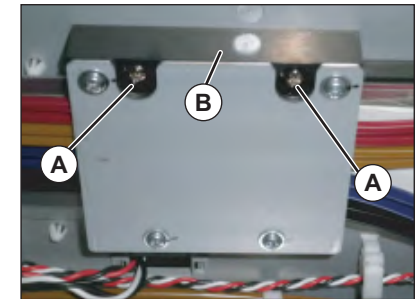
NOTE

Work, while you press down Steel Bare by hand. There is a possibility that it may be injured by Steel Bare being over.



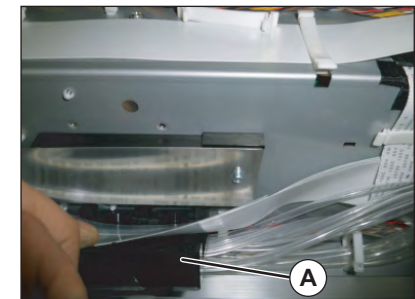
- 5 Remove the screws (2 pieces) retaining Bare Fixing Materials.

A : Tapping screw M3 x 14 P Tight cup
B : Bare Fixing Materials



- 6 Remove Bare Fixing Material with Ink Tubes and FFCs attached to it. (refer to the right images)

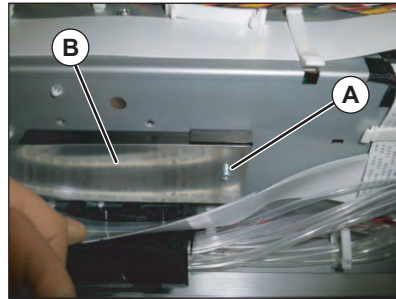
A : Bare Fixing Material



7 Remove the screw retaining Steel Bare.

A : Pan-head screw with spring washer and
flat washer M3 x 8

B : Steel Bare



8 Replace Steel Bare.

9 To reassemble unit, reverse the removal
procedure.

3.9.2 Replacing Tube Guide Film Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Tube Guide Film Assy	DG-44705	Exploded View Cable Guide
Phillips screwdriver No.2	Generic products	-
slotted screwdriver (precision)	Generic products	-

CAUTION


Work not to cut a hand etc. with Steel Bare, wearing gloves.

TIP

This section describes the procedure to replace the maintenance part, Tube Guide Film Assy. In this section, it is referred to as Tube Guide Film.

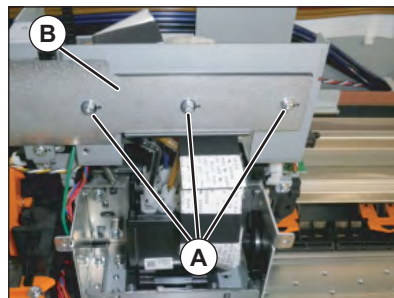
- 1** Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2** Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 3** Remove CR Board Cover.
 [3.8.1 Releasing Carriage Lock](#)

- 4** Remove the screws (3 pieces) retaining Steel Bare.

A : Pan-head screw with spring washer and flat washer M3 x 8
B : Steel Bare

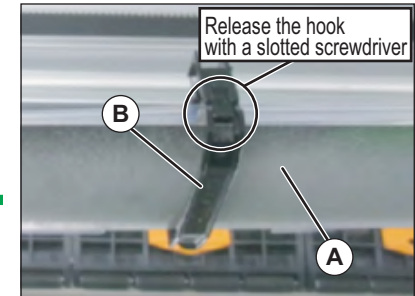


- 5** Remove the clamp that is the nearest to Carriage.

A : Steel Bare
B : Clamp_Bare

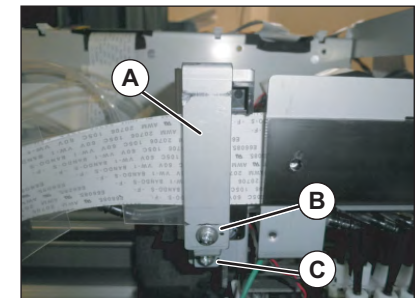
NOTE

Work, while you press down Steel Bare by hand. There is a possibility that it may be injured by Steel Bare being over.



- 6** Remove the screws (2 pieces) retaining CR FFC Fixing Plate.

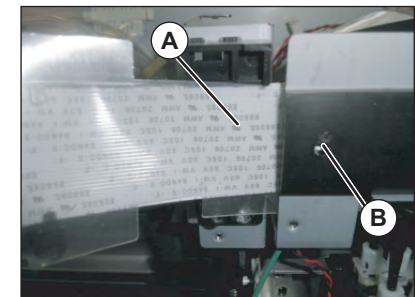
A : CR_FFC Fixing Plate
B : Tapping screw M3 x 8 P Tight cup
C : Tapping screw M3 x 6 S Tight cup



- 7** Remove CR_FFC Fixing Plate.

- 8** Remove Tube Guide Film from CR Board Base.

A : Tube Guide Film
B : CR Board Base

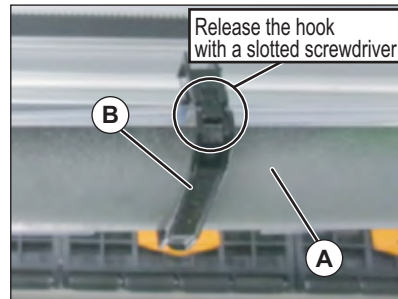


- 9** Remove Clamp Bare and then remove Tube Film.

A : Tube Film
B : Clamp Bare

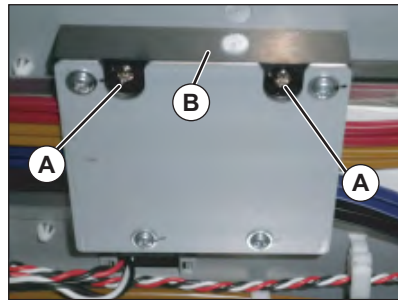
TIP

One place should work at a time. After attaching again the Clamp Bare of the part which removed Tube Film, the next part should work.



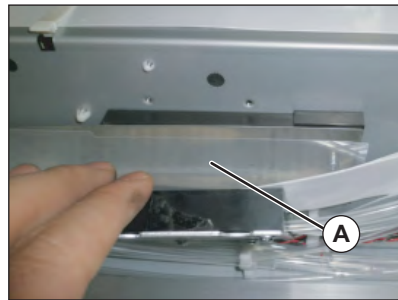
- 10** Remove the screws (2 pieces) retaining Bare Fixing Material.

A : Tapping screw M3 x 14 P Tight cup
B : Bare Fixing Material



- 11** Remove Tube Film.

A : Tube Film



- 12** Replace Tube Guide Film.

- 13** To reassemble unit, reverse the removal procedure.

3.9.3 Replacing CR FFC

● Tools & Jigs & Maintenance part

Name	No.	Remarks
CR FFC Assy	DG-44703	Exploded View Cable Guide
Phillips screwdriver No.2	Generic products	-
slotted screwdriver (precision)		-

CAUTION


Work not to cut a hand etc. with Steel Bare, wearing gloves.

TIP

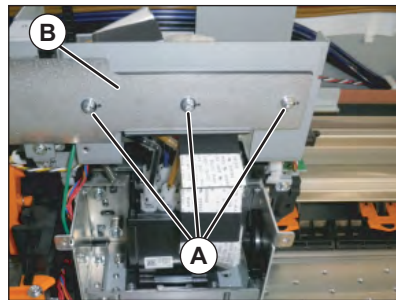
This section describes the procedure to replace the maintenance part, CR FFC Assy. In this section, it is referred to as CR FFC.

- 1** Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2** Release the Carriage Lock.
 [3.8.1 Releasing Carriage Lock](#)

- 3** Remove CR Board Cover.
 [3.8.1 Releasing Carriage Lock](#)

- 4** Remove the screws (3 pieces) retaining Steel Bare.
A : Pan-head screw with spring washer and flat washer M3 x 8
B : Steel Bare

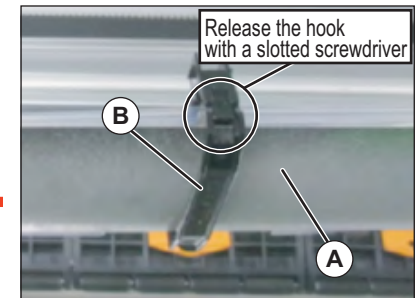


- 5** Remove the clamp that is the nearest to Carriage.

A : Steel Bare
B : Clamp Bare

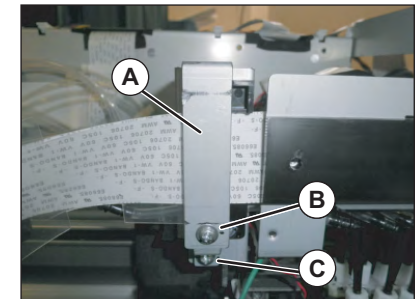
CAUTION

Work, while you press down Steel Bare by hand. There is a possibility that it may be injured by Steel Bare being over.



- 6** Remove the screws (2 pieces) retaining CR FFC Fixing Plate.

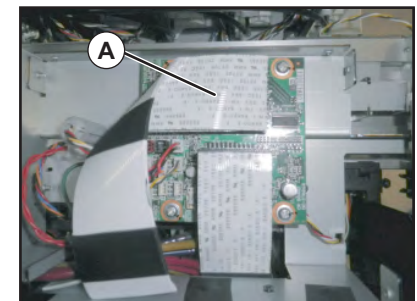
A : CR_FFC Fixing Plate
B : Tapping screw M3 x 8 P Tight cup
C : Tapping screw M3 x 6 S Tight cup



- 7** Remove CR FFC Fixing plate.

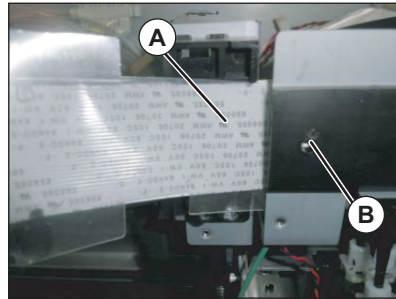
- 8** Remove CR FFC from CR Board.

A : CR_FFC



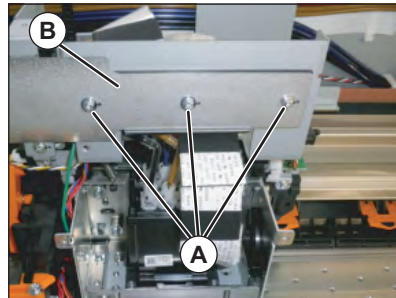
- 9** Remove CR_FFC from CR Board Base.

A : CR_FFC
B : CR Board Base



- 10** Temporary tighten the screws (3 pieces) retaining Steel Bare.

A : Pan-head screw with spring washer and flat washer M3 x 8
B : Steel Bare



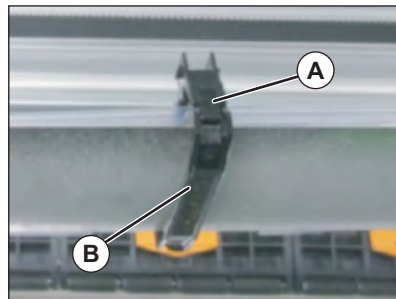
- 11** Remove Clamp Bare.

- 12** Remove Tube Film from Clamp FFC.

A : Clamp_FFC
B : Clamp_Bare

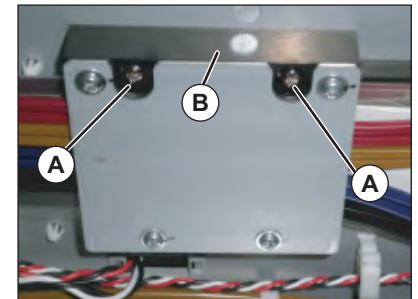
NOTE

One place should work at a time. After attaching again the Clamp Bare of the part which removed CR_FFC, the next part should work.



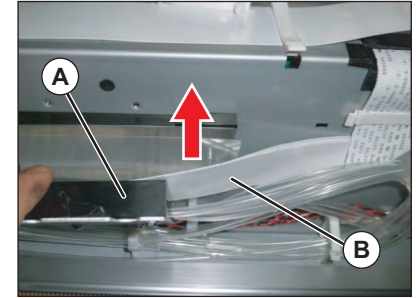
- 13** Remove the screws retaining Bare Fixing Material.

A : Tapping screw M3 x 14 P Tight cup
B : Bare Fixing Material



- 14** Remove CR_FFC from Bare Fixing Material.

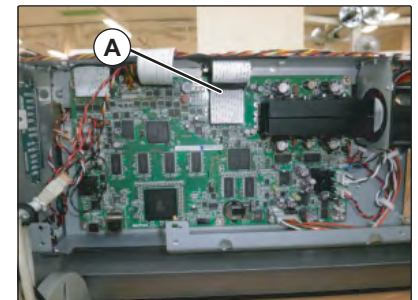
A : Bare Fixing Material
B : CR_FFC



- 15** Remove CR FFC from the clamps on the path.

- 16** Remove CR FFC from MAIN Board.

A : CR_FFC



- 17** Refer to the instructions and bend the new CR_FFC for installation.

 **Folding Direction CR FFC**

- 18** To reassemble unit, reverse the removal procedure.

3.9.4 Replacing Ink Tube

● Tools & Jigs & Maintenance part

Name	No.	Remarks
VJ Tube 3-4(2m)	DG-42723	Exploded View Cable Guide
Phillips screwdriver No.2	Generic products	-
Tube Cutter		-
slotted screwdriver (precision)		-
dedicated cleaning fluid	-	Operation manual

TIP

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

In this section, it is referred to as Ink tube.

NOTE

- If you replace some ink tubes at once, choose either of the followings to avoid the tube reconnection confusion;
 - Replace one by one.
 - Mark the tubes.
- Cut Ink tube (maintenance part) at an appropriate length before use. When cutting, use Tube cutter and make sure that the cut surface is flat. If it is not flat, it may cause ink leakage.
- Insert Ink tube straight into Fitting. Do not rotate and insert it. Doing so may damage the inside of Ink tube and cause ink leakage.



- 1 Perform ink discharge operation to discharge ink entirely from ink path.
[👉 5.6.9 Longstore Menu](#)

NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2 Remove Top Cover.
[👉 3.2.1 Removing Top Cover](#)

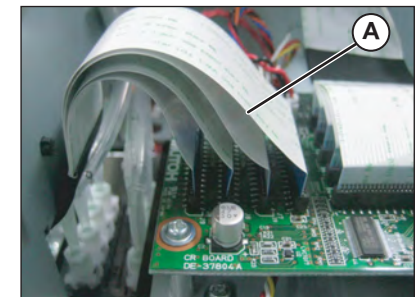
- 3 Remove R Side Cover and L Side Cover.
[👉 3.2.1 Removing Top Cover](#)

- 4 Release the Carriage Lock.
[👉 3.8.1 Releasing Carriage Lock](#)

- 5 Remove CR Board Cover.
[👉 3.8.3 Removing CR Board Cover](#)

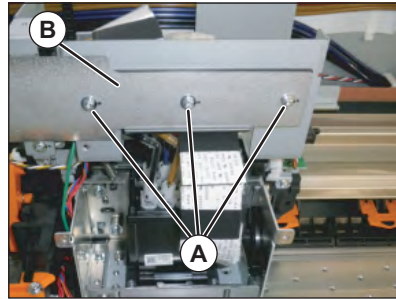
- 6 Remove Carriage Cover.
[👉 3.8.2 Removing Carriage Cover](#)

- 7 Remove Head FFC from CR Board.
A : Head FFC



- 8** Remove the screws (3 pieces) retaining Steel Bare.

A : Pan-head screw with spring washer and flat washer M3 x 8
B : Steel Bare

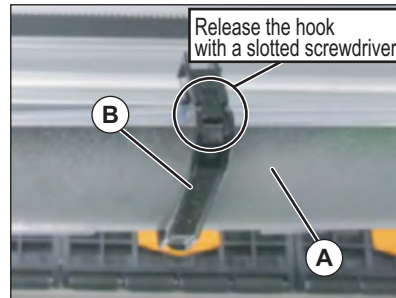


- 9** Remove the clamp that is the nearest to Carriage.

A : Steel Bare
B : Clamp Bare

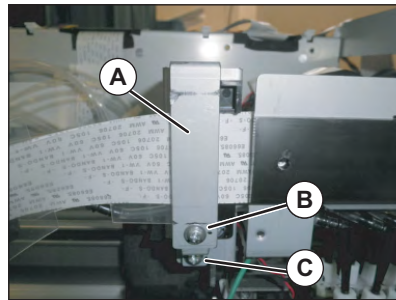
CAUTION

Work, while you press down Steel Bare by hand. There is a possibility that it may be injured by Steel Bare being over.



- 10** Remove the screws (2 pieces) retaining CR FFC Fixing Plate.

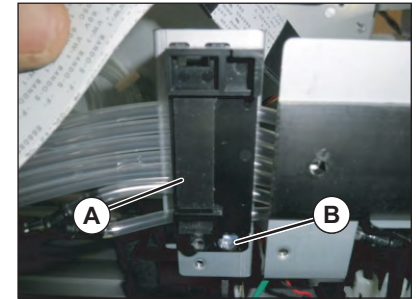
A : CR_FFCFixing Plate
B : Tapping screw M3 x 8 P Tight cup
C : Tapping screw M3 x 6 S Tight cup



- 11** Remove CR_FFC Fixing Plate.

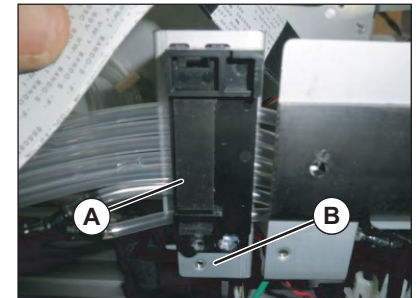
- 12** Remove the screw (1 piece) retaining Tube FFC Mounting Material.

A : Tube FFC Mounting Material
B : Tapping screw M3 x 8 S Tight cup



- 13** Remove Tube FFC Mounting Material from CR Cable Mounting Material.

A : CR_FFC Mounting Material
B : CR Cable Mounting Plate

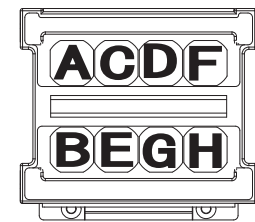


- 14** Mark on all the Fitting Screws.



NOTE

Mark the place to which Tube is attached.
 (ABCDEFGH)



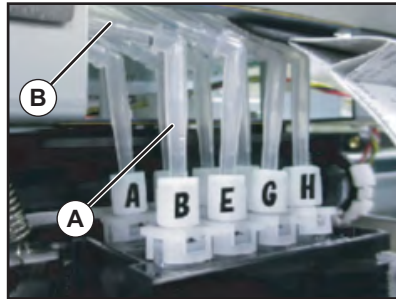
NOTE

The replacement work after this is different every Ink slot.

(1) Ink Slot 1/2/5/6/7/8

- 1** Remove Ink Tube from L Fitting.

A : L Fitting
B : Ink Tube

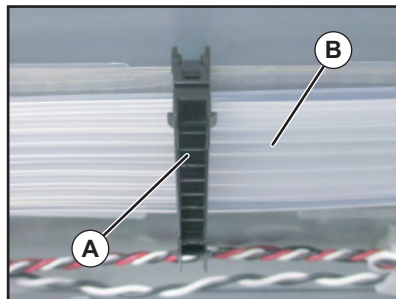


- 2** Remove Ink Tube from Clamp Tubes (7 pieces).

A : Clamp Tube
B : Ink Tube

NOTE

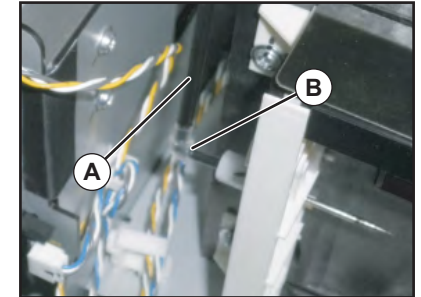
One place should work at a time. After attaching again the Clamp of the part which removed Ink Tube, the next part should work.



- 3** Remove Ink Tube from the clamps on the path.

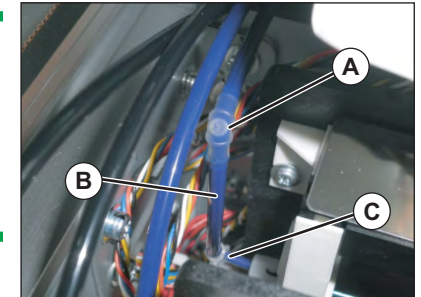
- 4** Remove Ink Tube from L Fitting (the back side of Cartridge Holder).

A : Ink Tube
B : L Fitting

**NOTE**

The inside cartridge differs in a connection method.

A : Mini Fitting
B : Ink Tube (60mm)
C : L Fitting



- 5** Replace Ink Tube.

- 6** To reassemble unit, reverse the removal procedure.

- 7** Charge Ink.
 [5.5 Ink Charging Menu](#)

(2) Ink Slot 3/4

(2-a)Head

- 1** Remove Ink tube from T fitting.

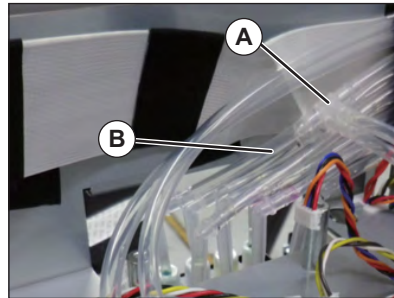
A : T fitting
B : Ink tube

T I P

length

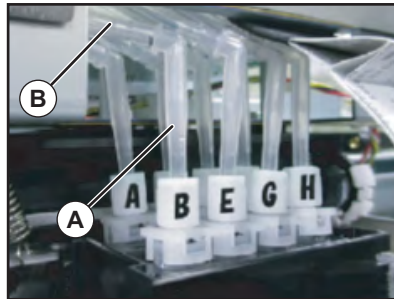
G nozzle: 40mm

H nozzle: 50mm



- 2** Remove Ink tube from L joint.

A : L joint
B : Ink tube



- 3** Replace Ink tube.

- 4** To reassemble unit, reverse the removal procedure.

- 5** Charge Ink.

 [5.5 Ink Charging Menu](#)

(2-b)Circulation Pump (L Joint)

- 1** Remove Ink tube from T fitting.

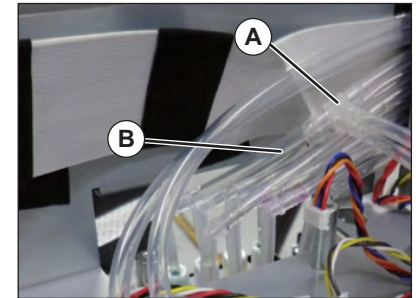
A : T fitting
B : Ink tube

T I P

length

Ink Slot 3: 1245mm

Ink Slot 4: 1200mm

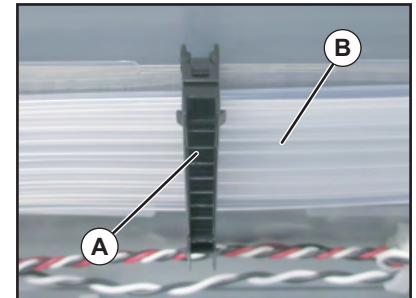


- 2** Remove Ink Tube from Clamp Tubes (7 pieces).

A : Clamp Tube
B : Ink Tube

NOTE

One place should work at a time. After attaching again the Clamp of the part which removed Ink Tube, the next part should work.

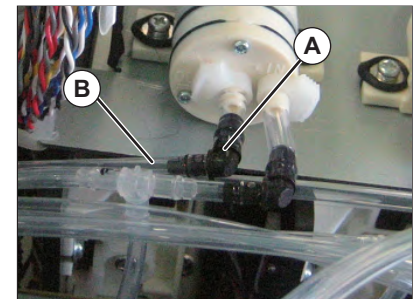


- 3** Remove Ink tube from the L joint of Circulation Pump.

A : L joint
B : Ink tube

- 4** Replace Ink tube.

- 5** To reassemble unit, reverse the removal procedure.



- 6** Charge Ink.

 [5.5 Ink Charging Menu](#)

(2-c)Circulation pump (T fitting)

- 1** Remove Ink tube from T fitting.

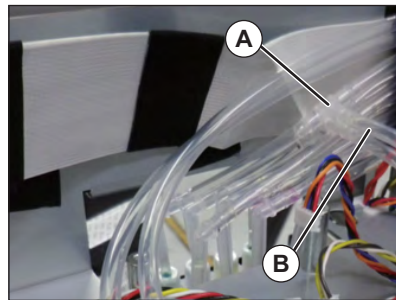
A : T fitting
B : Ink tube

TIP

length

Circulation pump3: 1570mm

Circulation pump4: 1510mm

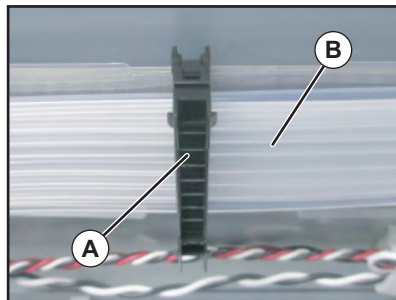


- 2** Remove Ink Tube from Clamp Tubes (7 pieces).

A : Clamp Tube
B : Ink Tube

NOTE

One place should work at a time. After attaching again the Clamp of the part which removed Ink Tube, the next part should work.



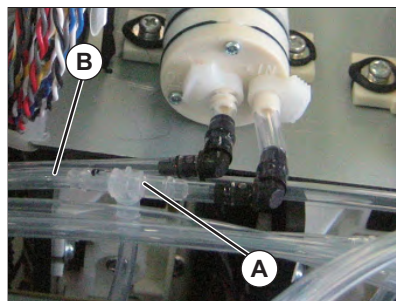
- 3** Remove Ink tube from the T fitting of Circulation pump.

A : T fitting
B : Ink tube

- 4** Replace Ink tube.

- 5** Charge Ink.
 ☞ [5.5 Ink Charging Menu](#)

- 6** Charge Ink.
 ☞ [5.5 Ink Charging Menu](#)



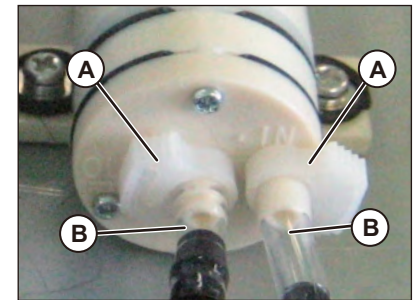
(2-d)Circulation pump peripheral

- 1** Remove Snapper hose clip from Circulation pump.

A : Snapper hose clip
B : Ink tube

NOTE

- Snapper hose clips are re-applied, make sure not to lose it.
- When replacing step 4 "E", the works of step 1 and 2 are not needed.



- 2** Remove Ink tube from Circulation pump.

when replacing A or B

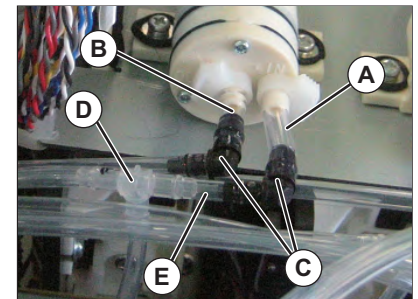
- 3** Remove Ink tube from L joint.

A : Ink tube (30mm)
B : Ink tube (20mm)
C : L joint

when replacing "E"

- 4** Remove Ink tube (20mm) from T fitting from T fitting and L joint.

D : T fitting
E : Ink tube (20mm)



- 5** Replace Ink tube.

- 6** Charge Ink.
 ☞ [5.5 Ink Charging Menu](#)

- 7** Charge Ink.
 ☞ [5.5 Ink Charging Menu](#)

3.10 Replacing Maintenance

3.10.1 Replacing Waste Fluid Pump

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Diaphragm Pump Assy	DG-43907	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

NOTE

Since ink may drip, work covering with a waste clothes etc. downward.

TIP

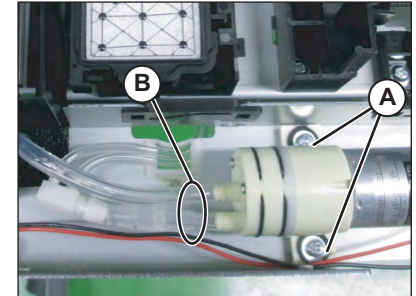
This section describes the procedure to replace the maintenance part, Diaphragm Pump Assy.

In this section, it is referred to as Waste Fluid Pump.

4 Remove Waste Fluid Tubes (2 pieces) from Waste Fluid Pump.

5 Remove the screws (2 pieces) retaining Waste Fluid Pump.

A : Pan-head screw with spring washer and flat washer M3 x 10
B : Waste Fluid Tube (φ3 x 5)



6 Replace Waste Fluid Pump.

7 To reassemble unit, reverse the removal procedure.

1 Removing R Side Cover.

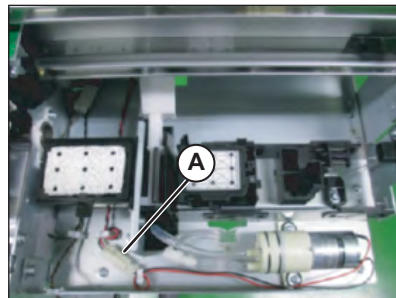
☞ [3.2.2 Removing Side Cover](#)

2 Move Carriage to the left side of Origin.

☞ [3.8.1 Releasing Carriage Lock](#)

3 Remove Pump Motor Cable from Waste Fluid Pump.

A : Connecting point



3.10.2 Replacing Pump Motor Cable

- Tools & Jigs & Maintenance part

Name	No.	Remarks
Vacuum FAN Relay 2 Assy	DF-48995	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Vacuum FAN Relay 2 Assy.
In this section, it is referred to as Pump Motor Cable.

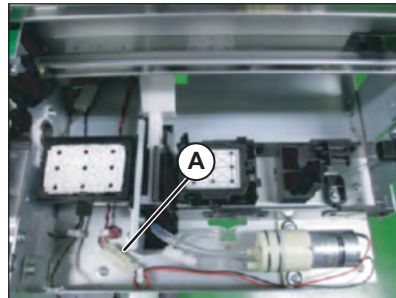
- 1 Removing R Side Cover.
☞ [3.2.2 Removing Side Cover](#)

- 2 Remove Top Cover.
☞ [3.2.1 Removing Top Cover](#)

- 3 Move Carriage to the left side of Origin.
☞ [3.8.1 Releasing Carriage Lock](#)

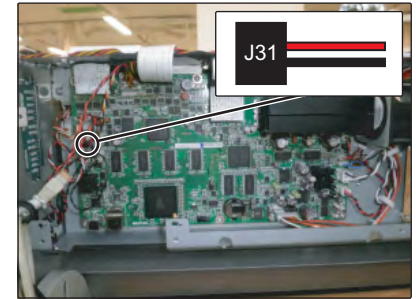
- 4 Remove Pump Motor Cable from Waste Fluid Pump.

A : Connecting point



- 5 Remove Pump relay cable from the clamps on the path.

- 6 Remove Pump Motor Cable from MAIN Board.



- 7 Replacing Pump Motor Cable.

- 8 To reassemble unit, reverse the removal procedure.

3.10.3 Replacing Wiper

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Cleaner Head Assy	DF-49687	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-
Tweezers		-

TIP

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

In this section, it is referred to as Wiper.

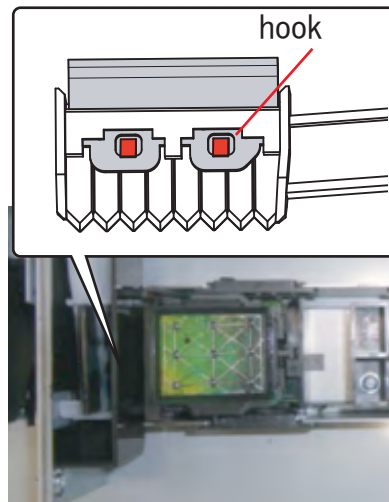
1 Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

2 Move Carriage to the opposite side of Platen.

 [3.8.1 Releasing Carriage Lock](#)

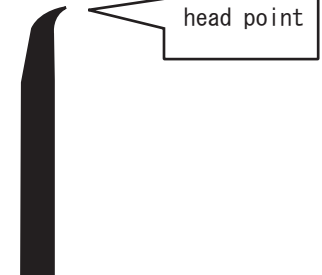
3 Remove the wiper by tweezers and so on.



NOTE

When reassembling the 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.



4 To reassemble unit, reverse the removal procedure.

3.10.4 Replacing Wiper Solenoid Cable


● Tools & Jigs & Maintenance part

Name	No.	Remarks
Wiper SOL Cable Assy	DG-44723	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

TIP

In this section describes the procedure to replace the maintenance part, Wiper SOL Cable Assy. In this section, it is referred to as Wiper solenoid cable.

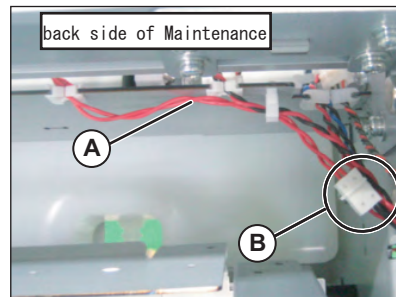
- 1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2 Move Carriage to the opposite side of Platen.
 [3.8.1 Releasing Carriage Lock](#)

- 3 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

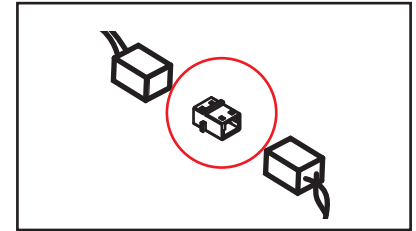
- 4 Remove Wiper Solenoid Relay Cable from Wiper Solenoid.

A : the cable of Wiper Solenoid
B : Connecting point



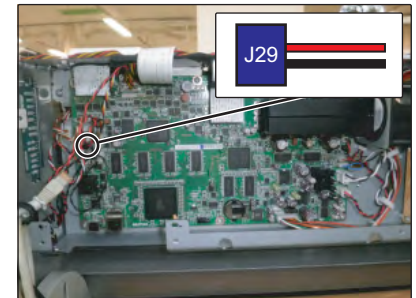
NOTE

Wiper solenoid and Wiper solenoid Cable are connected in the post header assembly. Please do not lose the post header assembly.



- 5 Remove the Wiper solenoid cable from the clamps on the path.

- 6 Remove the Wiper solenoid cable from the Main board Assy.



- 7 To reassemble unit, reverse the removal procedure.

3.10.5 Replacing Wiper Solenoid

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Wiper Solenoid SDC630KG	DG-41090	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-
longnose pliers		for removing a spring pin


NOTE

Since ink may drip, work covering with a waste clothes etc. downward.


TIP

This section describes the procedure to replace the maintenance part, Wiper Solenoid SDC630KG.

In this section, it is referred to as Wiper Solenoid.

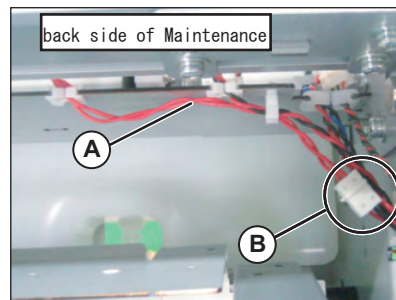
- 1 Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2 Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

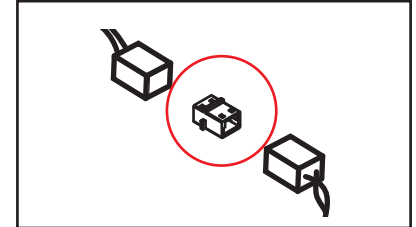
- 3 Move Carriage to the left side of Origin.
 [3.8.1 Releasing Carriage Lock](#)

- 4 Remove Wiper Solenoid Relay Cable from Wiper Solenoid.

A : the cable of Wiper Solenoid
B : Connecting point

**NOTE**

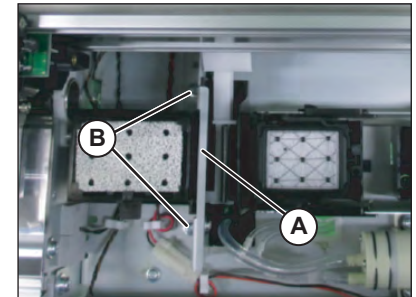
Solenoid and Media thickness detection sensor relay cable are connected in the post header assembly. Please do not lose the post header assembly



- 5 Remove the screws (2 pieces) retaining Wiper holding plate.

A : Wiper holding plate

B : Tapping screw M3 x 6 S tight cup

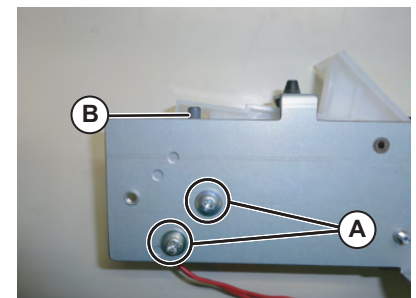


- 6 Remove Wiper holder plate (Wiper Assy).

- 7 Remove the screws(2 pieces) retaining Wiper Solenoid.

A : Pan-head screw with spring washer and flat washer M3 x 5

B : Wiper Solenoid

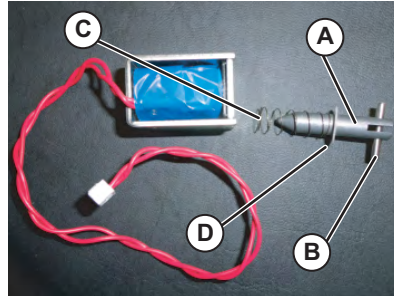


- 8** Remove the spring, washer and spring pin from plunger.

A : Plunger
B : Spring pin
C : Spring
D : Washer

NOTE

Spring, washer and spring pin will be reused. Take care not to lose them.



- 9** Replace it with new Wiper Solenoid.

- 10** To reassemble unit, reverse the removal procedure.

3.10.6 Replacing Cap Head Assy


- Tools & Jigs & Maintenance part

Name	No.	Remarks
Cap Head Assy	DG-41179	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

NOTE

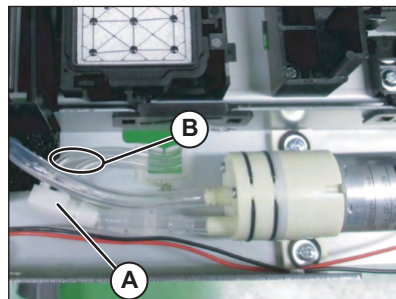
Since ink may drip, work covering with a waste clothes etc. downward.

- 1** Removing R Side Cover.
 [3.2.2 Removing Side Cover](#)

- 2** Move Carriage to the opposite side of Platen.
 [3.8.1 Releasing Carriage Lock](#)

- 3** Remove cap tube (4 pieces) from the joint (2 pieces).

A : Joint
B : Cap tube



- 4** Remove while pressing the cap head Assy, so as to rotate in the direction of the arrow.



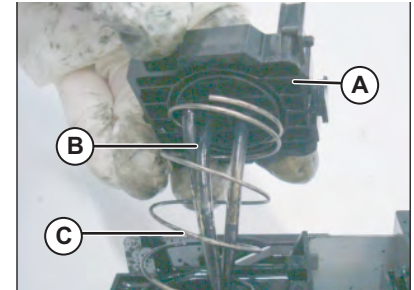
- 5** Remove Cap Tubes (3 pieces) from Cap Head Assy.

- 6** Remove Cap Head Assy from Maintenance Slide Base.

A : Cap Head Assy

B : Cap Tube

C : Cap Spring

**NOTE**

Cap Spring and the Cap tubes will be re-used.

- 7** 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.

3.10.7 Replacing Maintenance Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
VJ628 Periodic Maintenance Kit	DG-44737	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

NOTE

Since ink may drip, work covering with a waste clothes etc. downward.

TIP

This section describes the procedure to replace the maintenance part,VJ628 Periodic Maintenance Kit (Maintenance Assy and Wiper).

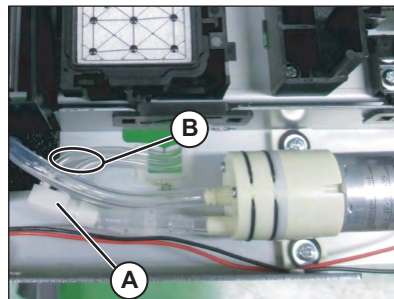
(1) Maintenance Assy

- 1 Remove R Side Cover.
🔧 [3.2.2 Removing Side Cover](#)

- 2 Move Carriage to the opposite side of Platen.
🔧 [3.8.1 Releasing Carriage Lock](#)

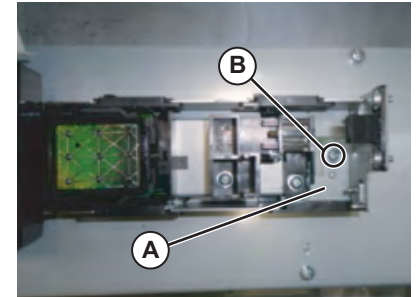
- 3 Remove cap tube (2 pieces) from the joint.

A : Joint
B : Cap tube



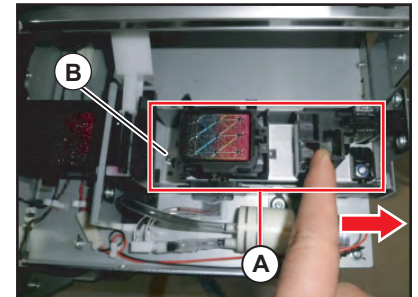
- 4 Remove the screw (1 piece) retaining the right side of Maintenance Slide Base.

A : Maintenance Slide Base
B : Tapping screw M3 x 6 S Tight cup



- 5 Remove screw (1 piece) retaining the left side of Maintenance slide base.
(Remove it by shifting Slide Base S in the direction of red arrow.)

A : Slide base S
B : Tapping screw M3 x 6 S Tight cup



- 6 Replacing Maintenance Assy.

- 7 To reassemble unit, reverse the removal procedure.

(2) Wiper

For replacing Wiper peripheral, see the procedure of replacing Wiper solenoid.

🔧 [3.10.5 Replacing Wiper Solenoid](#)

3.10.8 Replacing Waste Fluid Tank

- Tools & Jigs & Maintenance part

Name	No.	Remarks
Waste Fluid Tank Unit Assy	DG-45368	Exploded View Maintenance
Phillips screwdriver No.2	Generic products	-

TIP

This section describes the procedure to replace the maintenance part, Waste Fluid Tank Unit Assy.
In this section, it is referred to as Waste Fluid Tank.

- 4** Remove Waste Fluid Tank Holder.

NOTE

Since ink may drip, work covering with a waste clothes etc. downward.

- 5** Replace Waste Fluid Tank.

- 6** To reassemble unit, reverse the removal procedure.

- 1** Removing R Side Cover.

 [3.2.2 Removing Side Cover](#)

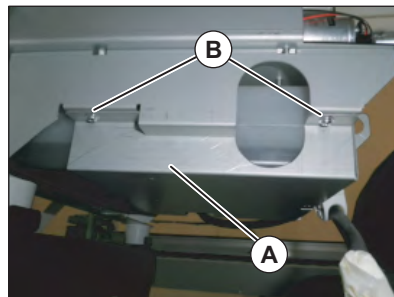
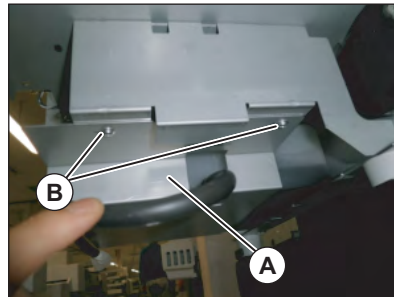
- 2** Move Carriage to the opposite side of Platen.

 [3.8.1 Releasing Carriage Lock](#)

- 3** Remove the screws (4 pieces) retaining Waste Fluid Tank Holder.

A : Waste Fluid Tank Holder

B : Tapping screw M3 x 6 S Tight cup




3.11 Replacing IH

3.11.1 Removing Pump stay

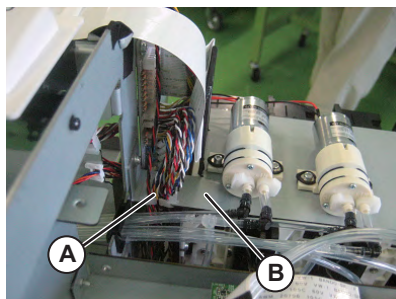
● Tools & Jigs & Maintenance part

Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-
Flat-shaped ratchet driver		-

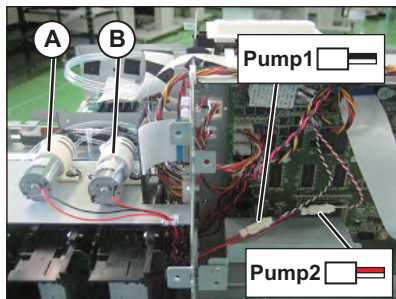
1 Remove Top cover
 [3.2.1 Removing Top Cover](#)

2 Remove R side cover.
 [3.2.2 Removing Side Cover](#)

3 Remove the cables from Pump stay.
A : Cables
B : Pump stay

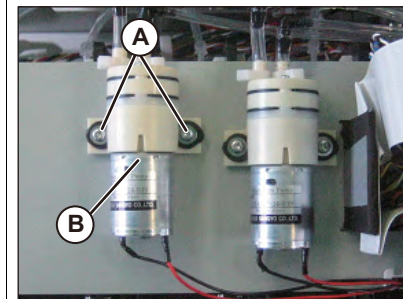


4 Remove Circulation pump relay cable from Circulation pump.
A : Circulation pump1
B : Circulation pump2



5 Remove the screws (x 2) retaining Circulation pump (x 2).

A : Pan-head screw with spring washer and flat washer M3x10
B : Circulation pump

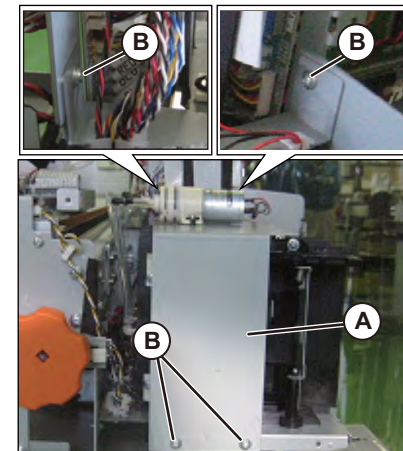


6 Remove Circulation pump.
 Put the Circulation pump in a state in which the ink tube no load.

NOTE

When it takes a load for an ink tube, there is a risk that ink leaks from a connecting point.

7 Remove the screws (x 4) retaining Pump stay.
A : Pump stay
B : Tapping screw M3 x 6 S Tight cup




8 Remove Pump stay.


9 To reassemble unit, reverse the removal procedure.

3.11.2 Removing Heater Board Stay

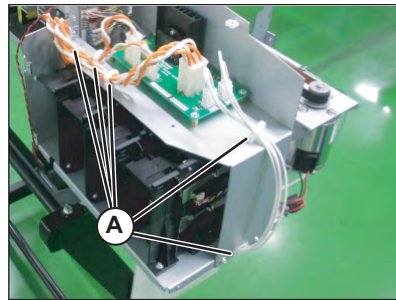
● Tools & Jigs & Maintenance part

Name	No.	Remarks
Phillips screwdriver No.2	Generic products	-

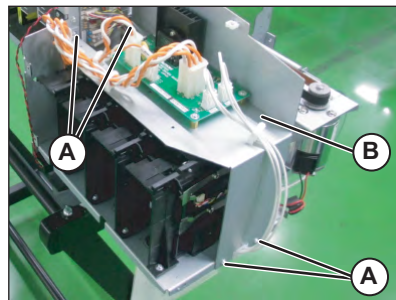
1 Remove Top cover
 [3.2.1 Removing Top Cover](#)

2 Remove L side cover.
 [3.2.2 Removing Side Cover](#)

3 Remove all the cables from HEATER DRIVE Board.
4 Remove the removed cables from the clamps.
A : clamp



5 Remove the screws (4 pieces) retaining Heater Board Stay.
A : Tapping screw M3 x 6 S Tight cup
B : Heater Board Stay




6 Remove Heater Board Stay.

7 取付けは、取外しと逆の手順で行います。

3.11.3 Replacing Cartridge Holder

● Tools & Jigs & Maintenance part

Name	No.	Remarks
I/C Holder Assy1	DG-45562	Exploded View IH R
I/C Holder Assy2	DG-45563	Exploded View IH L
I/C Holder Assy3	DG-45564	
I/C Holder Assy4	DG-45565	
Phillips screwdriver No.2	Generic products	-
dedicated fluid	-	 Operation Manual

TIP

This section describes the procedure to replace the maintenance part, I/C Holder Assy. In this section, it is referred to as Cartridge Holder.

- 1 Perform ink discharge operation to discharge ink entirely from ink path.

 [5.6.9 Longstore Menu](#)

NOTE

After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2 Removing Side Cover (R or L).

 [3.2.2 Removing Side Cover](#)

- 3 Removing Pump Stay.

 [3.11.1 Removing Pump stay](#)

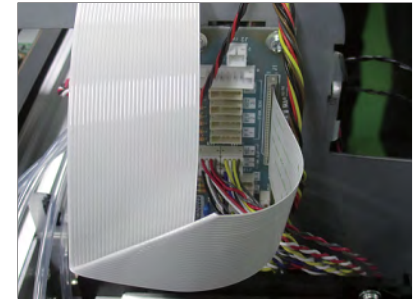
NOTE

This procedure is needed for replacing R-side.

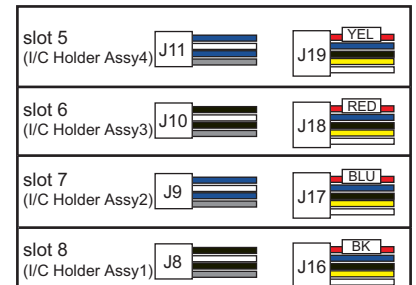
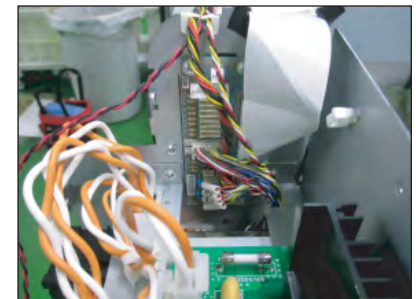
- 4 Remove the cable for exchange (2 sets each) from JUNCTION Board.

 [3.5.11 Replacing JUNCTION Board](#)


JUNCTION Board R



JUNCTION Board L



- 5** Remove the removed cables from the clamps on the path.

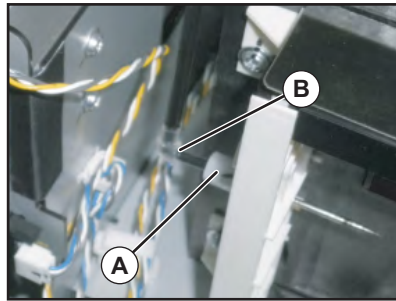
- 6** Removing Heater Board Stay.
 [3.11.2 Removing Heater Board Stay](#)

NOTE

This procedure is needed for replacing L-side.

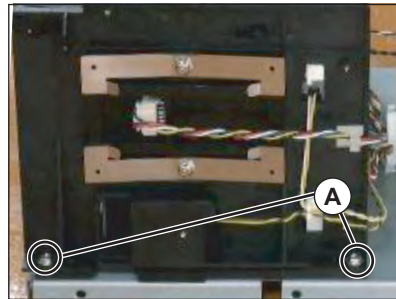
- 7** Loosen Joint Screw and then remove L Fitting from Cartridge Holder.

A : Joint Screw
B : L Fitting



- 8** Remove the screws (2 pieces) retaining Cartridge Holder to Cartridge Base.

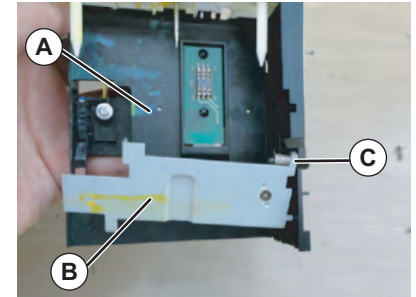
A : Tapping screw M3 x 12S Tight cup



- 9** Remove Cartridge Holder.

- 10** Remove IH Cap and Twist Spring from Cartridge Holder.

A : Cartridge Holder
B : IH Cap
C : Twist Spring

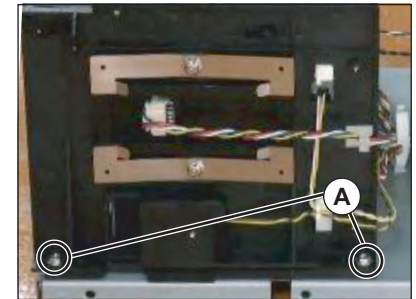


- 11** Replace Cartridge Holder.

- 12** Assemble the removed IH Cap and Twist Spring to Cartridge Holder.

- 13** Assemble Cartridge Holder to Cartridge Base.

A : Tapping screw M3 x 12S Tight cup



- 14** Attach the new O ring to the removed fitting, and connect it to cartridge holder with the Joint screw.

NOTE

- Replace O ring attached to Fitting with New one.
- Attach O ring after dipping in dedicated cleaning fluid.

- 15** To reassemble unit, reverse the removal procedure.

3.11.4 Replacing INK ID Board Assy

● Tools & Jigs & Maintenance part

Name	No.	Remarks
INK ID Board Assy	DF-43968	Exploded View IH R/IH L
Phillips screwdriver No.2	Generic products	-

1 Removing Side Cover (R or L).

 [3.2.2 Removing Side Cover](#)

2 Removing Pump Stay.

 [3.11.1 Removing Pump stay](#)

NOTE

This procedure is needed for replacing R-side.

3 Removing Heater Board Stay.

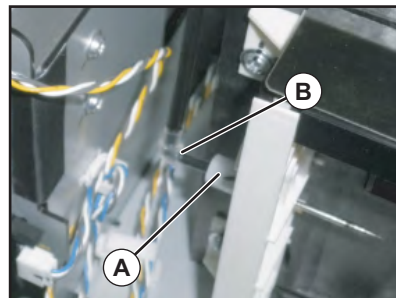
 [3.11.2 Removing Heater Board Stay](#)

NOTE

This procedure is needed for replacing L-side.

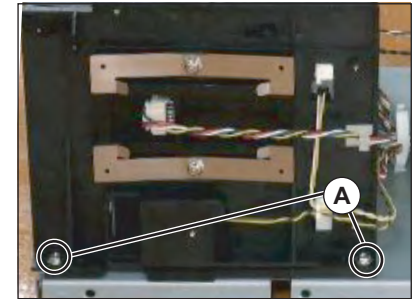
4 Loosen the joint screw and remove the ink tube (fitting) from Cartridge holder.

A : Joint Screw
B : L Fitting



5 Remove the screws (2 pieces) retaining Cartridge Holder to Cartridge Base.

A : Tapping screw M3 x 12S Tight cup

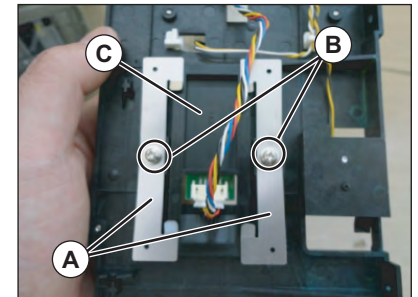


6 Remove the screws (2 pieces) retaining Holder Pressure Spring (2 pieces).

A : Holder Pressure Spring

B : P Tight cup M3 x 6

C : INK ID Board Assy



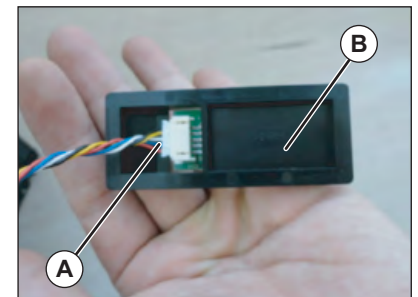
7 Remove Holder Pressure Spring.

8 Remove INK ID Board Assy.

9 Remove INK ID Cable Assy from INK ID Board Assy.

A : INK ID Cable Assy

B : INK ID Board Assy



10 Replace INK ID Board Assy.

11 To reassemble unit, reverse the removal procedure.

3.11.5 Replacing Holder Pressure Spring

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Holder Pressure Spring	DF-43967	Exploded View IH R Exploded View IH L
Phillips screwdriver No.2	Generic products	-

TIP

The replacement procedure is common to both R side and L side.
The procedure described here is that of R side.

1 Removing Side Cover (R or L).

☞ [3.2.2 Removing Side Cover](#)

2 Removing Pump Stay.

☞ [3.11.1 Removing Pump stay](#)

NOTE

This procedure is needed for replacing R-side.

3 Removing Heater Board Stay.

☞ [3.11.2 Removing Heater Board Stay](#)

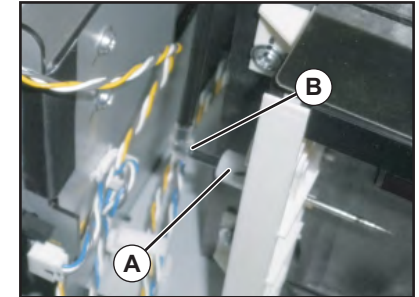
NOTE

This procedure is needed for replacing L-side.

4 Loosen the joint screw and remove the ink tube (fitting) from Cartridge holder.

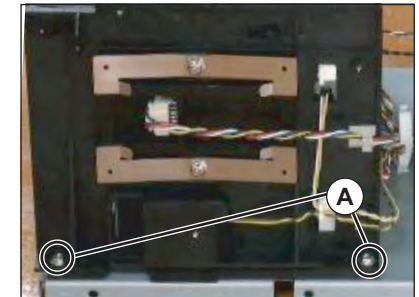
A : Joint Screw

B : L Fitting



5 Remove the screws (2 pieces) retaining Cartridge Holder to Cartridge Base.

A : Tapping screw M3 x 12S Tight cup

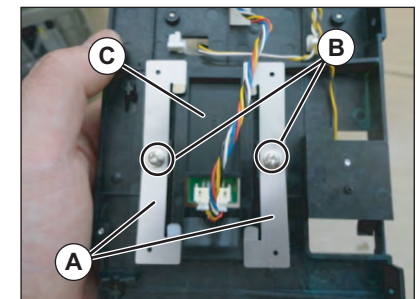


6 Remove the screws (2 pieces) retaining Holder Pressure Spring (2 pieces).

A : Holder Pressure Spring

B : P Tight cup M3 x 6

C : INK ID Board Assy



7 Replace Holder Pressure Spring.

8 To reassemble unit, reverse the removal procedure.

3.11.6 Replacing HEATER DRIVE Board

● Tools & Jigs & Maintenance part

Name	No.	Remarks
AC JUNCTION Board Assy	DG-44710	Exploded View IH L
Phillips screwdriver No.2	Generic products	-

TIP

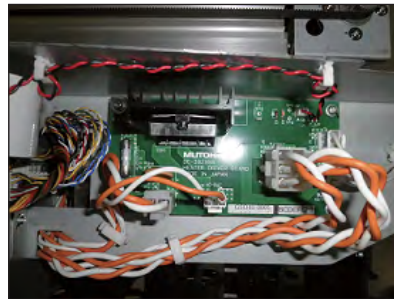
This section describes the procedure to replace the maintenance part, AC JUNCTION Board Assy.
In this section, it is referred to as HEATER DRIVE Board.

5 To reassemble unit, reverse the removal procedure.

1 Removing L Side Cover.

 [3.2.2 Removing Side Cover](#)

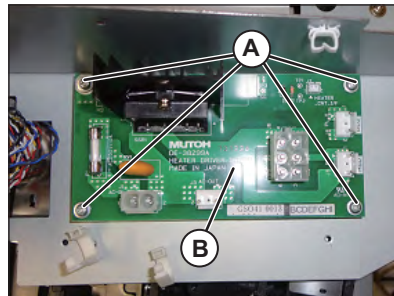
2 Remove all the cables from HEATER DRIVE Board.



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

A : Cup screw M3x6 Zn-CM2

B : HEATER DRIVE Board



4 Replace HEATER DRIVE Board.

3.11.7 Replacing AC JUNC CNT Cable Assy

- Tools & Jigs & Maintenance part

Name	No.	Remarks
AC JUNC CNT Cable Assy	DG-44711	Exploded View IH L
Phillips Screwdriver No.2	generic product	-

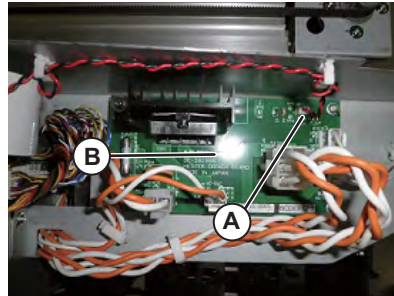
- 7** To reassemble unit, reverse the removal procedure.

- 1** Remove Top Cover.
 [3.2.1 Removing Top Cover](#)

- 2** Removing L Side Cover.
 [3.2.2 Removing Side Cover](#)

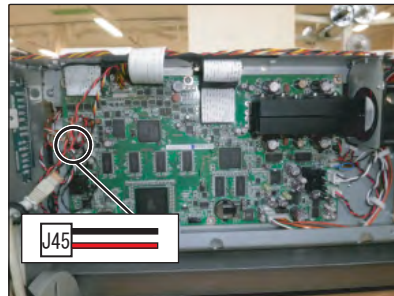
- 3** Remove JUNC CNT Cable Assy from HEATER DRIVE Board.

A : AC JUNC CNT Cable Assy
B : HEATER DRIVE Board



- 4** Remove the cables from the clamps on the path.

- 5** Remove JUNC CNT Cable Assy from MAIN Board.



- 6** Replace AC JUNC CNT Cable Assy.

3.11.8 Replacing Circulation pump

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Diaphragm pump Assy	DG-43907	Exploded View Circulation pump
Phillips Screwdriver No.2	generic product	-

TIP

This section describes the procedure to replace the maintenance part, Diaphragm pump Assy.
In this section, it is referred to as Circulation pump.

- 1 Perform ink discharge operation to discharge ink entirely from ink path.
👉 [5.6.9 Longstore Menu](#)

NOTE

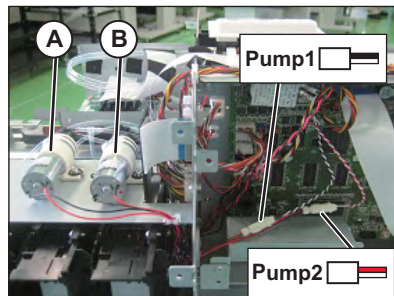
After ink discharge operation, make sure that Ink cartridge is pulled out.

- 2 Remove Top Cover.
👉 [3.2.1 Removing Top Cover](#)

- 3 Removing R Side Cover.
👉 [3.2.2 Removing Side Cover](#)

- 4 Remove the Circulation pump relay cable for replacement from Circulation pump.

A : Circulation pump1
B : Circulation pump2



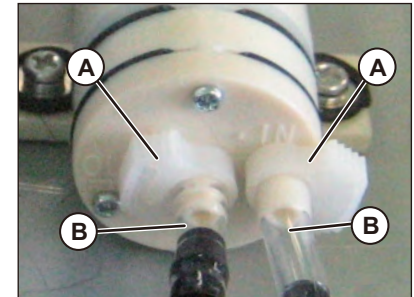
- 5 Remove the cable of Circulation pump from the clamps on the path.

- 6 Remove the snapper hose clips from Circulation pump.

A : Snapper hose clip
B : Ink tube

NOTE

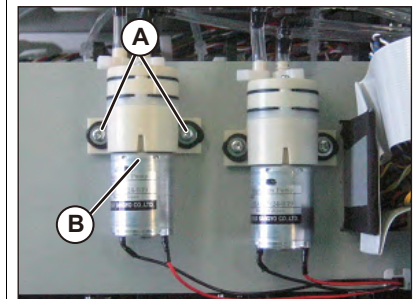
Snapper hose clips are re-applied, make sure not to lose it.



- 7 Remove Ink tubes from Circulation pump.

- 8 Remove the screws (x 2) retaining Circulation pump.

A : Pan-head screw with spring washer and flat washer M3x10
B : Circulation pump



- 9 Replace Circulation pump.

- 10 To reassemble unit, reverse the removal procedure.

3.11.9 Replacing Circulation Pump Relay Cable

● Tools & Jigs & Maintenance part

Name	No.	Remarks
Circulation Pump Relay Cable Assy	DG-45567	Exploded View "Circulation Pump"
Phillips Screwdriver No.2	generic product	-

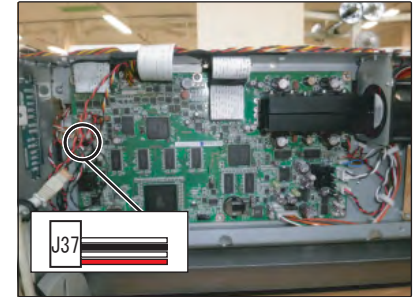
TIP

TIP

This section describes the procedure to replace the maintenance part, Circulation Pump Relay Cable Assy..

In this section, it is referred to as Circulation pump Relay Cable Assy.

- 5** Remove the circulation pump relay cable from the main board.



- 6** Replace the circulation pump relay cable.

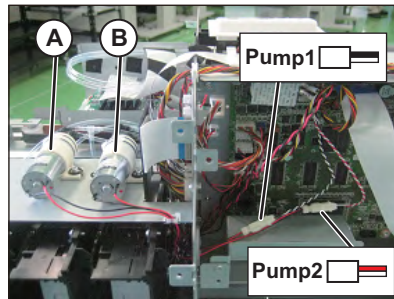
- 7** To reassemble unit, reverse the removal procedure.

- 1** Remove Top Cover.
[3.2.1 Removing Top Cover](#)

- 2** Removing R Side Cover.
[3.2.2 Removing Side Cover](#)

- 3** Remove the circulation pump relay cable.

A : Circulation Pump1
B : Circulation Pump2



- 4** Remove the circulation pump relay cable from the clamps on the path.

4 Adjustment

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4.1 Introduction

This chapter provides information on necessary adjustment items and procedure.

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 4-1 Adjustment Item List", you must always adjust the printout quality using the self-diagnosis function referring to Table 4-1 "Adjustment Item List".

Table 4-1 Adjustment Item












Part replaced or adjusted	Adjustment order	Adjustment item	Reference
Print head	1	Head cleaning	 "5.6.9 Longstore Menu
	2	Head rank input (including initial ink charge)	 "(2) Head Rank  "5.5 Ink Charging Menu
	3	Head nozzle check	 "5.6.2 Head Nozzle Check Menu
	4	Head height adjustment	 "4.8 Head Height Adjustment
	5	Head slant check	 "5.6.4 Head Slant Check Menu  "4.7 Head Adjustment
	6	Uni-D/Bi-D adjustment	 "5.6.5 Uni-D/ Bi-D Adjustment Menu
	7	Test printing	 "5.6.8 Test Printing Menu
	8	Reset of head unit life counter	 "5.9.1 Parameter Initialization Menu
MAIN Board	1	Differs depending on the status of MAIN Board.	 4.3 Working with MUTOH Service Assistance Software

Table 4-1 Adjustment Item(Continued)(Continued)































Part replaced or adjusted	Adjustment order	Adjustment item	Reference
CR Motor	1	CR speed reduction belt adjustment	 "4.6 CR Belt Tension Adjustment
	2	Reset of Life counter	 6.3.4 Counter Initialization Menu
	3	Uni-D/Bi-D adjustment	 "5.6.5 Uni-D/ Bi-D Adjustment Menu
	4	Side margin adjustment	 "5.6.7 Margin adjustment Menu
	5	Test printing	 "5.6.8 Test Printing Menu
PF Motor	1	X speed reduction belt adjustment	 "4.4 X Speed Reduction Belt Tension Adjustment
	2	Test printing	 "5.6.8 Test Printing Menu
	3	Reset of Life counter	 6.3.4 Counter Initialization Menu
P_EDGE Sensor	1	P_EDGE Sensor sensitivity adjustment	 "5.6.1 Rear/ Edge Sensor Adjustment
	2	Side margin adjustment	 "5.6.7 Margin adjustment Menu
P_REAR Sensor	1	P_Rear Sensor sensitivity adjustment	 "5.6.1 Rear/ Edge Sensor Adjustment
PF Encoder	1	PF encoder inspection	 "5.4.5 Encoder Menu
	2	Test printing	 "5.6.8 Test Printing Menu
T Fence	1	CR encoder inspection	 "5.4.5 Encoder Menu
	2	Uni-D / Bi-D Adjustment	 "5.6.5 Uni-D/ Bi-D Adjustment Menu
	3	Side margin adjustment	 "5.6.7 Margin adjustment Menu
	4	Test printing	 "5.6.8 Test Printing Menu

Table 4-1 Adjustment Item(Continued)(Continued)

Part replaced or adjusted	Adjustment order	Adjustment item	Reference
CR Return Pulley	1	CR belt tension adjustment	 "4.6CR Belt Tension Adjustment
	2	Uni-D/Bi-D adjustment	 "5.6.5Uni-D/ Bi-D Adjustment Menu
	3	Side adjustment	 "5.6.7Margin adjustment Menu
	4	Test printing	 "5.6.8Test Printing Menu
Carriage Assy	1	PG height adjustment	 "4.8Head Height Adjustment
	2	CR encoder inspection	 "5.4.5Encoder Menu
	3	Paper Edge Sensor Assy sensitivity adjustment	 "5.6.1Rear/ Edge Sensor Adjustment
	4	Sequential printing endurance operation check	 "5.11.9General Endurance Menu
	5	Margin adjustment	 "5.6.7Margin adjustment Menu
	6	Head nozzle check	 "5.6.2Head Nozzle Check Menu
	7	Head slant adjustment	 "5.6.4Head Slant Check Menu
	8	Uni-D/ Bi-D adjustment	 "5.6.5Uni-D/ Bi-D Adjustment Menu
	9	Test printing	 "5.6.8Test Printing Menu

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.

 ["4.3.10Board Replacement Wizard"](#)

NOTE

- This manual is edited based on MUTOH Service Assistance Ver.4.0.5
- Use the most recent version of MSA for the printer.

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.

 [4.3.8 Receiving Backup Parameters](#)

 [4.3.9 Sending Backup Parameter](#)

4.3.2 Jigs and Tools

The following jigs and tools are required for MUTOH Service Assistance.

- Windows PC:
 - With one of the following installed: Windows 98 / Windows 98 SE / Windows Me / Windows 2000 / Windows XP / Windows Vista / Windows 7
 - 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

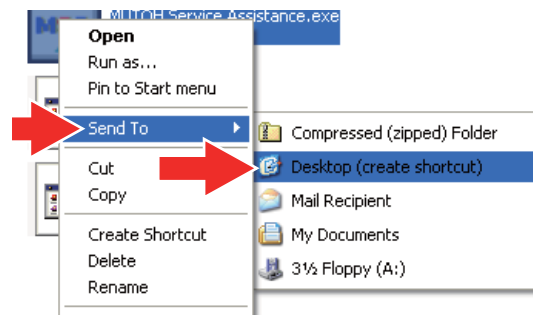
- 1 Insert the MSA installed CD-ROM in the CD-ROM drive of the PC, and open from "My Computer".
- 2 Drag and drop the "MUTOH Service Assistance" folder to the desktop to copy the files.

(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 Shortcut to MUTOH Service Assistance icon is created on the desktop.

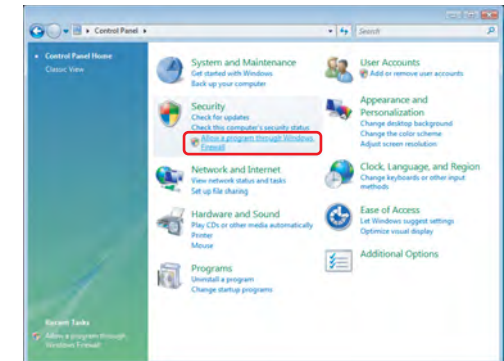
(3) Setting Exceptions in Windows Firewall Setting

If you use Windows Vista or later as the OS, you need to add MSA to the exceptions list for Windows Firewall.

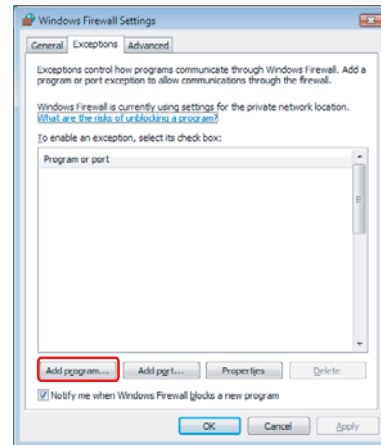
NOTE

- 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.

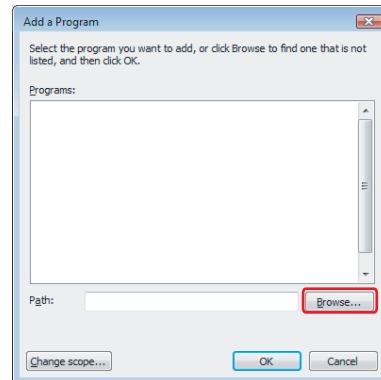
- 1 Click the Start button and then click [Control Panel].
 - The "Control Panel" window will be displayed.
- 2 Click "Allow a program through Windows Firewall".



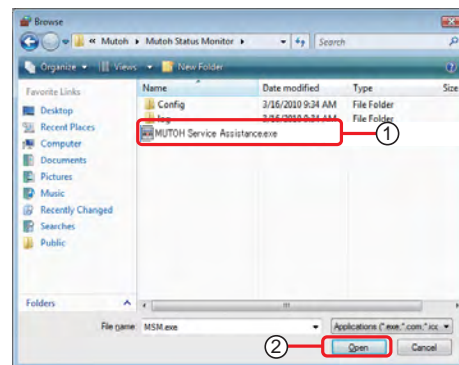
- 3 When the “Windows Firewall Settings” window is displayed, select the “Exceptions” tab and click the “Add program...” button.



- 4 When the “Add a Program” window is displayed, click the “Browse...” button.

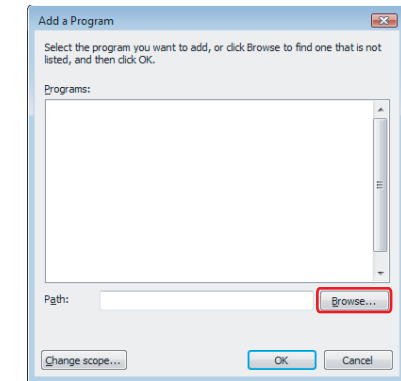


- 5 When the “Browse” window is displayed, select Mutoh Service Assistance.exe where the Mutoh Service Assistance is installed and click the “Open” button.



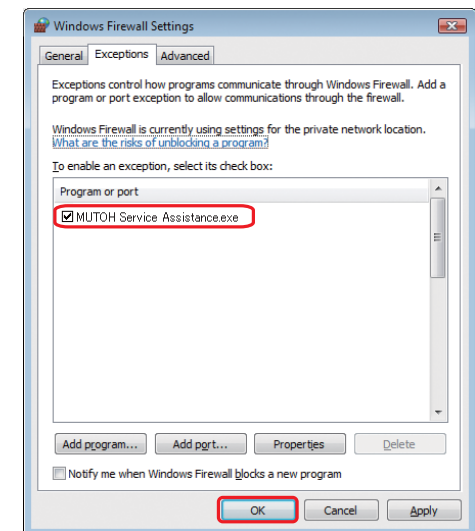
- 6 Make sure that MSA.exe is added and click the “OK” button.

- The Windows Firewall Settings window will be displayed.



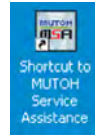
- 7 Confirm that MSA.exe is added in the “Windows Firewall Settings” window and click the “OK” button.

- Complete the setting.



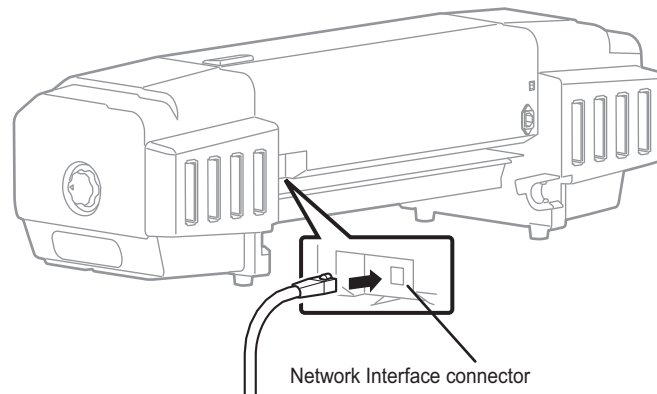
(4) Confirming Startup of the "MUTOH Service Assistance"

- 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

Function of MSA	set up mode
 "4.3.5Editing Media Type	BM
 "4.3.6Acquiring and Saving Error Log	PR
 "4.3.7Updating main firmware	BM
 "4.3.8Receiving Backup Parameters	PR/BM
 "4.3.9Sending Backup Parameter	BM
 "4.3.10Board Replacement Wizard	BM
 "4.3.11Diagnostic Mode	PR
 "4.3.12Acquiring Printer Identification Data	BM
 "4.3.13Sending Authorization code	BM
 "4.3.14Referring Set Up Information	PR
 "4.3.15Reffering Adjustment Parameter	PR
 "4.3.19Maintenance Panel	BM

(6-a) Starting Printer Mode

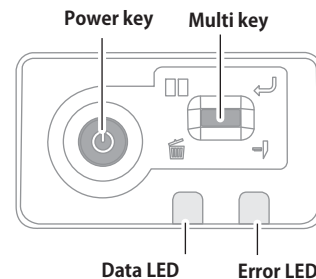
Start up printer in Printer mode (Normal mode).
Press [Power] key to start Printer mode.

(6-b) Board Manager Mode

Start up printer in board manager mode.
Follow the steps below to start up in board manager mode.

- When it starts from an operation panel

- 1 When printer is in operation status or in diagnosis menu display status, press Power key to OFF.
- 2 Press Power key to ON.
- 3 If data LED and error LED light up, pressing the multi-key is continued.



TIP

If Data LED and Error LED repeat lighting and putting out lights by turns, it means having started in board manager mode.

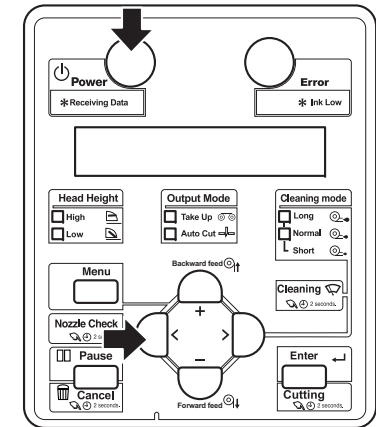
NOTE

- It starts in the state that the IP address of the user mode is set.
- Self Diagnose function and Maintenance mode 2 cannot start from an operation panel.

- When it starts from Jig panel

- 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.

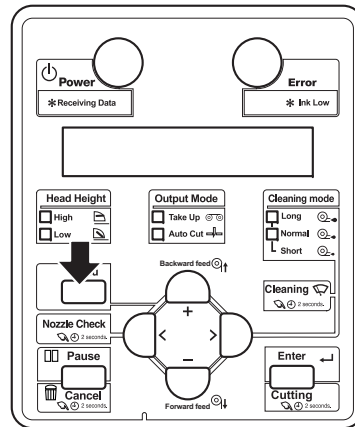
If any IP address other than default address is displayed on Board, release [<] key to change display to [IP192.168.xxx.xxx] (depending on the set address) on LCD panel. In this case, display the default IP (IP192.168.1.253) or the set IP address using the [+] key or [-] key, and press [Enter] key. [Waiting for command] will then appears.

(7) Printer IP Address Check

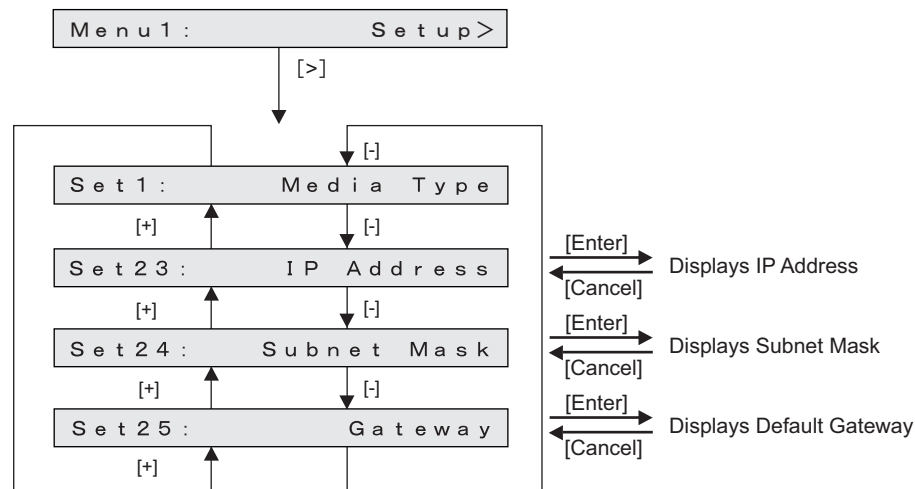
Printer IP address can be confirmed from either printer mode or board manager mode. Follow the steps below.

(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

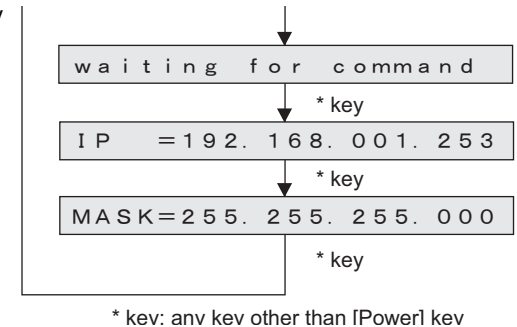
When "Set 23: IP address" etc. does not appear, set up from "Menu 5: Easy Setup" to display IP address and others.

☞『Operation Manual』

(7-b) Checking the printer IP address in Board manager mode

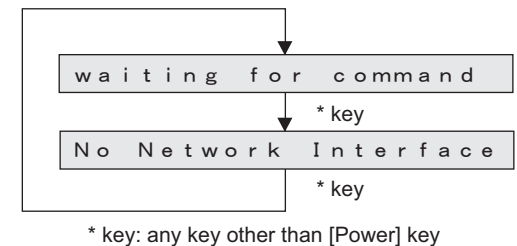
- 1 Start up printer in board manager mode.
- 2 While Power light is on, press any key other than [Power] key.

IP address and sub net masks can be checked on the LCD monitor of Operation panel.



NOTE

When Network interface card is not recognized because of its damage or contact failure, LCD display changes as shown in the right figure.



(8) Computer IP Address Setting

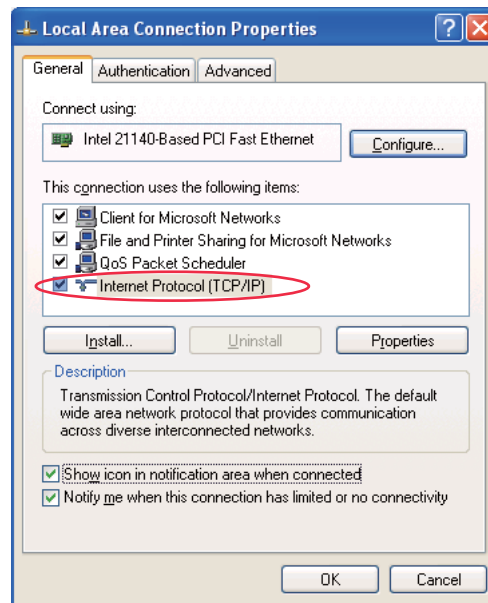
(8-a) Connecting with Crossover Cable

When directly connecting computer and printer, follow the steps as below.

NOTE

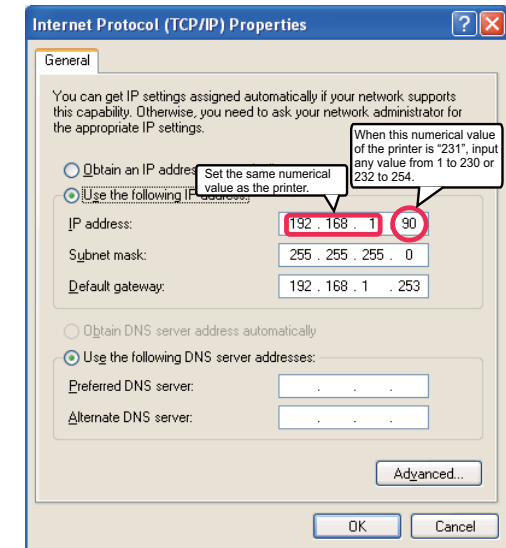
The following explains the procedure to set up on Windows XP keeping printer default IP address, "192.168.1.253"

- 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.

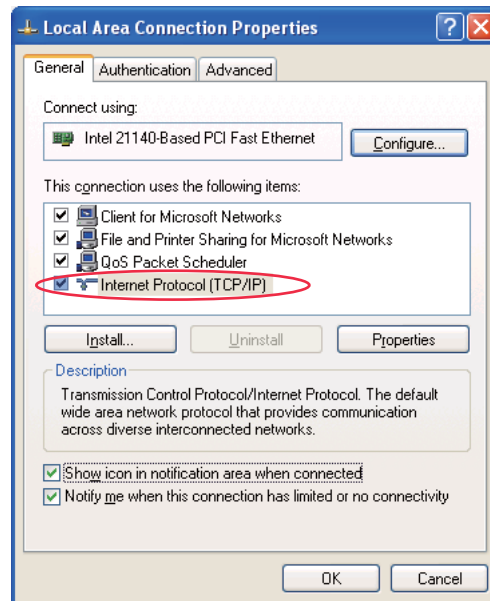
(8-b)Connecting with Straight Cable

When connecting computer and printer with straight cable (through hub, like LAN), follow the steps below.

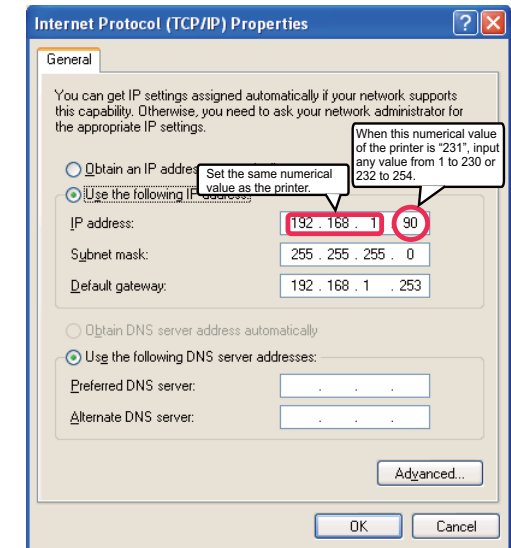
NOTE

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



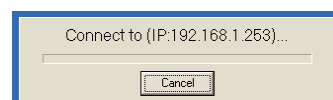
- 5 Click [OK] to finish setting.

(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.

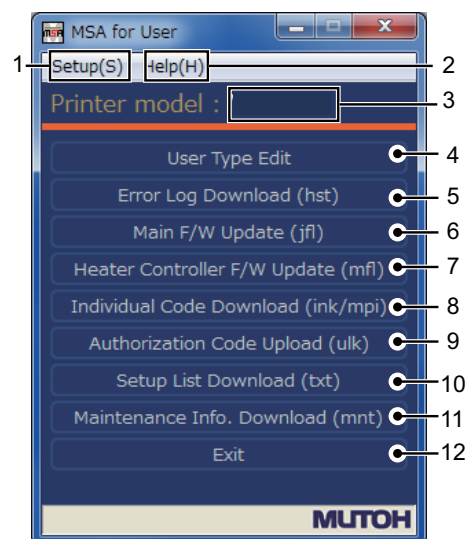


- 2 Automatic printer model selection is started.
(It displays IP address set by MSA.)



- 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.



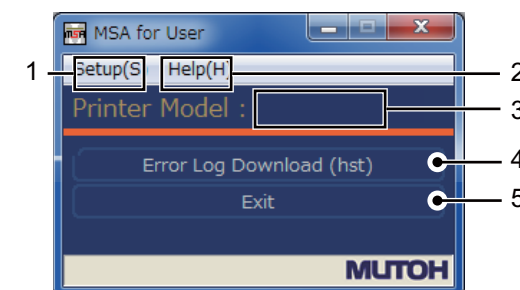
No.	
1	Setting IP address, Selecting language, Automatic printer model selection
2	Confirming version of MSA.
3	Displaying chosen printer model name.

No.	
4	Editing Use type
5	Acquiring or Saving "Error Log".
6	Updating "Main F/W".
7	Updating Blower Heater F/W".
8	Acquiring "Individual Code"(ink / mpi files).
9	Sending authorization code (.ulk file) sent by MUTOH Industries authorized dealer to a printer.
10	Acquiring Setup information from a printer by a text file.
11	Acquiring 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 ["2.3.7Problems in Using MUTOH Service Assistance"](#)



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.

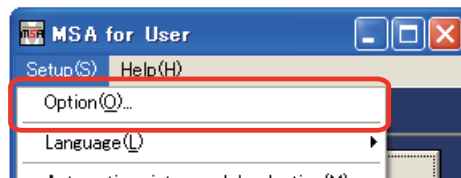
When indicated IP address is different from printer IP address, change IP address to match the printer IP address.

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 is not needed.

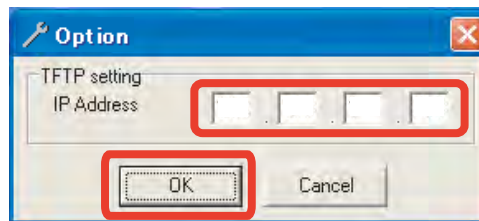
Follow the steps below to set the IP address.

- 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.

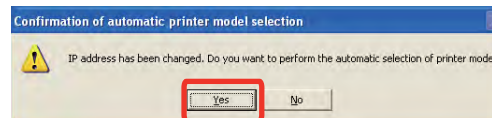
**TIP**

Double click "IP Address", it is set to default value "192.268.1.253".

- 3 Click [Yes] to use Automatic selection.

Model name shall be changed to the name of the connected printer model.

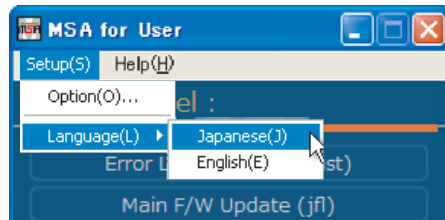
*This window appears only when IP address is changed.



(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

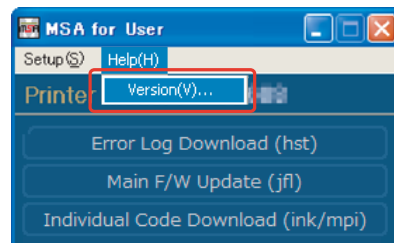
MUTOH Service Assistance is in MSA for User (User mode) at the time of start-up. Switch it to MSA for Technician (Technician mode) when performing maintenance operations.

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.

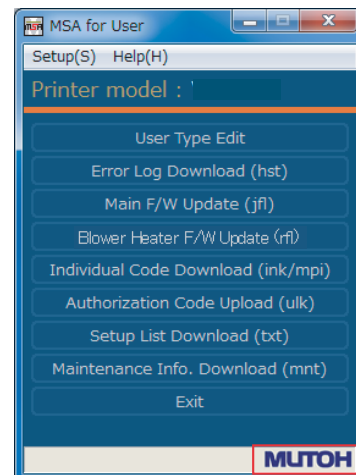


- 2 Double-click the MUTOH logo (1) and then the MSA icon (2).

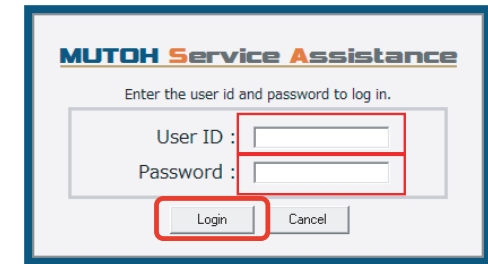
Then click [OK].



- 3 Double click [MUTOH].
Login window will be displayed.

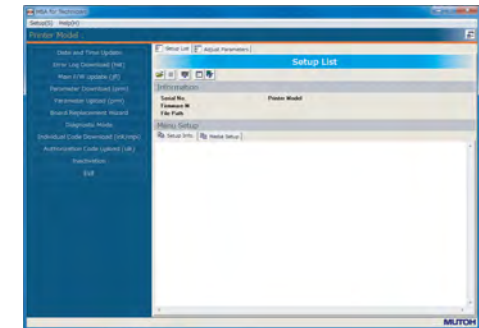


- 4 Enter User ID and Password.
Then click [Login].

**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.

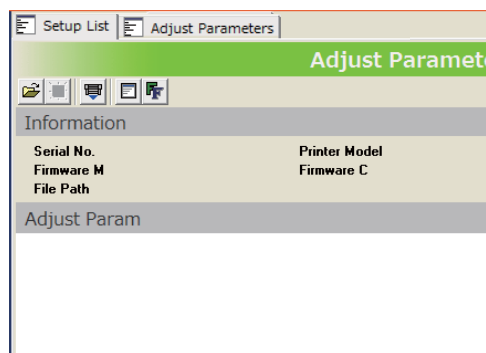
**NOTE**

- Even from the main window of a model indeterminate state, it is possible to switch to the Technician mode, the features available in the Technician mode is limited.
- When User mode is started by an English mode, Technician mode is also started by an English mode. When language mode is changed from [setting (S)]- [Language(L)] in Technician mode, login operation is needed again.
- The function which MSA supports between a printer and PC is dependent on the starting mode of the printer.
- At the time of clicking each button of the main window, when starting mode is not suitable, a warning message is displayed.

TIP

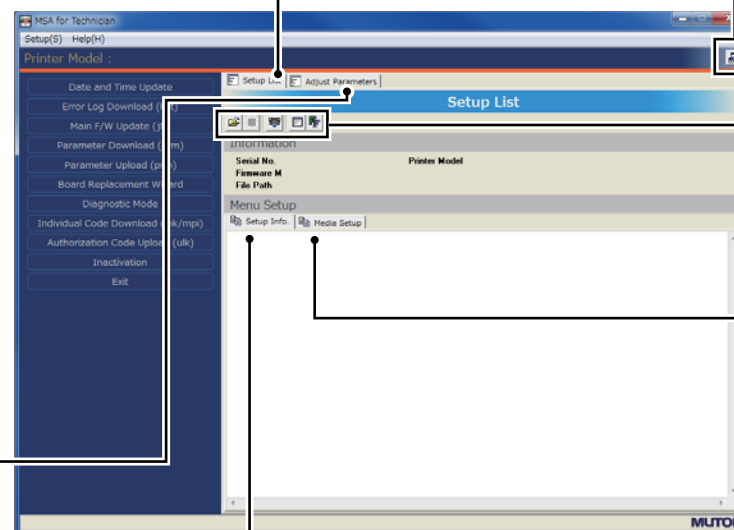
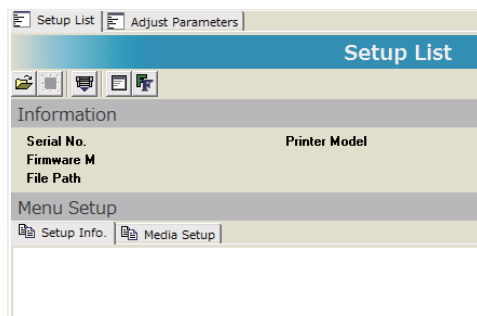
In [Setup Information] window, you can refer to the following:

- Setup information of the printer
- Setup information of the printer read by the saved parameters



In [Adjustment Parameters] window, you can refer to the following:

- Printer adjustment parameters
- Printer adjustment parameters by the saved parameters



Change the size of Main window



Lists up the information acquired from the parameter file.



Saves the listed information as plain text.



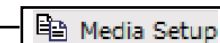
Lists up the information acquired from the printer.



Clears the listed information.



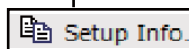
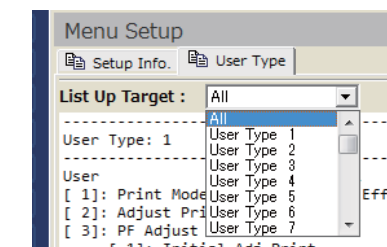
Changes the font of the listed information.



(It is available on the page "Setup List".)

User Type list :
Confirming only the User Type settings.

Moreover, if it is in the state where setup information was referred to, the contents of a setting of arbitrary user definitions can be checked by the combo box "for a listing." If "all" is chosen, all the user definitions will be indicated by list.



(It is available on the page "Setup List").
Displaying the list of settings.

(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

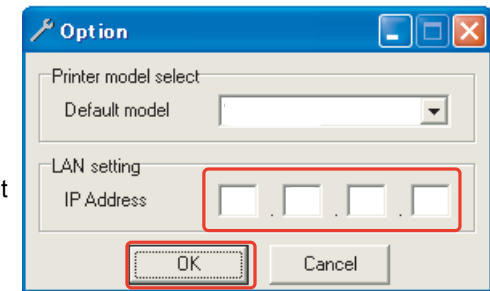
MSA has a function to automatically recognize model so that manual model select function is normally not required.

Manual function is limited to use especially when installing the new firmware in a Board without any firmware in it.

- 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”.

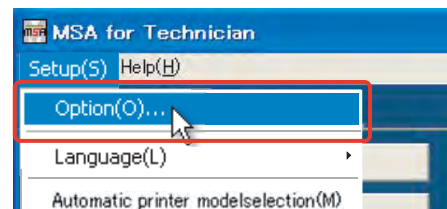


- 1** Start [MUTOH Service Assistance.exe] from shortcut on desktop window.



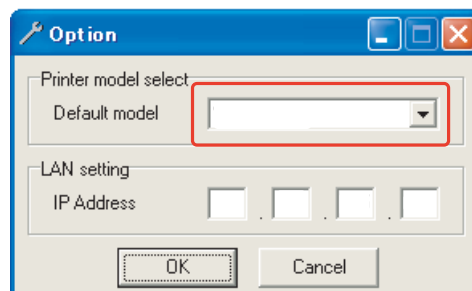
- 2** Switch to Technician mode.
 **(12) Switching to Technician Mode**

- 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.



4.3.4 Updating Date and Time

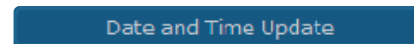
This section explains the operating procedure which updates the date and time of a printer using MSA.

NOTE

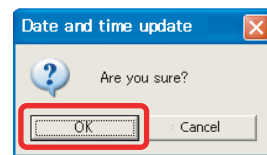
Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
👉 [4.3.3 Required Environment](#)
- Start the printer on Board manager mode.
👉 [\(6\) Starting the printer](#)
- Change to Technician mode on MSA.
👉 [\(12\) Switching to Technician Mode](#)

- 1 Click [Date and Time Update] on main window.



- 2 Click [OK] to send the systematic of the computer to the printer, as the data of year, month, day, and time.



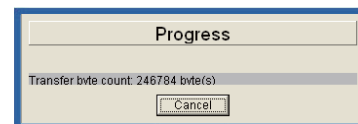
NOTE

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.

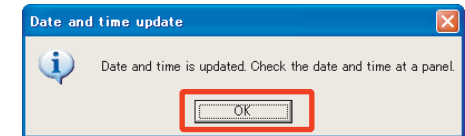
- 3 Once transmission has started, the 「Progress」 window is displayed.



NOTE

When an error message is displayed during updating, if it clicks [OK], it will return to a main window.

- 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 the panel of the printer has been changed.
👉 [5.4.9 Time Check Menu](#)

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:

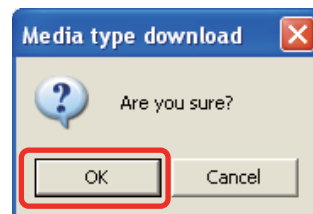
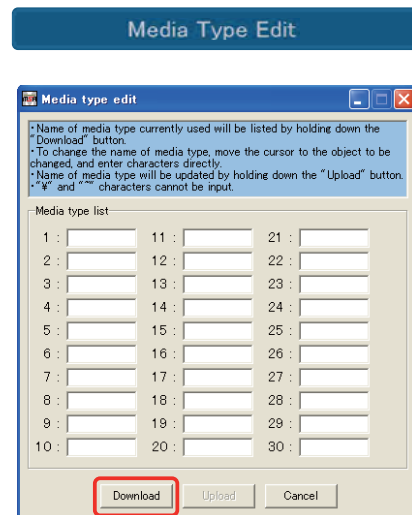
- Set up the printer, computer and MSA.
➡ "4.3.3 Required Environment
- Start the printer on Board manager mode.
➡ "(6) Starting the printer
- Change to Technician mode on MSA.
➡ "(12) Switching to Technician Mode

1 Click [Media Type Edit] on main window.

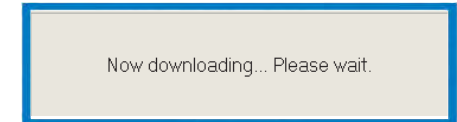
2 When [Media Type Edit] window appears, click [Download].

Click [Cancel] to return to the main window.

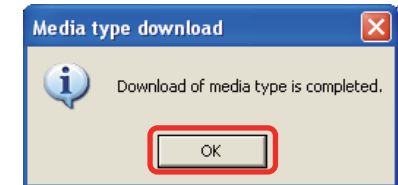
3 When [Media type download] window appears, click [OK].



4 When acquisition starts, [Process dialog] window appears.

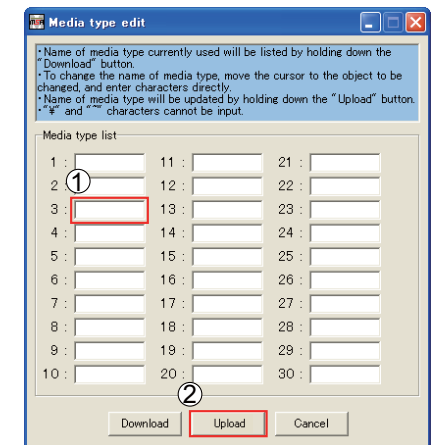


5 After media names are acquired, [Media type download] window appears. Click [OK] to return to [Media type download] window.



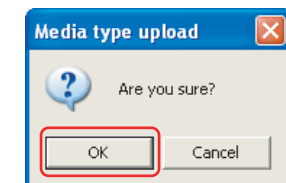
6 Edit user media name ①. After editing completed, click [Upload] ②.

*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.



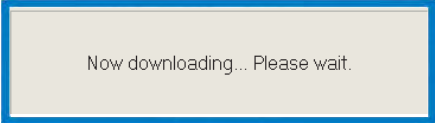
NOTE

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.



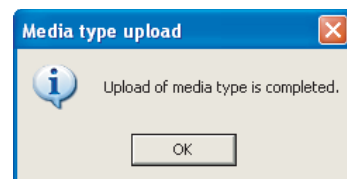
Now downloading... Please wait.

NOTE

When an error message is displayed during updating, if it clicks [OK], it will return to a main window.

- 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

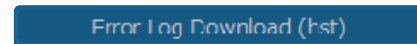
Acquiring and saving error log can be processed from printer mode or Manager mode.


Before this procedure, make sure to prepare the following:

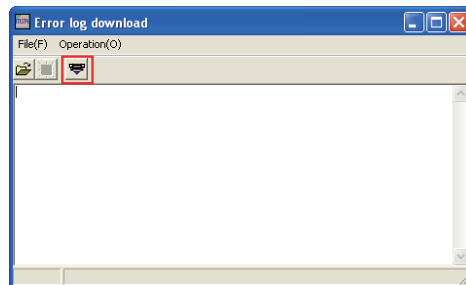
- Set up the printer, computer and MSA.
 ["4.3.3 Required Environment"](#)
- Change to Technician mode on MSA.
 ["\(12\) Switching to Technician Mode"](#)

(1) Acquiring Error Log

- 1 Click [Error Log Download] on main window.



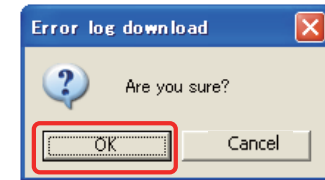
- 2 Click  on [Error log download].



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].



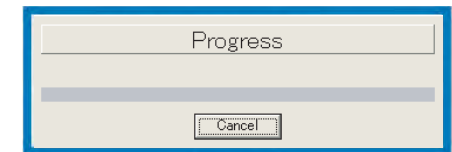
NOTE

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.

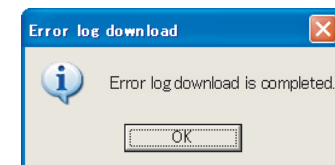
- 4 While downloading error log, [Communication situation] window appears.



NOTE

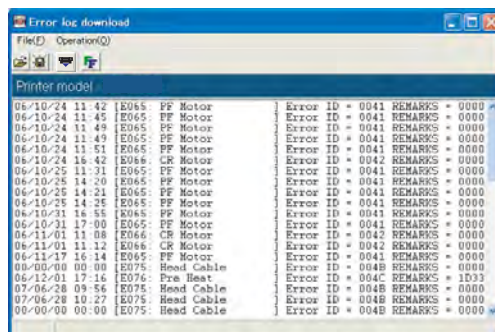
When an error message is displayed during updating, if it clicks [OK], it will return to a main window.


- 5 After completion of acquiring failure record information, [Error log download] window appears. Click 「OK」.

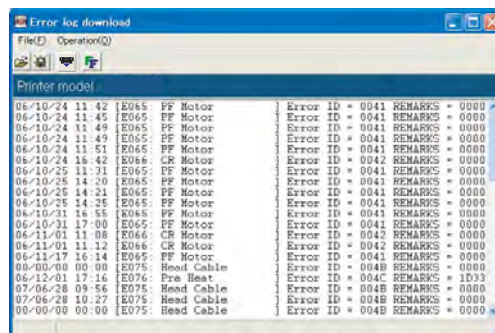


- 6 After completion of acquiring failure record information, [Error log download] window appears.

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.



TIP

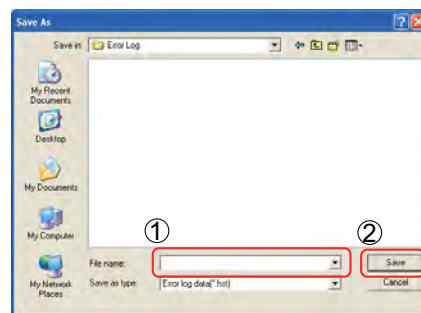
You can also save the data by selecting [File] - [Save as] from [Error log download] window.

- 8 On [Save as] window, enter desired file name ① and click [Save] ②.


The File extension will be *.hst.

TIP

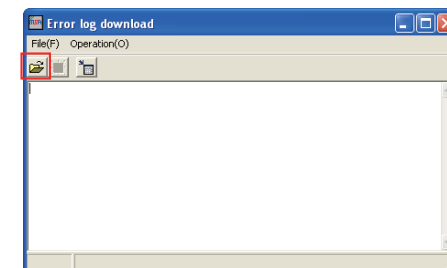
* When saving Error log as a text file, choose "Textdata (*.txt)."



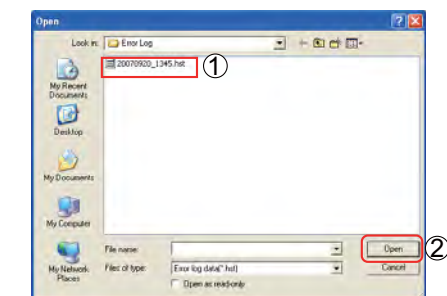
(2) Referring Error Log

- 1 Click  on [Error log download] Window.

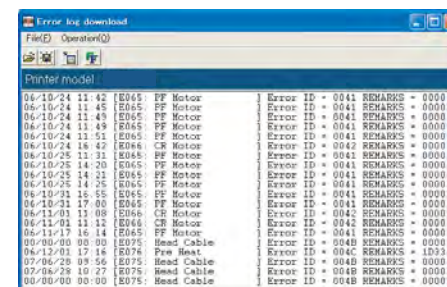
Also form [File] - [Open] is the same.



- 2 Click appropriate failure record information file (*.hst) ① and click [Open] ②.



- 3 Record data appears on [Error log download] window.



TIP

In the case of the format error of the specified Error log file, an error message is displayed.

Moreover, when there is no history data in the specified Error log, it is displayed on a list as < no data>."

4.3.7 Updating main firmware

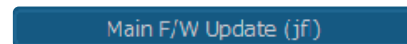
The following describes the procedure to update main side firmware accessed to Technician mode without replacing Main board Assy.

NOTE

Before this procedure, make sure to prepare the following:

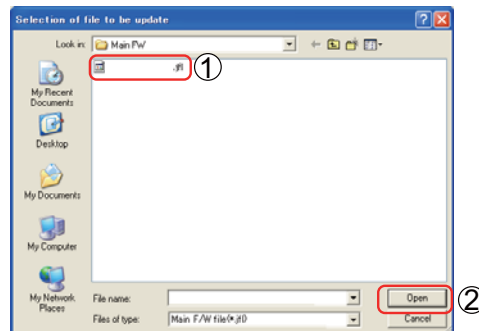
- Set up the printer, computer and MSA.
👉 "4.3.3 Required Environment
- Start the printer on Board manager mode.
👉 "(6) Starting the printer
- Change to Technician mode on MSA.
👉 "(12) Switching to Technician Mode

- 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.

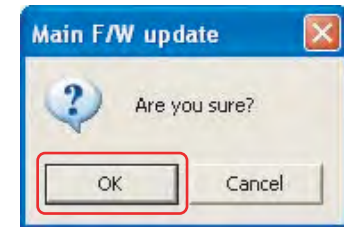


NOTE

F/W used for updating should use the file saved on the PC locally.
It may be unable to update, if the file saved in the USB memory etc. is used.

- 3 On [Main F/W update], click [OK].

*Press [Cancel] to return to the main window.



NOTE

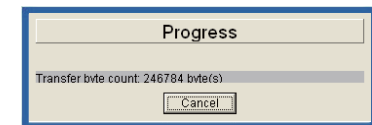
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

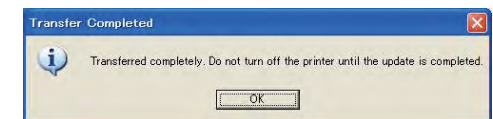
Click [OK] to return to main window.

- 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 Receiving Backup Parameters

This section describes the procedure to receive backup parameter from the printer by using Technician mode.

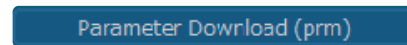
NOTE

Saving backup parameter and main board inheritance information acquisition can be processed both from printer mode and board manager mode.

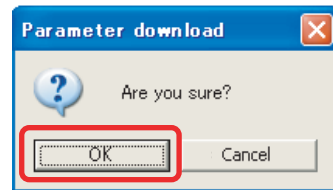
Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
 **"4.3.3 Required Environment"**
- Change to Technician mode on MSA.
 **"(12) Switching to Technician Mode"**

- 1 Click [Parameter Download] on main window.



- 2 Click [OK] on [Parameter Download] window to start receiving backup parameters.



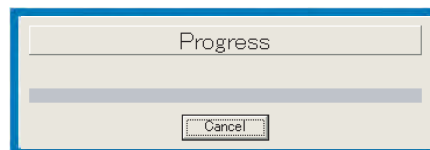
NOTE

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.

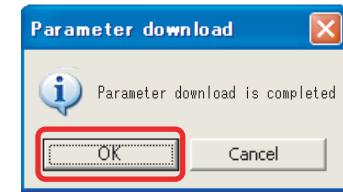
In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.

- 3 While receiving Parameters, [Progress] window appears.



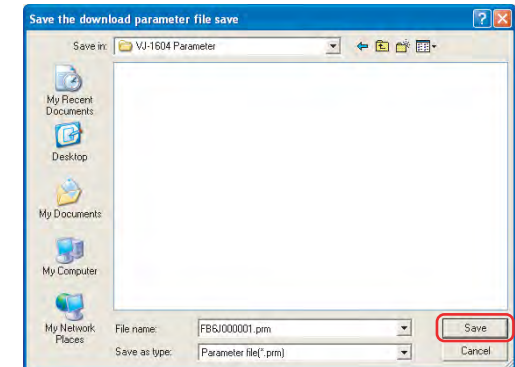
- 4 On [Parameter download] window, click [OK] to close the window.



- 5 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.



4.3.9 Sending Backup Parameter

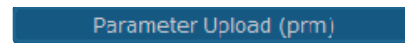
This section describes the procedure to send backup parameters by using Technician mode.

NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
☞ "4.3.3 Required Environment"
- Start the printer on Board manager mode.
☞ "(6) Starting the printer"
- Change to Technician mode on MSA.
☞ "(12) Switching to Technician Mode"

- 1 Click [Parameter Upload (prm)] on main window.

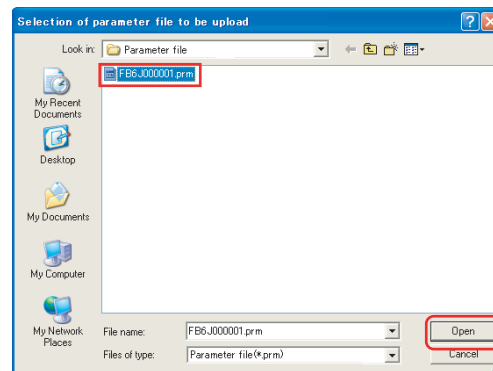


- 2 The [Selection of parameter file to be uploaded] window appears.

Select and click appropriate parameter file and click [Open] to send.

* Any extension except *.prm is invalid.

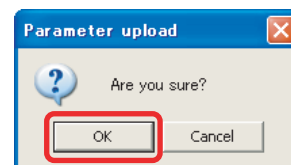
**Click [Cancel] to stop sending and return to the main window.



NOTE

If clicking [Open] to select any file not saved in *.prm extension file, an error message appears and return to the main window.

- 3 Click [OK] on "Parameter upload".



NOTE

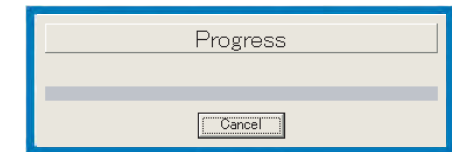
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears.

In both cases, communication with printer shall be interrupted.

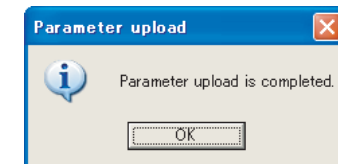
Click [OK] to return to main window.

- 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].



4.3.10 Board Replacement Wizard

This section describes Board replacement wizard which support replacing MAIN board Assy.

NOTE

- About mounting alternative MAIN board, refer to ["3.5.10Replacing MAIN Board"](#)
- 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\)Board Manager Mode"](#)

2 Connect PC to the printer.

["8\)Computer IP Address Setting"](#)

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.

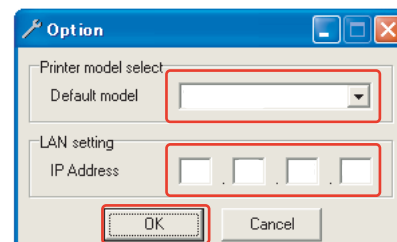
["12\)Switching to Technician Mode"](#)

4 Select the [Board Replacement Wizard].

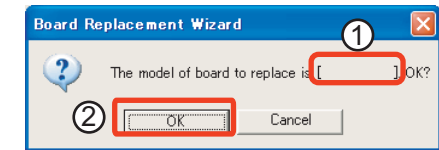
Board Replacement Wizard

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.



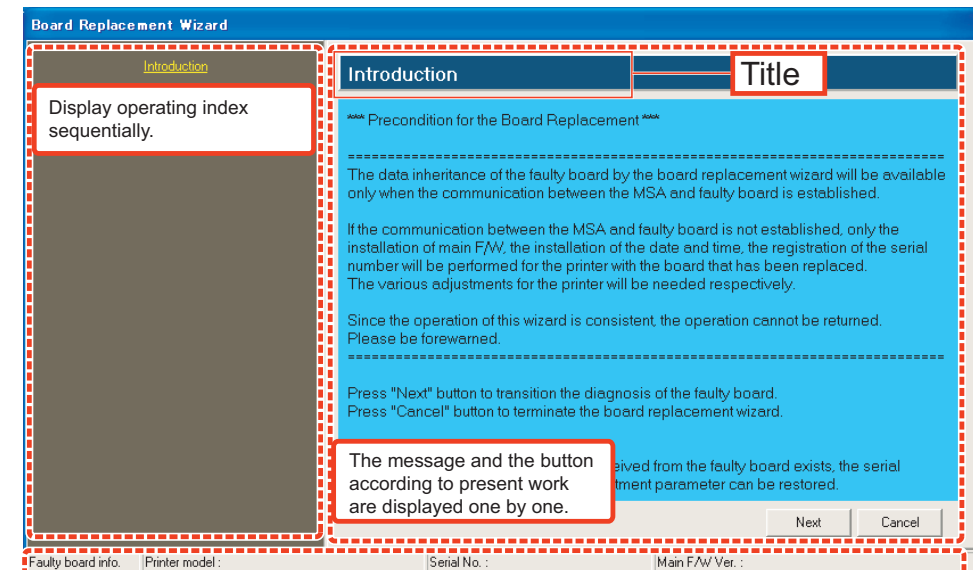
5 Confirm the printer model for board replacement ①.
Then click [OK] ②.



6 After displaying Board replacement wizard window, work by messages.

NOTE

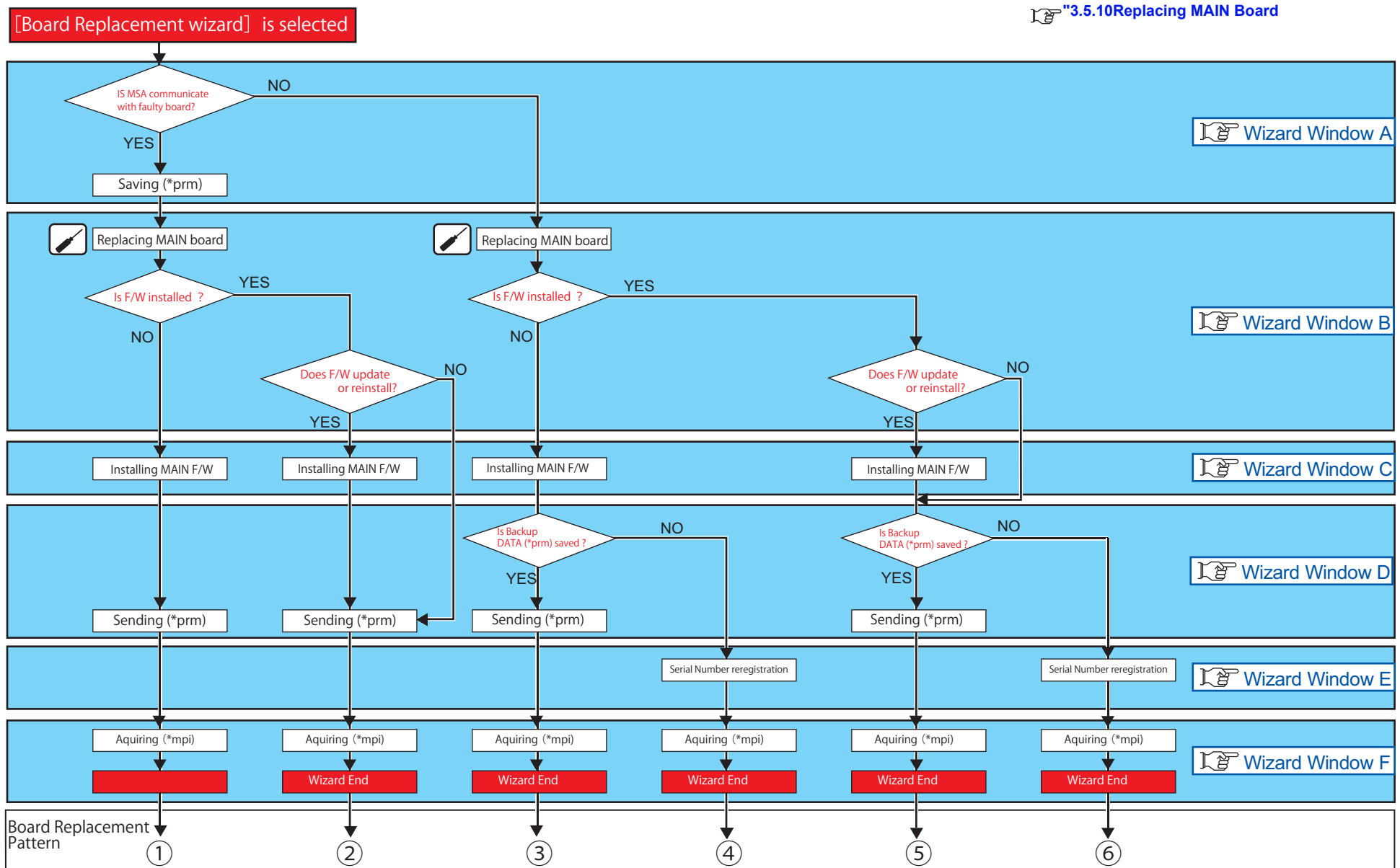
Work contents are different by the conditions of malfunction board and alternative board. ["1\)Flow Chart of Board Replacement Wizard"](#)



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"](#)

(1) Flow Chart of Board Replacement Wizard



"(2) List of adjustment operations after replacing the board for each board replacement pattern

(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)	 "4.3.12Acquiring Printer Identification Data	—	—	●	●	●	●
2	Resending Authorization code (ulk file)	 "4.3.13Sending Authorization code	—	—	●	●	●	●
3	Updating (*mpi) on the MB-web	 Printer Activation guide	●	●	●	●	●	●
4	Resetting Smart/C	 Printer Activation guide	—	—	●	●	●	●
5	Inputting Head rank	 "(2)Head Rank	—	—	—	●	—	●
6	Adjusting Paper edge sensor	 "5.6.1Rear/ Edge Sensor Adjustment	●	●	●	●	●	●
7	Adjusting Paper Rear Sensor	 "5.6.1Rear/ Edge Sensor Adjustment	●	●	●	●	●	●
8	Setting Ink-NOT Filled Flag	 "(5)Charge Flg	—	—	—	●	—	●
9	Confirming Head nozzles	 "5.6.2Head Nozzle Check Menu	●	●	●	●	●	●
10	Adjusting Uni-D/Bi-D	 "5.6.5Uni-D/ Bi-D Adjustment Menu	—	—	—	●	—	●
11	Adjusting Top & Side	 "5.6.7Margin adjustment Menu	—	—	—	●	—	●
12	Test Printing	 "5.8Sample printing Menu	●	●	●	●	●	●
			● : Need to work / — : Need not work					

(3) Wizard window (according to Flow chart)

(3-a) Wizard Window A

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
A	●	●	●	●	●	●	Introduction	Click <input type="button" value="Next"/> .	-
							Diagnosis of the faulty board	It diagnose whether it can communicate with faulty board. After settings, click <input type="button" value="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 <input type="button" value="Get prm"/> , After acquiring, click <input type="button" value="Next"/> .	-
							Making the faulty board data back up	After completing Back up, proceed to "(3-b) Wizard window B."	Do not turn off the printer.
	-	-	●	●	●	●	IS MSA communicate with faulty board? → When NO:		
							Diagnosis of the faulty board	Click <input type="button" value="Retry"/> when reconfirming the communication with the faulty board. Click <input type="button" value="Next"/> when not performing the above work. Proceed to "(3-b) Wizard window B"	Display Yellow window.
									<div> <p>The communication with the faulty board has not been detected. The board may be damaged.</p> <p>To reconfigure the alternative board from scratch, remove the faulty board from the printer, and mount the alternative board. Then, follow the procedure below.</p> <p>1) Start the printer in board manager mode.</p> <p>2) Connect the PC and the alternative board with LAN cable.</p> <p>3) Press "Next" button.</p> <p>Press "Retry" button to check the communication with faulty board again. Press "Cancel" button to terminate the board replacement wizard.</p> <p>[Info]----- In the board replacement wizard, the MSA automatically recognize the IP address of the printer as "192.168.1.25".</p> <p>Press "Retry" several times to try to check the communication.</p> </div>

(3-b) Wizard window B

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
B	●	●	●	●	●	●	Attachment and diagnosis of the alternative board	Replace MAIN board. 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:	When reinstalling or updating main F/W, click Re-install . Proceed to "(3-c) Wizard window C" .	Display Green window. <small>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.</small>
	●	-	●	●	-	-	Is F/W installed? → If NO:	Click Skip when not performing the above work. Proceed to "(3-d) Wizard window D" .	
							Proceed to "(3-c) Wizard window C" .		

(3-c) Wizard window C

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
C	●	●	●	●	●	●	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 window D"
	②⑤⑥ are only Re-install is selected.						Installing the main F/W	After completing, proceed to "(3-d) Wizard window D" .	Do not turn off the printer.

(3-d) Wizard window D

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
D	●	●	-	-	-	-	Sending of the back up data	Click <input type="button" value="Next"/> to send ".prm".	-
	-	-	●	●	●	●	Sending of the back up data	When there is ".prm" data saved before, click <input type="button" value="Restore"/> to send it. When there is no ".prm" data saved, click <input type="button" value="Skip"/> . "(3-e) Wizard window E	When <input type="button" value="Skip"/> is clicked, the ".prm" data is not sent.
	●	●	●	-	●	-	Sending of the back up data	After sending the ".prm" data, proceed to "(3-f) Wizard window F	Do not turn off the printer.

(3-e) Wizard window E

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
E	-	-	-	-	●	●	R-registration of the serial number	Click <input type="button" value="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.	Do not turn off the printer.

(3-f) Wizard window F

	Board replacement pattern						Board replacement window (Title)	work contents	NOTE
	①	②	③	④	⑤	⑥			
F	●	●	●	●	●	●	Termination	After the wizard ends, click <input type="button" value="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	-

4.3.11 Diagnostic Mode

This section describes the procedure to use diagnostic mode on Technician mode.
Each function can be monitored on each window and those windows can be displayed at the same time.

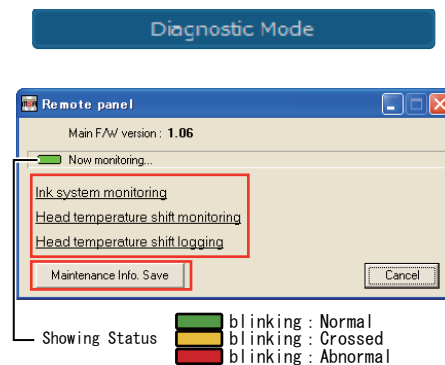
NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
👉 "4.3.3 Required Environment
- Start the printer on Board manager mode.
👉 "(6) Starting the printer
- Change to Technician mode on MSA.
👉 "(12) Switching to Technician Mode

- 1 Click [Diagnostic 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.
👉 "(5) Saving the maintenance information

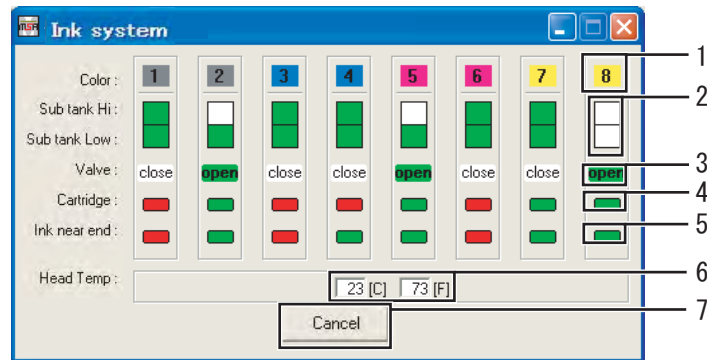


NOTE

The monitoring information is acquired every time seconds from the printer through the 「Remote 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	Sub tank condition
3	2-way valve condition
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

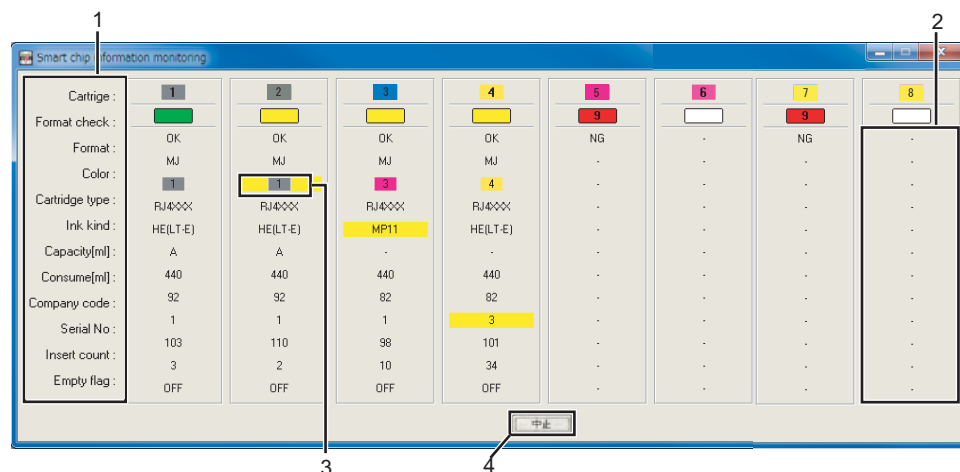
NOTE

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 [Remote panel] window to indicate the condition of the connected printer cartridge.



No.	content	
1	Error status	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div> No errors</div> <div> Recoverable error (the target item is displayed in yellow)</div> <div> Non-recoverable error (the error number is displayed)</div> <div> Not supported</div> <div> Cartridge is not inserted</div> </div>
	Format Check	OK: Normal、NG: Abnormal
	Format	-
	Color	Indicating inserted cartridge color (When the cleaning cartridge inserted, the display is gray.)
	Cartridge type	-
	Ink kind	-
	Ink Kind Ex	-
	Capacity(ml)	-
	Consume (ml)	-
	Company code	-
2	Serial No	-
	Insert count	-
	Empty Flag	Display "On" or "Off".
3	Displaying no message when the cartridges are not installed.	
4	Indicating an ink cartridge of wrong color is inserted in the cartridge slot.	
5	Cancel monitoring.	

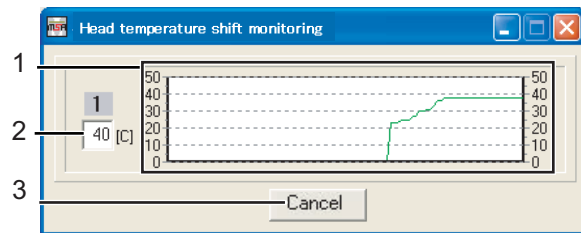
NOTE

- 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) Head Temperature Transition Monitoring

Head temperature transition of the connected printer can be monitored.

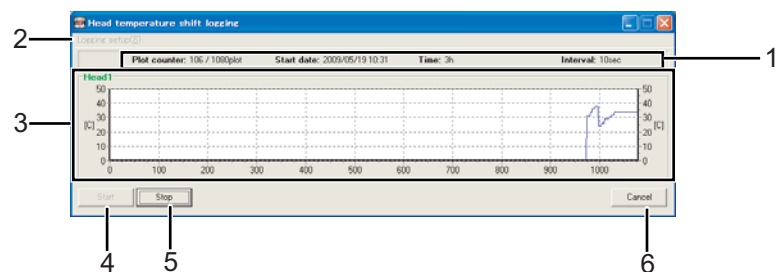
[Head temperature transition] graphs vary depending on the number of the print heads.



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.

(4) Head Temperature Transition Logging

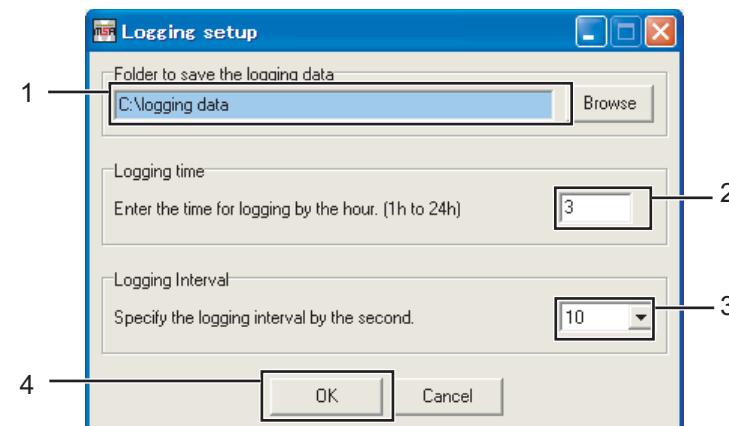
Head temperature transition of the connected printer can be monitored.
[Head temperature transition] graphs vary depending on the number of the print heads.



No.	Part name
1	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.

(4-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

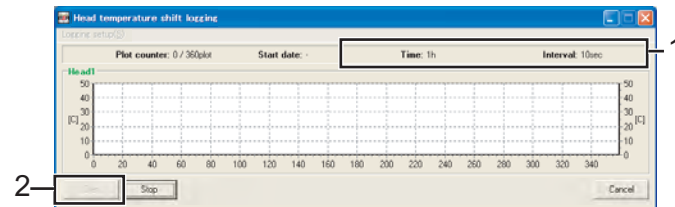
Logging data is sorted by head and saved in plain text format.

(4-b)Logging method

First, set the conditions in the Logging setting menu.

☞ "(4-a)Logging setting

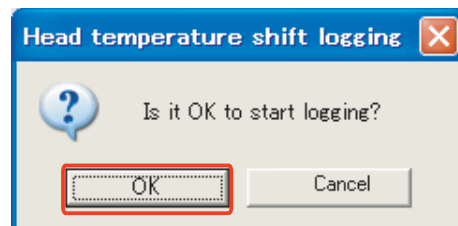
- 1 Check the time and interval.
- 2 Press the Start button.



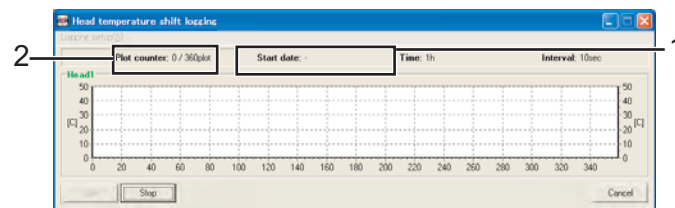
TIP

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.



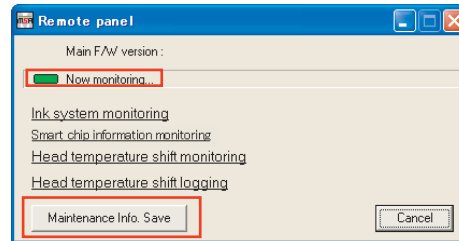
- 8 Click OK to go back to the Head temperature transition logging window and confirm the logging data in the save folder.

TIP

The saved file name for the logging data is "Head_*_Tmp_Log.txt" (* is the head number).

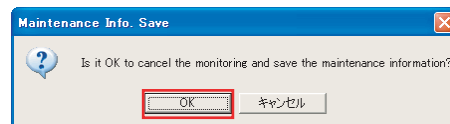
(5) Saving the maintenance information

- 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

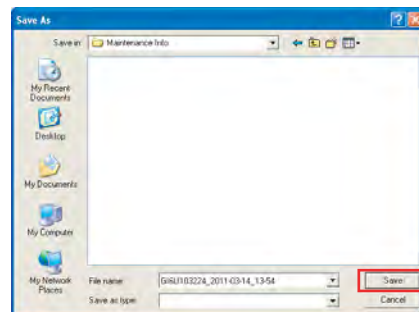
Monitoring is stopped temporarily while the maintenance information is saved.

- 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].

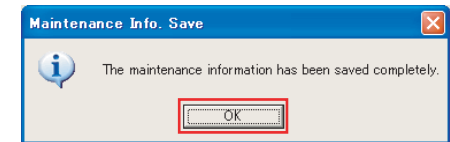
Click [Cancel] to return to the main window.



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.



4.3.12 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:

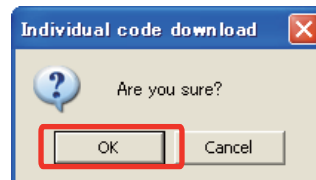
- Set up the printer, computer and MSA.
👉 "4.3.3 Required Environment
- Start the printer on Board manager mode.
👉 "(6) Starting the printer
- Change to Technician mode on MSA.
👉 "(12) Switching to Technician Mode

- 1 Click [Individual Code Download] on main window.

Individual Code Download (ink/mpi)

- 2 Click [OK] on [Individual code download] to start.

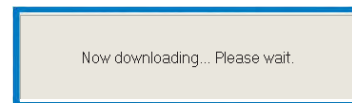
*Click [Cancel] to return to main window without acquiring printer identification data.



NOTE

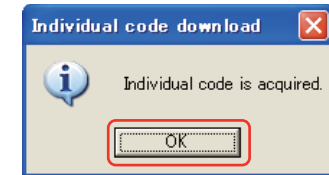
After clicking [OK], if any communication errors occur such as wrong IP address or unplugged LAN cable, an error message appears. If any setting errors occur such as inappropriate model name selection, serial number registration is not finished or incorrect one is registered, an warning message appears. 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.

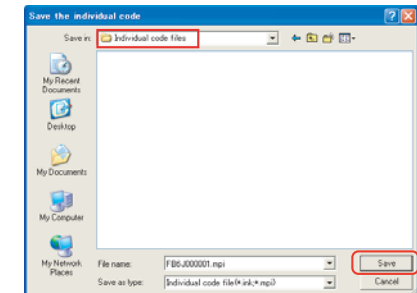
*Click [OK] to appear 「Save the individual code」 window



- 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.

4.3.13 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:

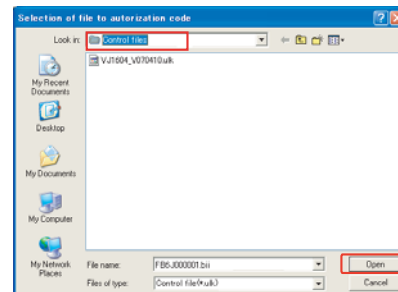
- Before sending authorization code, save authorization code file (*.ulk) from MUTOH INDUSTRIES dealer in any folder.
- Set up the printer, computer and MSA.
☞ ["4.3.3 Required Environment"](#)
- Start the printer on Board manager mode.
☞ ["\(6\) Starting the printer"](#)
- Change to Technician mode on MSA.
☞ ["\(12\) Switching to Technician Mode"](#)

- 1 Click [Authorization Code Upload] on main window.

Authorization Code Upload (ulk)

- 2 Select and click authorization code file from saved folder and click [Open] .

*Click [Cancel] to return to the main window.

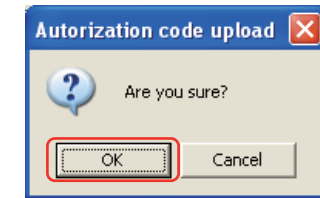


NOTE

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.

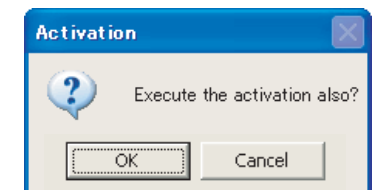
Click [OK] to return to main window.

- 4 When authorization code file sending is in process, a progress dialog appears.

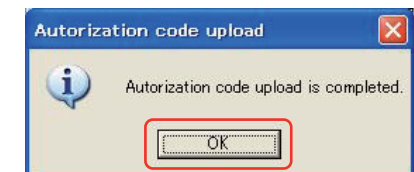
Now uploading... Please wait.

NOTE

- When an error occurs while transmitting the authentication 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.



4.3.14 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
- Start the printer on Board manager mode.
👉 "(6) Starting the printer
- Change to Technician mode on MSA.
👉 "(12) Switching to Technician Mode

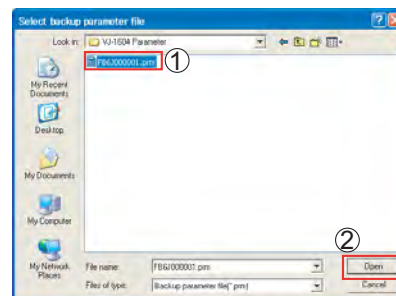
(1) Acquiring Setup Information from Backup Parameter (*.prm) to Reference

- 1 Click  on "Set up List".



- 2 On [Select backup parameter file] window, click to select backup parameter file ①, then click [Open] ②.

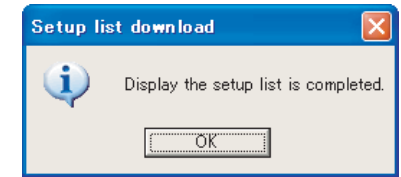
*Click [Cancel] to return to the main window.




NOTE

If you select an inappropriate file (such as a file which has as extension other than *.prm, etc and click [Open], an error message is displayed and the display returns to the main window.

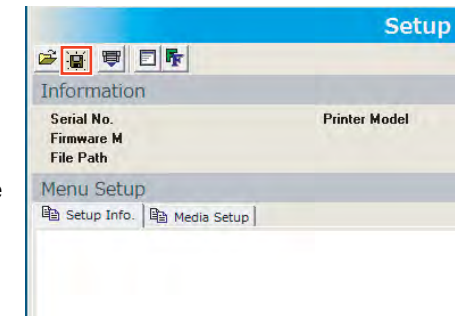
- 3 Setup information is displayed under a setup information acquisition tab page after the completion of acquisition of setup information from a backup parameter. Since a "Set up list download" window is displayed after that, click [OK] and it checks the listed setup information.



- 4 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].

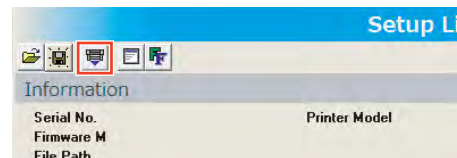


NOTE

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.

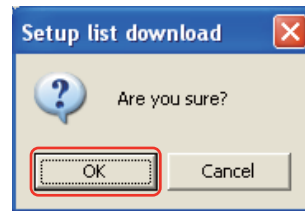
(2) Acquiring Setup Information from Printer to Reference

- 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.

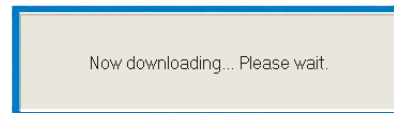
**NOTE**

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.

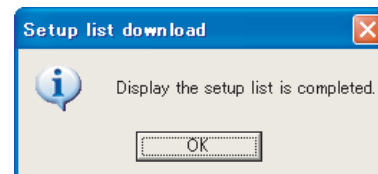
In both cases, communication with printer shall be interrupted.

Click [OK] to return to main window.


- 3 When set up information acquisition is in process, a progress dialog appears.



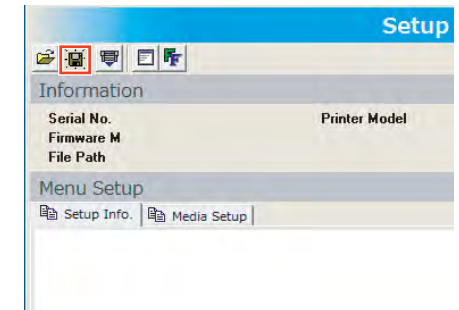
- 4 Setup information is displayed under a setup information acquisition tab page after the completion of acquisition of setup information from a printer. Since a "Set up list download" window is displayed after that, click [OK] and it checks the listed setup information.



- 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**

- The serial number of a printer, a model name, the version of various F/W and at the time of the date of acquisition of setup information are displayed.
- The information acquired by "Setup List" is displayed on a "Setup info." tab page.
- Only "Media Setup" currently displayed on the "Setup info." tab page is listed by the "Media Setup" tab page.
- 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.


4.3.15 Referring Adjustment Parameter

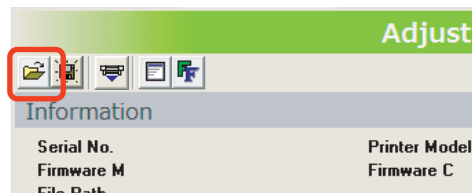
NOTE

Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
☞ "4.3.3 Required Environment"
- Start the printer on Board manager mode.
☞ "(6) Starting the printer"
- Change to Technician mode on MSA.
☞ "(12) Switching to Technician Mode"

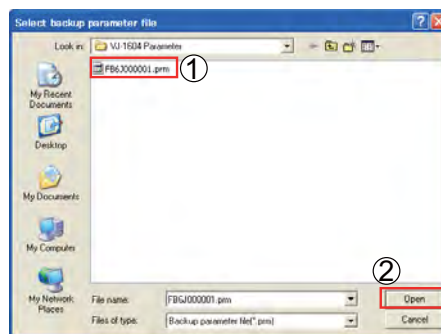
(1) Acquiring Adjustment Parameter from Backup parameter (*.prm) to reference

- 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 Adjustment parameter is displayed under a Adjust parameter tab page after the completion of acquisition of Adjustment parameter from a Backup parameter. Since a "Adjustment parameter download" window is displayed after that, click [OK] and it checks the listed setup information.

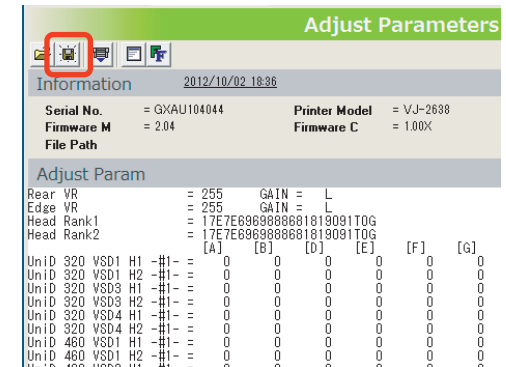


- 4 Acquired adjustment parameter shall be indicated under the tab named [Adjust parameter].

To save the file as plain text, click .

*Set up information is same detail with the one acquired in [Print setup parameters].

☞ "5.8 Sample printing Menu"




NOTE

- The serial number of Printer, model name and FilePath are displayed.
- At the time of acquisition date and various F/W version are not displayed.
- Adjustment 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.

5 Acquired set up information shall be indicated under the tab named [Adjust parameter].


-
- The screenshot shows the top section of a printer's control panel. At the top, there is a green bar with the text 'Adjust P' on the right. Below this is a row of five icons: a folder, a printer, a document with a checkmark, a document with a magnifying glass, and a document with a plus sign. The second icon, representing a printer, is highlighted with a red square. Below the icons is a grey bar with the word 'Information' in blue. At the bottom, there are two labels: 'Serial No.' and 'Firmware M' on the left, and 'Printer Model' and 'Firmware C' on the right.

- 

NOTE

In both cases, communication with printer shall be interrupted.
Click [OK] to return to main window.

- Now downloading... Please wait.

- 

*Set up information is same detail with the one acquired in [Print setup parameters].

Adjust Parameters

Information

Serial No. = GXAU104044

Firmware M = 2.04

File Path

Printer Model = VJ-2638

Firmware C = 1.00X

Adjust Param

Rear VR	= 255	GAIN	= L				
Edge VR	= 255	GAIN	= L				
Head Rank1	= 17E7E69698868681819091T0G						
Head Rank2	= 17E7E69698868681819091T0G						

	[A]	[B]	[D]	[E]	[F]	[G]
Unit0 320 VSD1 H1 -#1-	= 0	0	0	0	0	0
Unit0 320 VSD1 H2 -#1-	= 0	0	0	0	0	0
Unit0 320 VSD3 H1 -#1-	= 0	0	0	0	0	0
Unit0 320 VSD3 H2 -#1-	= 0	0	0	0	0	0
Unit0 320 VSD4 H1 -#1-	= 0	0	0	0	0	0
Unit0 320 VSD4 H2 -#1-	= 0	0	0	0	0	0
Unit0 460 VSD1 H1 -#1-	= 0	0	0	0	0	0
Unit0 460 VSD1 H2 -#1-	= 0	0	0	0	0	0

TIP

- The serial number of Printer, model name and various F/W version are displayed.
- The contents based on an adjustment parameter are displayed.
- Adjustment 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 Initializing activation

NOTE

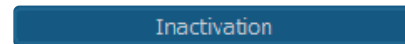
Before this procedure, make sure to prepare the following:

- Set up the printer, computer and MSA.
☞ "4.3.3 Required Environment"
- Start the printer on Board manager mode.
☞ "(6) Starting the printer"
- Change to Technician mode on MSA.
☞ "(12) Switching to Technician Mode"

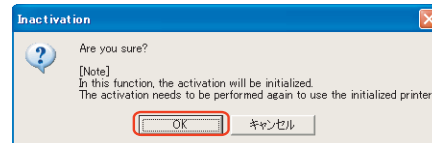
CAUTION

When using the printer whose activation is initialized in the "Inactivation", activation is required again.
Do not use activation lock unnecessarily.

- 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.



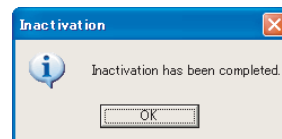
* Click [Cancel] to return to the main window.

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.

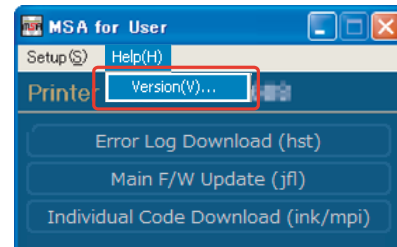
- 3 After initializing, the "Inactivation" message box is displayed.
Click [OK] to return to the main window.



4.3.17 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.



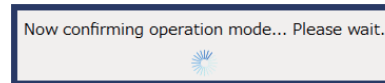
4.3.18 Switch to Board Manager Mode

This chapter describes how to switch to Board Manager Mode from Printer Mode.

- 1 Click [Board Manager Mode] from the MSA main menu.



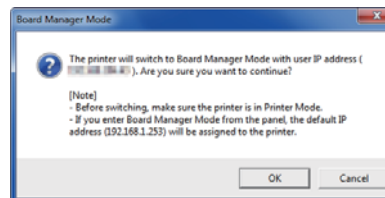
- 2 The "Progress Dialog" will appear.



NOTE

If the printer is not in Printer Mode, the message box will appear and the switching process is stopped.

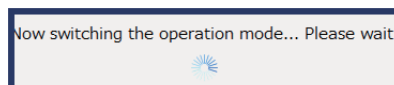
- 3 If the printer is in Printer Mode, the message shown at right will appear. Click [OK] to start to switch to Board Manager Mode.



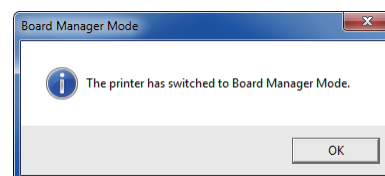
- 4 The "Progress Dialog" will appear.

NOTE

If any error occurs while switching to Board Manager Mode, the error message will appear.
Click [OK] to go back to the main menu.



- 5 When the switching has successfully completed, the message shown at right will appear. Click [OK] to go back to the main menu.



4.3.19 Maintenance Panel

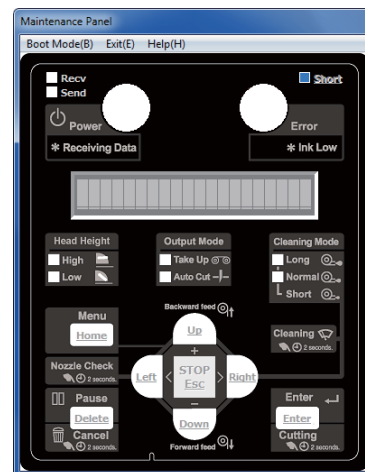
This chapter describes how to operate the Maintenance Panel.

(1) How to start the Maintenance Panel

NOTE

Check that the printer is in Board Manager Mode.

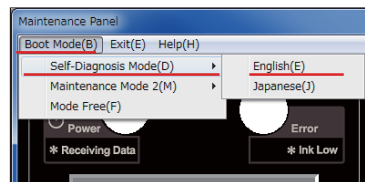
- 1 Click [Maintenance Panel].
- 2 The Maintenance Panel will appear.



- 3 Click [Boot Mode] and choose either [Self-Diagnosis Mode] or [Maintenance Mode 2]. Then, choose language.

CAUTION

- The Maintenance Panel is not available until the PC is properly connected to the printer after the mode selection.
- The selected language is reflected in the Maintenance Panel until the printer is powered off. The initial language setting is reflected in the printer.



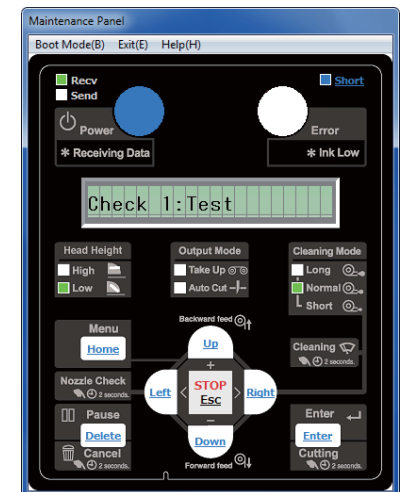
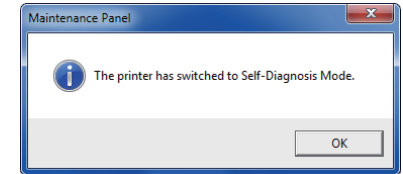
- 4 When the printer is successfully switched to the mode you selected, the complete message will appear as shown at right. Click [OK] to go back to the Maintenance Panel.

TIP

When selecting Maintenance Mode 2, the complete message for Maintenance Mode 2 will appear.

CAUTION

The LCD display on the Maintenance Panel is updated. Then, the Maintenance Panel becomes available.



(2) Maintenance Panel Display and Operation

Choose Self-Diagnosis Mode/ Maintenance Mode 2 and choose language.

Display the communication status with the printer.

Recv:Printer information receiving status
Send:Button input sending status

Recv/Send:
☒ Green Light: Communication Success
☐ Red Light: Communication Failed

Clicking button to operate the Maintenance Panel.

Right-clicking stops the operation.

The "Stop" button is implemented only for the Maintenance Panel to stop the operation of "Long (press)" and "10cnt".

The button operation can be changed by clicking:

Short (press) → Long (press) → 10cnt

Long (press): Press the button for 2 seconds.
10 cnt: Send a short-press button input 10 times to the printer.

The keyboard operation is also available as below:

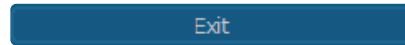
HOME/Space key → ESC key
 ↑ key → → key
 ← key → ↓ key
 Backspace/Delete key → Enter key

Long (press): Press [Shift] key and keyboard key.
10cnt: Press [Ctrl] key and keyboard key.

4.3.20 Terminating Application

This section describes the procedure to terminate this application.

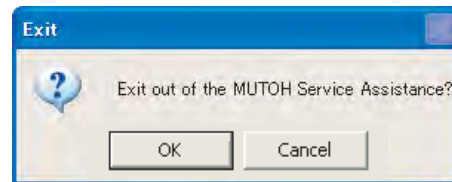
- 1 Click [Exit] on the main window or Click [×] on the right top corner of the window to terminate this application.



*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 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.

4.4.1 Adjustment Procedure

● Tools & Jigs

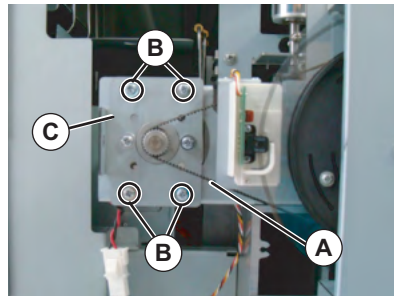
Name	Remark
Phillips screwdriver No.2	generic product
Tension gauge	generic product for measuring Max 40N (4,080gf)

1 Remove Side maintenance cover L.

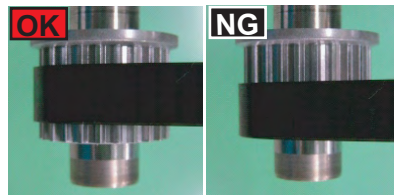
 ["3.2.2Removing Side Cover"](#)

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

A : X speed reduction belt
B : Pan head screw with spring washer and flat washer M4 x 8
C : PF Motor mounting plate

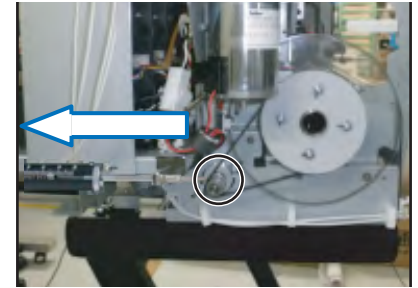


3 Make sure that X Speed Reduction Belt, refer to the following procedure.



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.

4.5 PF Encoder Position Adjustment

This section describes the procedure to adjust the PF Encoder.
After replacing PF encoder, adjust PF Encoder position.

4.5.1 Adjustment Procedure

● Tools & Jigs

Name	Remarks
Phillips screwdriver No.2	Generic products

- 1 Remove L Side Cover.
☞ [3.2.2 Removing Side Cover](#)

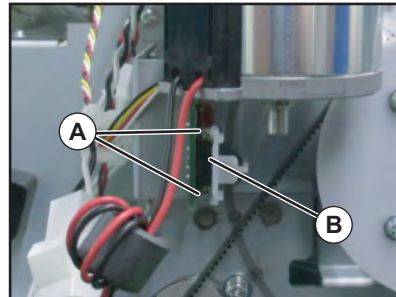
- 2 Loosen the screws retaining PF encoder.

A : Pan head screw with spring washer and flat washer M4 x 8

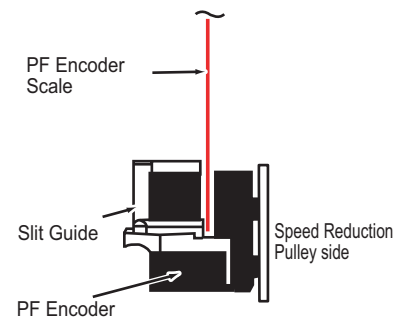
B : PF Encoder

NOTE

Align so that the PF encoder scale is placed in the gap of the PF encoder Assy, and then tighten the screw.



- 3 Align so that the PF encoder scale is placed in the gap of the PF encoder.



- 4 Turn the PF encoder scale around once to check that the scale does not swing toward the speed reduction pulley from the center of the encoder gap. If it swings, adjust the PF encoder position again.

NOTE

There is no problem even if the scale hits the slit guide when turned around.

- 5 To reassemble unit, reverse the removal procedure.

4.6 CR Belt Tension Adjustment

This section describes the procedure to adjust the tension of the CR belt.
When you have removed and installed the CR belt, adjust the CR belt tension.

4.6.1 Adjustment procedure

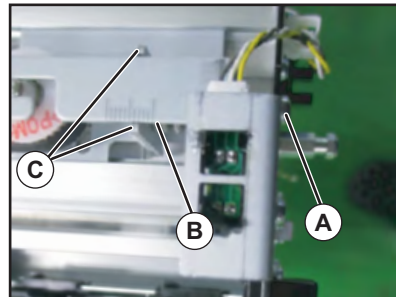
● Tools & Jigs

Name	Remarks
Phillips screwdriver No.2	Generic Products
Thread locker	Three bond1401

- 1 Remove L Side Cover.
👉 ["3.2.2Removing Side Cover"](#)

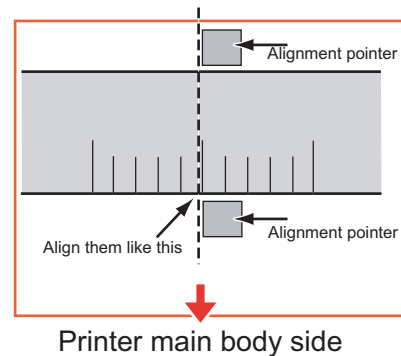
- 2 Tighten the CR tension mounting shaft, and align the left side (viewed from the front of the printer) of the graduation alignment pointer with the center line of graduations on the driven pulley base.

A : CR tension adjustment screw
B : Graduation
C : Graduation alignment pointer



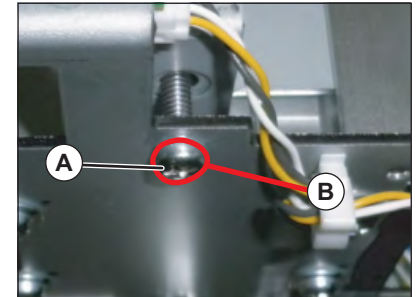
NOTE

To align the graduation alignment pointer with the center line of driven pulley base, align the left side (viewed from the front of the printer) of the pointer with the center line as shown below.



- 3 After adjustment, apply threadlockert to the screw head of the CR tension mounting shaft not to loosen it.

A : Round head screw M4 x 30
B : applying point



- 4 To reassemble unit, reverse the removal procedure.

4.7 Head Adjustment

4.7.1 Head Alignment (Horizontal Slant)

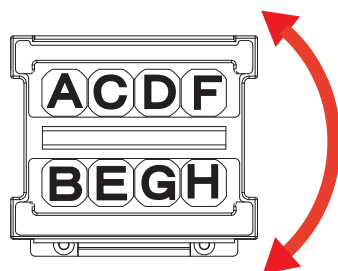
This section describes the procedure to adjust the head slant in the horizontal direction. When you have removed and installed the print head, such as for print head replacement, always adjust the head slant following the steps below.

● Tools & Jigs

Name	Remark
Phillips screwdriver No.2	generic product
hex wrench (2.5mm)	generic product For screws retaining Head base, with shaft length of 150mm or longer and not L-shaped
Loupe	generic product For confirming Adjust pattern
Penlight	generic product For confirming Adjust pattern

NOTE

- Using the adjustment pattern when setting 8 colors.
- Adjustment procedure is the same as 4 color setting, 6 color setting and 8 color setting.
- 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.
- Designation of the head nozzles are as follows.



1 Remove R Side Cover.


["3.2.2Removing Side Cover"](#)

2 Release Carriage lock.

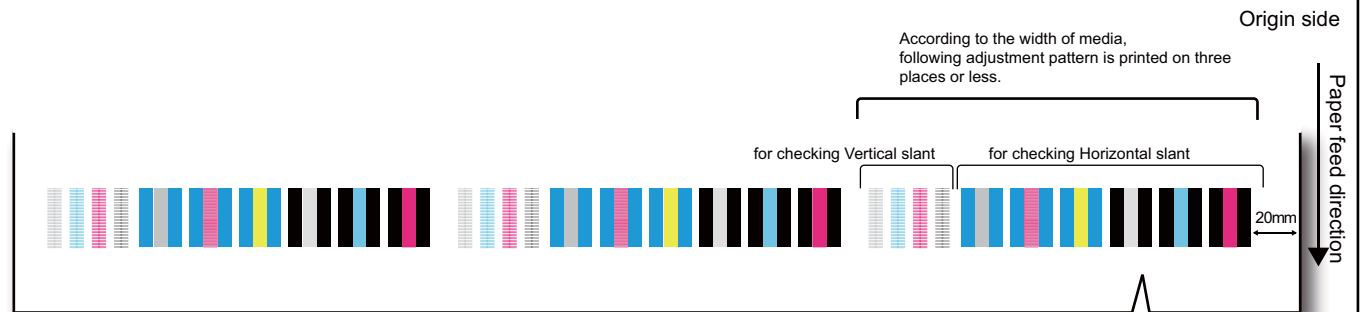
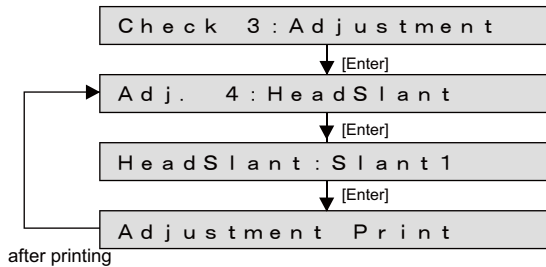
["3.8.1Releasing Carriage Lock"](#)

3 Remove Carriage cover.

["3.8.2Removing Carriage Cover"](#)

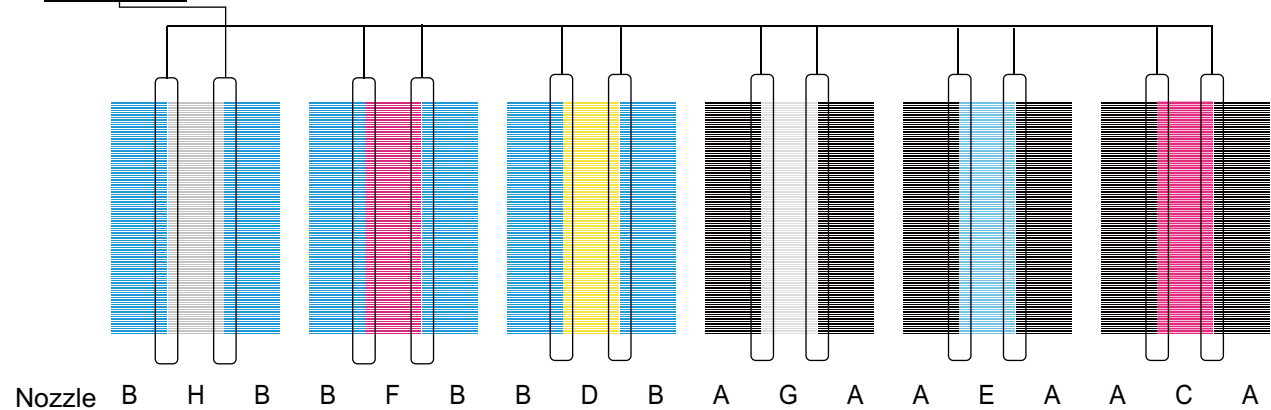
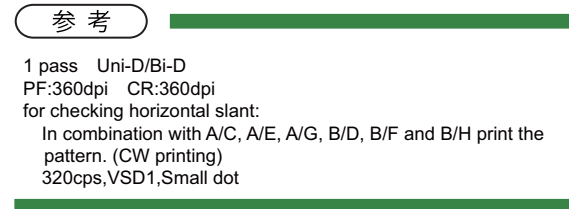
- 4 Start the printer in the self-diagnosis function mode and print the check patterns in "Head Slant: Slant 1."  "5.6.4 Head Slant Check Menu"
Using the adjustment pattern when setting 8 colors.

Print the Adjustment pattern



Check Head slant1 (Horizontal)

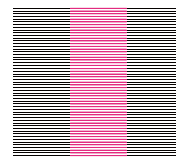
Check the Slant 1 (Horizontal) at Connecting points (Refer to the following and an enlargement.)



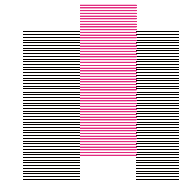
connecting point enlargement : nozzle A and C

- (1) Check the position of Black and each color
In "good", No need for adjustments.
In "poor", it adjust respectively and be set to
"good".
Refer to the "Step 5" or later.

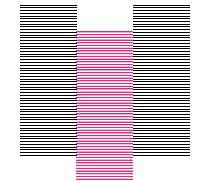
- (2) Repeat printing and adjustment until a result
becomes "good".



good



poor



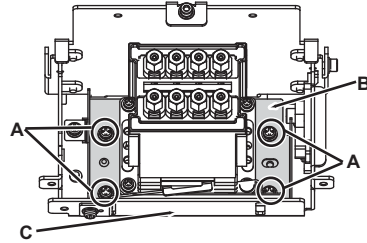
poor

- 5** Loosen the screws (4 pieces) retaining Head base.

A : Pan-head screw with spring washer and flat washer M3 x 6

B : Head base

C : Head mounting plate

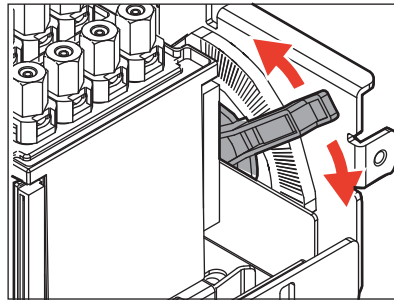


- 8** Print check pattern again to check head slant (horizontal height) is appropriate.
 step 5

- 9** When head slant is not correct, repeat step 5 to step 9.

- 10** To reassemble unit, reverse the removal procedure.

- 6** Shift Notch to adjust the head.



NOTE

- 1 notch is counted as it clicks. The print position moves upward/downward by half a dot per 1 notch.

		A nozzle (Black) lines will be shifted upward.
		A nozzle (Black) lines will be shifted downward.

- 7** Tighten the loosened screws (4 pieces) in step 6.


4.7.2 Head Alignment (Vertical Slant)

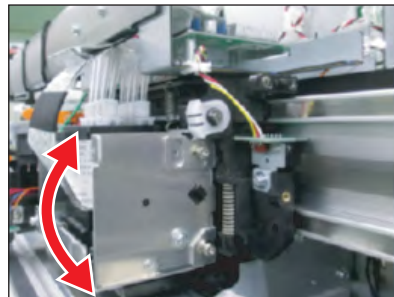
This section describes the procedure to adjust the head slant (Vertical Slant). After operation such as head replacement, you might need to adjust the head slant. When needed, adjust the head slant following the steps below. After an operation such as head replacement, adjust the head slant following the steps below.

● Tools & Jigs

Name	Maintenance Part No.	Remarks
Phillips screwdriver No.2	Generic products	-
Hex Wrench (2.5mm)	Generic products	-
Loupe	Generic products	-
dedicated media	-	MUTOH recommended media
Penlight	Generic products	for check the adjustment pattern

NOTE

- Using the adjustment pattern when setting 8 colors.
- Adjustment procedure is the same as 4 color setting and 5 color setting.
- Adjust the horizontal height of the head alignment before adjusting the vertical alignment slant of head alignment.
 ["5.6.4Head Slant Check Menu"](#)
- In this procedure, the print head will be aligned in the directions (vertical slant) shown below.



3 Remove Carriage cover.


 ["3.8.2Removing Carriage Cover"](#)

1 Remove R Side Cover.

 ["3.2.2Removing Side Cover"](#)

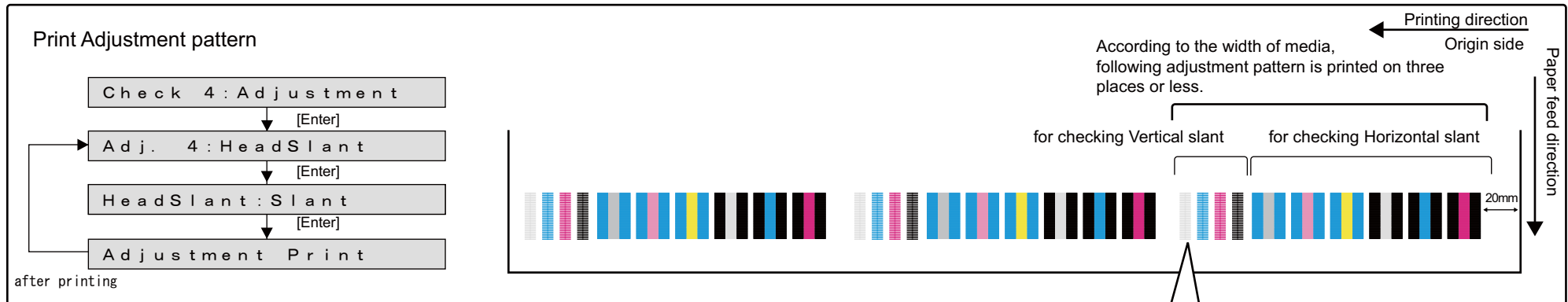
2 Release Carriage lock.

 ["3.8.1Releasing Carriage Lock"](#)

- 4 Start the printer in the self-diagnosis function mode and print the check patterns in "Head Slant: Slant 1."  [5.6.4 Head Slant Check Menu](#)

TIP

Adjustment patterns of Head alignment (horizontal height) and (vertical) are printed when printing the adjustment pattern of "Head Slant: Slant1".

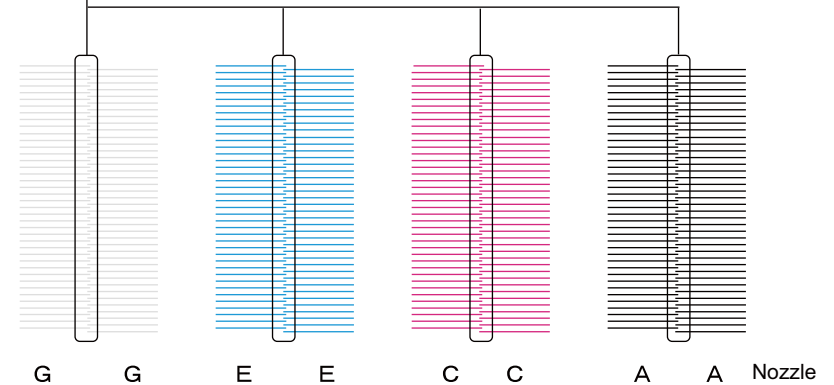


Check Head Slant 2 (Vertical)

Check the Slant 2 (Vertical) at Connecting points (Refer to the following and an enlargement.)


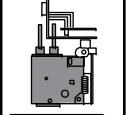
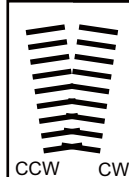
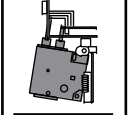
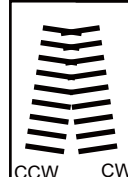
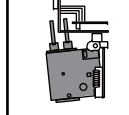
TIP

1 pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 for checking horizontal slant:
 Nozzle A,C,E and G print the pattern. (CW/CCW printing)
 320cps,VSD1,Small dot



Connecting point (Enlargement) : Ex. Black

- (1) Check whether Connecting points are one row.
 In "good", No need for adjustments.
 In "poor", it adjusts, respectively and be set to "good".
 Refer to the following page for the adjustment method.

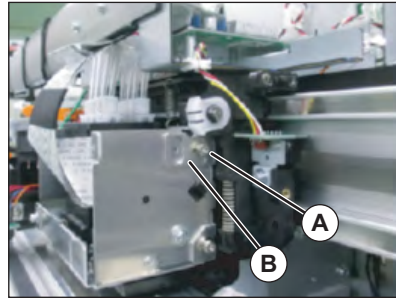
	state of Vertical Slant 	good The connecting points of CW printing and CCW printing are printed vertically in a straight line.		state of Vertical Slant 	poor The lines of CW printing and CCW printing are not straight.		state of Vertical Slant 	poor The lines of CW printing and CCW printing are not straight.
---	--	---	---	--	--	---	--	--

(1) Adjustment Procedure

- 5** Loosen the screws (2 pieces) retaining Head Base Mounting Plate.

**A : Hexagon socket head cap screw with spring washer and flat washer
M3 x 8 Ni-3**

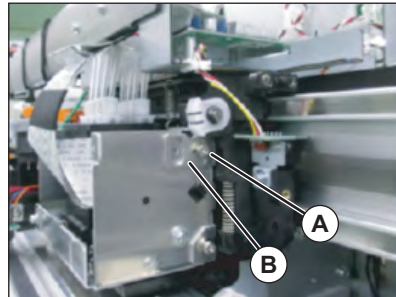
B : Head Base Mounting Plate



- 6** After adjusting Head Base Mounting Plate, tighten the screws (2 pieces).

**A : Hexagon socket head cap screw with spring washer and flat washer
M3 x 8 Ni-3**

B : Head Base Mounting Plate



- 7** Print the confirmation pattern again to check if Head slant (vertical) is appropriately adjusted.

 ["5.6.4Head Slant Check Menu"](#)

- 8** If Head slant is still not adjusted, repeat printing and adjusting.

- 9** To reassemble unit, reverse the removal procedure.

4.8 Head Height Adjustment


This section describes the procedure to check Carriage height (distance from the platen).

4.8.1 Adjustment Procedures

● Tools & Jigs & Maintenance Parts

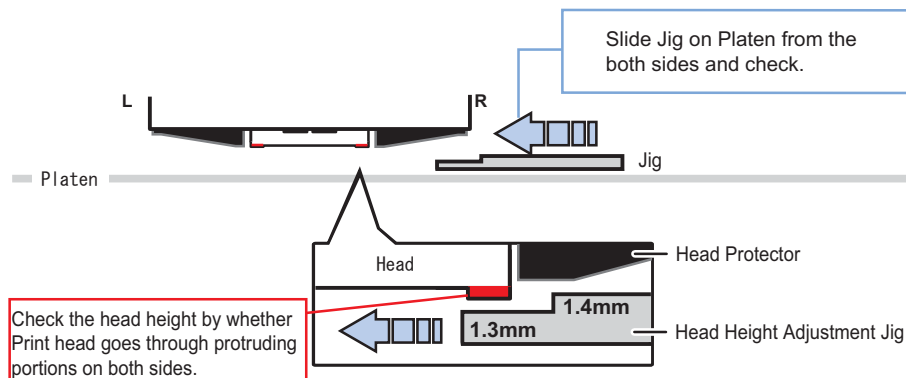
Name	No.	Remarks
Phillips screwdriver No.2	Generic product	-
PG Adjusting Jig (1.1/1.3)	DG-43193	-

1 Remove R Side Cover.
 ["3.2.2Removing Side Cover"](#)

2 Release Carriage lock.
 ["3.8.1Releasing Carriage Lock"](#)

3 Place the Head height adjustment Jig on Platen.

4 Check that Carriage can pass through a gap above the 1.1mm part of the Head height checking Jig and cannot pass through a gap above the 1.3mm part.



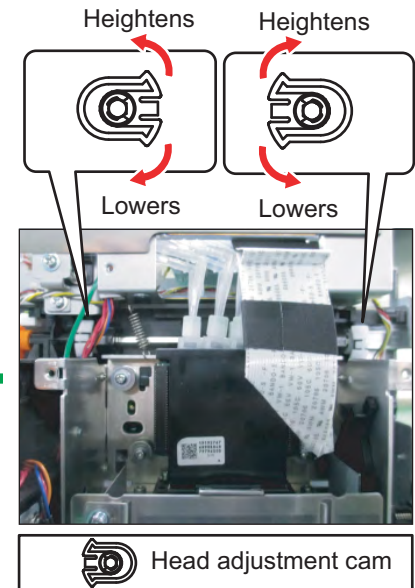
5 Reverse the direction of the jig and adjust the opposite side of the head with the same procedure.

6 When Print head does not go through 1.1mm step or go through 1.3mm, loosen the screws (1 piece each on the right and left sides) that retain the head adjustment cam located on the right and left sides of the carriage, and adjust the head height.

- Move the cam upward: Heighten the head height.
- Move the cam downward : Heighten the head height.

NOTE

The heights of right and left cams are separately changed. After changing the height, refer to the steps 4 to 6 and make sure to use Head height adjustment Jig to check that the heights of the right and left cams are appropriate.



7 Apply the Thread locker on the Head adjustment cam to fix the head height.

8 To reassemble unit, reverse the removal procedure.

5 Self Diagnosis Function

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5.1 Introduction

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.

 ["\(2\) Jig panel"](#)

TIP

This manual is created based on firmware Ver.1.00.

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 a MUTOH recommended media.

(2) Connecting Power Cable

Connect Power cable to the machine's inlet Assy and insert Power plug into an outlet.

WARNING

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

NOTE

When using the self-diagnostic function of VJ-628X, there are the following two methods.

- Using Panel Window in MSA
 - ➡ (1) Usage of Maintenance Panel (MSA)
- Using Jig Panel Assy
 - ➡ (2) Connecting Jig Panel Assy

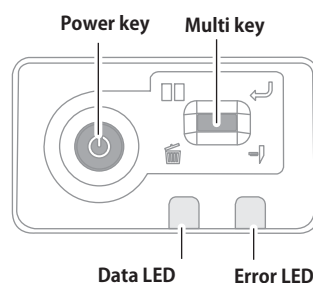
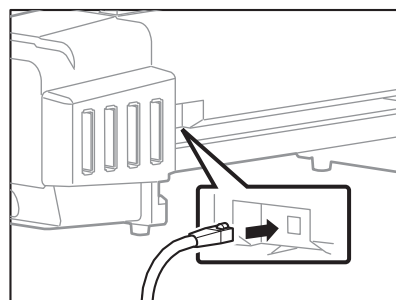
(1) Usage of Maintenance Panel (MSA)

(1-a) Usage of Maintenance Panel Window

- 1 Turn OFF the printer.
- 2 Insert Connector of Network interface cable into Network interface connector located in the back of the printer.
- 3 Press Power key to ON.
- 4 If data LED and error LED light up, pressing the multi-key is continued.

TIP

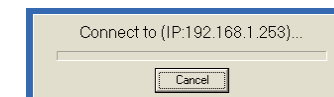
If Data LED and Error LED repeat lighting and putting out lights by turns, it means having started in board manager mode.



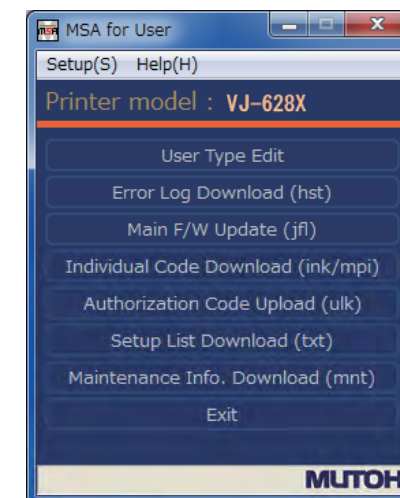
- 5 Double-click the [Shortcut to MUTOH Service Assistance.exe], and check that the application starts correctly.
At the first startup, it shall be started in English mode.



- 6 Automatic printer model selection is started.
➡ (9) Confirming Startup of the "MUTOH Service Assistance"

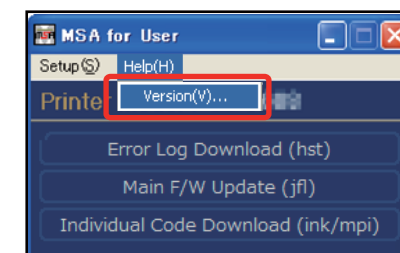


- 7 After having chosen printer model, main window appears.



- 8 On User mode main window, click [Help] - [Version].

[Version information] window appears.

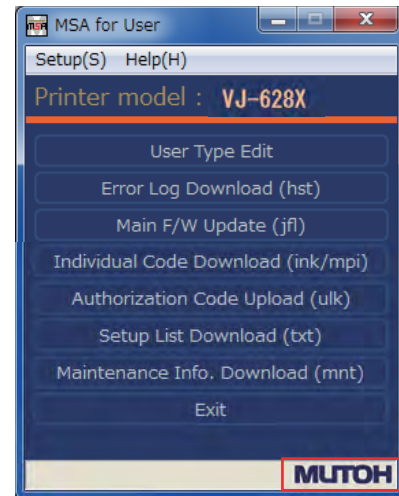


- 9** Double-click the MUTOH logo (1) and then the MSA icon (2).

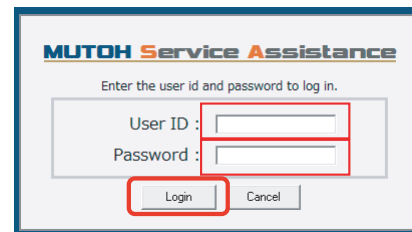
Then click [OK].



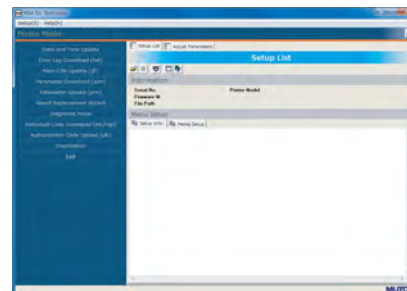
- 10** Double click [MUTOH].
Login window will be displayed.



- 11** Enter User ID and Password.
Then click [Login].

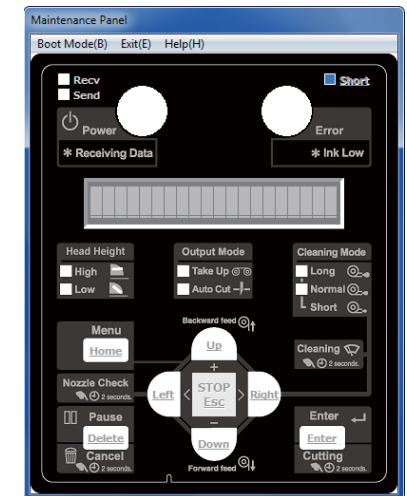


- 12** The main screen of Technician mode will be displayed.



- 13** Click [Maintenance Panel].

- 14** [Maintenance Panel] window will be displayed.

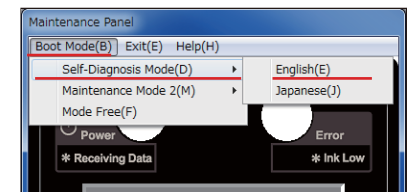


(1-b)How to start the Maintenance Panel

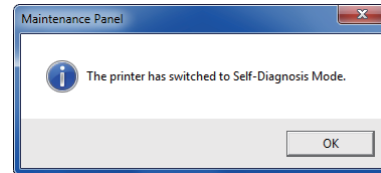
- 1** Click [Boot Mode] and choose either [Self-Diagnosis Mode] or [Maintenance Mode 2].
Then, choose language.

CAUTION

- The Maintenance Panel is not available until the PC is properly connected to the printer after the mode selection.
- The selected language is reflected in the Maintenance Panel until the printer is powered off.
The initial language setting is reflected in the printer.

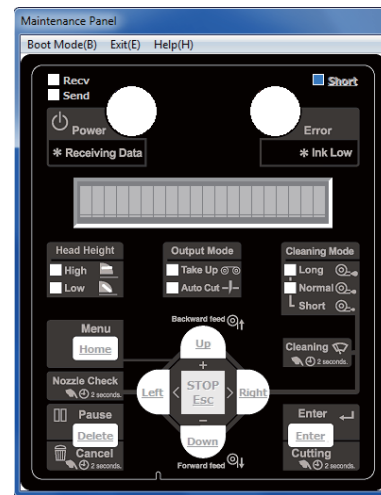


- 2 When the printer is successfully switched to the mode you selected, the complete message will appear as shown at right. Click [OK] to go back to the Maintenance Panel.



CAUTION

- The LCD display on the Maintenance Panel is updated.
- The Maintenance Panel becomes available after the proper connection



(1-c) Maintenance Panel Display and Operation

TIP

5.3 Operations in Self-Diagnosis Mode

Choose Self-Diagnosis Mode/ Maintenance Mode 2 and choose language.

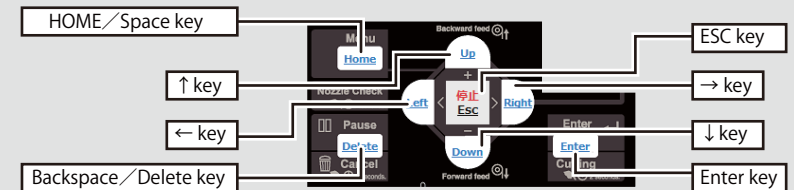
Display the communication status with the printer.
Recv: Printer information receiving status
Send: Button input sending status
Recv/Send
Green Light: Communication Success
Red Light: Communication Failed

Clicking button to operate the Maintenance Panel.

Right-clicking stops the operation.

The [STOP] button is implemented only for the Maintenance Panel to stop the operation of "Long (press)" and "10cnt".

The keyboard operation is also available as below.



Press [Shift] key and keyboard key: [Long (press)]
Press [Ctrl] key and keyboard key: [10cnt]

Exit the Maintenance Panel.

Display the Help window.

The button operation can be changed by clicking.

Short (press) → Long (press) → 10cnt

Long (press):
Press [Shift] key and keyboard key
10cnt:
Press [Ctrl] key and keyboard key

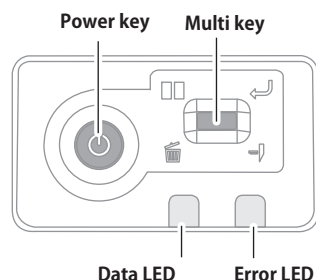
(2) Connecting Jig Panel Assy

NOTE

- When starting Self-diagnostic function or Maintenance mode 2, it is necessary to connect Jig Panel Assy (maintenance parts) to the MAIN Board of the printer. (Jig panel Assy is not enclosed by the printer.)
- Prepare Jig Panel Assy and Phillips screwdriver No.2. (refer to the following table)
- Tools & Jigs & Maintenance part

Name	No.	Remarks
Jig Panel Assy	DG-44954	the followings are enclosed Panel FFC Panel Unit Panel Sheet
Phillips screwdriver No.2	Generic product	-

- 3** When the printer is an operating state, turn the power key OFF.



- 4** Remove Power Cable.

- 5** Turn the power key ON.

NOTE

It is the work for making it discharge.

- 6** Turn the power key OFF.

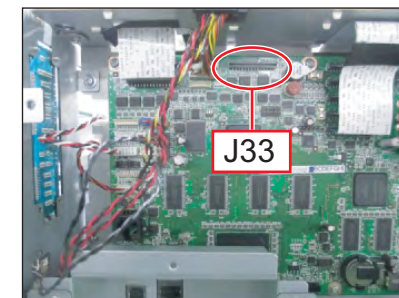
- 7** Remove Top Cover.

[3.2.1 Removing Top Cover](#)

- 8** Connect the Panel FFC to the connector J33 of MAIN Board.

CAUTION

- 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.



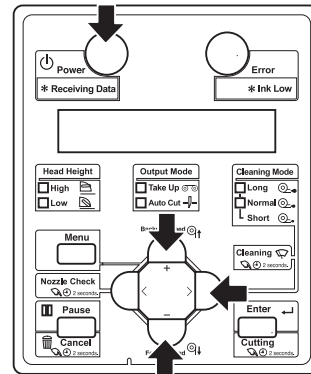
- 9** Connect Panel FFC to Panel Unit.

(2-a) Starting Up the Self Diagnosis Mode

NOTE

- You need a jig panel (operation panel) for self diagnosis function.
- You need to display self diagnosis menu on the operation panel to use self diagnosis functions.
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 While pushing three of the [-] key to Jig panel, [+] key and [>] the key at the same time; Push [Power] key. Self diagnosis menu is displayed.



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.

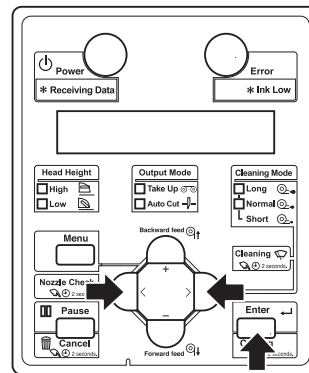
5.3.1 Operating Self-Diagnosis Mode

Follow the flow shown below to operate the self-diagnosis mode.

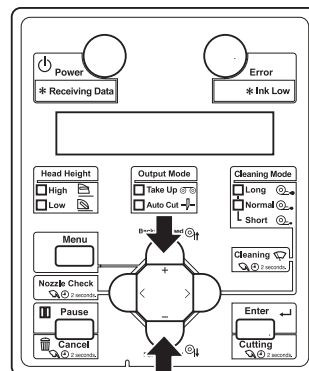
TIP

For more detailed operation procedure, refer to the flow chart of the applicable diagnosis items.

- 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.



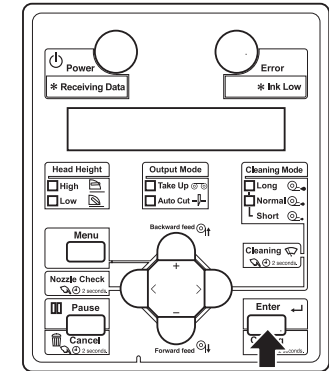
- When the LCD monitor on Operation panel indicates a setting value, the value can be modified. Press [+] key or [-] key on Operation panel to modify the value.



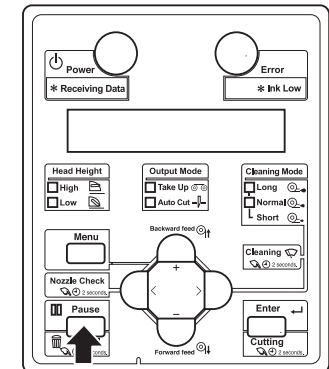
- To save the modified value, press [Enter] key on Operation panel.

NOTE

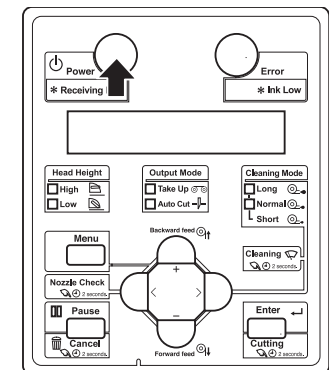
If you press [Cancel] key, instead of [Enter] key, the modification is not stored.



- To quit the diagnosis, press [Cancel] key on Operation panel.
*The system returns to an upper hierarchy of the diagnosis menu.















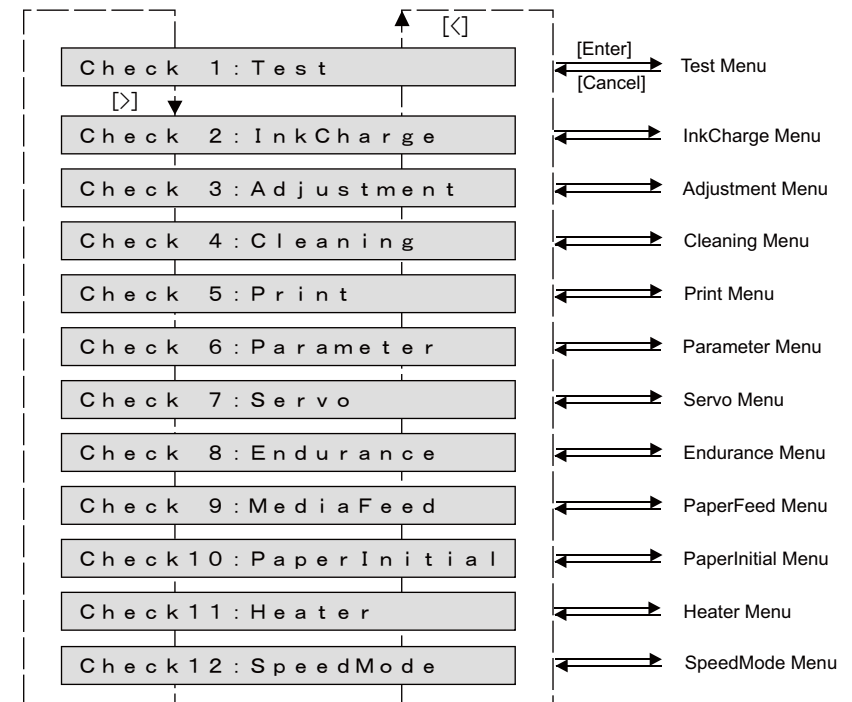
- To exit the self-diagnosis menu, press [Power] key.



5.3.2 Diagnosis Items in Self-Diagnosis Menu

The self-diagnosis menu includes the following diagnosis items.

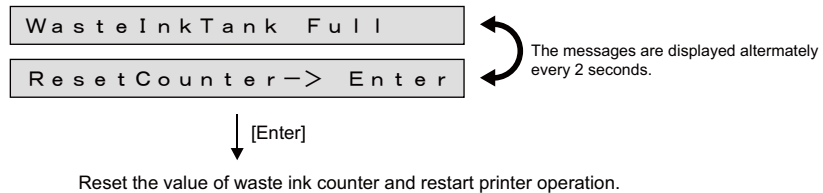
Diagnosis item	Contents	Reference
Test	Display the following items on Operation panel. Memory size Firmware version Panel Sensor Encoder Fan History Head waveform Time Check	 "5.4 Test Menu"
InkCharge	Performs initial cleaning of Print head and ink charging.	 "5.5 Ink Charging Menu"
Adjustment	Head Adjustment, Sensor Position, Sensitivity adjustment	 "5.6 Adjustment Menu"
Cleaning	Performs cleaning of Print head.	 "5.7 Cleaning Menu"
Print	Performs printing of the following items: Adjustment pattern ALL Parameter ALL Error history S/C Log	 "5.8 Sample printing Menu"
Parameter	Performs the setting and initialization of the adjustment parameter.	 "5.9 Parameter Menu"
Servo	Performs setting for Servo motor.	 "5.10 Servo Setting Menu"
Endurance	Performs endurance running of the printer mechanism.	 "5.11 Endurance Running Menu"
MediaFeed	The media is fed forward and backward, and then cut.	 "5.12 Media Feed Menu"
MediaInitial	Performs media detection setting.	 "5.13 Media Initial Menu"
Heater	The status of the sensors related to the heater is displayed on the panel.	 "5.14 Heater"
SpeedMode	Set the print speed for user mode.	 "5.15 Speed mode"



5.3.3 Reset Waste Ink Counter

When the waste ink, generated from printing and cleaning, reaches the upper limit of the waste ink tank, “WasteInkTank Full” will be displayed on the panel and the printer will stop operating to prevent overflowing.

To start operating the printer, empty the tank and then press [Enter] to reset the value of waste ink counter.




NOTE

Make sure to empty the tank before pressing [Enter].

Even if the waste ink still remains in the tank, the counter can be reset once you press the key.

5.3.4 Error Message Display

Following error messages will appear on the jig panel when any of such error occurs during ink sequences (ink charging, discharging, cleaning or longstore) or pattern printing. For how to handle the errors, see "Operation Manual" or  [2.2 Troubleshooting with Error Messages](#)

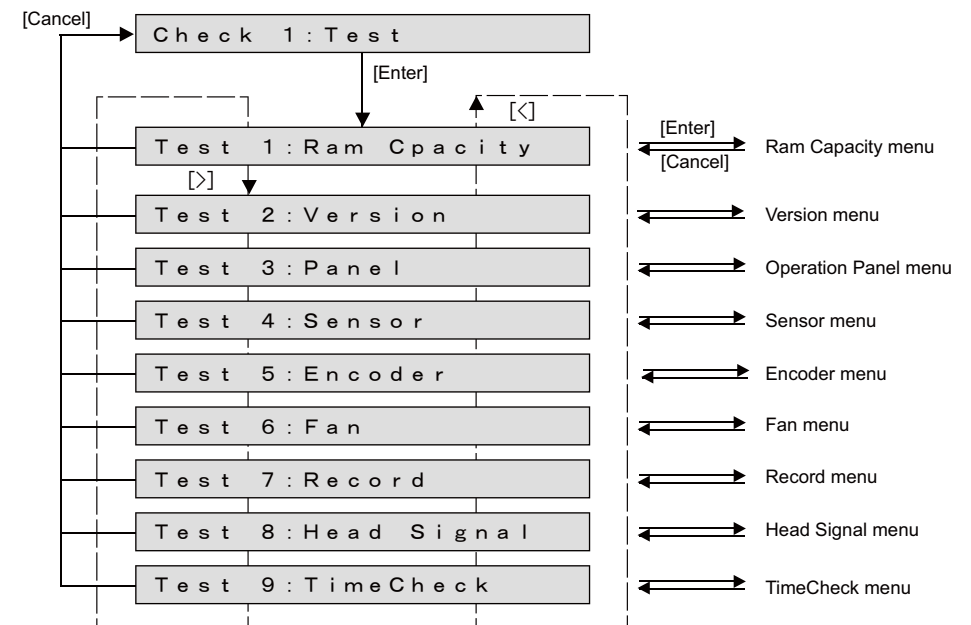
Messages	Contents
Cover Open	Front cover is open.
Lever Up	The media is not loaded.
[ALL] NoCartridge	All cartridges are not inserted.
[1] NoCartridge	The cartridge of [] is not inserted.
[ALL] Ink End	Ink of all cartridges has run out.
[1] Ink End	Ink of [] has run out.
[ALL] S/C ReadErr	IC chip cannot be read.
[ALL] S/C Col. Err	Ink cartridge is inserted into a wrong Ink cartridge slot.
[2] S/C Ink Err	This type of ink cannot be used for this printer.
[3] S/C CodeErr	An improper Ink cartridge is inserted.
[4] Broken Chip	IC chip is broken.
Smart/C Empty	A remaining amount of Smart/C has run out.

5.4 Test Menu

This menu displays the following items on Operation Panel.

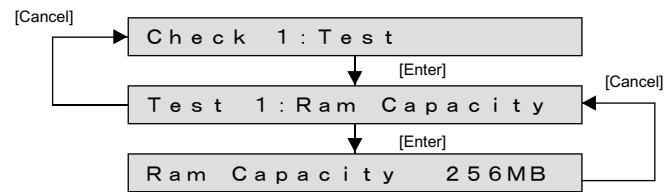
Diagnosis item	Contents	Reference
Ram Capacity	Displays the size of memories installed on the MAIN board.	"5.4.1 Memory Size Menu"
Version	Displays the following items on Operation panel: Firmware version Backup parameter version Setting of dip switches of MAIN board Revision of MAIN board Company code Serial No.	"5.4.2 Version Menu"
Panel	Used to check the operations of Operation panel keys, LED.	"5.4.3 Operation Panel Menu"
Sensor	Displays the status of the following sensors: CR origin sensor Cover sensor Lever sensor Media edge AD sensor Media rear AD sensor Head Gap sensor Head thirmistor sensor Head Trans istor Thermistor Sensor1/2 Cartridge Not (8) Ink Not (8) INK ID (8) Cutter solenoid Check Wiper solenoid Check	"5.4.4 Sensor Menu"
Encoder	Displays the detected values from the following encoders: CR encoder PF encoder	"5.4.5 Encoder Menu"
Fan	Used to check if the following fans operate normally by turning them ON and OFF: Vacuum Fan Cooling fan (24V) Assy (for MAIN board)	"5.4.6 Fan Menu"

Diagnosis item	Contents	Reference
Record	Used to check the following records. Used to initialize the serious error record. <ul style="list-style-type: none"> Maintenance record Serious error record Initialize Serious error record Confirming Printing information Confirming Operating Time Confirming S/C Log Initializing S/C Log 	"5.4.7 Record Menu"
Head Signal	Used to check the head-driving waveform.	"5.4.8 Head Waveform Menu"
TimeCheck	Confirming operating RTC (real time clock).	"5.4.9 Time Check Menu"



5.4.1 Memory Size Menu

This menu is used to display the size of memories installed on MAIN board on Operation panel.



5.4.2 Version Menu

This menu is used to display the following items on Operation panel.

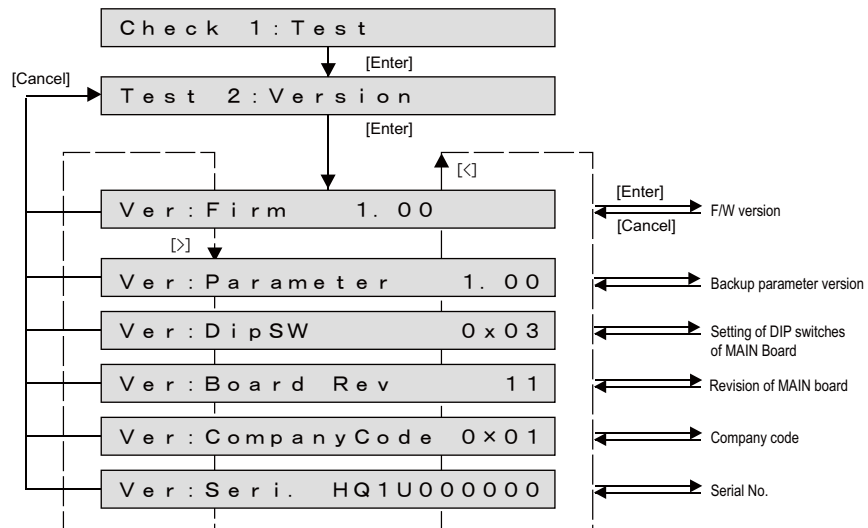
- Firmware version
- Backup parameter version
- Setting of dip switches of MAIN board
- Revision of MAIN board
- Company code
- Serial No.

TIP

The following is a supplement explanation about display contents.

- Settings for the DIP switch on the MAIN board 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: Ser i. Not Set

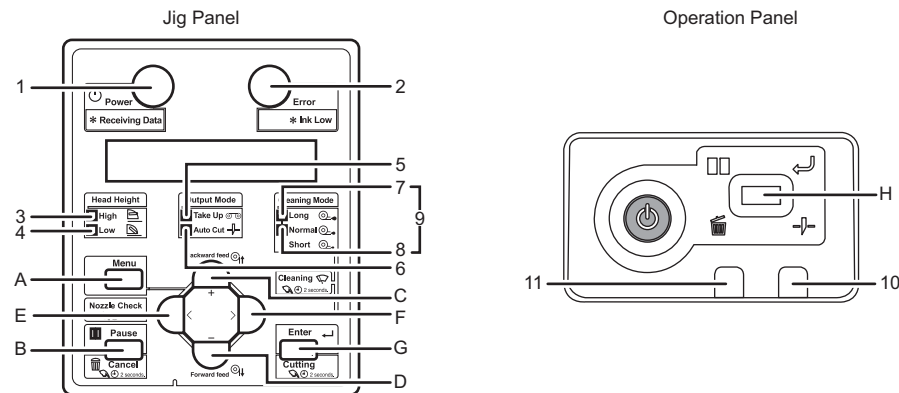


5.4.3 Operation Panel Menu

Check the operation panel (jig panel) keys and LED operation.

TIP

Names for the panel keys and LED parts are as follows.



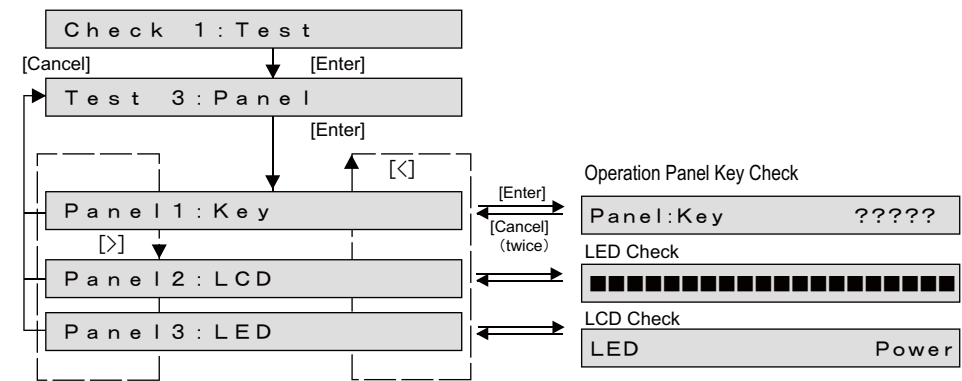
No.	LED part names	No.	Panel Key name
1	Power	A	Menu
2	Error	B	Cancel
3	High	C	Plus
4	Low	D	Minus
5	Take Up	E	Pre
6	Auto Cut	F	Next
7	Long	G	Enter
8	Normal	H	Tact
9	Short	-	-
10	Error	-	-
11	Data	-	-

(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) LED Check

For LED check, the LED is lit in the order of the numbers shown in the left illustration. The LCD displays the name of LED that is currently illuminated.

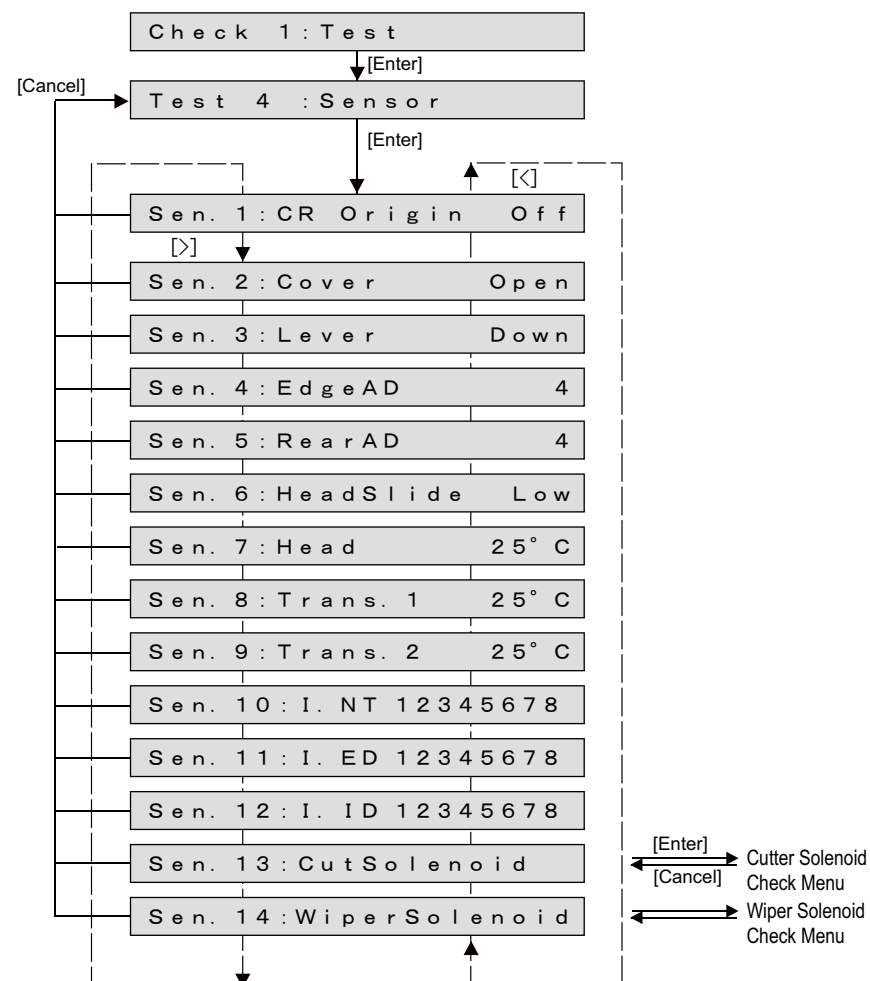


5.4.4 Sensor Menu

This menu is used to display the sensor status on Operation panel.

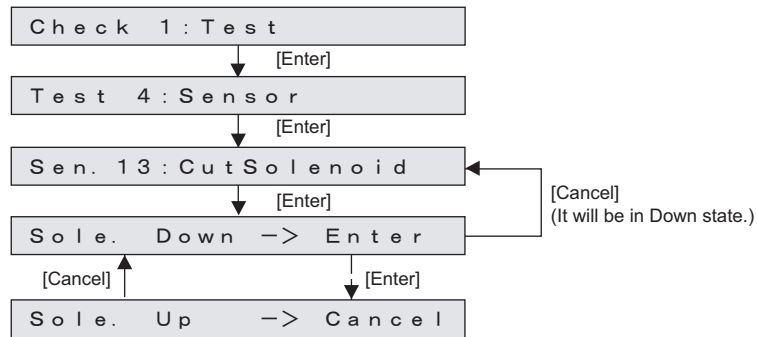
If the displayed sensor status does not match the actual machine status, replace or adjust the relevant sensor.

No.	Sensor name	Status in display	Reference
1	CR Origin	ON/OFF	The state of CR Origin Sensor is displayed.
2	Cover	Open/Close	The state of Front cover is displayed.
3	Lever	Up/Down	The position of Pressuring Lever is displayed.
4	Edge AD (P_EDGE sensor)	0 to 255	The sensitivity of P_EDGE sensor is displayed.
5	Rear AD (P_REAR sensor)	0 to 255	The sensitivity of P_REAR sensor is displayed.
6	Head Slide	Low/High	The height of Head is displayed.
7	Head	** °C	The temperature of the Head is displayed.
8	Trans.1 (Head transistor thermistor 1)	** °C	The temperature of the transistor of Head (MAIN board) is displayed.
9	Trans.2 (Head transistor thermistor 2)	** °C	
10	I.NOT	12345678	The existence of an ink cartridge is displayed.
11	I.END	12345678	The existence of ink is displayed.
12	I.ID	12345678	The slot which has read the smart chip card is displayed.
13	Cut Solenoid check	-	Checking the operation of the Cutter Solenoid.
14	Wiper Solenoid check	-	Checking the operation of the Wiper Solenoid.



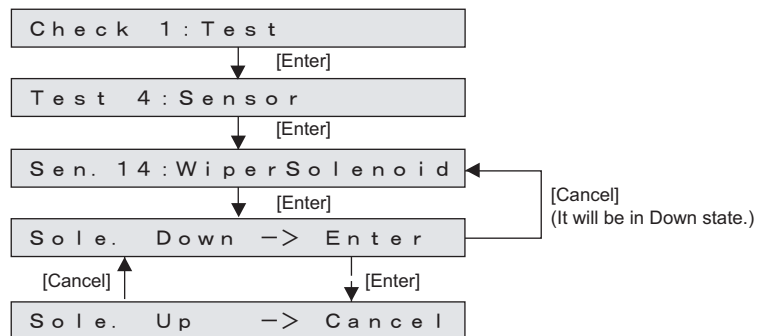
(1) Cutter Solenoid Check

Check the up/down operations of Cutter Solenoid.



(2) Wiper Solenoid Check

Check the up/down operations of Wiper Solenoid.



5.4.5 Encoder Menu

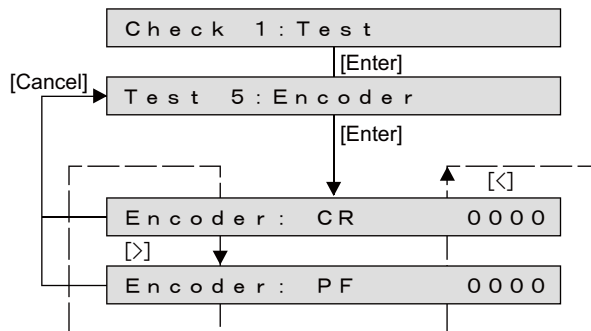
This menu is used to display the detected values from the following encoders:

- CR encoder
- PF encoder

NOTE

For the encoder-detected values, the encoder pulse numbers are displayed in hexadecimal number.

- Encoder values are displayed as follows.
 - CR Encoder: approximately 35.28 μ m
 - PF Encoder: approximately 2.73 μ m



5.4.6 Fan Menu

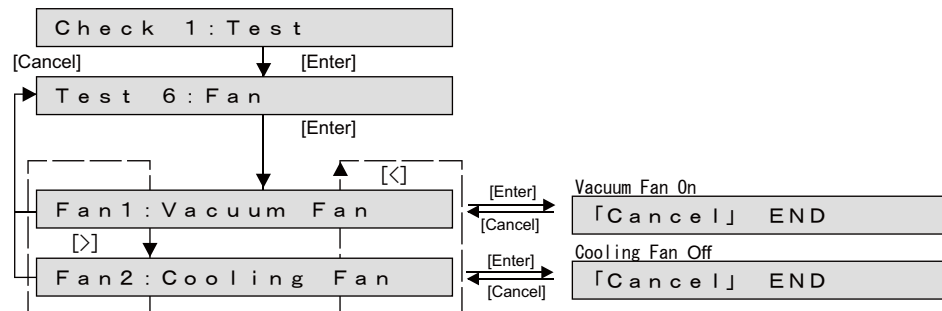
This menu is used to check if the following fans operate normally by turning them ON and OFF:

- Vacuum FAN
- Cooling FAN (24V) Assy (for MAIN board)

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 differs as below.

Name	While Power is ON	After [Enter] is pressed	After [Cancel] is pressed
Vacuum Fan	OFF	ON	OFF
Cooling FAN	ON	OFF	ON

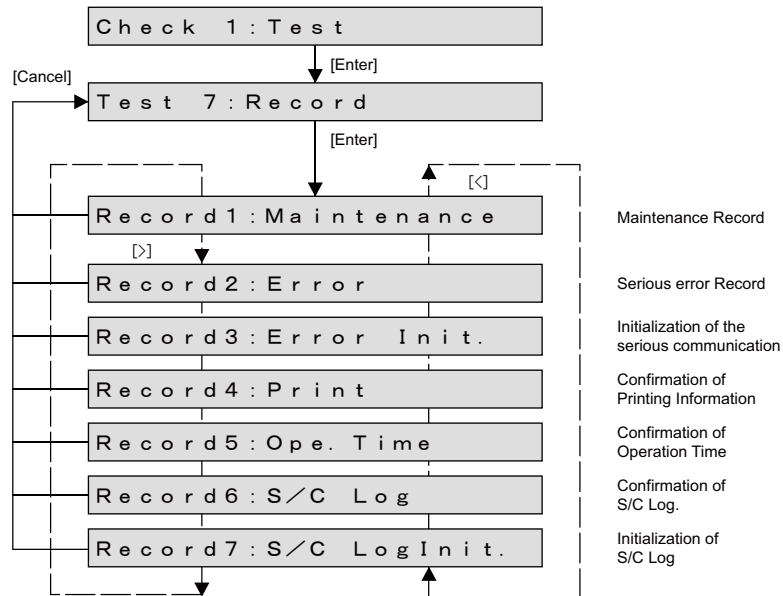


5.4.7 Record Menu

This menu is used to check the following record. In addition, it initializes serious error record. Initializing Record and S/C Log.

- Maintenance record
- Serious error record
- Printing Information
- Operation Time
- S/C Log

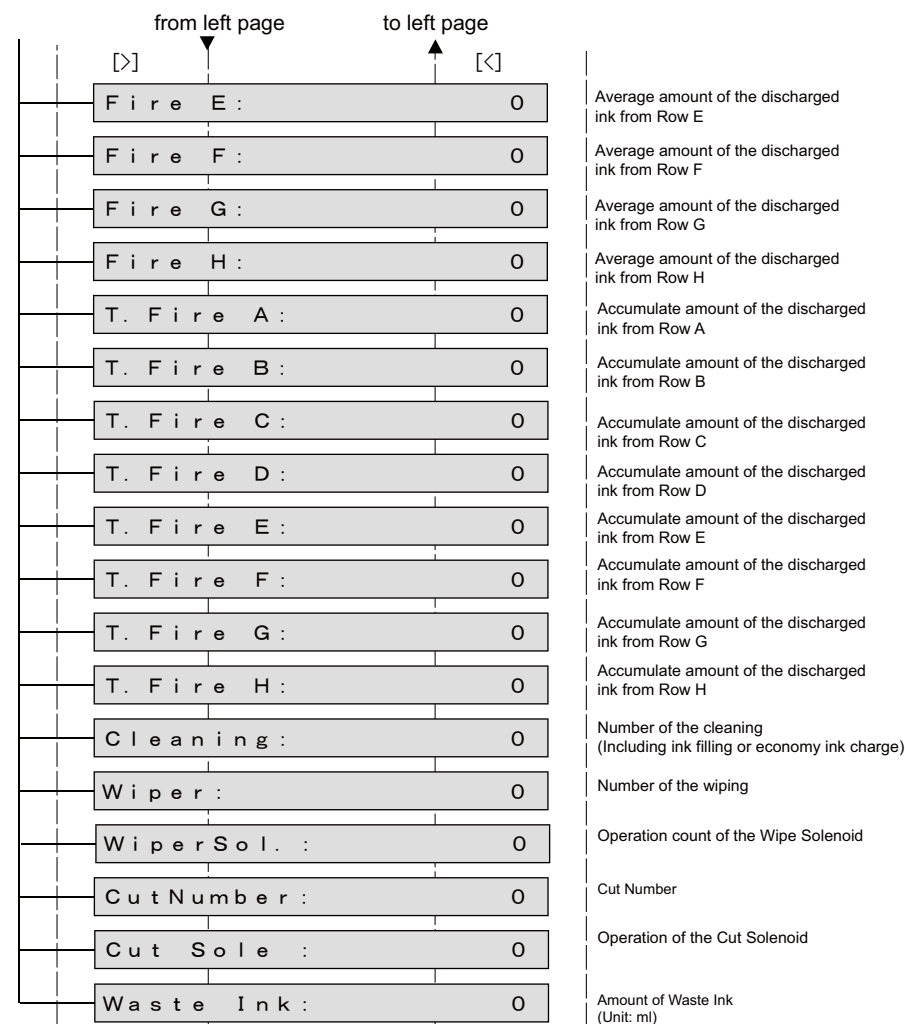
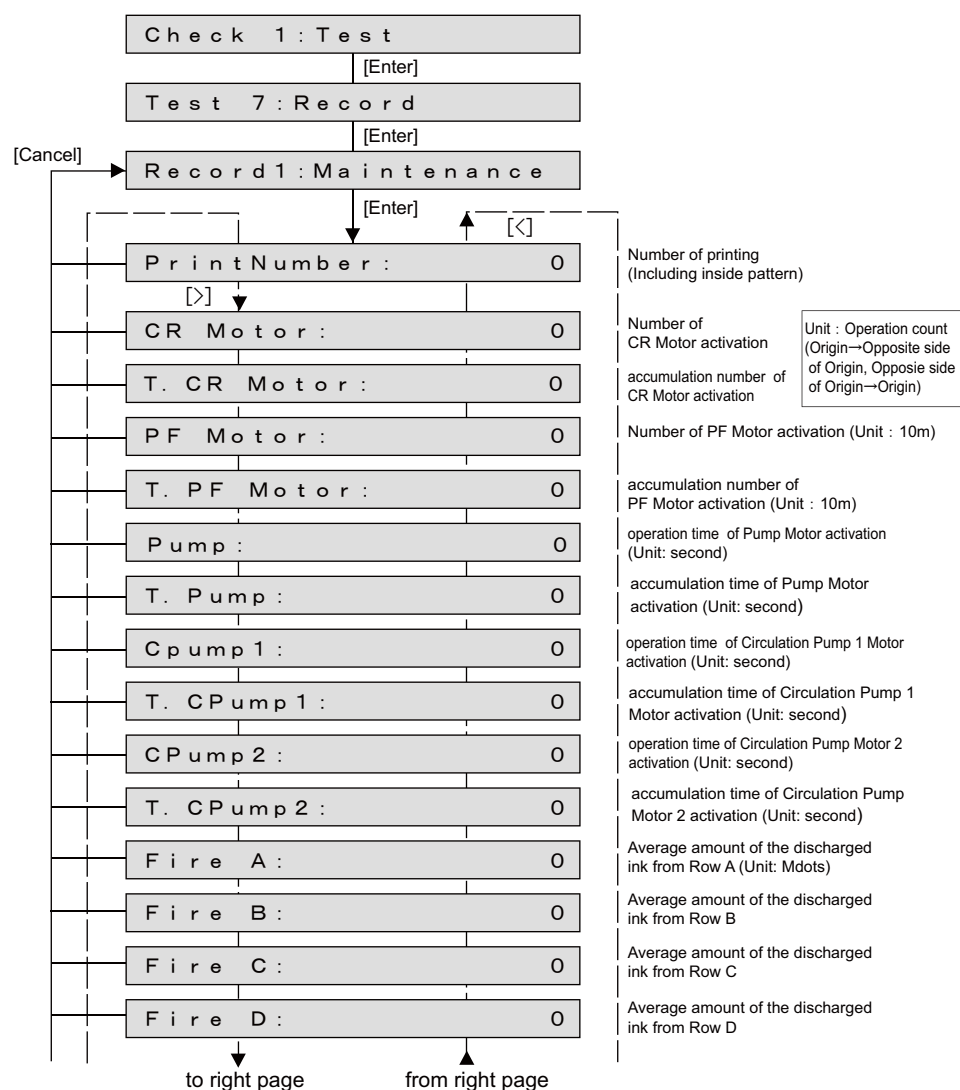
Also Maintenance record and S/C Log will be initialized.



(1) Maintenance Record

TIP

- The number of ink discharge is the average value of the total discharge number divide by 180 per 1 nozzle.
- The ink discharge number is shown in the units of mega dot.

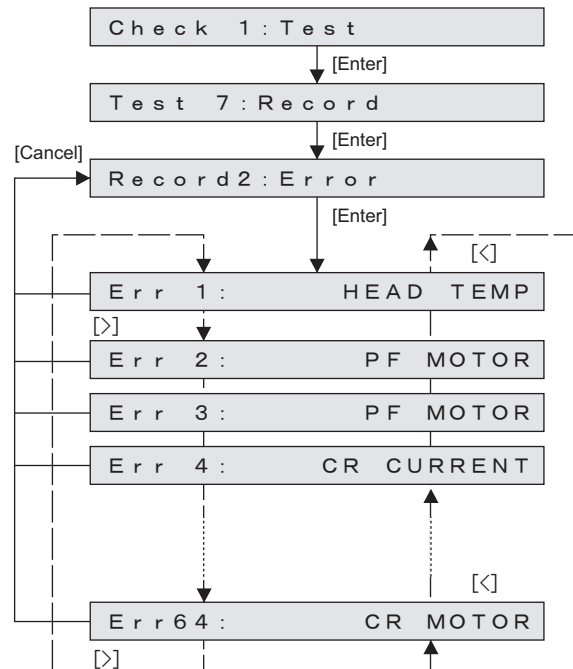


(2) Serious Error Record

This menu is used to display serious error record on Operation panel.

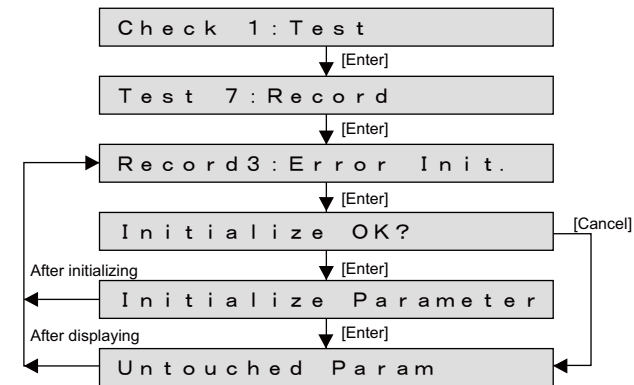
NOTE

- The serious error history does not include CPU error.
- The serious error history menu indicates up to 64 history of items.



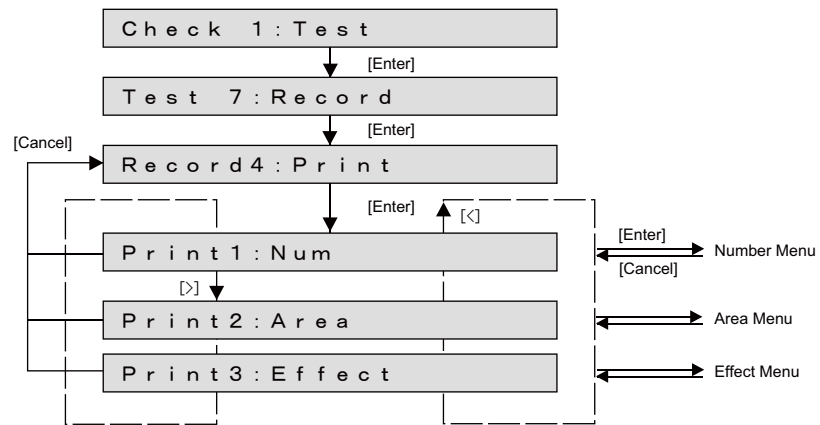
(3) Error Initialization

This menu is used to initialize the serious error record.



(4) Printing Information

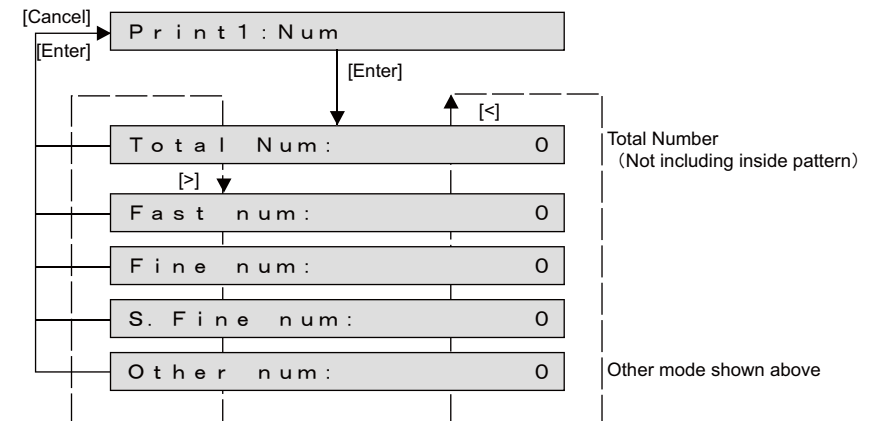
Check printing information (number of printed copies of each print mode, print area, and number of printed copies of each effect). The inner pattern will not be accumulated.

**TIP**

Displayed as a decimal.

(4-a)Number

Check the number of printed copies of each print mode.

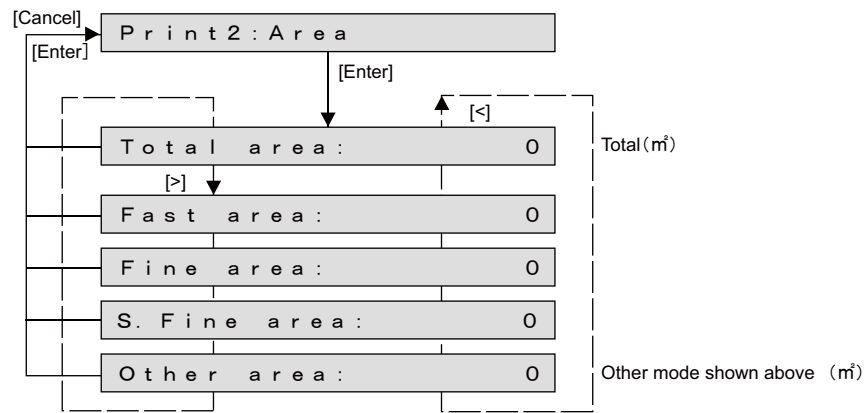


Total Number
(Not including inside pattern)

Other mode shown above

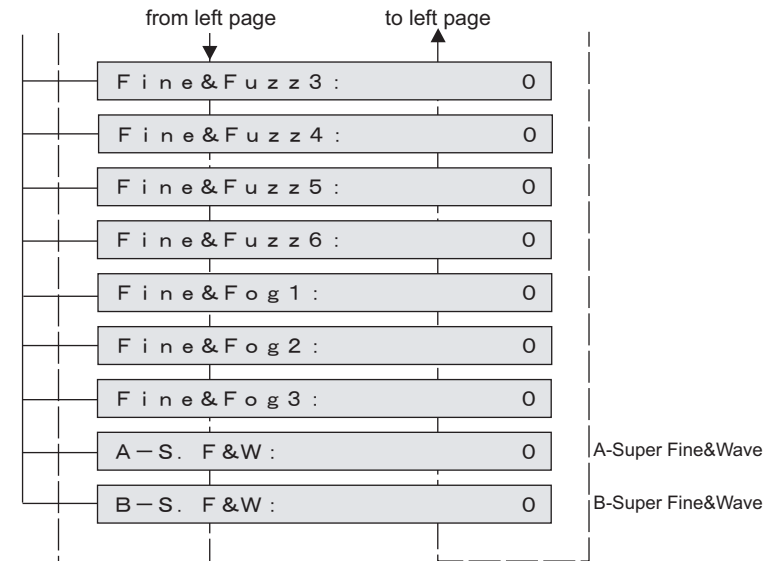
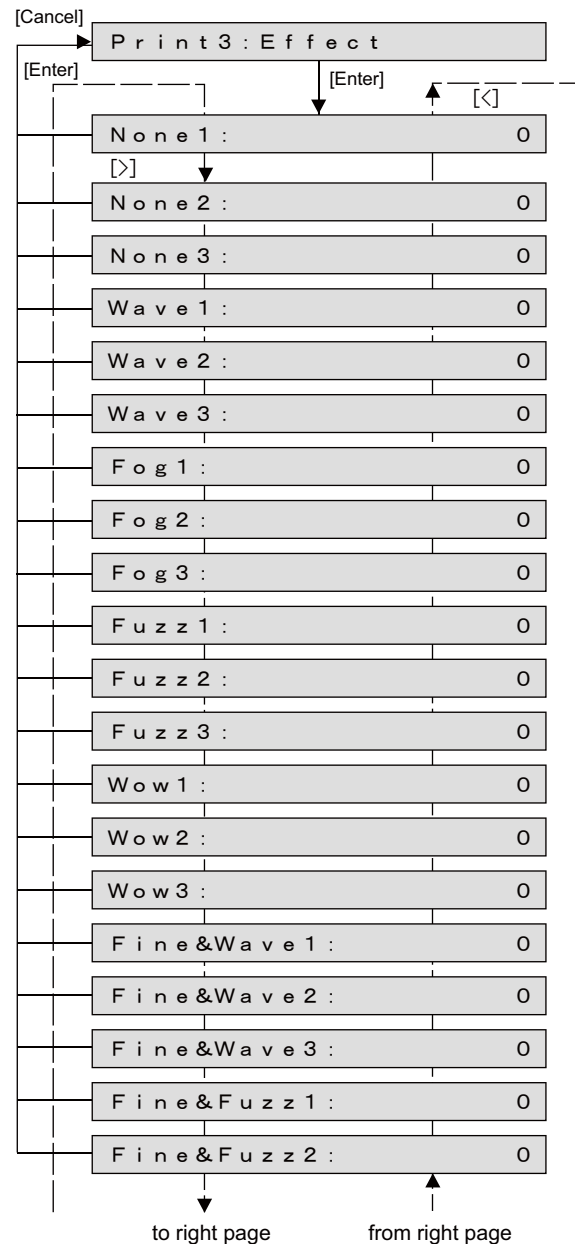
(4-b)Area

Check the number of printed copies of each effect.



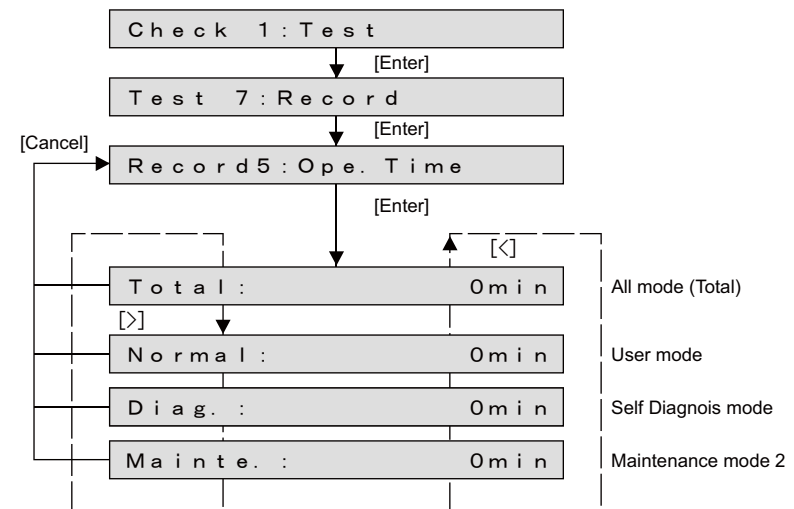
(4-c)Effect

Check the number of printed copies of each print effect.



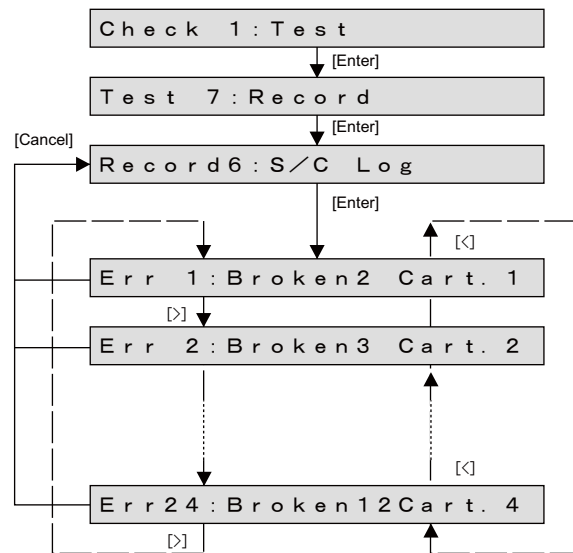
(5) Operation Time

Check the accumulated operation time of each activation mode.



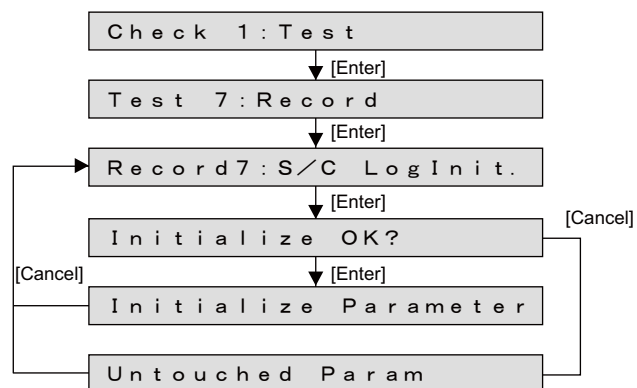
(6) S/C Log

Check the Smart chip log.
It Displays up to error 24.



(7) Initialization of S/C Log

Initialize the Smart chip log.

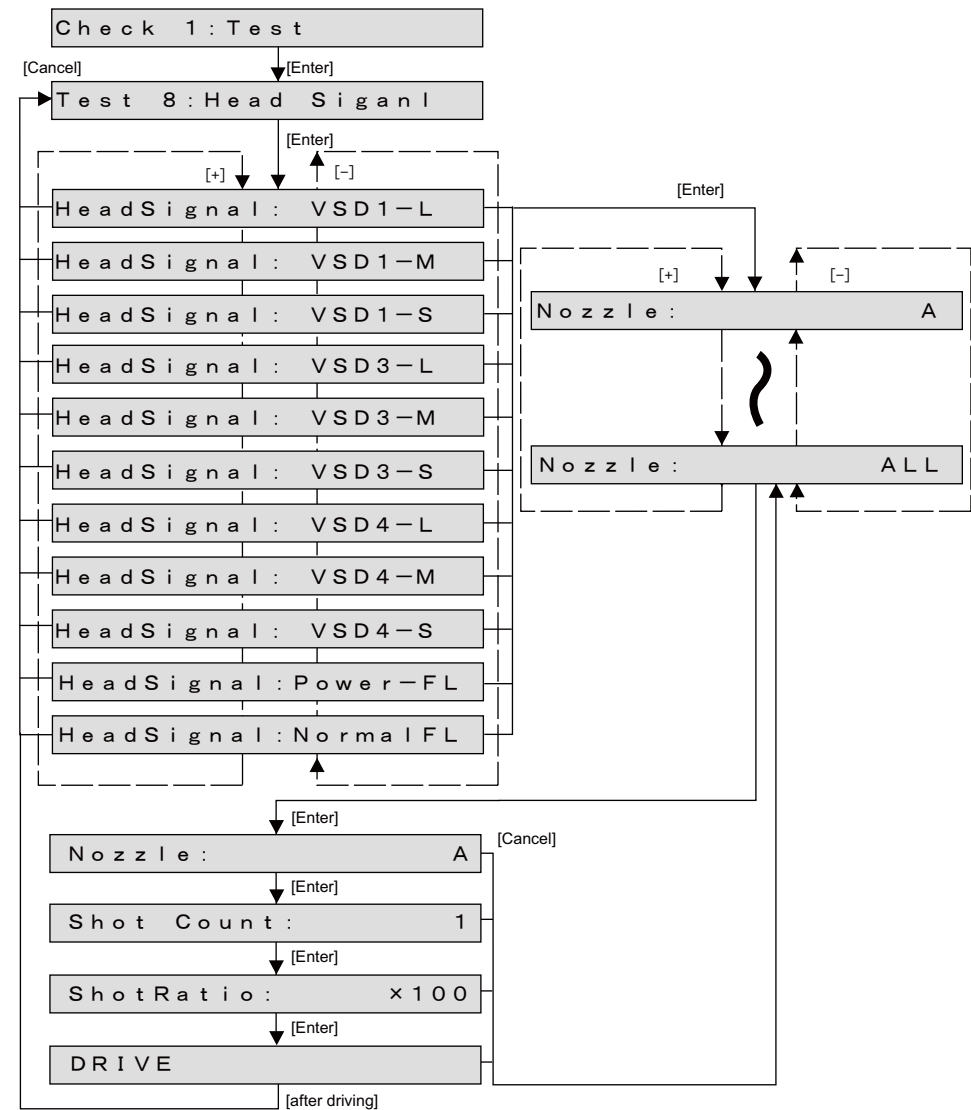


5.4.8 Head Waveform Menu

This menu is used to check the head-driving waveform.
This is a function that is not normally used in maintenance work.

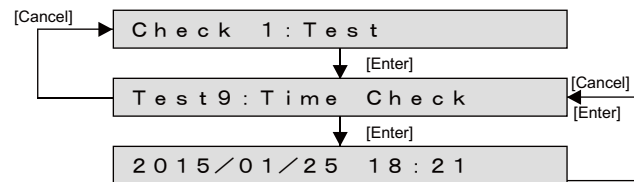
NOTE

- Nozzles can be selected A to H and ALL.
- The number of shots can be selected in a range from 1 to 655.
- Magnification can be selected from the x1, x100, x10000, x1000000.
- During DRIVE (waveform output), the [Cancel] key is invalid.
- When the number of waveform output is larger than 65535 shots, waveform is output in units of 65535 shots. (Temperature is corrected by waveform output unit.)



5.4.9 Time Check Menu

Check the date which is managed by RTC (Real Time Clock) on MAIN board.
You can only check it in Self-diagnosis function. To setup, use Mutoh Service Assistance.



5.5 Ink Charging Menu

In the ink charging menu, you can execute the initial wash of Print head and ink charge.
The charging items are as follows:

NOTE

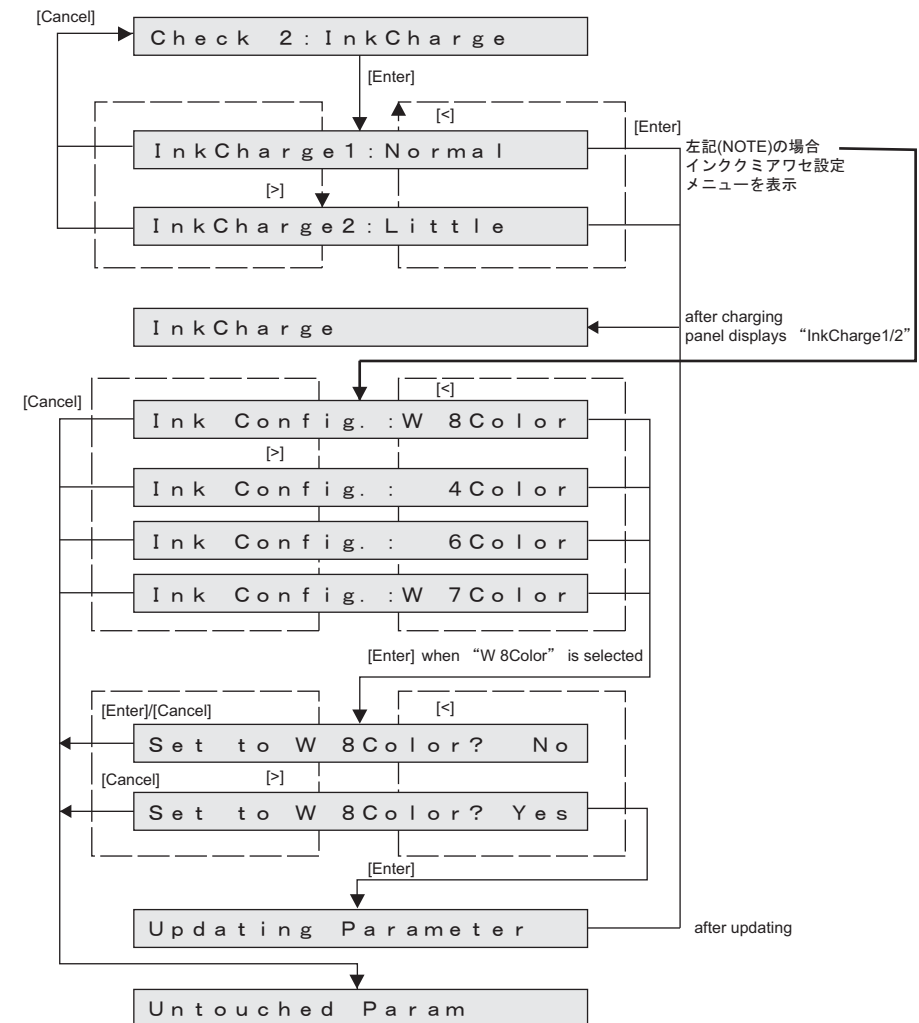
In the following conditions, "Ink Config." menu appears to specify the ink configuration after "InkCharge1:Normal" is performed:

- Ink has not been charged yet.
- "Parameter" > "Update" > "Ink Config." is "Auto" (the ink color configuration parameter has not been specified yet).

The initial ink charge will start after the ink configuration is specified.

 (10) Ink Config..

Charging item	Contents
Normal	Initial INK charge
Little	Economy INK charge



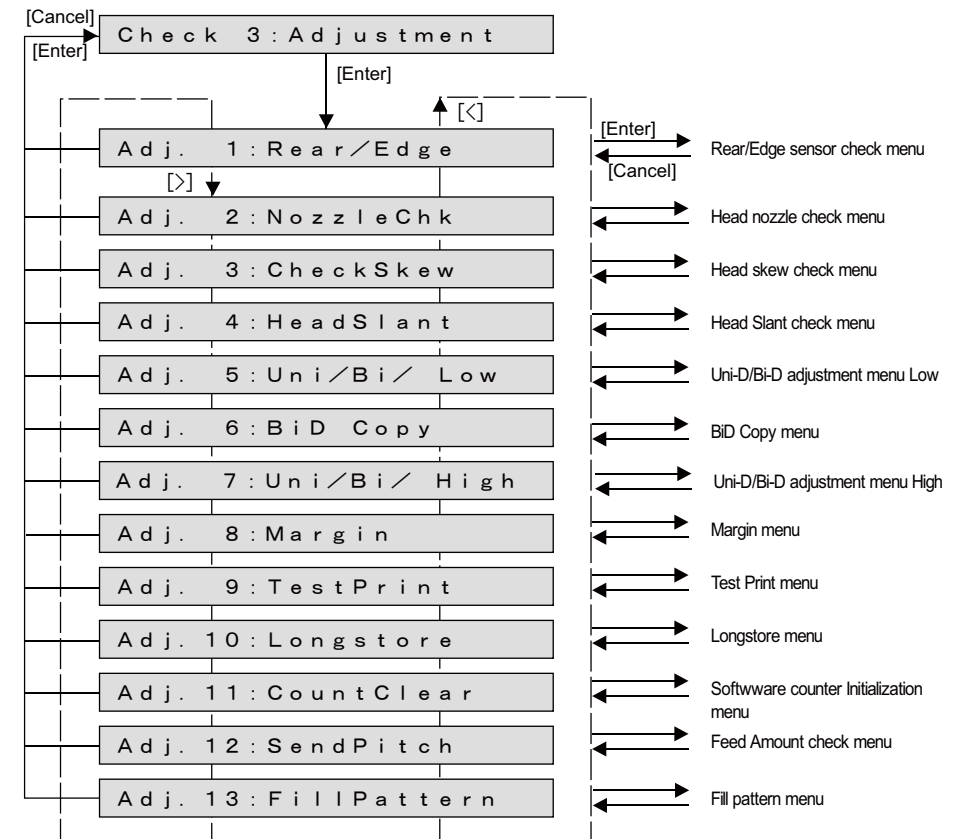
5.6 Adjustment Menu

This menu is used to align the printing position and correct the media feed operation.

- 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.
- If the print position is shifted by changing the height of the head, perform Bi-D print alignment.

Diagnosis item	Contents	Reference
Rear/Edge	Automatically adjusts the sensor sensitivity for Media detection.	"5.6.1 Rear/Edge Sensor Adjustment Menu"
NozzleChk	Checks whether the ink is normally discharged from Head nozzles from the printing results.	"5.6.2 Head Nozzle Check Menu"
CheckSkew	Performs media feed and detects the degree of skew in media feed by Sensor.	"5.6.3 Skew Check Menu"
HeadSlant	Checks Print head slant (horizontal and vertical direction) from the printing results. Mechanical adjustment must be performed as necessary.	"5.6.4 Head Slant Check Menu"
Uni/ Bi Low	Print with the head height set at Low, and perform the following adjustment. <ul style="list-style-type: none"> • Misalignment between the heads and nozzle lines (Uni-D CW/CCW) • Bidirectional printing position 	"5.6.5 Uni-D/ Bi-D Adjustment Menu"
Uni/ Bi Copy	Copy the adjustment values for the Uni/Bi Low items to those of the High adjustment values.	"5.6.6 Bi-D Copy Menu"
Uni/ Bi High	Print with the head height set at High, and perform the following adjustment. <ul style="list-style-type: none"> • Misalignment between the heads and nozzle lines (Uni-D CW) • Bidirectional printing position 	"5.6.5 Uni-D/ Bi-D Adjustment Menu"
Margin	Adjusts Top, bottom, and side margins.	"5.6.7 Margin adjustment Menu"
TestPrint	Prints out adjustment pattern ALL, adjustment parameters ALL, serious error history and S/C Log.	"5.6.8 Test Printing Menu"

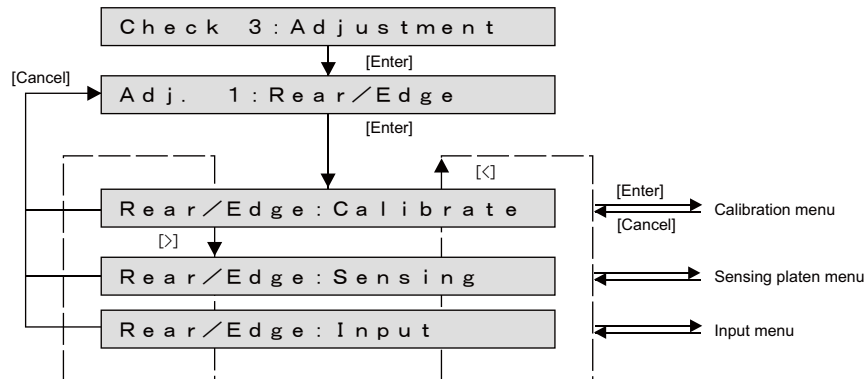
Diagnosis item	Contents	Reference
Longstore	Prints out adjustment pattern ALL, adjustment parameters ALL, serious error history and S/C Log.	"5.6.9 Longstore Menu"
CountClear	Clears various software counters.	"5.6.10 Software Counter Initialization Menu"
SendPitch	Checks whether there is an error in feed amount per band from the printing results.	"5.6.11 Feed Pitch Check Menu"
FillPattern	Checks fill printing (Select color, nozzle and printing direction.)	"5.6.12 Solid Print Menu"



5.6.1 Rear/ Edge Sensor Adjustment

TIP

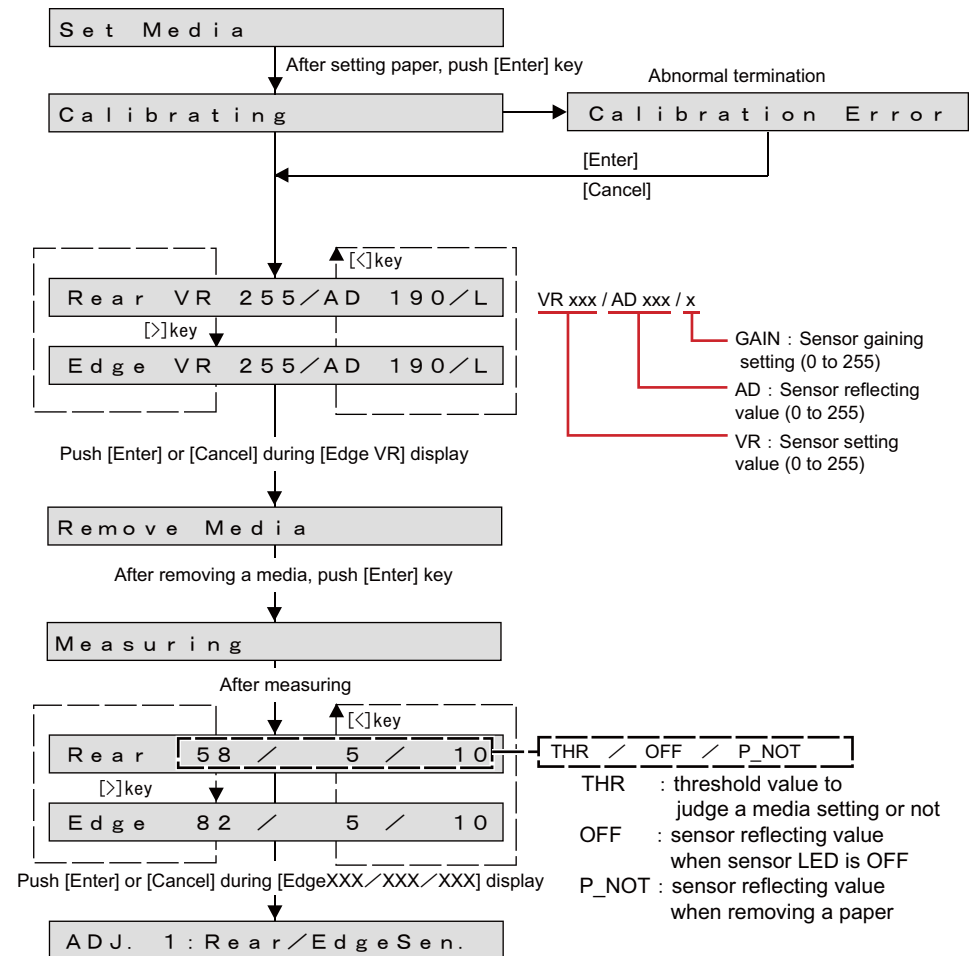
- Automatically Adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values.
- After adjusting, measuring AD values when paper is not set.
Confirming threshold that is used to judge whether paper is set.
- Measuring AD values of Edge sensor at four positions of Platen.



(1) Calibration

TIP

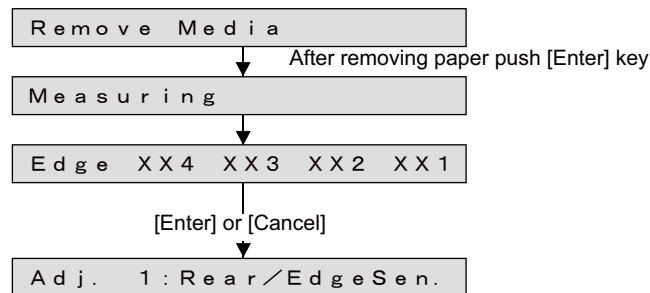
- After adjusting AD values of P_REAR sensor and P_EDGE sensor to proper values, panel displays results.
- When abnormal termination, panel displays the VR values that is final state of adjusting process.



(2) Measuring Platen reflecting value (Sensing Platen)

TIP

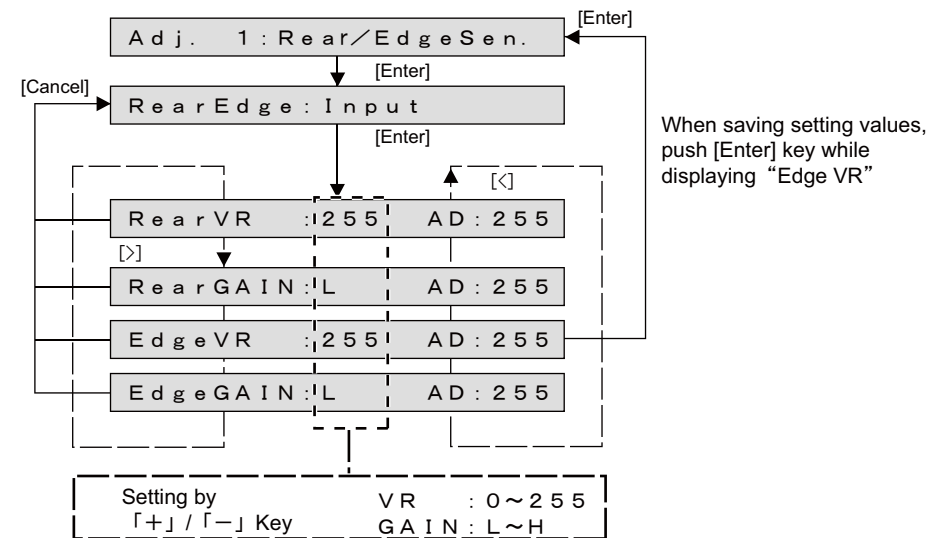
- Measuring AD values of Edge sensor at four positions of Platen.
- Measuring AD values at the four positions as shown below, and the AD values is displayed on the panel.



(3) Input

NOTE

- Do not usually use this function.
- Use only in:
When any problems are occurred 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 to 255



5.6.2 Head Nozzle Check Menu

This menu is used to check if Head nozzles can discharge ink correctly from the printing results.

TIP

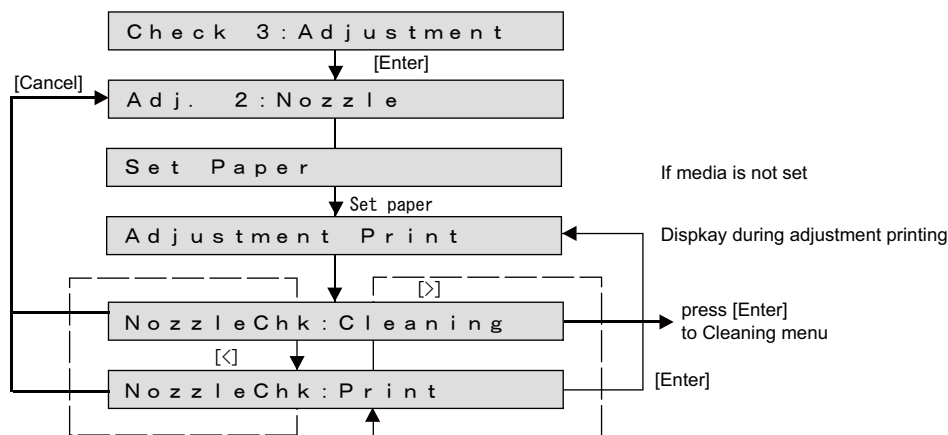
- CW : In this manual, it indicates the direction from origin to opposite side of the origin.
- CCW : In this manual, it indicates the direction from opposite side of the origin to origin.

To check Head nozzles, follow the procedure below.

1 Set media as necessary.

- 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
- 320cps
- VSD4, Large dot

2 Nozzle check pattern will be printed.

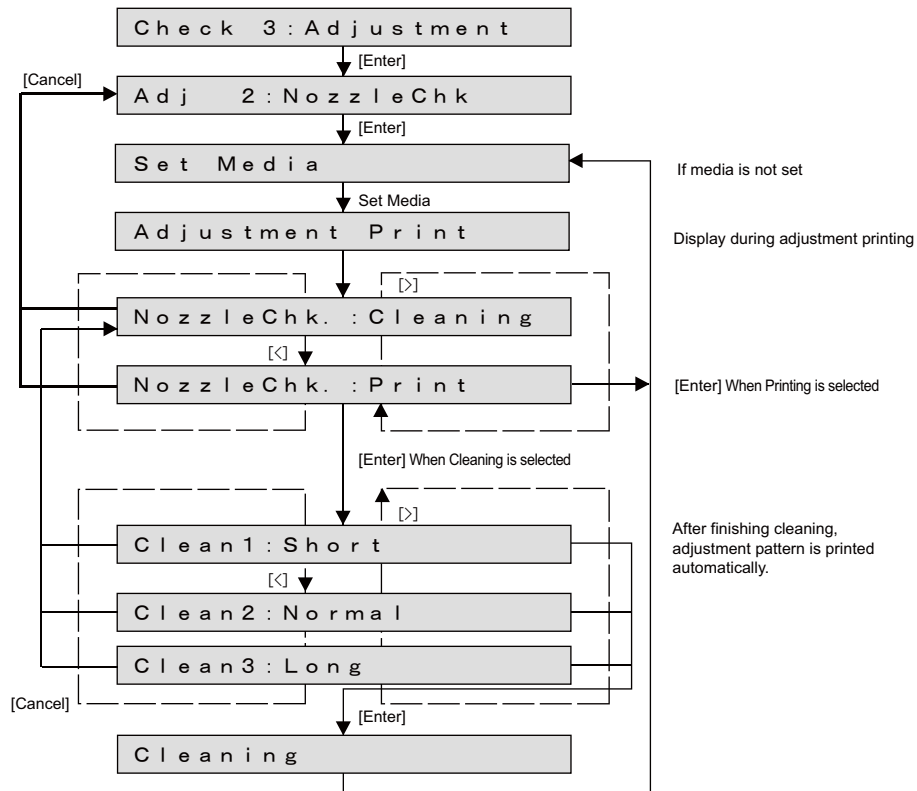


TIP

- The following pattern will be printed.
- The letters and arrow will not be printed.
- Adjustment pattern is different in 4 colors, 6 colors and 8 colors.



- 3 If any abnormal conditions are found in the ink discharge status of Head nozzles, perform cleaning.



- 4 After cleaning, print out head nozzle check patterns again.

5.6.3 Skew Check Menu

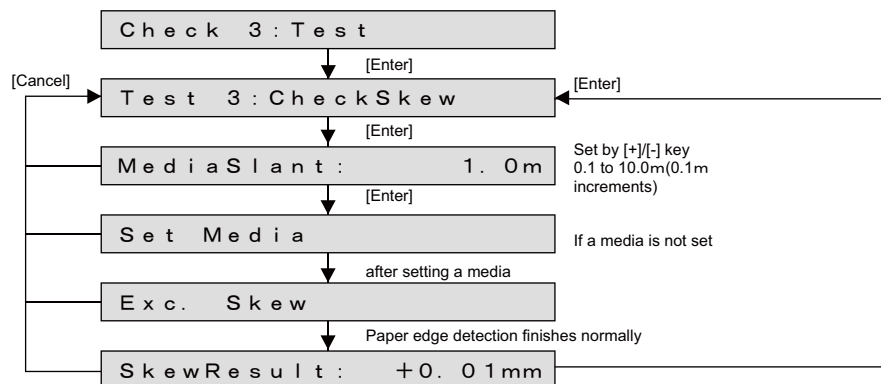
Feed the paper to check the skew size using Sensor.

When you select this item from the Adjustment Menu, the printer feeds the loaded media (specified amount) 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.
- When the skew result is beyond $\pm 9.99\text{mm}$, $+9.99\text{mm}$ or -9.99mm is displayed.



5.6.4 Head Slant Check Menu

Check the Head slant (Horizontal direction, vertical direction) from the print result.

Perform mechanical adjustment as required.

Since there are eight nozzle lines per Head, adjustment has to be done so that each nozzle line's slope is even.

TIP

- Uni-D (Uni-Direction) indicates uni-directional printing.
- Bi-D (Bi-Direction) indicates bi-directional printing.

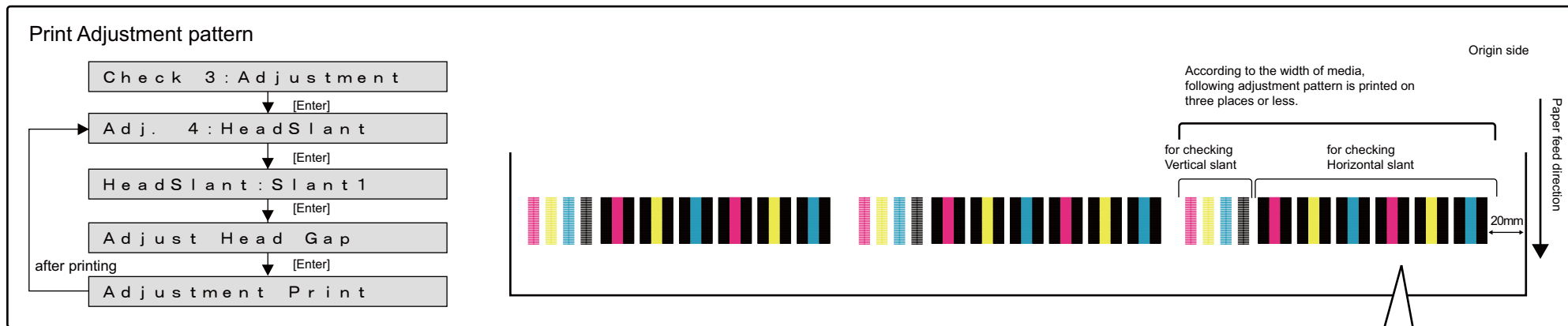
The items for head slant is as follow

Items	Contents
Head Slant : Slant1	<ul style="list-style-type: none">• Head slant check horizontal direction (left/right)• Printing method 1Pass, UniD/BiD, CR 360dpi, PF 360dpi 320cps, VSD1, Small
Head Slant : Slant 2	<ul style="list-style-type: none">• Head slant check vertical direction• Printing method 1Pass, UniD/BiD, CR 360dpi, PF 360dpi 320cps, VSD1, Small

NOTE

- When printing "Head slant: Slant1" adjustment pattern, the pattern for Head slant check vertical direction is also printed.
- The adjustment pattern printed in "Head Slant : Slant 1" is used and adjustment of head slant (vertical direction) is possible.

(1) "Head slant: slant 1"

(1-a) Confirming horizontal direction (left / right) **(4-color setting)**

Check Head Slant 1 (Horizontal)

Check the Slant (Horizontal) at Connecting points (Refer to the following and an enlargement.)

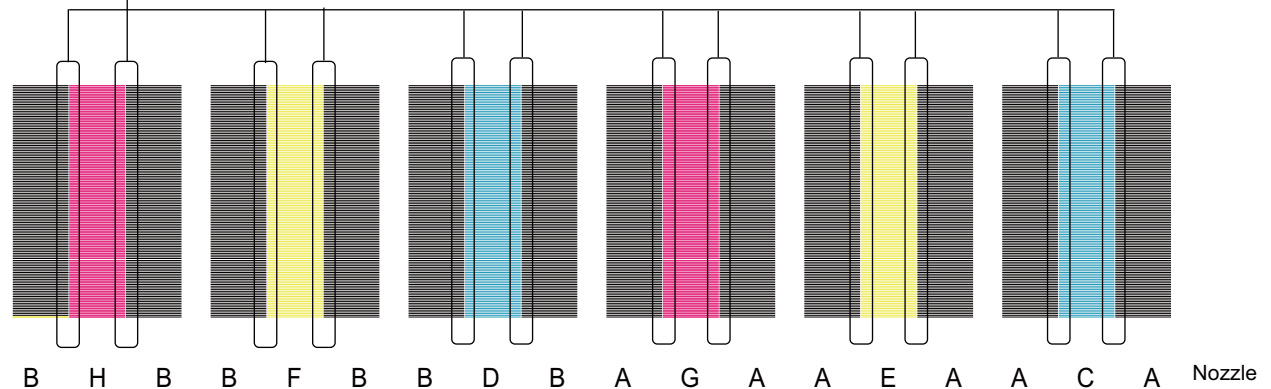
TIP

1pass Uni-D/Bi-D
PF:360dpi CR:360dpi

Check the slant (Horizontal):

For CW printing, the nozzles combination are, from the media origin side, A/C, A/E, B/D, B/F, and B/H.

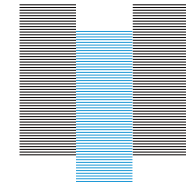
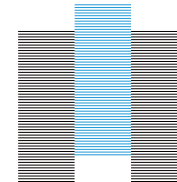
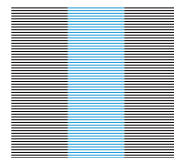
320cps, VSD1, Small dot



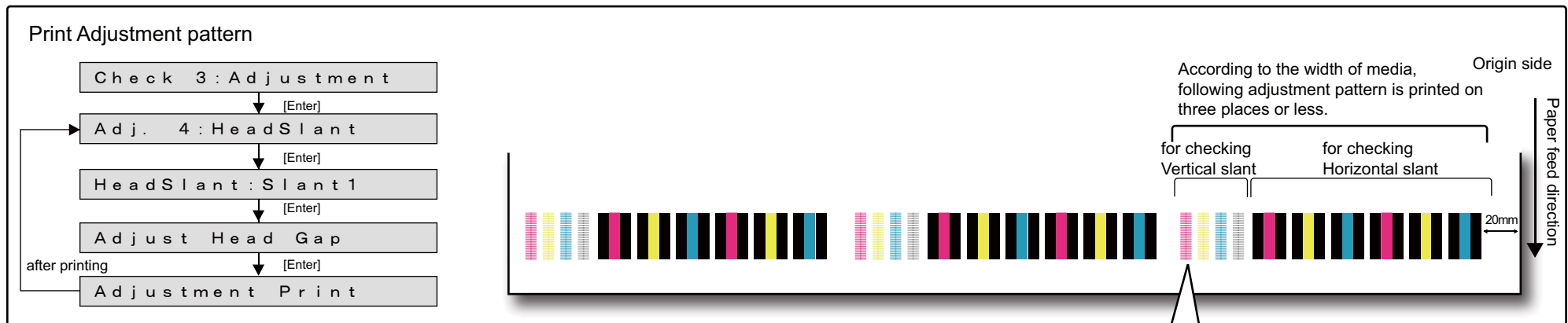
Connecting point enlargement : Ex. Nozzle A,C

- Check the position of Black and each color.
In "O", No need for adjustments.
In "x", it adjust, respectively and be set to "O". Refer to the "4.7.1 「Head Alignment (Horizontal Slant)」"

- Repeat printing and adjustment until a result becomes "O".



(1-b)Confirming vertical direction (4-color setting)



Check Head Slant (Vertical)

TIP

1pass Uni-D/Bi-D

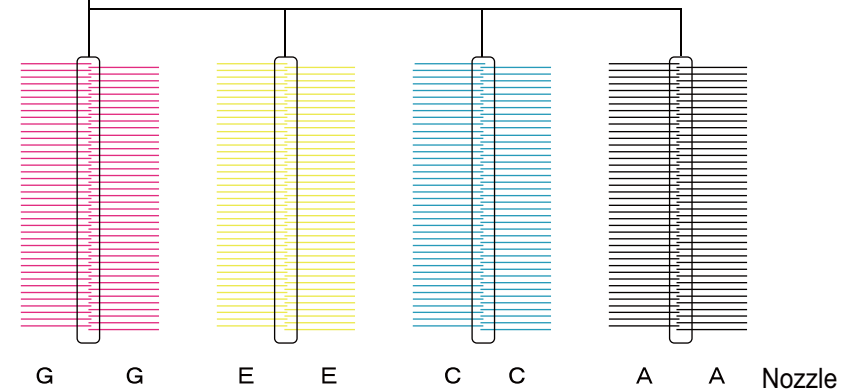
PF:360dpi CR:360dpi

Check the slant (Vertical):

For CW/CCW printing, the nozzles combination are, from the media origin side, A, C, E, and G.

320cps, VSD1, Small dot

Check the Vertical Slant at Connecting points (Refer to the following and an enlargement.)



connecting point enlargement : Ex. Nozzle A

(1) Check the position of K and each color.

In "O", No need for adjustments.

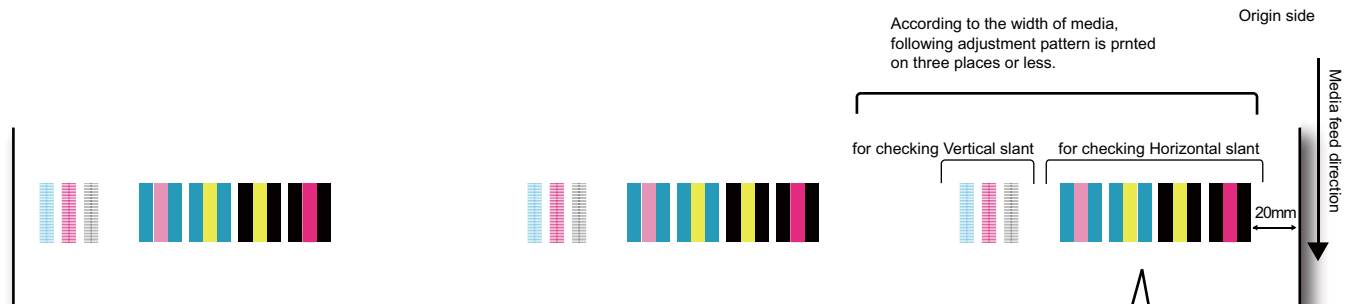
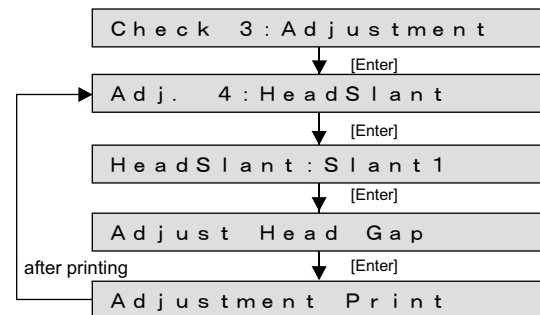
In "x", it adjust, respectively and be set to "O". Refer to the "4.7.2 「Head Alignment (Vertical Height)」"

(2) Repeat printing and adjustment until a result becomes "O".



(1-c)Confirming horizontal direction (left / right) **(6-color setting)**

Print Adjustment pattern

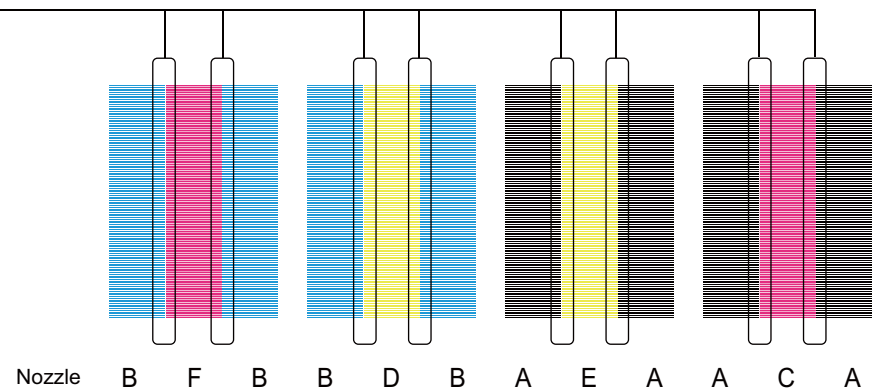


Check Head Slant (Horizontal)

Check the Slant (Horizontal) at Connecting points (Refer to the following and an enlargement.)

TIP

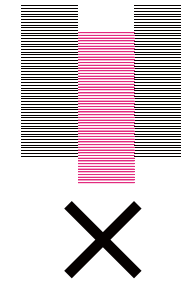
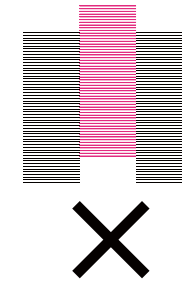
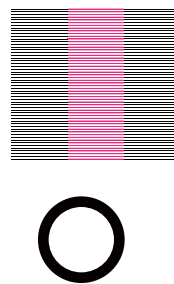
1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Horizontal) :
 For CW printing, the nozzles combination are, from the media origin side, A/C, A/E, B/D and B/F.
 320cps, VSD1, Small dot



Connecting point enlargement : Ex. Nozzle A,C

- (1) Check the position of Black and each color.
 In "O", No need for adjustments.
 In "x", it adjust, respectively and be set to "O". Refer to the "4.7.1 Head Adjustment (Horizontal Slant)"

- (2) Repeat printing and adjustment until a result becomes "O".



(1-d)Confirming vertical direction (6-color setting)

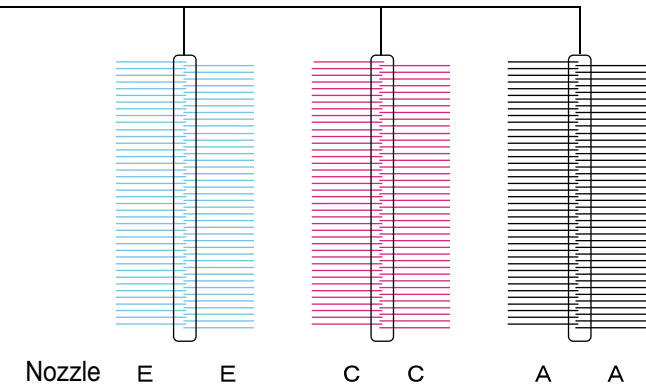


Check Head Slant (Vertical)

Check the Vertical Slant at Connecting points (Refer to the following and an enlargement.)

TIP

1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Vertical):
 For CW/CCW printing, the nozzles combination are, from the media origin side, A, C, and E.
 320cps, VSD1, Small dot



connecting point enlargement : Ex. Nozzle A

(1) Check the position of K and each color.

In "O", No need for adjustments.

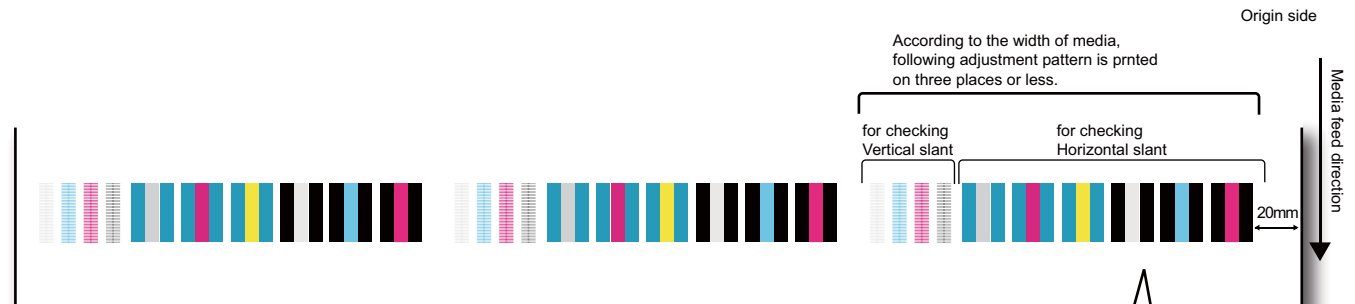
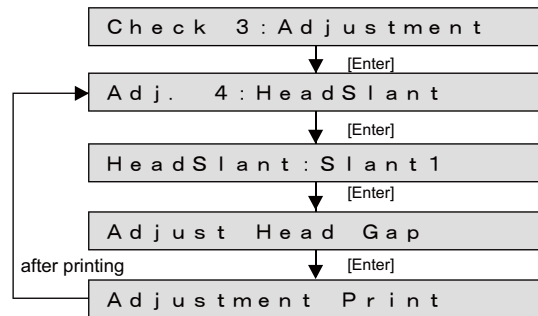
In "x", it adjust, respectively and be set to "O". Refer to the "4.7.2 Head Adjustment (Vertical)".

(2) Repeat printing and adjustment until a result becomes "O".



(1-e)Confirming horizontal direction (left / right) **(white 8-color setting)**

Print Adjustment pattern

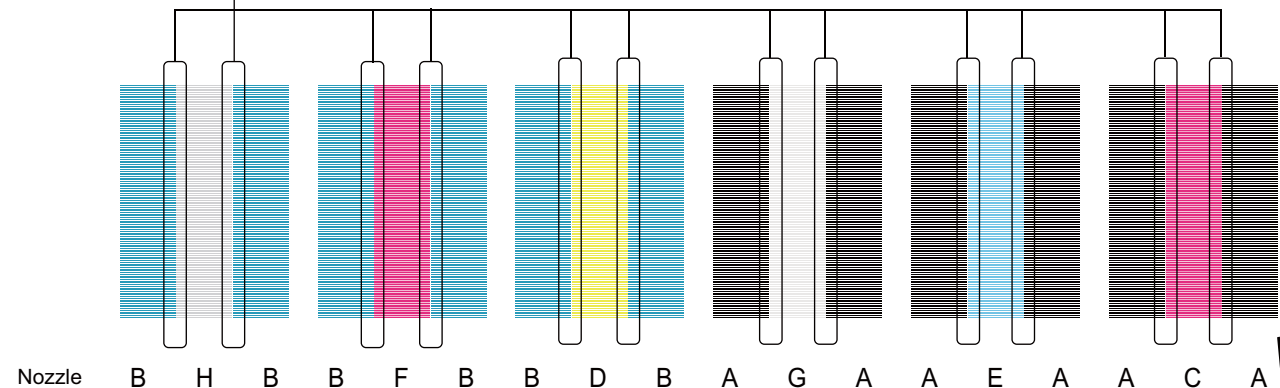


Check Head Slant (Horizontal)

Check the Slant (Horizontal) at Connecting points (Refer to the following and an enlargement.)

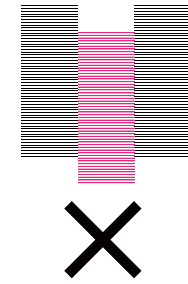
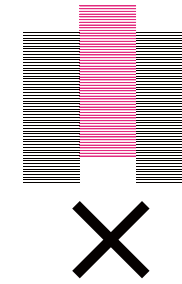
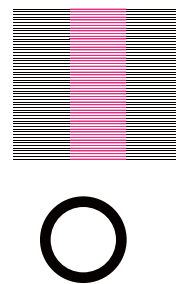
TIP

1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Horizontal) :
 For CW printing, the nozzles combination are, from the media origin side, A/C, A/E, A/G, B/D, B/F and B/H.
 320cps, VSD1, Small dot



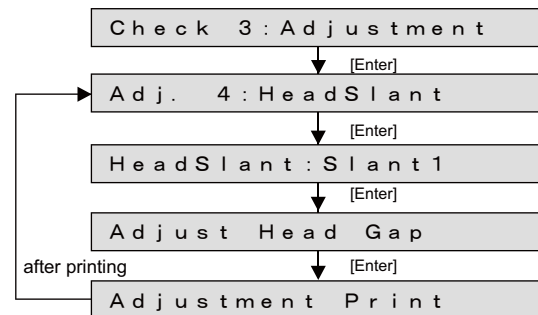
Connecting point enlargement : Ex. Nozzle A,C

- Check the position of Black and each color.
 In "O", No need for adjustments.
 In "x", it adjust, respectively and be set to "O". Refer to the "4.7.1 「Head Adjustment (Horizontal Slant)」"
- Repeat printing and adjustment until a result becomes "O".



(1-f) Confirming vertical direction (white 8-color setting)

Print Adjustment pattern

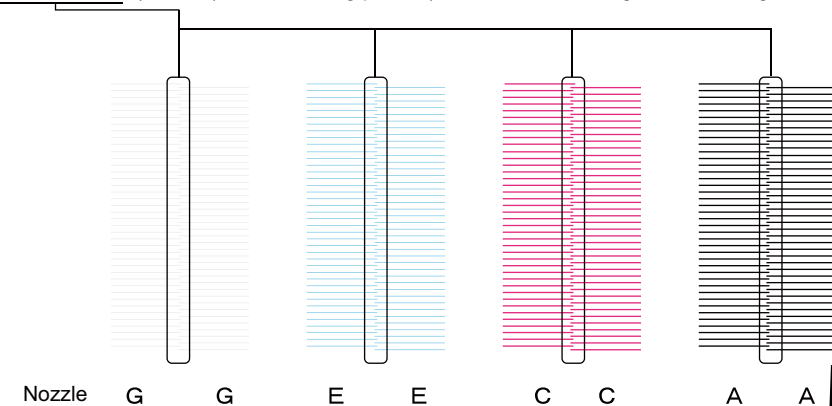


Check Head Slant (Vertical)

TIP

1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Vertical):
 For CW/CCW printing, the nozzles combination are, from the media origin side, A, C, E, and G.
 320cps, VSD1, Small dot

Check the Slant (Vertical) at Connecting points (Refer to the following and an enlargement.)



connecting point enlargement : Ex. Nozzle A

(1) Check the position of K and each color.

In "O", No need for adjustments.

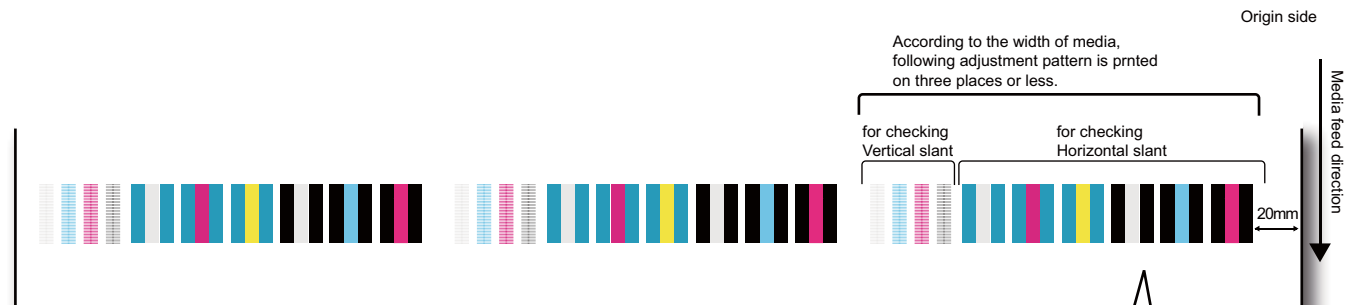
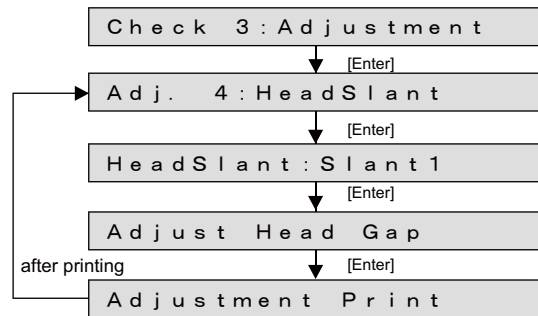
In "x", it adjust, respectively and be set to "O". Refer to the "4.7.2 「Head Adjustment (Vertical)」".

(2) Repeat printing and adjustment until a result becomes "O".



(1-g) Confirming horizontal direction (left / right) **(white 7-color setting)**

Print Adjustment pattern

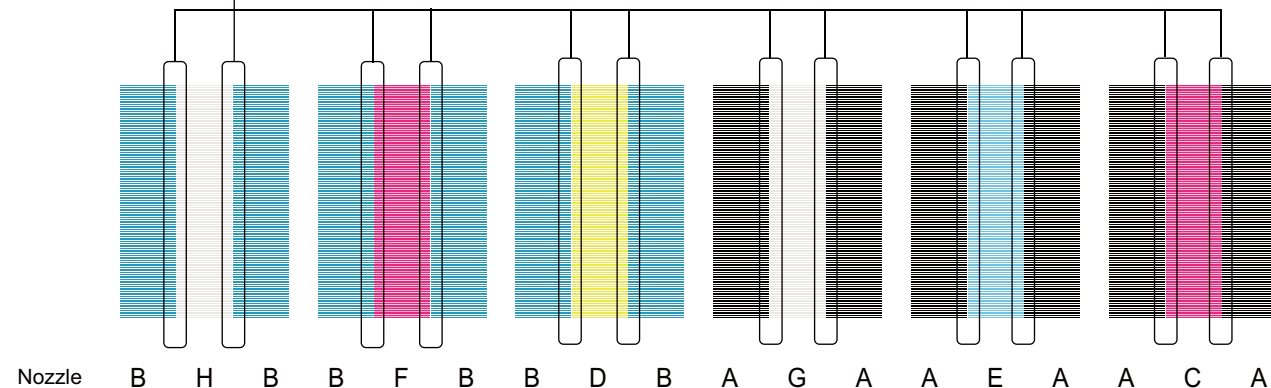


Check Head Slant (Horizontal)

Check the Slant (Horizontal) at Connecting points (Refer to the following and an enlargement.)

TIP

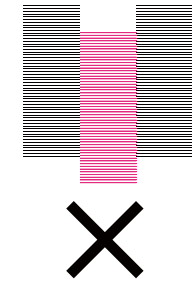
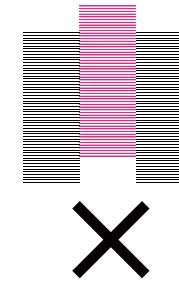
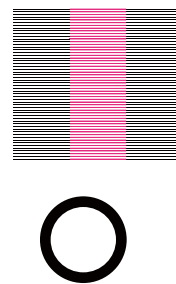
1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Horizontal) :
 For CW printing, the nozzles combination are, from the media origin side, A/C, A/E, A/G, B/D, B/F and B/H.
 320cps, VSD1, Small dot



Connecting point enlargement : Ex. Nozzle A,C

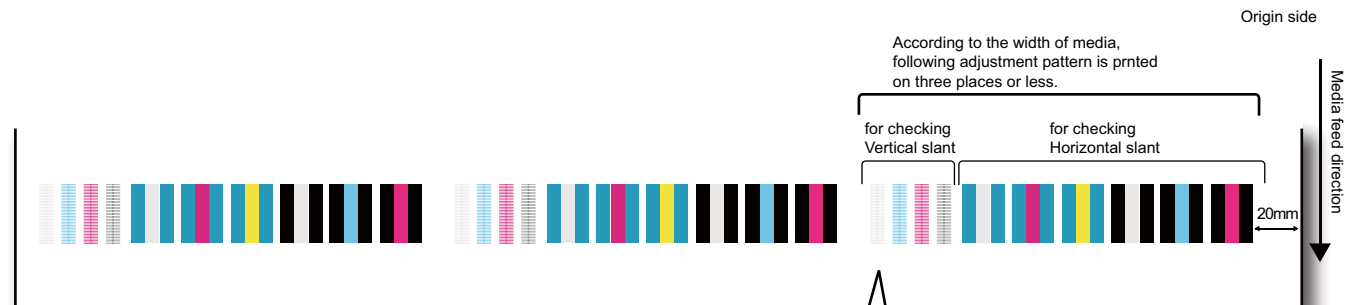
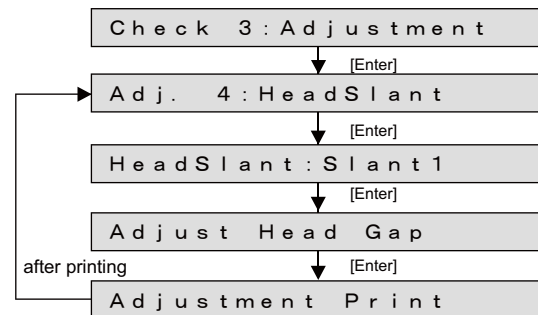
- (1) Check the position of Black and each color.
 In "O", No need for adjustments.
 In "x", it adjust, respectively and be set to "O". Refer to the "4.7.1 「Head Adjustment (Horizontal Slant)」"

- (2) Repeat printing and adjustment until a result becomes "O".



(1-h)Confirming vertical direction (white 7-color setting)

Print Adjustment pattern

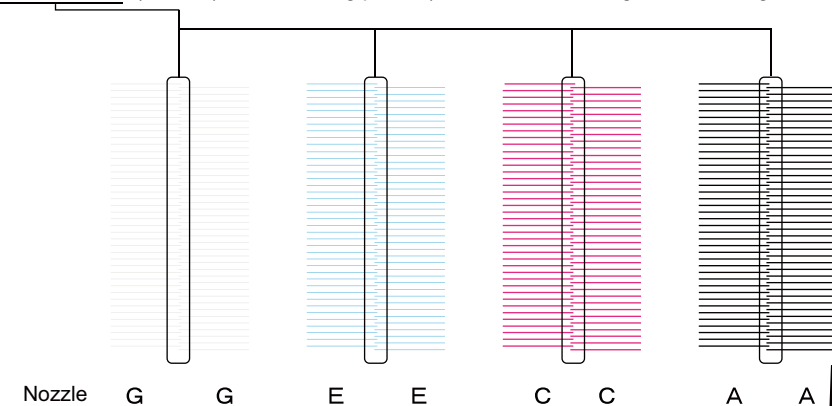


Check Head Slant (Vertical)

TIP

1pass Uni-D/Bi-D
 PF:360dpi CR:360dpi
 Check the slant (Vertical):
 For CW/CCW printing, the nozzles combination are, from the media origin side, A, C, E, and G.
 320cps, VSD1, Small dot

Check the Slant (Vertical) at Connecting points (Refer to the following and an enlargement.)



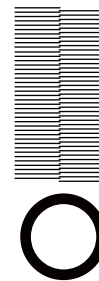
connecting point enlargement : Ex. Nozzle A

(1) Check the position of K and each color.

In "O", No need for adjustments.

In "x", it adjust, respectively and be set to "O". Refer to the "4.7.2 「Head Adjustment (Vertical)」".

(2) Repeat printing and adjustment until a result becomes "O".



(2) “Head Slant: Slant2”

Confirm the vertical slant check of the print head from the printed result. Follow the procedures below to check the head slant.

(2-a) 4-color setting

1. Print the head adjustment pattern (Vertical slant)

```

Check 3 : Adjustment
  |
  | [Enter]
Adj. 2 : Head Slant
  |
  | [Enter]
Head Slant : Slant 2
  |
  | [Enter]
Adjust Head Gap
  |
  | After the Head height is set to Low.
Adjustment Print
  
```

after printing

TIP

1pass Uni-D/Bi-D
PF:360dpi CR:360dpi

pattern1: For printing, in the order of ABCDEFGH.
320cps, VSD4, Large dot, CW/CCW

pattern2: For printing, in the order of ACEG.
320cps, VSD1, Small dot, CW/CCW

2. Check the connecting point 1 of the pattern 1.

① Adjustment is not required.

② Move the head base mounting plate down.

③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 1

①

○

②

×

③

×

3. Check the connecting point 2 of the pattern 2.

① Adjustment is not required.

② Move the head base mounting plate down.

③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 2

①

○

②

×

③

×

4. After performing mechanical adjustment, the head adjustment (vertical slant) pattern is printed again.

5. Repeat steps 1 to 3 until the result of the connecting points becomes “○”.

5.6.4 Head Slant Check Menu

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(2-b)6-color setting

1. Print the head adjustment pattern (Vertical slant)

Check 3 : Adjustment
[Enter]
Adj. 2 : Head Slant
[Enter]
Head Slant : Slant 2
[Enter]
Adjust Head Gap
After the Head height is set to Low.
Adjustment Print
after printing

TIP

1pass Uni-D/Bi-D
PF:360dpi CR:360dpi

pattern1:For printing, in the order of ABCDEF.
320cps,VSD4, Large dot, CW/CCW
pattern2:For printing, in the order of ACE.
320cps,VSD1, Small dot, CW/CCW

5mm

pattern 2

connecting point 2

Origin side

20mm

Media feed direction

CCW

CW

2. Check the connecting point 1 of the pattern 1.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 1

①

②

③

3. Check the connecting point 2 of the pattern 2.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 2

①

②

③

4. After performing mechanical adjustment, the head adjustment (vertical slant) pattern is printed again.
5. Repeat steps 1 to 3 until the result of the connecting points becomes "O".

(2-c)White 8-color setting

1. Print the head adjustment pattern (Vertical slant)

Check 3 : Adjustment
[Enter]
Adj. 2 : Head Slant
[Enter]
Head Slant : Slant 2
[Enter]
Adjust Head Gap
[Enter] After the Head height is set to Low.
Adjustment Print

after printing

TIP

1pass Uni-D/Bi-D
PF:360dpi CR:360dpi

pattern1:For printing, in the order of ABCDEFGH.
320cps,VSD4, Large dot, CW/CCW
pattern2:For printing, in the order of ACEG.
320cps,VSD1, Small dot, CW/CCW

5mm

pattern 2

pattern 1

connecting point 2

Origin side

20mm

Media feed direction

CCW

CW

2. Check the connecting point 1 of the pattern 1.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 1

①

②

③

3. Check the connecting point 2 of the pattern 2.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 2

①

②

③

4. After performing mechanical adjustment, the head adjustment (vertical slant) pattern is printed again.
5. Repeat steps 1 to 3 until the result of the connecting points becomes "O".

(2-d)White 7-color setting

1. Print the head adjustment pattern (Vertical slant)

Check 3 : Adjustment
[Enter]
Adj. 2 : Head Slant
[Enter]
Head Slant : Slant 2
[Enter]
Adjust Head Gap
[Enter] After the Head height is set to Low.
Adjustment Print

after printing

TIP

1pass Uni-D/Bi-D
PF:360dpi CR:360dpi

pattern1:For printing, in the order of ABCDEFGH.
320cps,VSD4, Large dot, CW/CCW

pattern2:For printing, in the order of ACEG.
320cps,VSD1, Small dot, CW/CCW

5mm

pattern 2

pattern 1

connecting point 2

Origin side

20mm

Media feed direction

CCW

CW

2. Check the connecting point 1 of the pattern 1.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 1

①

②

③

3. Check the connecting point 2 of the pattern 2.

① Adjustment is not required.
② Move the head base mounting plate down.
③ Move the head base mounting plate up.

For details of adjustment procedure
☞ 4.7.2 Head Adjustment (Vertical Slant)

connecting point 2

①

②

③

4. After performing mechanical adjustment, the head adjustment (vertical slant) pattern is printed again.
5. Repeat steps 1 to 3 until the result of the connecting points becomes "O".

TIP

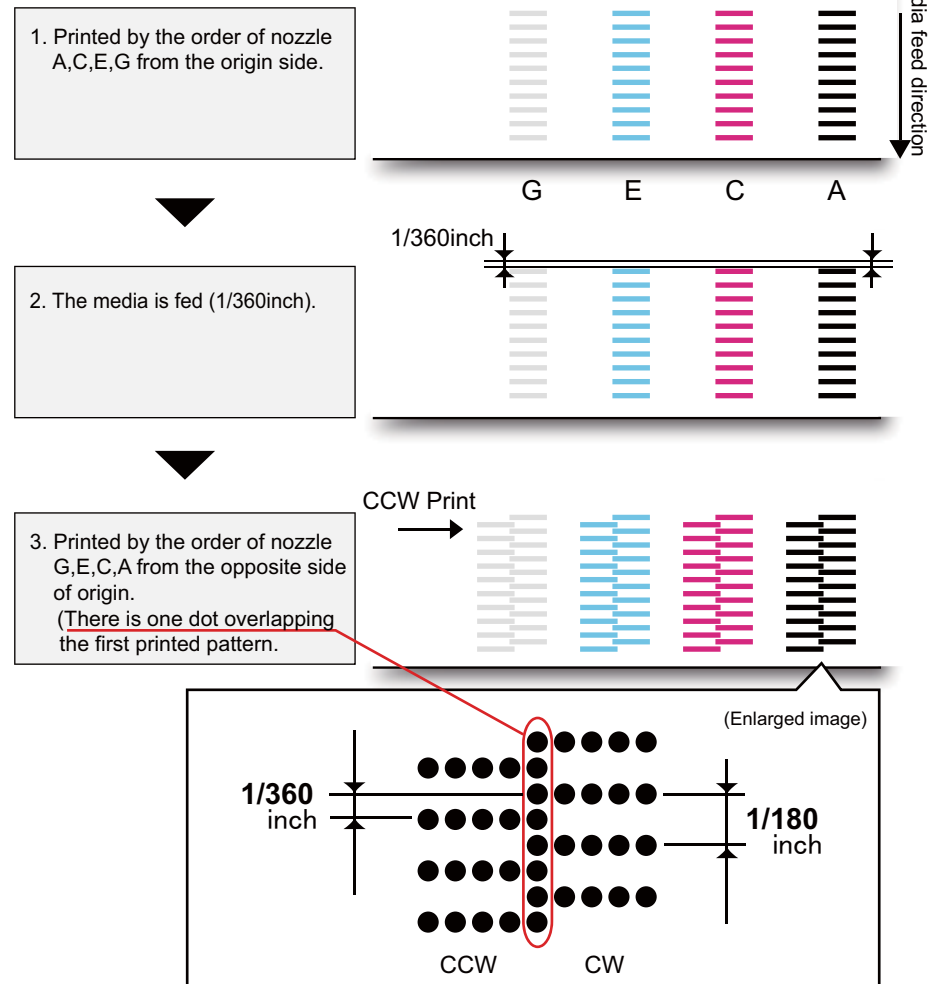
Printing Method for Head Slant Check Pattern 2

(The figure below describes the printing method as 8-color. CW/CCW printing sequence is similar for 4-color/6-color/8-color/7-color.)

Nozzles in use

4 color/8 color:A,C,E,G

6 color:A,C,E



5.6.5 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 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.

NOTE

- “Uni-D (Uni-Direction)” stands for a print of one-way direction.
- “Bi-D (Bi-Direction)” stands for a print of two-way direction.
- Since the characteristics of the print head, only one adjusted value can be applied for all nozzles.
- CPS (Characters Per Second) is the unit for printing speed.
- Print the pattern using only line C (Cyan, odd-numbered lines) and enter the set value.
- If ALL is selected, all the possible combination of the the wave form (VSD1/VSD3/ VSD4) and speed (320cps/400cps) are used.
- When you select High, the panel display changes from “Low” to “High”.








Table 5-1 Uni-D/Bi-D adjustment items

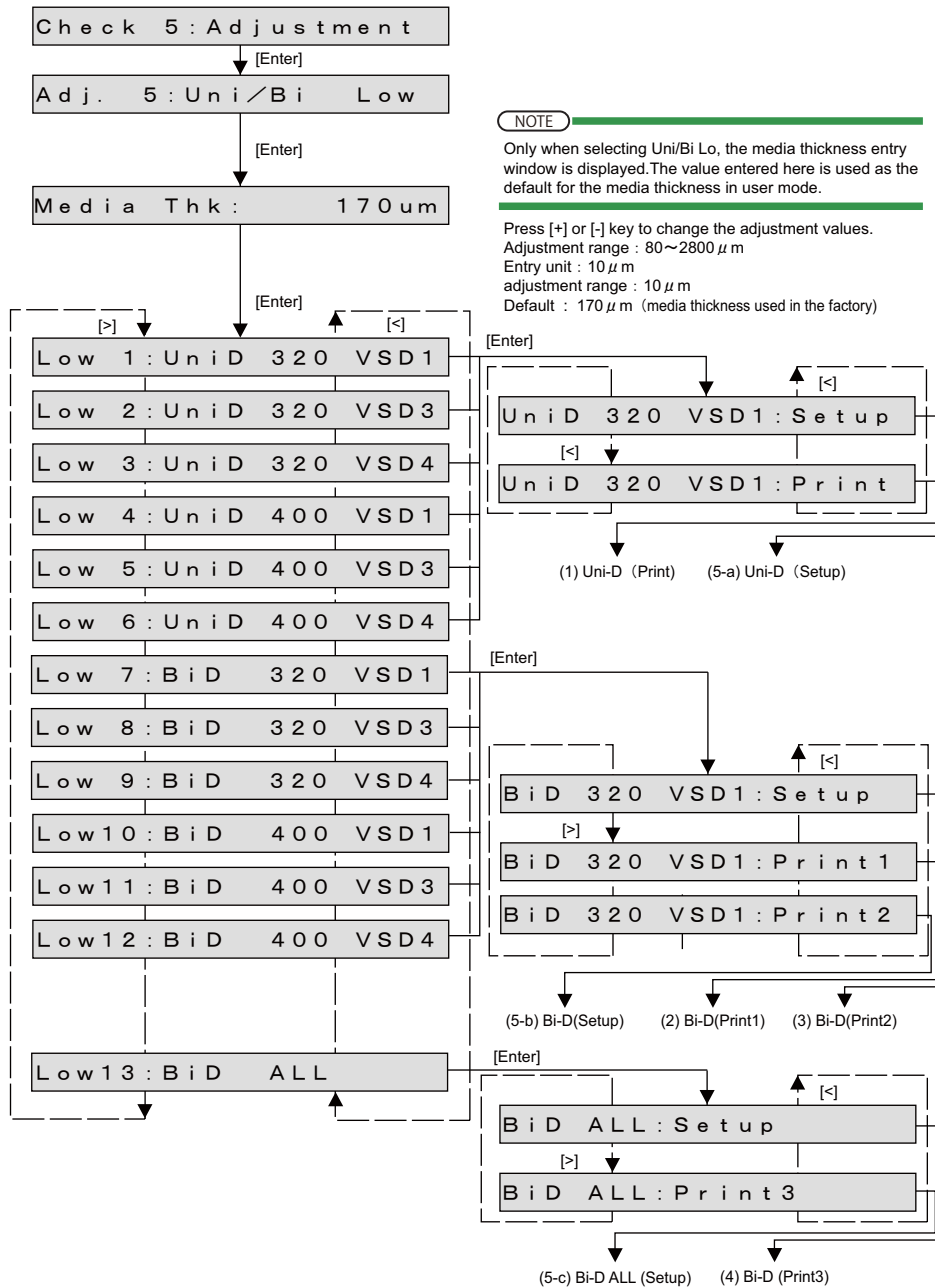
Panel	contents
Uni-D 320 VSD1	CW adjustment with 320cps, VSD1
Uni-D 320 VSD3	CW adjustment with 320cps, VSD3
Uni-D 320 VSD4	CW adjustment with 320cps, VSD4
Uni-D 400 VSD1	CW adjustment with 400cps, VSD1
Uni-D 400 VSD3	CW adjustment with 400cps, VSD3
Uni-D 400 VSD4	CW adjustment with 400cps, VSD4
Bi-D 320 VSD1	Bi-D adjustment with 320cps, VSD4
Bi-D 320 VSD3	Bi-D adjustment with 320cps, VSD2
Bi-D 320 VSD4	Bi-D adjustment with 320cps, VSD3
Bi-D 400 VSD1	Bi-D adjustment with 400cps, VSD1
Bi-D 400 VSD3	Bi-D adjustment with 400cps, VSD3
Bi-D 400 VSD4	Bi-D adjustment with 400cps, VSD4

Table 5-1 Uni-D/Bi-D adjustment items(continued)

Panel	contents
Bi-D ALL	Bi-D ALL adjustment of all items

Table 5-2 The details of the adjustment item

Adjustment Item	1st sub item	Contents	Refer to
Uni-D	Setup	Enter the adjusted value for each line when adjusting the misalignment of other lines between the reference line. Adjusted value input unit: 720dpi	 "(5-a) Uni-D Setup
	Print	Print out Adjust pattern with the current adjusted value and check the misalignment between the reference line and other lines.	 "(1) Uni-D Print
Bi-D	Setup	Enter the misalignment degree of bidirectional printing of the reference line.	 "(5-c) Bi-D ALL Setup
	Print1	Print out the patterns with the current parameters and the patterns with the current parameters ± 2 , ± 4 , ± 6 , and ± 8 (one vertical line with each parameter). Check the degree of misalignment.	 "(2) Bi-D Print 1
	Print2	Print out the patterns with the current parameters and check the degree of misalignment.	 "(3) Bi-D Print 2
Bi-D ALL	Setup	Enter the misalignment degree of bidirectional printing of the reference line.(all Bi-D items)	 "(5-b) Bi-D Setup
	Print3	Print out the current parameters of all Bi-D items and check the current misalignment.	 "(5-c) Bi-D ALL Setup

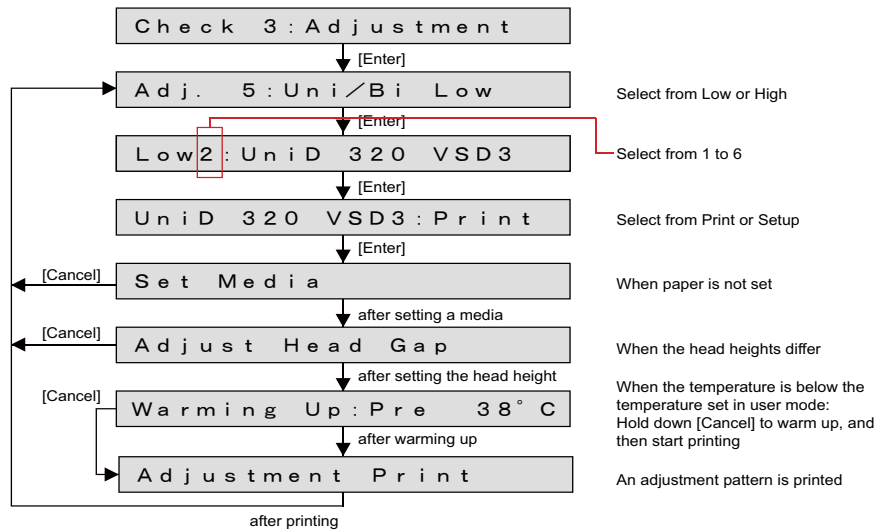


(1) Uni-D Print

NOTE

Adjustment patterns differ depending on the setting (TypeA or TypeB).

 (12)Uni/Bi Ptn



1 Prints out adjustment pattern (the following is the example of Uni-D 320 VSD3)

TIP

Dot diameter: Medium

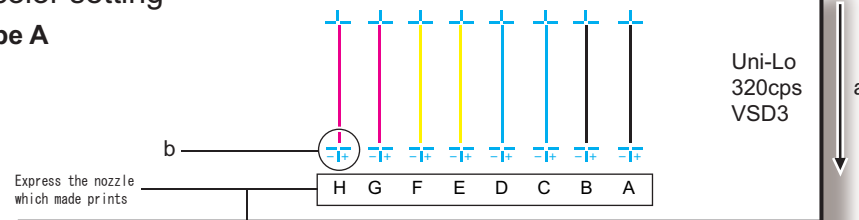
Nozzle: Print the pattern in the order of A to H from the origin side

base line: 4-color: C-Cyan/6-color, 8-color: C-Magenta

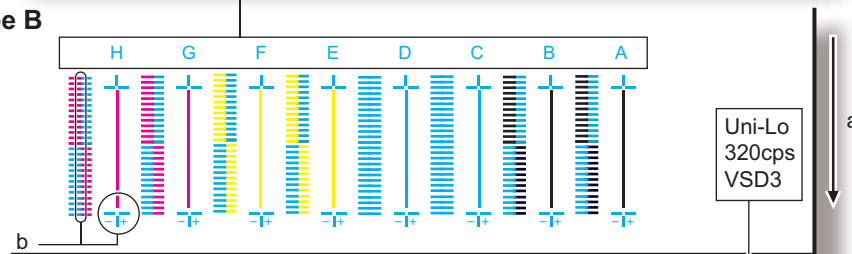
Print direction: CW, 1 Pass

4-color setting

Type A



Type B



Item carried out is printed

Panel Menu : printed
 UniD320 VSD1 : Uni-Lo/Hi 320cps VSD1
 UniD320 VSD3 : Uni-Lo/Hi 320cps VSD3
 UniD320 VSD4 : Uni-Lo/Hi 320cps VSD4
 UniD400 VSD1 : Uni-Lo/Hi 400cps VSD1
 UniD400 VSD3 : Uni-Lo/Hi 400cps VSD3
 UniD400 VSD4 : Uni-Lo/Hi 400cps VSD4

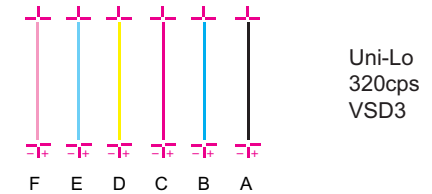
(Lo or Hi is printed in a part in Lo/Hi.)

a: media feed direction

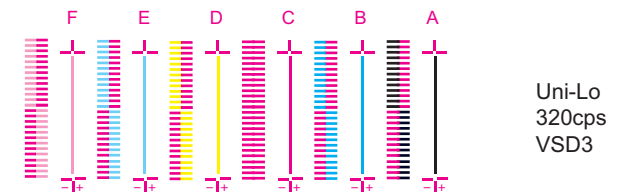
b: adjust the setting value so that these points match

6-color setting

Type A

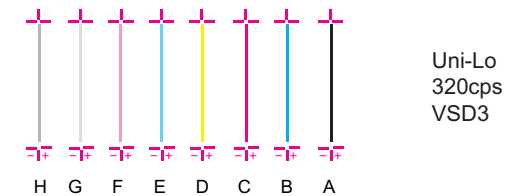


Type B

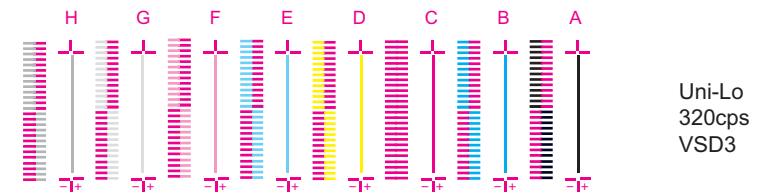


white 8-color setting

Type A

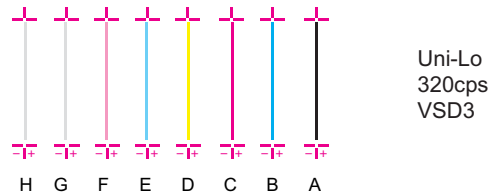


Type B

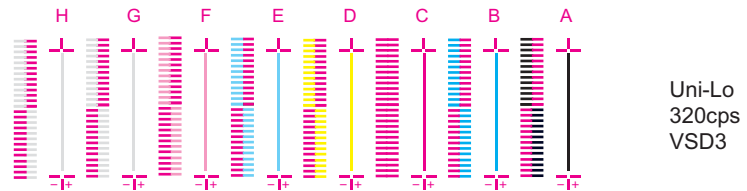



white 7-color setting

Type A



Type B



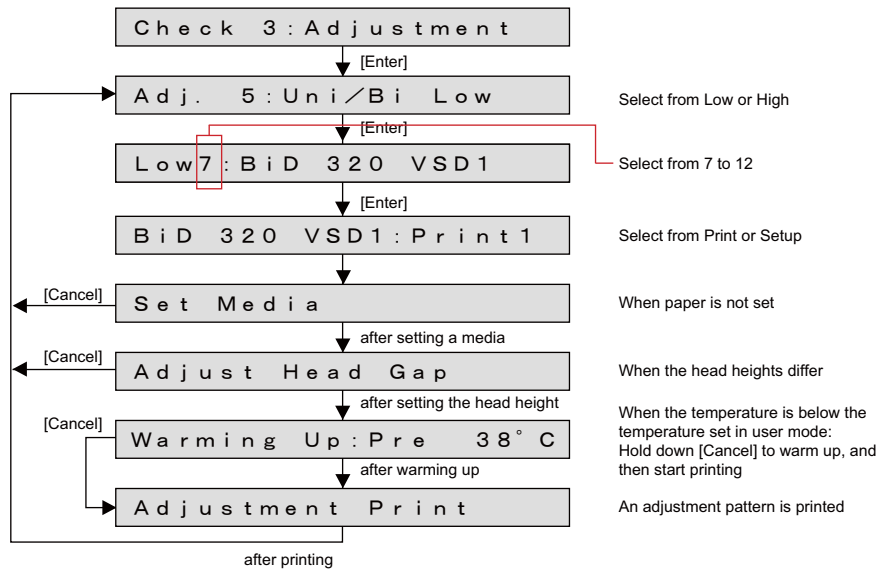
- 2 If connecting points above do not match, enter adjust values under 'setup'.
 (5-a) **Uni-D Setup**
- 3 After entering the adjustment values, prints out adjustment pattern again and check.
- 4 Repeat steps 1 through 3 until connecting points match.

(2) Bi-D Print 1

NOTE

Adjustment patterns differ depending on the setting (TypeA or TypeB).

 (12)Uni/Bi Ptn



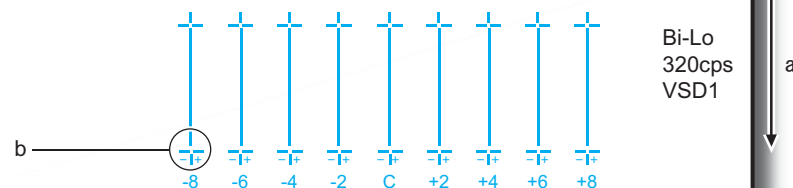
- 1 Prints out adjustment pattern. (the following is the example of Bi-D 320 VSD1)
 dot diameter: Medium
 Nozzle: print using only C (4-color: Cyan, 6/7/8-color: Magenta)
 Print direction: CW, CCW

TIP

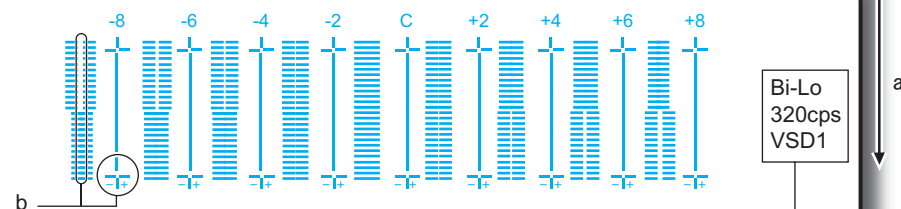
For details on how to print, refer to the following page.

4-color setting

Type A



Type B



Item carried out is printed

Panel Menu : printed
 BiD320 VSD1 : Bi-Lo/Hi 320cps VSD1
 BiD320 VSD3 : Bi-Lo/Hi 320cps VSD3
 BiD320 VSD4 : Bi-Lo/Hi 320cps VSD4
 BiD400 VSD1 : Bi-Lo/Hi 400cps VSD1
 BiD400 VSD3 : Bi-Lo/Hi 400cps VSD3
 BiD400 VSD4 : Bi-Lo/Hi 400cps VSD4

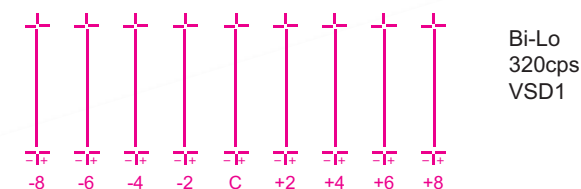
(Lo or Hi is printed in a part in Lo/Hi.)

a: Media feed direction

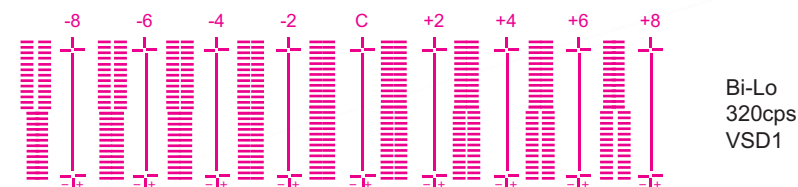
b: Check the set value in which the connecting points match.

6-color/white 8-color/white 7-color setting

Type A



Type B



- 2 When the above connection points do not match, enter the adjustment value in Setup menu.
 (5-b) Bi-D Setup
- 3 After entering the adjustment value, print the adjustment pattern again and check.
- 4 A Repeat steps 1 to 3 until each connection point matches.

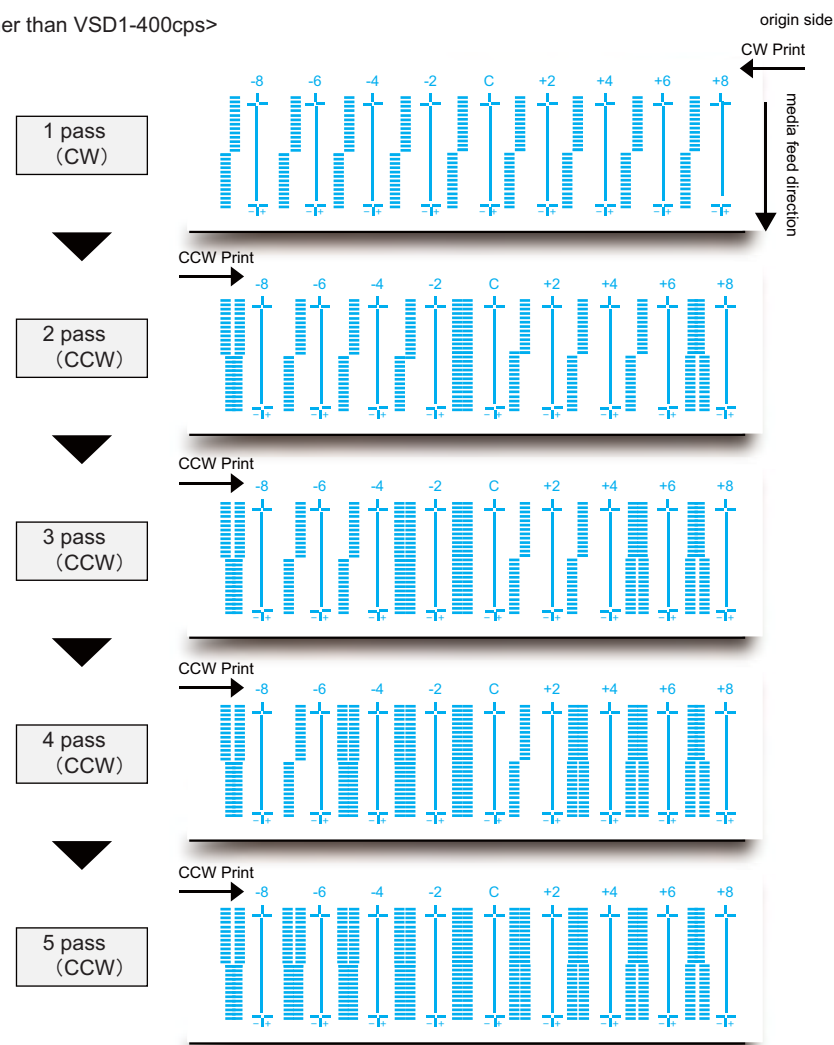
TIP

Printing Method for Bi-D Adjustment. The figure below describes the printing method as 8-color. (Similar method is applied to 4-color/6-color/7-color/8-color.)

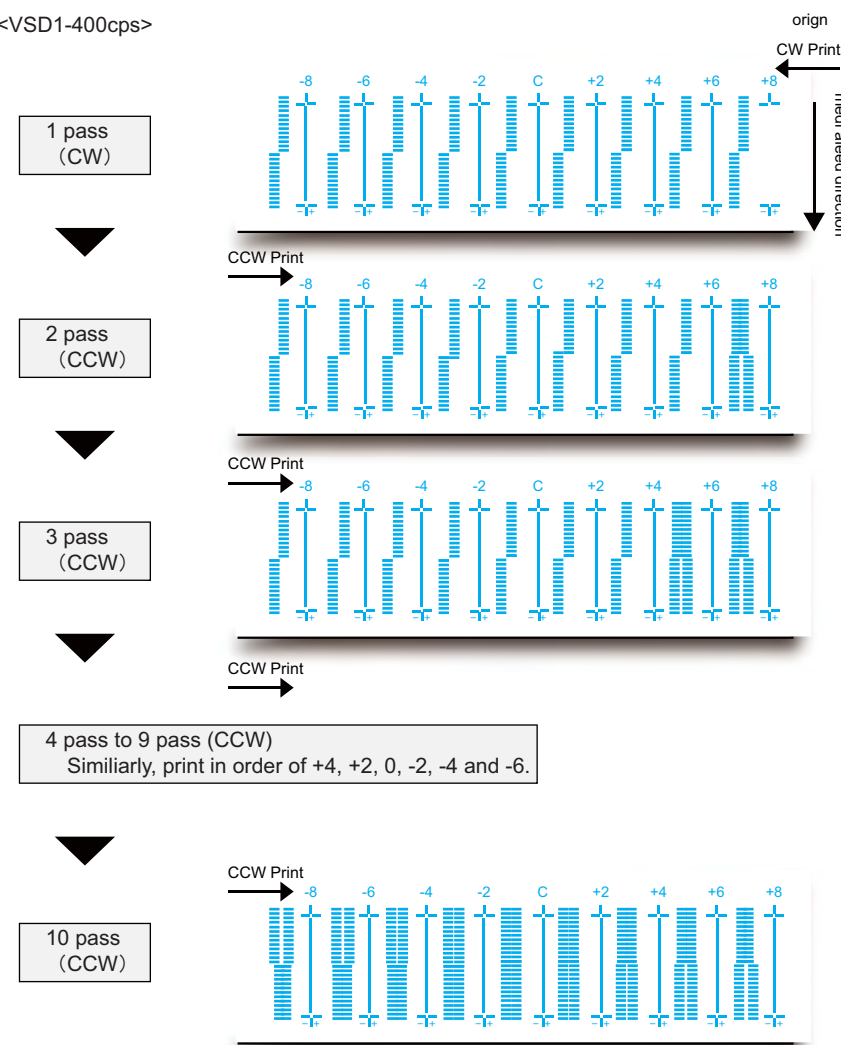
The printing pass number differs as below:

- VSD1 - 400cps: 10 pass
- Other than VSD1 - 400cps: 5 pass.

<Other than VSD1-400cps>



<VSD1-400cps>

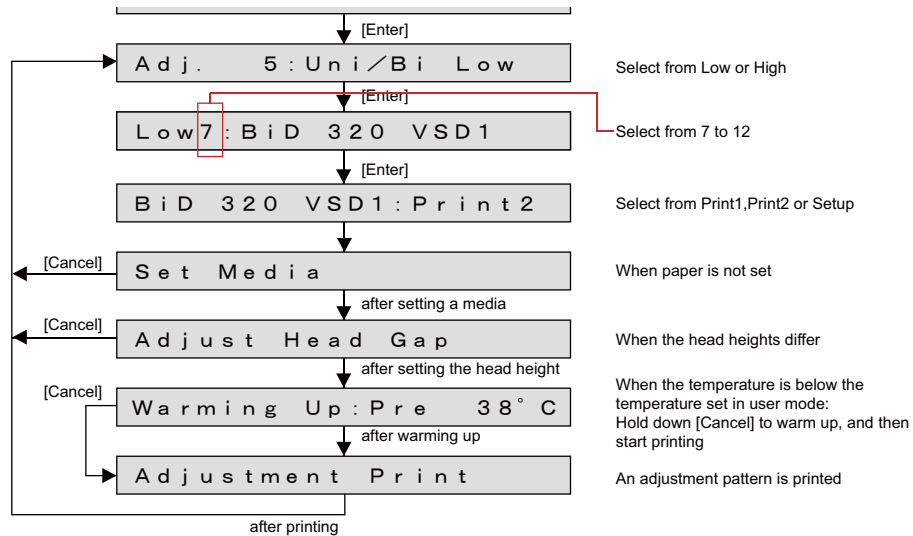


(3) Bi-D Print 2

NOTE

Adjustment patterns differ depending on the setting (TypeA or TypeB).

 (12)Uni/Bi Ptn



1 Prints out adjustment pattern. (the following is the example of Bi-D 320 VSD1)

Dot diameter : Middle

Nozzle : Print the pattern in the order of A to H from the origin side (base line: C-Cyan)

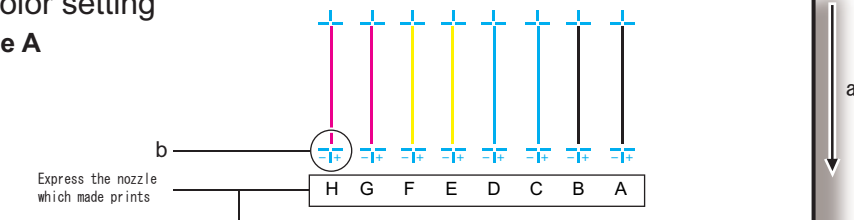
Print direction : CW, CCW

TIP

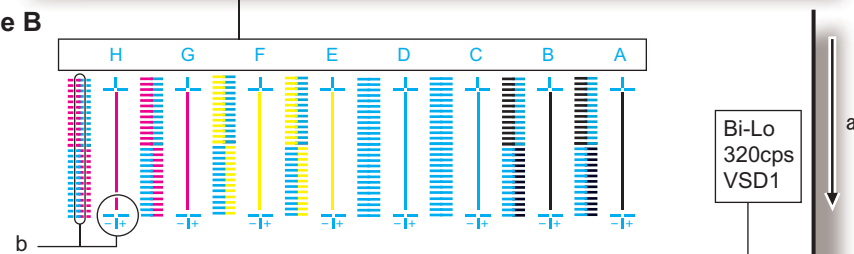
For details on how to print, refer to the following page.

4-color setting

Type A



Type B



Item carried out is printed

Panel Menu : printed
 BiD320 VSD1 : Bi-Lo/Hi 320cps VSD1
 BiD320 VSD3 : Bi-Lo/Hi 320cps VSD3
 BiD320 VSD4 : Bi-Lo/Hi 320cps VSD4
 BiD400 VSD1 : Bi-Lo/Hi 400cps VSD1
 BiD400 VSD3 : Bi-Lo/Hi 400cps VSD3
 BiD400 VSD4 : Bi-Lo/Hi 400cps VSD4

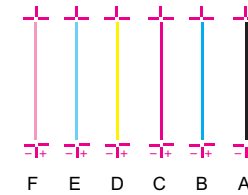
(Lo or Hi is printed in a part in Lo/Hi.)

a:Media feed direction.

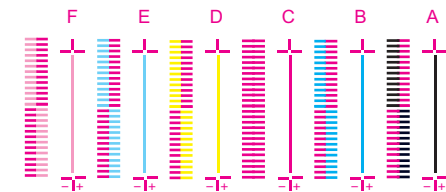
b:Check the set value in which the connecting points match.

6-color setting

Type A

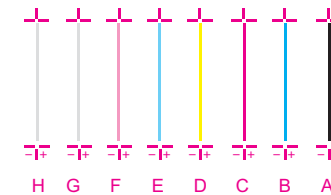


Type B

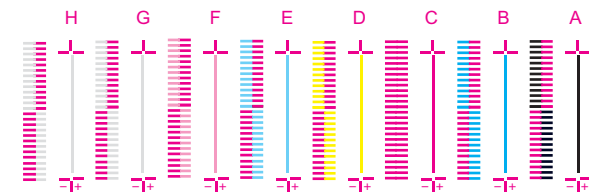


white 7-color setting

Type A

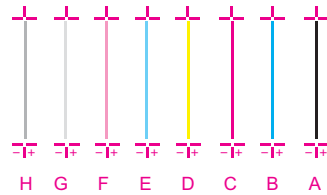


Type B

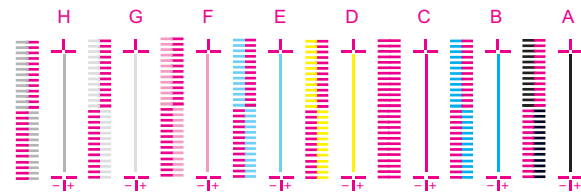


white 8-color setting

Type A



Type B



Bi-Lo
320cps
VSD3

- 2** When the above connection points do not match, enter the adjustment value in Setup menu.

(5-a)Uni-D Setup

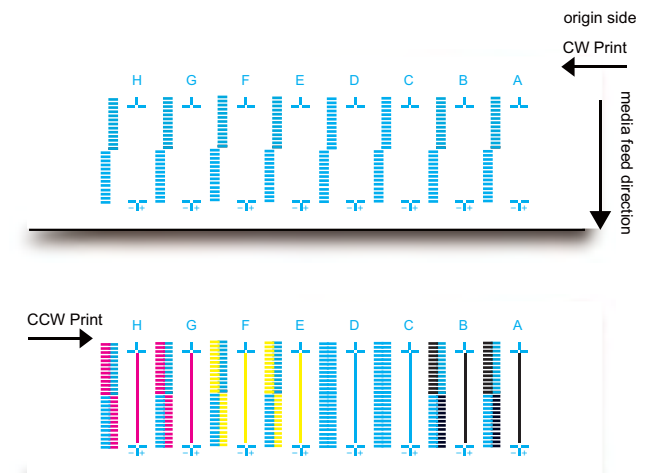
- 3** After entering the adjustment value, print the adjustment pattern again and check
- 4** Repeat steps 1 to 3 until each connection point matches

TIP

Details of printing

1 pass
(CW)
Nozzle C

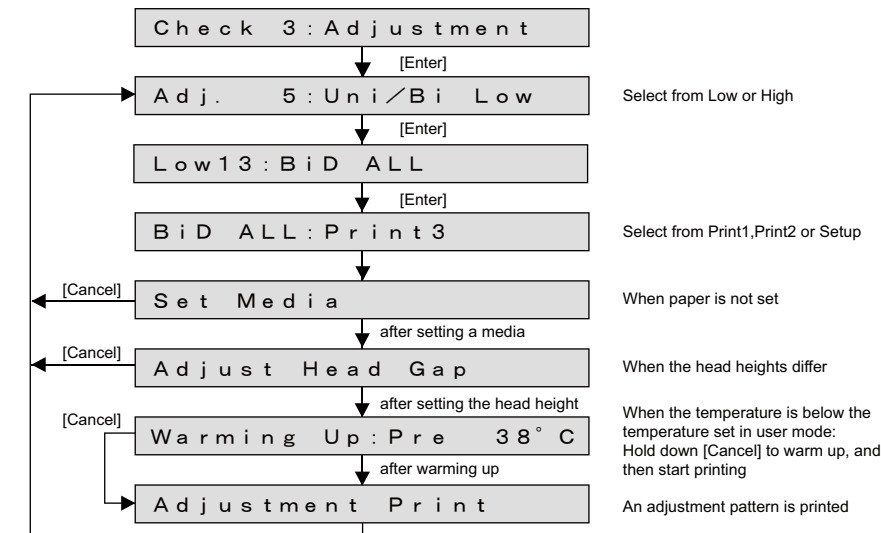
2 pass
(CCW)
print in the order of line A
to H from the origin point



(4) Bi-D Print 3

TIP

When only Bi-D ALL is selected.



1 Prints out adjustment pattern.

- Prints all items of the (3)Bi-D Print 2 adjustment pattern.

Dot diameter: Medium

Nozzle: Print the pattern in the order of A to H.

Adjustment pattern: Refer to (3)Bi-D Print 2

2 When the above connection points do not match, enter the adjustment value in Setup menu.

(5-a)Uni-D Setup

3 After entering the adjustment value, print the adjustment pattern again and check.

4 Repeat steps 1 to 3 until each connection point matches.

(5) Setup menu

Select the Setup menu for parameter, and then press [Enter] to renew the parameter.

TIP

The default value is set to values that are suited for Mutoh ink.

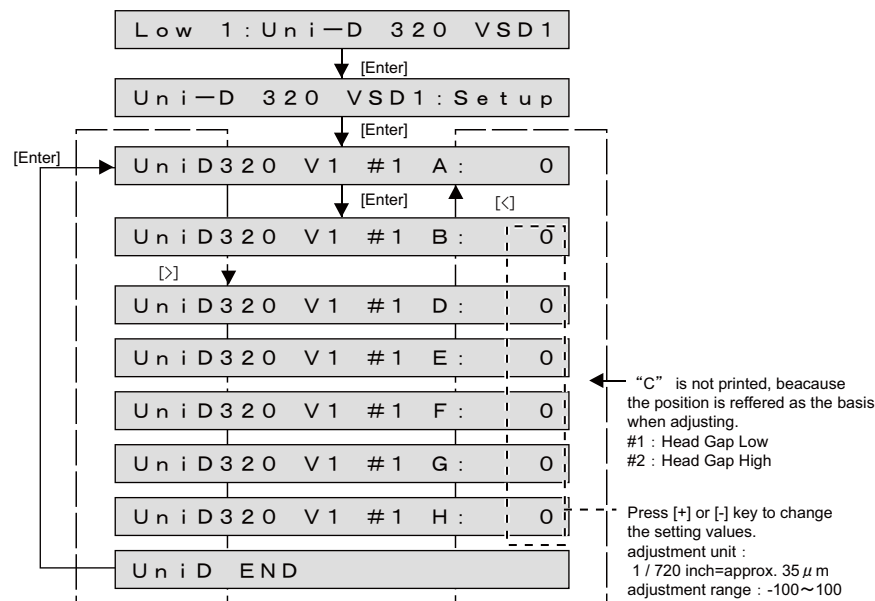
Enter setting values from panel.

(5-a)Uni-D Setup

TIP

The default values for Uni-D adjustment is set to all "0" regardless of carriage speed and head height.

Inputting Uni-D adjustment value (when Uni-D 320 VSD1 is selected)



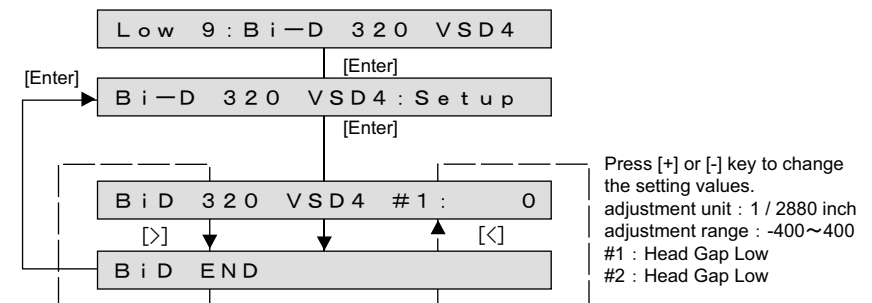
(5-b)Bi-D Setup

TIP

The default values for Bi-D adjustment is as follows:

Item		default values	Item		default values
BiD Low	320 VSD1	-40	BiD High	320 VSD1	-78
	320 VSD3	-42		320 VSD3	-92
	320 VSD4	-36		320 VSD4	-81
	400 VSD1	-53		400 VSD1	-100
	400 VSD3	-54		400 VSD3	-114
	400 VSD4	-47		400 VSD4	-100

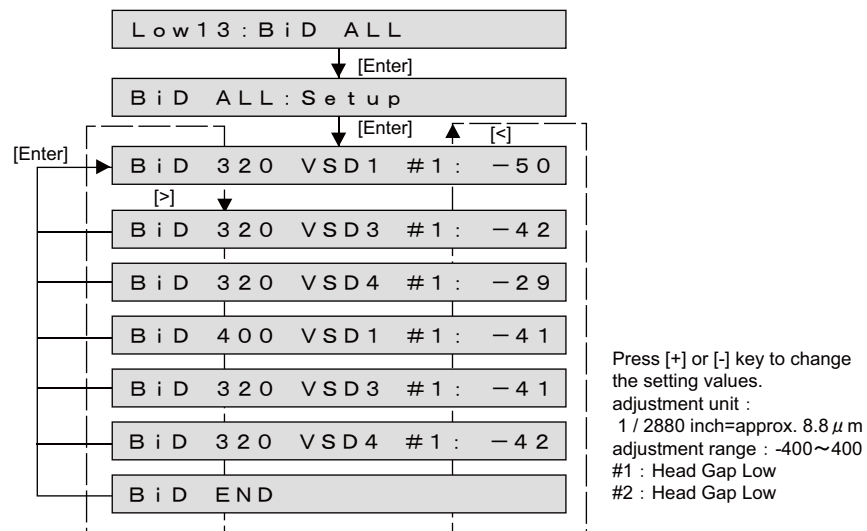
Inputting Bi-D adjustment value (when Bi-D 320 VSD4 is selected)



(5-c)Bi-D ALL Setup

NOTE

You can adjust all the setting value in Bi-D ALL.

Bi-D all adjustment value

After entering the adjustment value, print the adjustment pattern again and check.

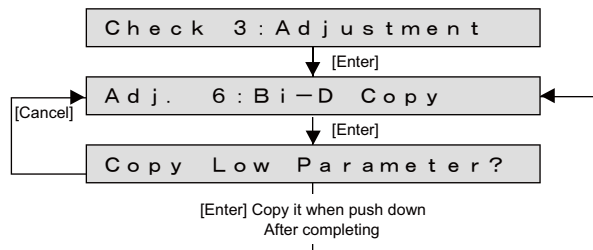
5.6.6 Bi-D Copy

Copy the adjustment values for all items of BiD Low to those of the BiD High adjustment values.

T I P

The values corrected based on Bi-D Low adjustment values are used as High adjustment values.

(Uni-D adjustment values are not corrected.)



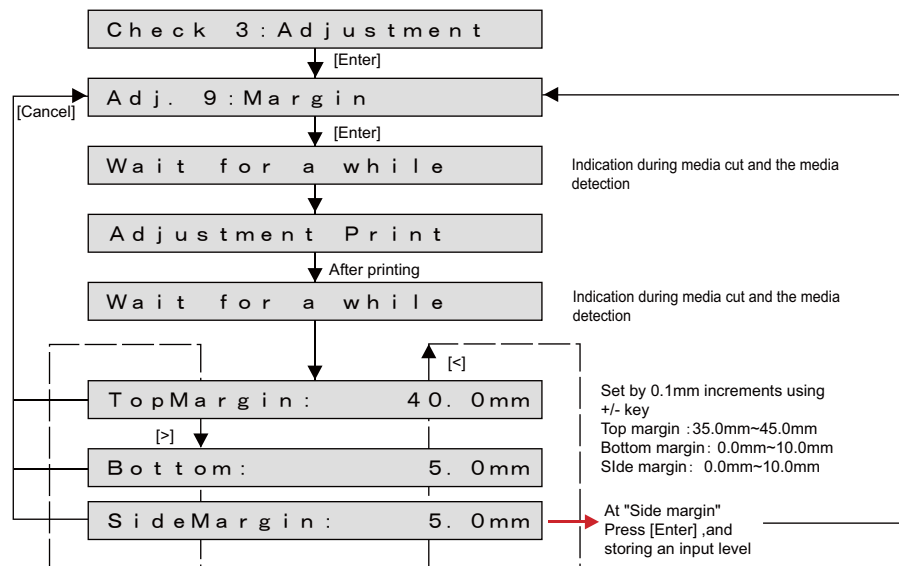
5.6.7 Margin adjustment Menu

Perform printing and cut the media. Enter the distance between the front sensor heads, cutter heads, and edge sensor heads (print start position), and then adjust the top, bottom, and side margins.

TIP

Default values are as it is the following table.

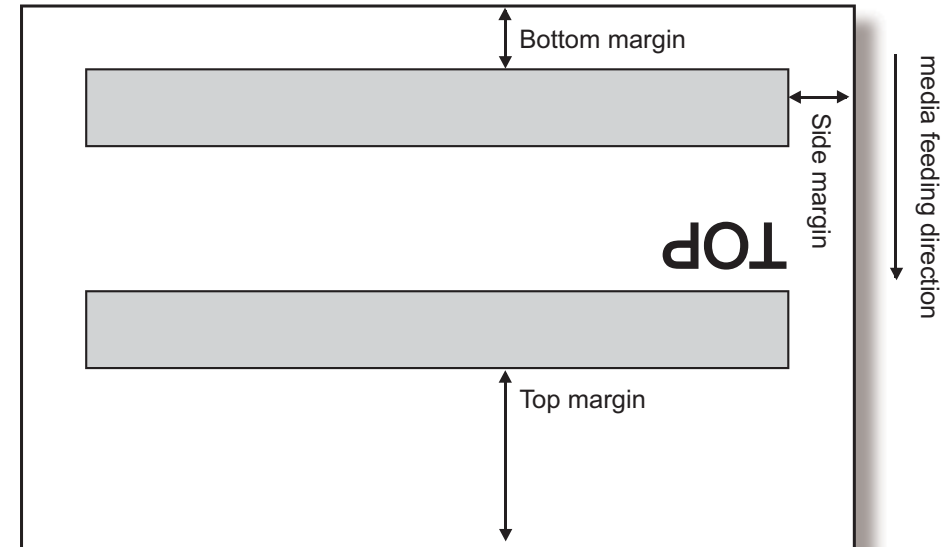
Item	default values
TopMargin	40.0mm
BottomMargin	5.0mm
SideMargin	5.0mm



- 1 Set media as necessary.
- 2 After media is set, the printer prints out band feed correction adjustment patterns in the following modes.

- Black, 1 pass, Uni-D, 360 dpi, 320cps, VSD4, Large dot

- 3 Check the printed margin adjustment patterns for the measurement.
 1 : Top margin (Front sensor position)
 2 : Bottom margin (Rear sensor position)
 3 : Side margin (Print start position)
 Measure each margins with a scale and so on.



- 4 Enter each measured values as the parameter. Prints put the margin adjustment pattern again.
- 5 Measure the followings on the print result and check that the print margins are adjusted.
 1:Top margin
 2:Bottom margin
 3:Side margin
- 6 If the margins are not adjusted, repeat (2) to (5).

5.6.8 Test Printing Menu

This menu is used to print out the following items.

Item	Contents
Adjust 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.

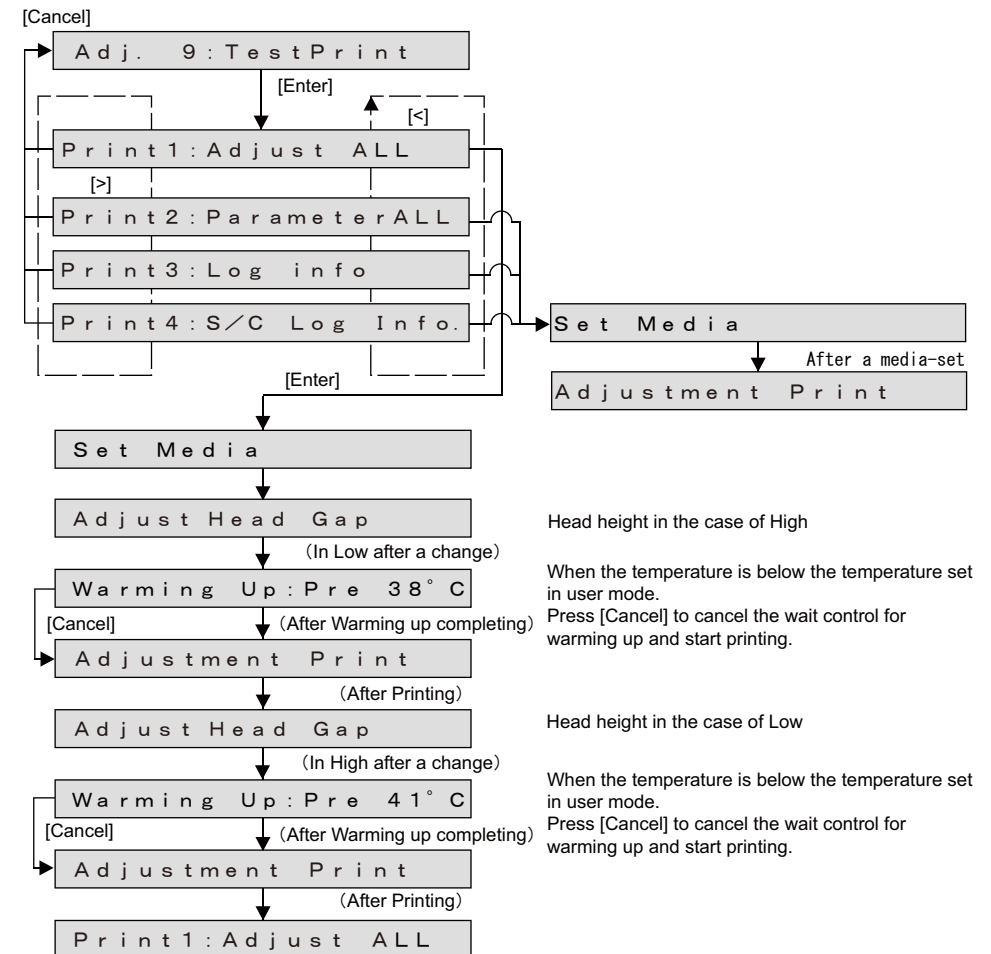
TIP

This menu provides the same functions with **"5.8 Sample printing Menu"**.

The test printing procedure is as follows.

- 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 each adjustment parameter setting value.
 - Log Info.: Prints the serious error history and smart chip log.
 - S/C Log Info. : Prints S/C Log history.

- 3 Press [Enter] key on Operation panel to start the selected test printing.

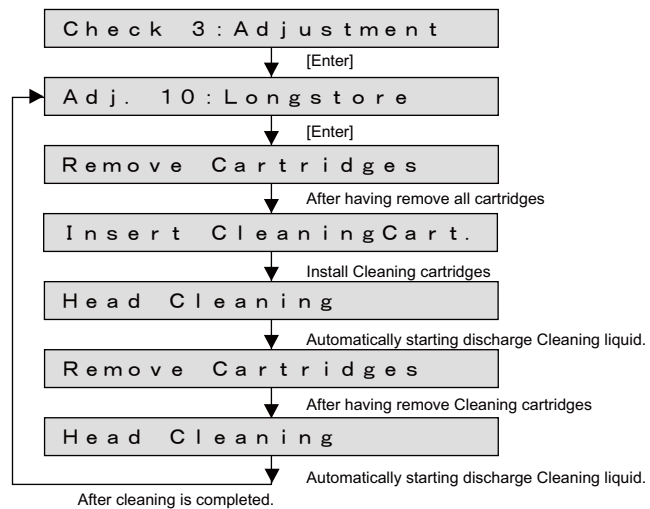


5.6.9 Longstore Menu

This menu is used to clean Ink tube and Print head with Clean liquid.

The actual procedure for cleaning of Ink tube and Print head is as follows.

- 1** Press [Enter] key on Operation panel to determine the Longstore Menu.
- 2** Remove Cleaning cartridges.
- 3** Discharge Ink liquid.
- 4** Install Cleaning cartridges.
- 5** Charge Cleaning liquid.
- 6** Remove Cleaning cartridges,discharge Cleaning liquid.



5.6.10 Software Counter Initialization Menu

This menu is used to initialize various software counters.

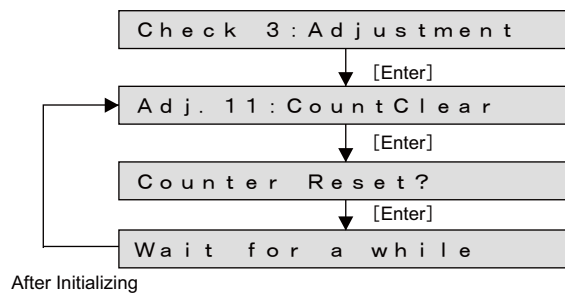
NOTE

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	default values
Cumulative print timer	0
Ink consumption counter (each cartridge)	0
Ink amount count in the cap	0
Waste ink count	0
Use not-filled flag	0
Not-filled flag	1
Use First Start up flag	1
User definition first choice flag	0xFFFFFFFF
Plug replacement count of 1L adapter	0
Debug Bit	0
Dot control counter	OFF

Pressing [Enter] key on Operation panel in the “Counter Reset?” screen performs the software counter initialization.

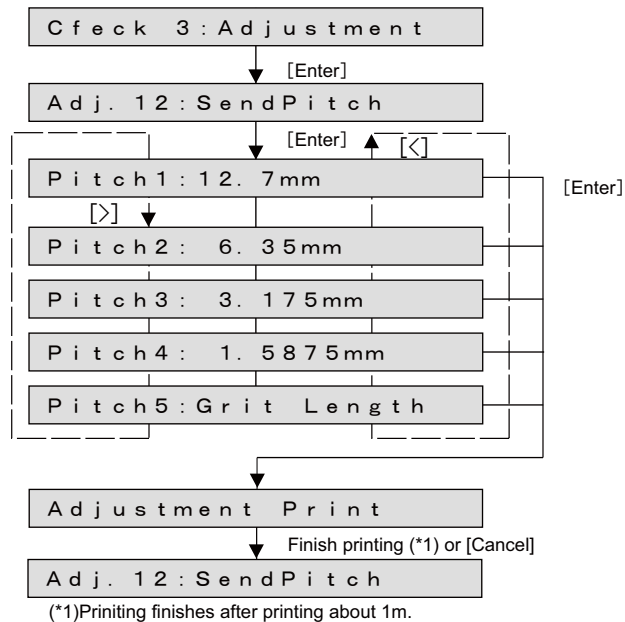


5.6.11 Feed Pitch Check Menu

This menu used to check whether there is as error in 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.

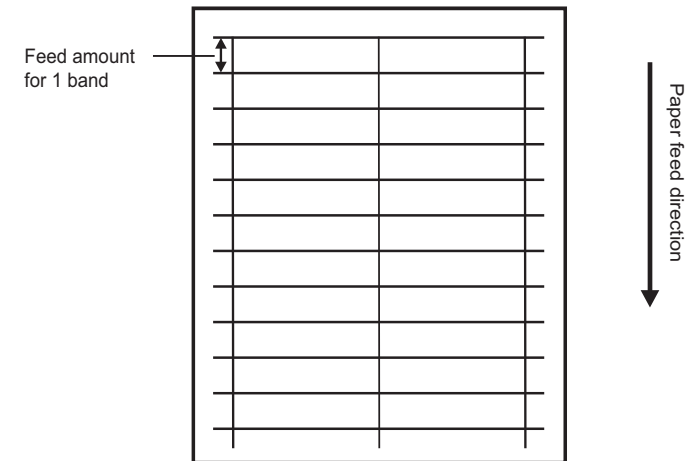
- 1 Set media as necessary.
- 2 Select "Adj : SendPitch.
- 3 Select media feed amount for one band.



- 4 Prints out with 320cps, VSD4, Large.

T I P

Print about 1000mm.



5.6.12 Solid Print Menu

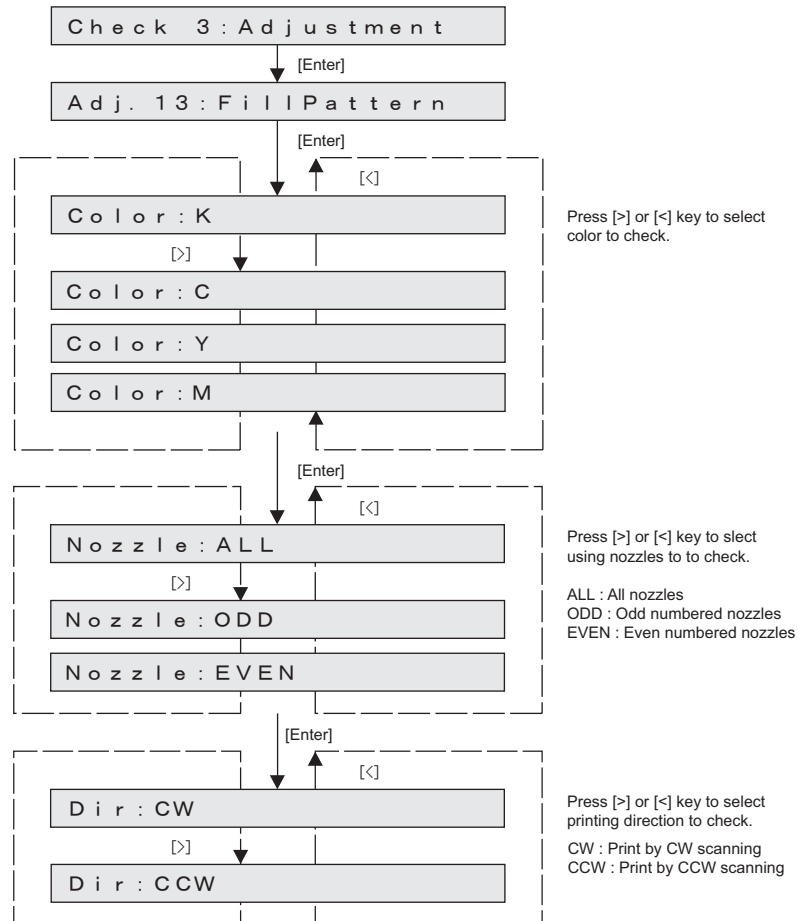
This menu is used to perform solid nozzle print check (color selection, nozzle selection and print direction) selection are available.

*The order of printing is as follows:

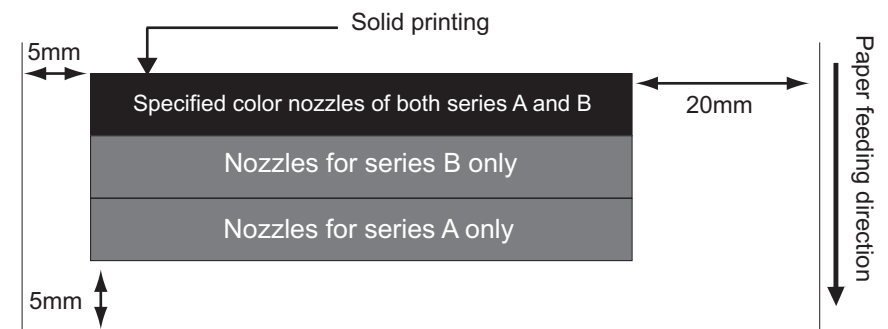
A series & B series

only B series

only A series



- Printing mode: 320cps, VSD4, Large dot
- A printed pattern is as follows:



5.7 Cleaning Menu

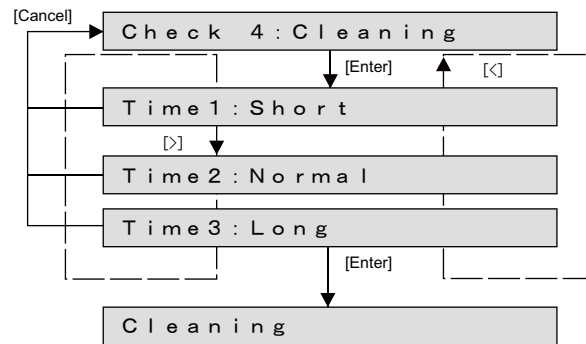
This menu is used to clean Print head.

There is the next diagnosis item on the cleaning menu.

Diagnosis item	Description
Short	Cleaning Short
Normal	Cleaning Normal
Long	Cleaning Long

TIP

After cleaning, operation panel displays the selected cleaning menu.



5.8 Sample printing Menu

This menu is used to print out a sample printing.

Diagnosis item	Contents
Adjust ALL	<p>The following contents are printed.</p> <ol style="list-style-type: none"> 1. Model name/Serial No./year/month/day/time 2. Nozzle check pattern normal/Horizontal line/Vertical line (CW)/Vertical line(CCW) 3. Head Slant Slant1 4. Head Slant Slant2 5. UniD 320 VSD1 Low 6. UniD 320 VSD3 Low 7. UniD 320 VSD4 Low 8. BiD 320 VSD1 Low 9. BiD 320 VSD3 Low 10. BiD 320 VSD4 Low 11. UniD 400 VSD1 Low 12. UniD 400 VSD3 Low 13. UniD 400 VSD4 Low 14. BiD 400 VSD1 Low 15. BiD 400 VSD3 Low 16. BiD 400 VSD4 Low 17. the above 5 to 10 (PG-High) 18. the above 11 to 16(PG-Low) <p>NOTE</p> <p>When a speed mode is "Low", the part of 400 is printed with 240.</p>

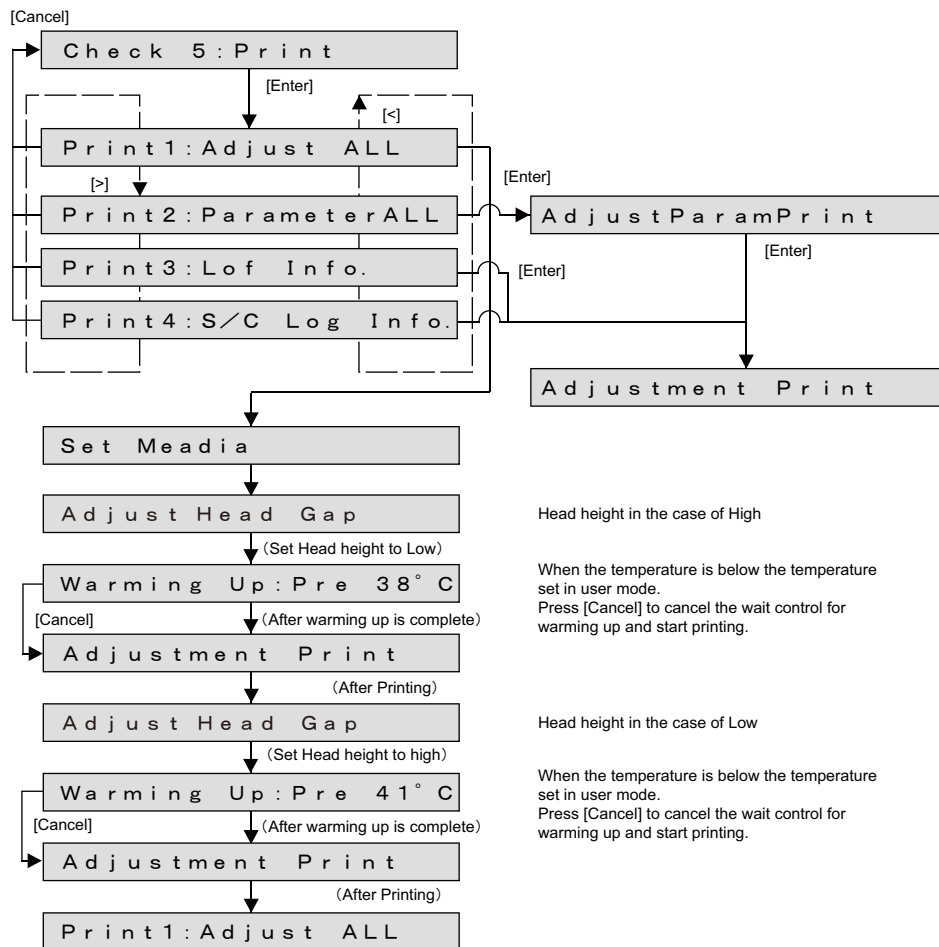
Diagnosis item	Contents
Parameter ALL	<p>Prints out the following adjustment parameters.</p> <p>Rear sensor VR/GAIN Edge sensor VR/GAIN Head rank UniD adjustment value BiD adjustment value Margin adjustment value Company code Periodical cleaning Servo parameter</p>
Log info.	Prints the serious error 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

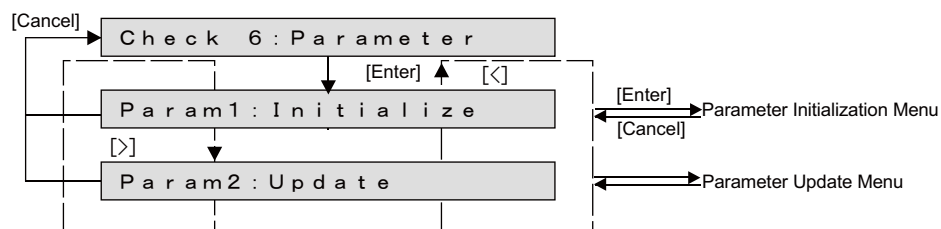
This menu is the same function as the ["5.6.8 Test Printing Menu"](#)



5.9 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
Initialize	Initializes the adjustment parameters.	 "5.9.1 Parameter Initialization Menu"
Update	Updates the adjustment parameters.	 "5.9.2 Parameter Update Menu"



NOTE

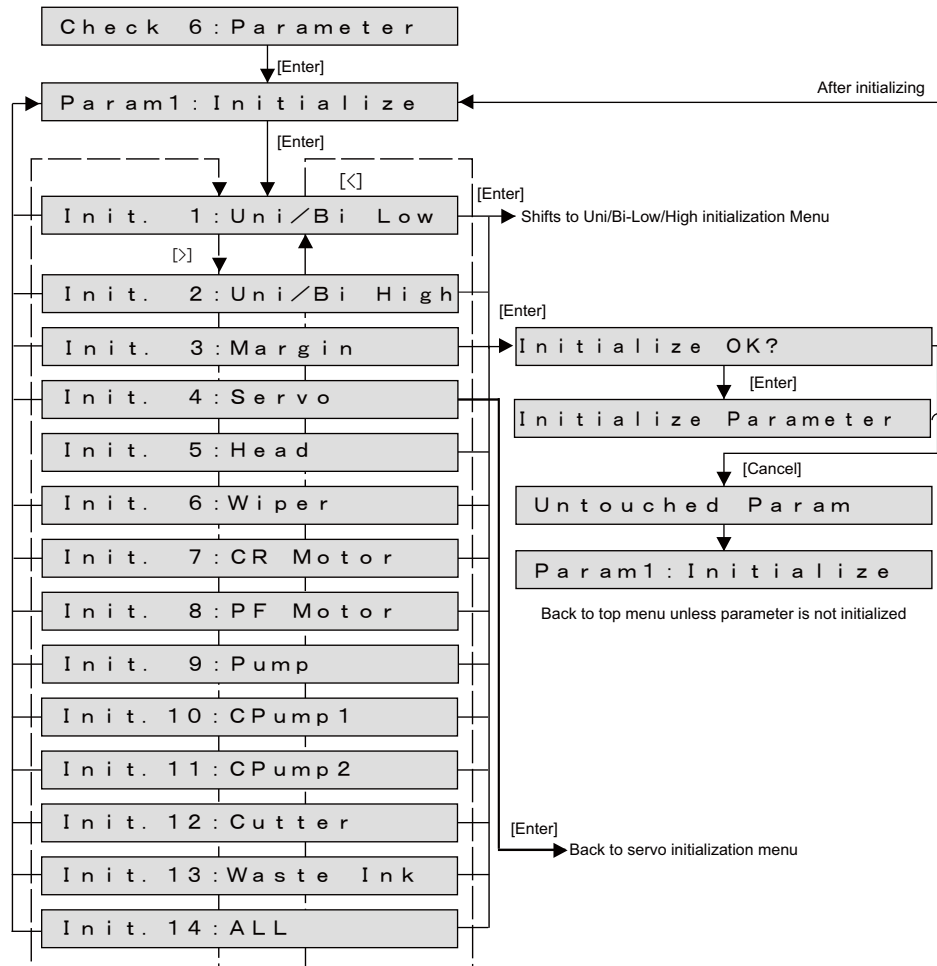
To backup the parameter or recover the backup parameter, start up the printer with "Board Manager Mode" and use the printer with Mutoh Service Assistance installed on, via LAN cable.

 [4.3 Working with MUTOH Service Assistance Software](#)

5.9.1 Parameter Initialization Menu

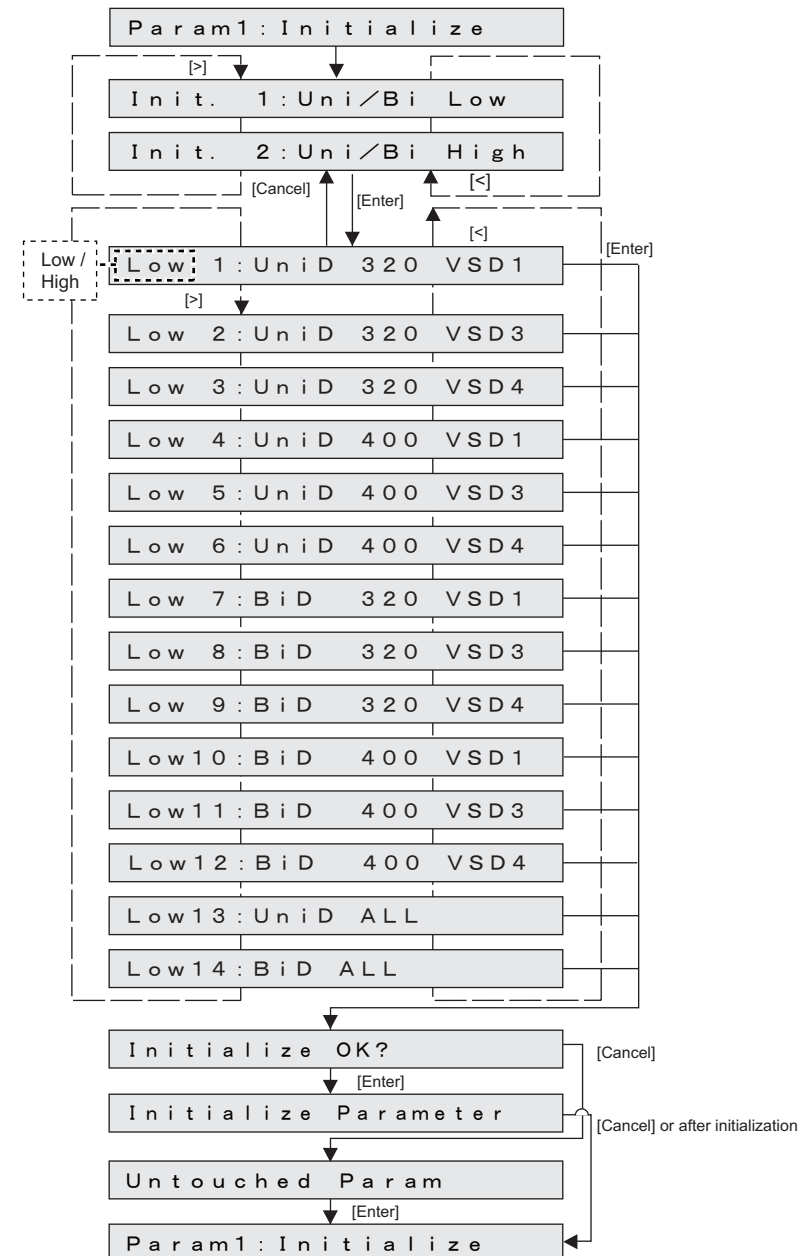
This menu is used to initialize the adjustment parameters. The parameters that can be initialized through this menu are as follows.

- Uni-D/ Bi-D parameter, Margin, Servo, Print head, Wiper, CR motor, PF motor, Pump, Circulation Pump, Cutter, Waste ink counter
- Initialization of all items



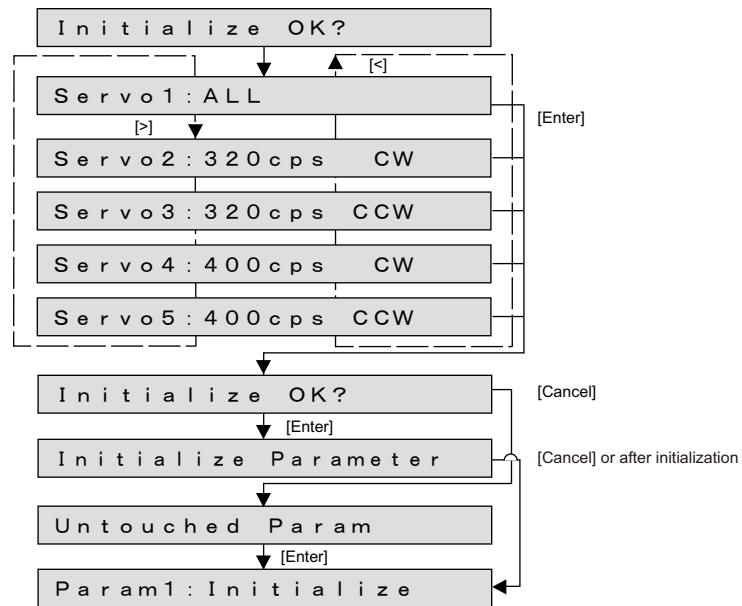
(1) Uni-D/Bi-D initialization Menu

This menu is used to initialize the Uni-D/Bi-D adjustment parameter Uni-D/ Bi-D.



(2) Servo initialization Menu

This menu is used to initialize the Servo settings.



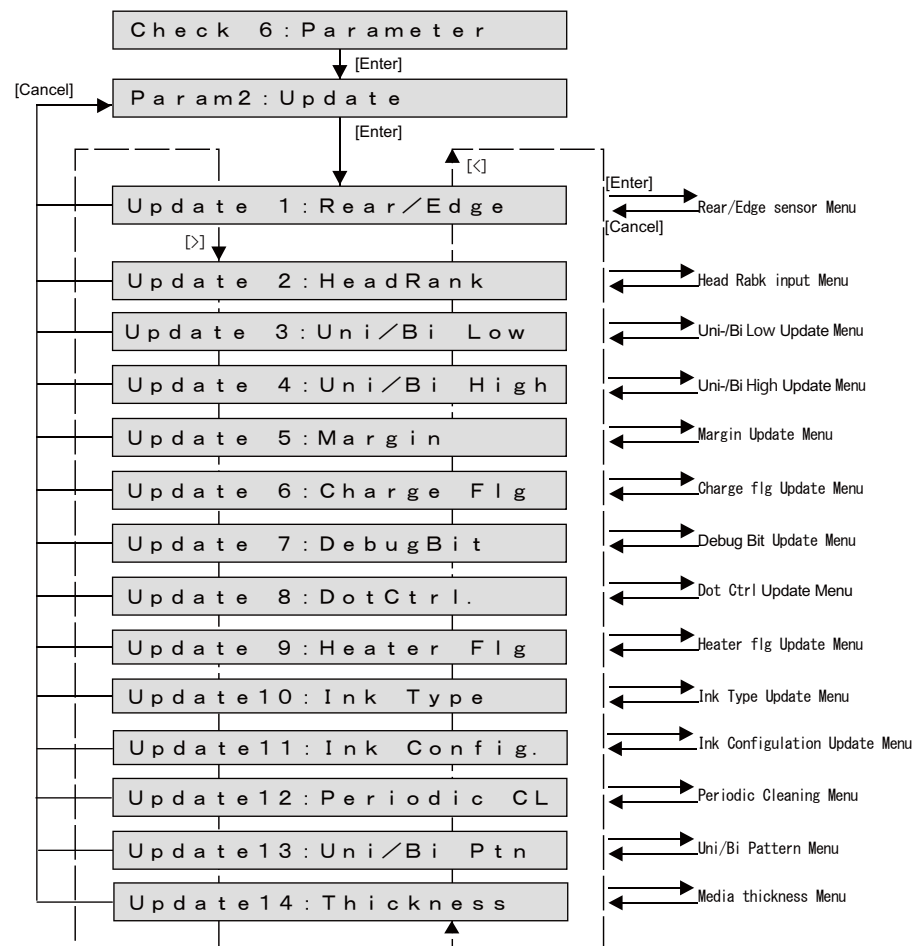
5.9.2 Parameter Update Menu

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, Margin, Charge flg, DebugBit, Dot control, Heater flag, Ink Type, Ink combination, Periodic cleaning, Uni/Bi pattern, Media thickness

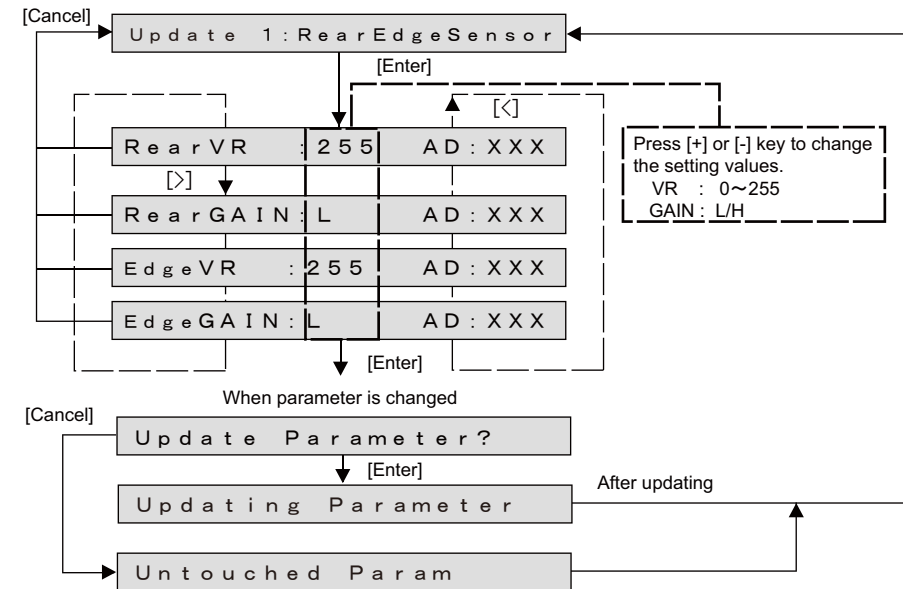
NOTE

The updated parameters will not be stored in the flash memory unless the system power is turned OFF.



(1) Rear/Edge Sensor

Enter the set values of Rear/Edge sensors.

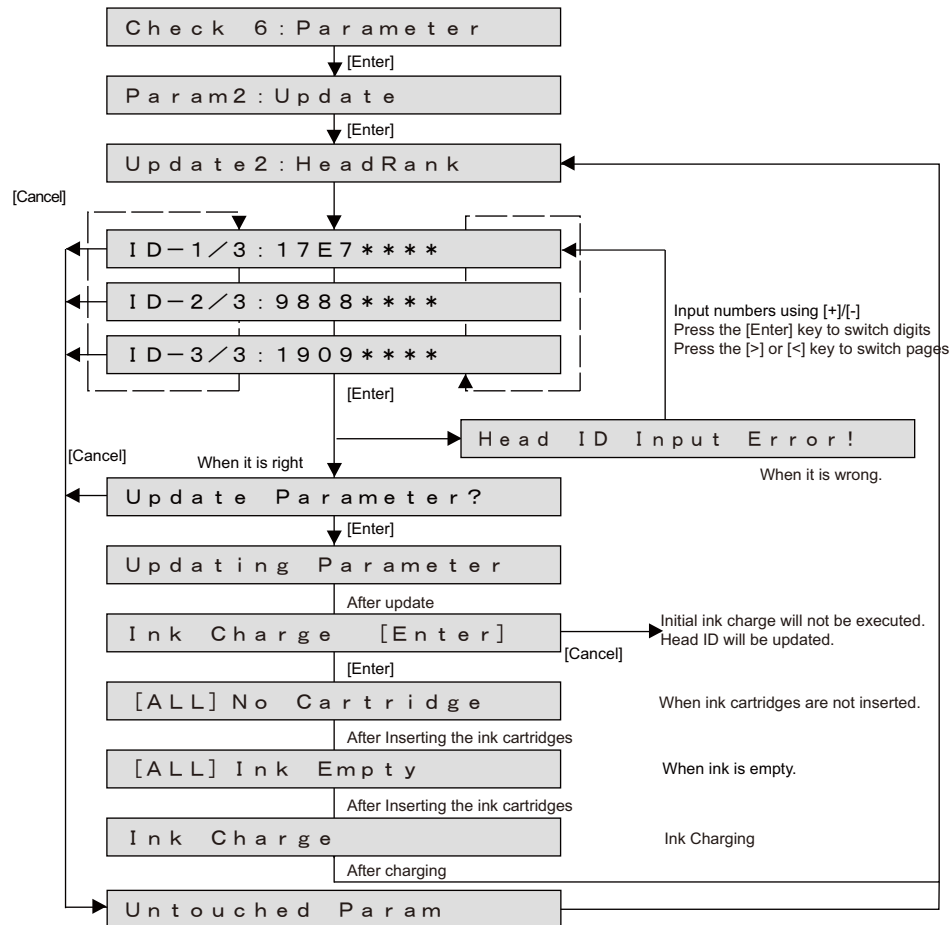


(2) Head Rank

This menu is used to update the head rank parameters.

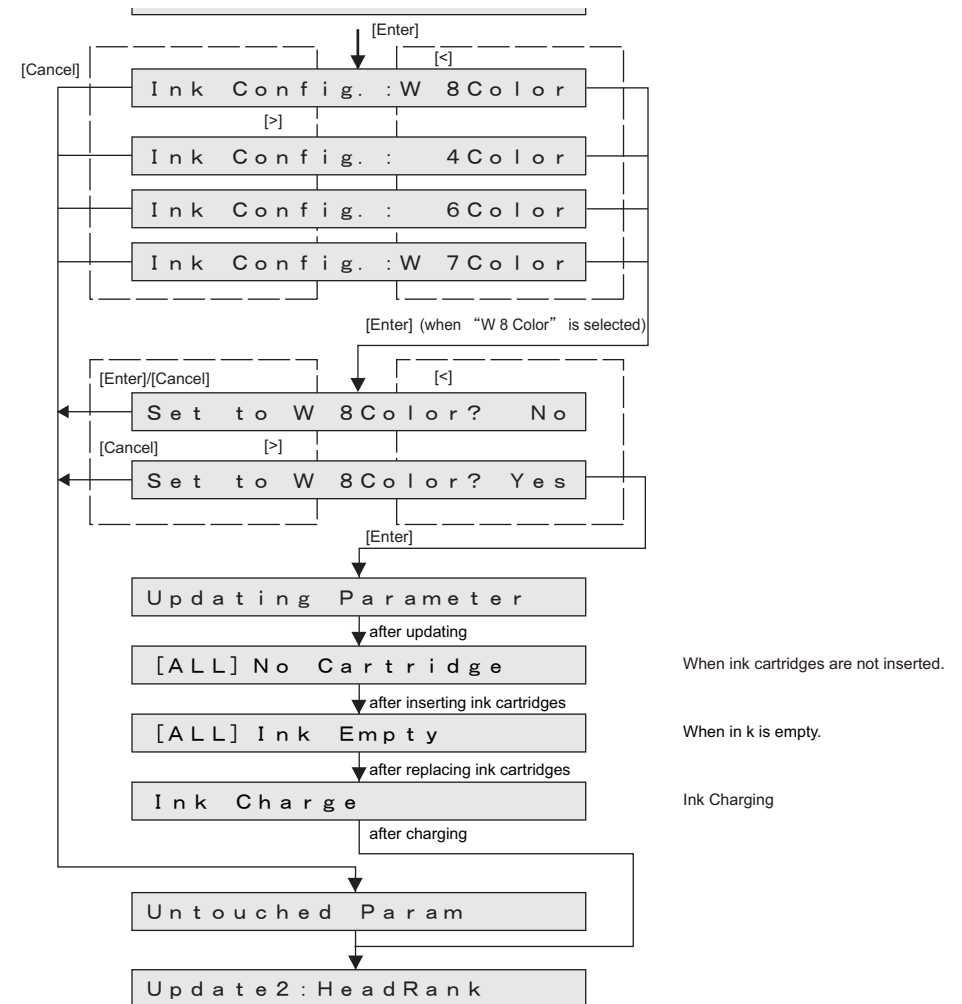
The head rank is used to determine Print head driving voltage and correct the head temperature.

After head rank is entered, the 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.
- When the ink is not charged and 'Ink Config.' setting is 'Auto', after updating the head rank, press [Enter] key on 'Ink Charge [Enter]' to display the following menu.



(3) Uni-D/Bi-D

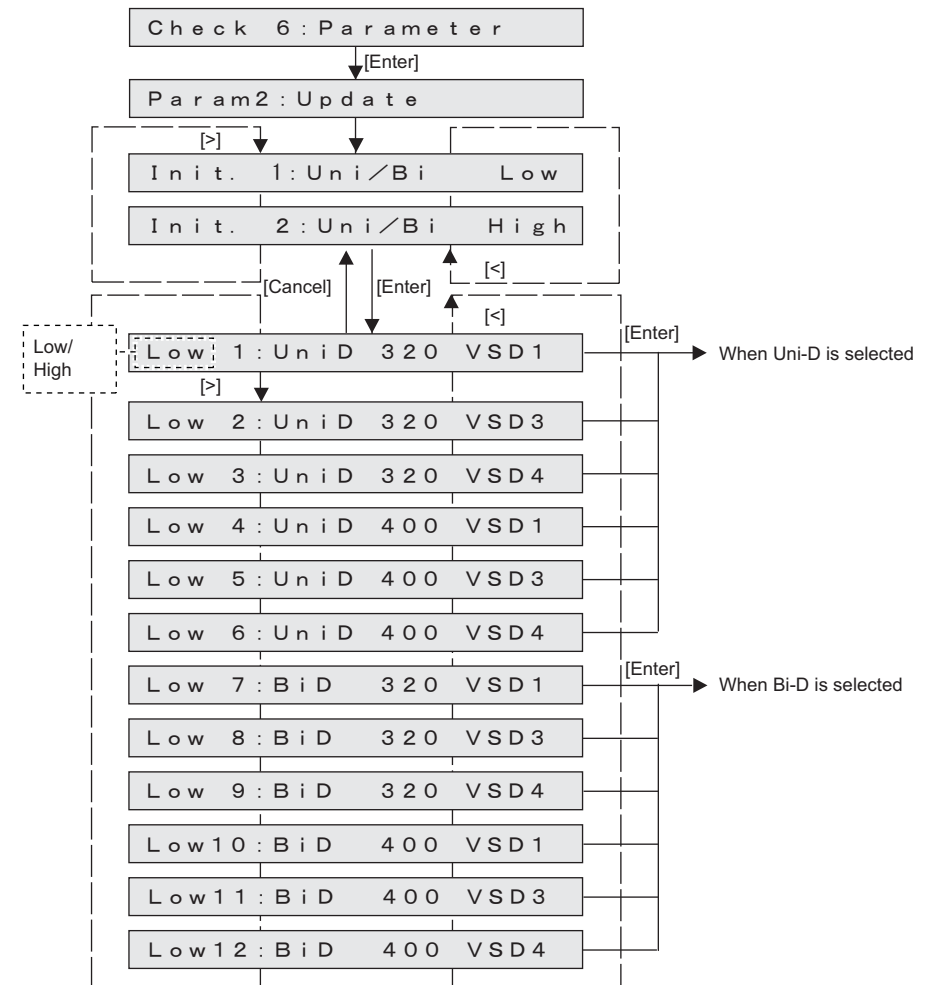
Uni-D/Bi-D adjustment parameters are updated.

The following are the setting items for the Uni-D/Bi-D adjustment parameters menu.

NOTE

When a speed mode is "Low", the part of 400 is printed with 240.

Panel	Contents
Uni-D 320 VSD1	CW adjustment with 320cps, VSD1
Uni-D 320 VSD3	CW adjustment with 320cps, VSD3
Uni-D 320 VSD4	CW adjustment with 320cps, VSD4
Uni-D 400 VSD1	CW adjustment with 400cps, VSD1
Uni-D 400 VSD3	CW adjustment with 400cps, VSD3
Uni-D 400 VSD4	CW adjustment with 400cps, VSD4
Bi-D 320 VSD1	Bi-D adjustment with 320cps, VSD1
Bi-D 320 VSD3	Bi-D adjustment with 320cps, VSD3
Bi-D 320 VSD4	Bi-D adjustment with 320cps, VSD4
Bi-D 400 VSD1	Bi-D adjustment with 400cps, VSD1
Bi-D 400 VSD3	Bi-D adjustment with 400cps, VSD3
Bi-D 400 VSD4	Bi-D adjustment with 400cps, VSD4

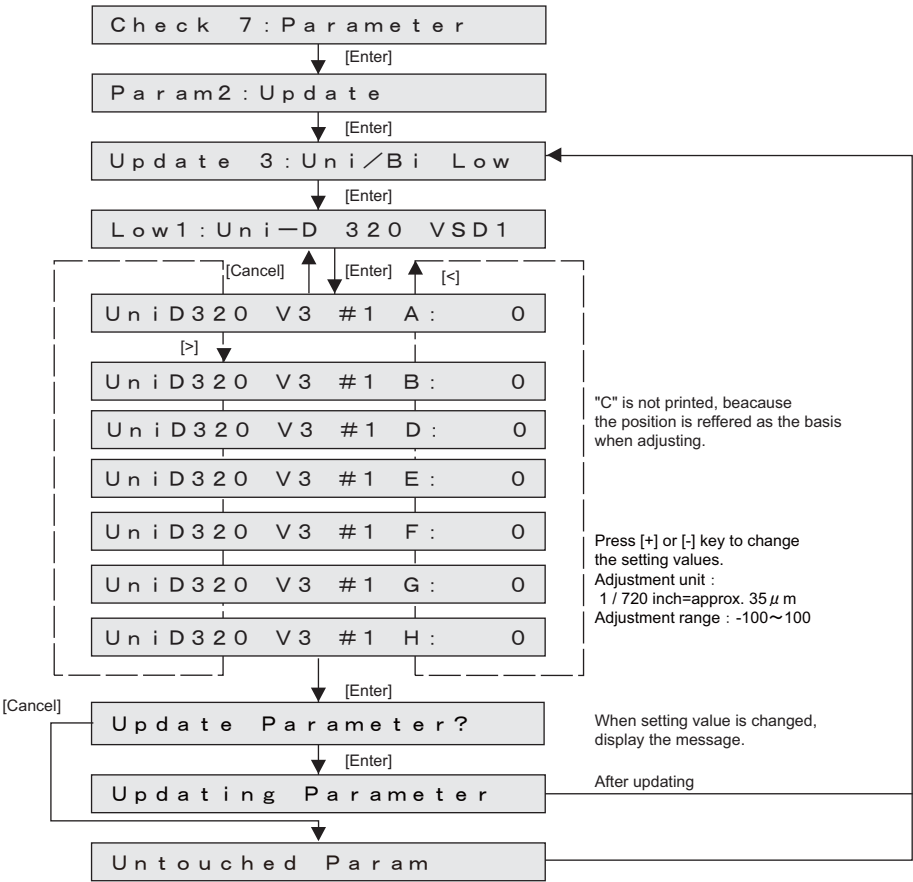


(3-a)When Uni-D is selected

TIP

The default values for Uni-D adjustment is set to all "0" regardless of carriage speed and head height.

When Uni-D320 VSD1 is selected.



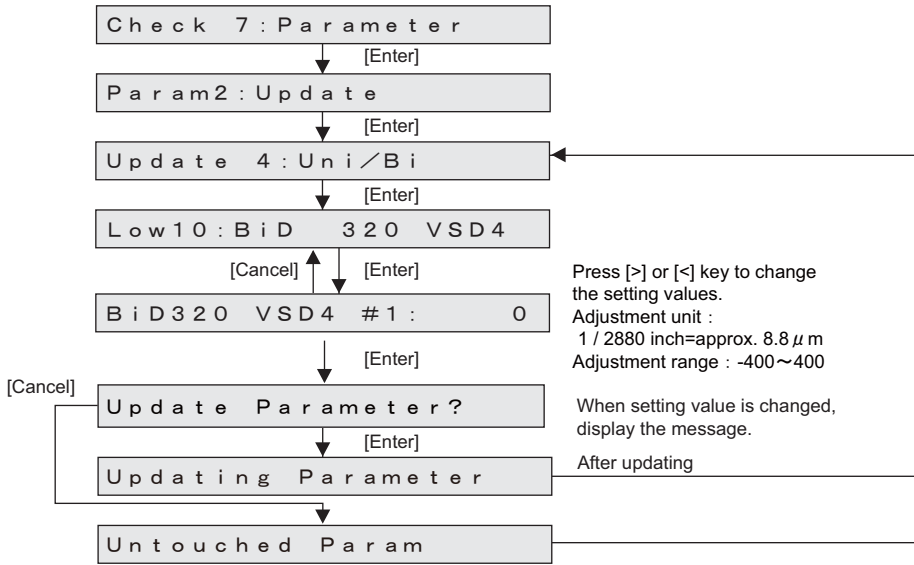
(3-b)When Bi-D is selected

TIP

Default values are as it is the following table.

Item		default values	Item		default values
BiD Low	320 VSD1	-40	BiD High	320 VSD1	-78
	320 VSD3	-42		320 VSD3	-92
	320 VSD4	-36		320 VSD4	-81
	400 VSD1	-53		400 VSD1	-100
	400 VSD3	-54		400 VSD3	-114
	400 VSD4	-47		400 VSD4	-100

When Bi-D 320 VSD4 is selected.



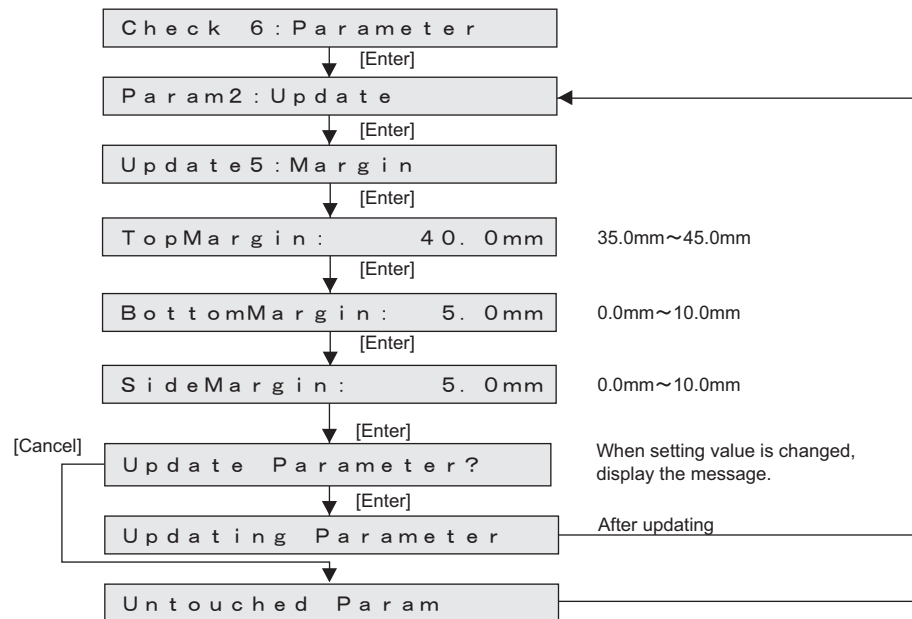
(4) Margin

Updates Margin parameters.

TIP

Default values are as it is the following table.

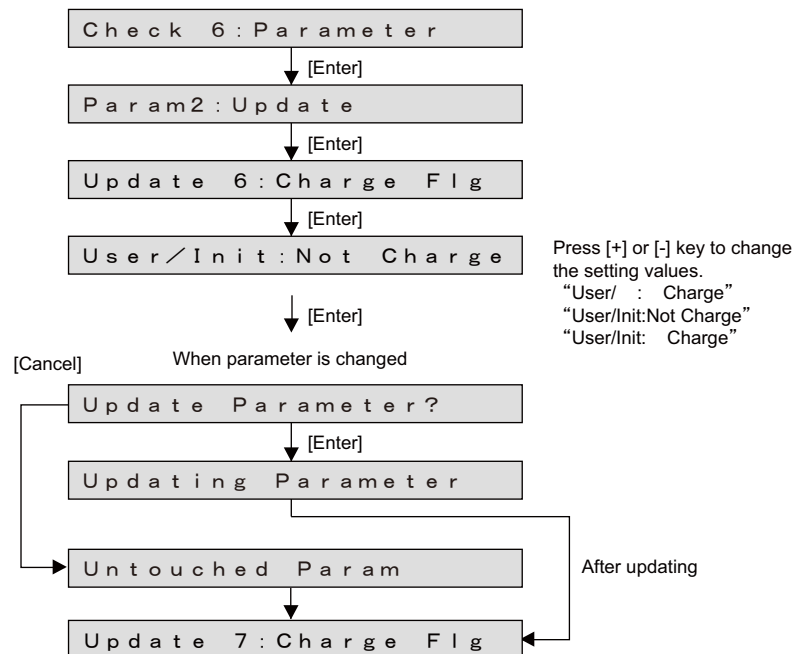
Item	default values
TopMargin	40.0mm
BottomMargin	5.0mm
SideMargin	5.0mm



(5) Charge Flg

Update the ink parameters. The setting items are as follows.

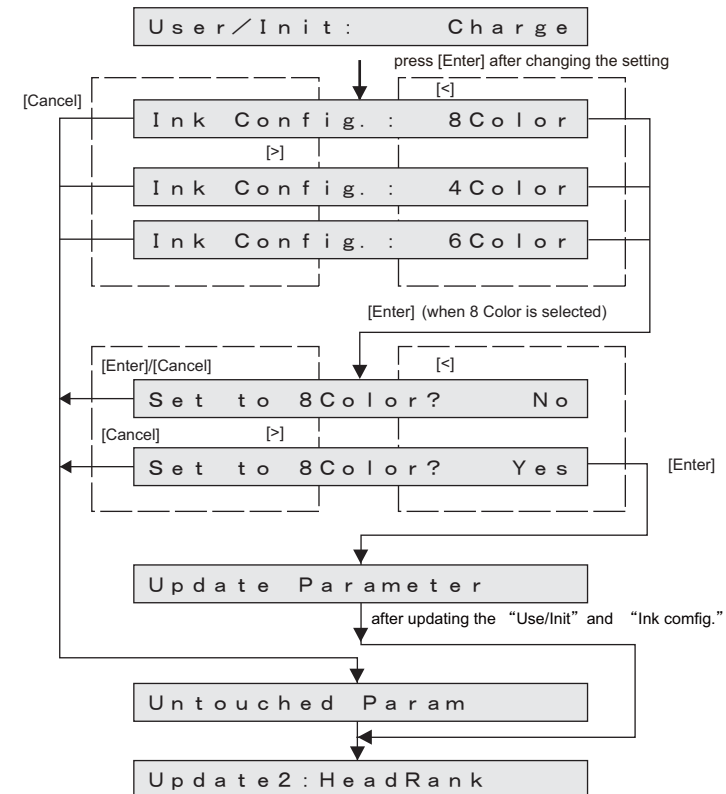
Diagnosis item	Initial washing	Initial filling
User/Init : Not Charge	×	×
User/ : Charge	○	×
User/Init : Charge	○	○



NOTE

When reset the parameters, ink cartridges should be inserted.

- When the ink is not charged and 'Ink Config.' setting is 'Auto', updating the 'User/ Init: Charge' to display the following menu.



(6) Debug Bit Update

This menu is used to update the debug bit.
The debug bit is used for testing.

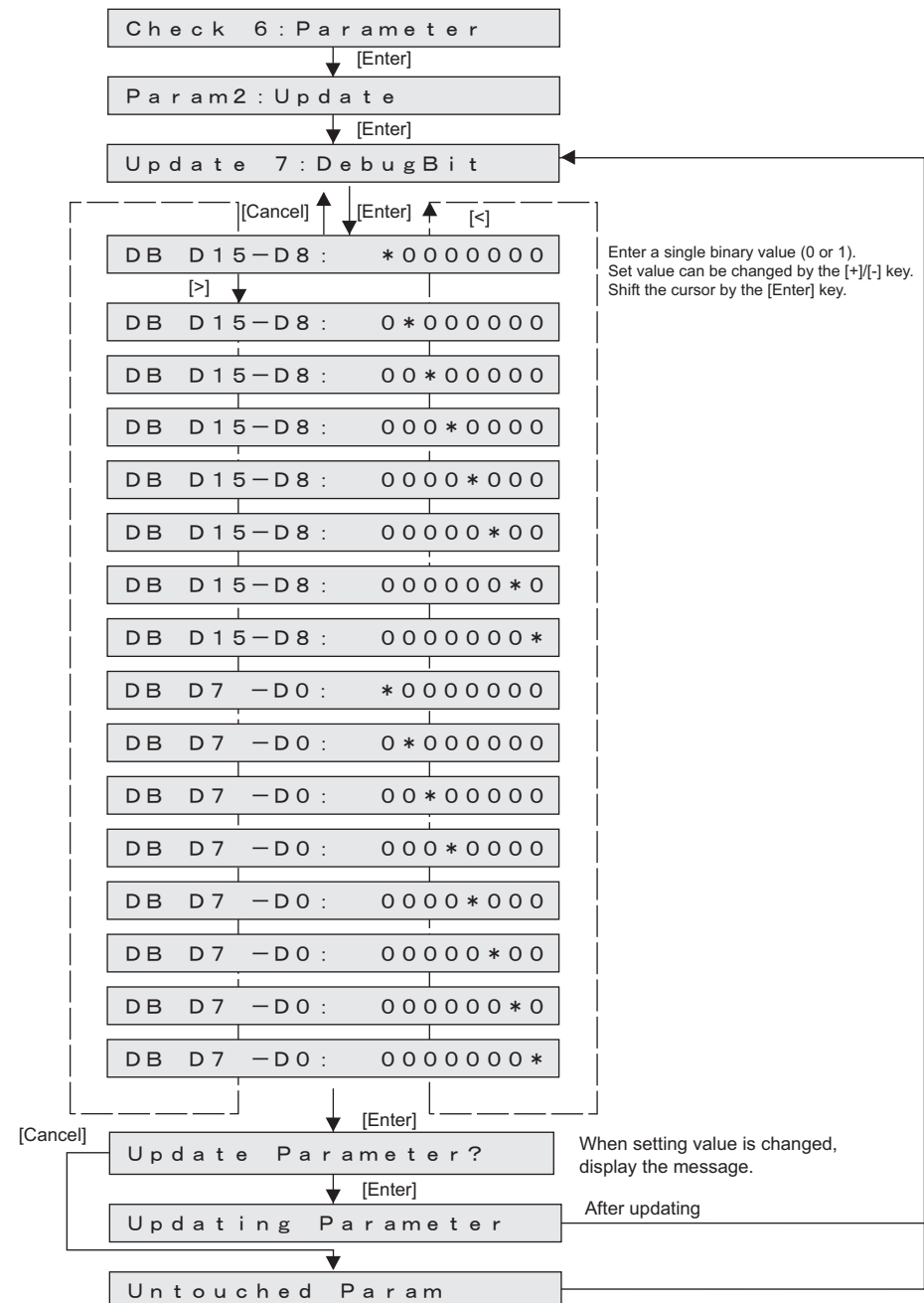
NOTE

This menu is not used for maintenance operation.

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 D15-D8: 00000000, D7-D0: 00000000
- Initial value D15-D8: 00000000, D7-D0: 00000000



(7) DotCtrl

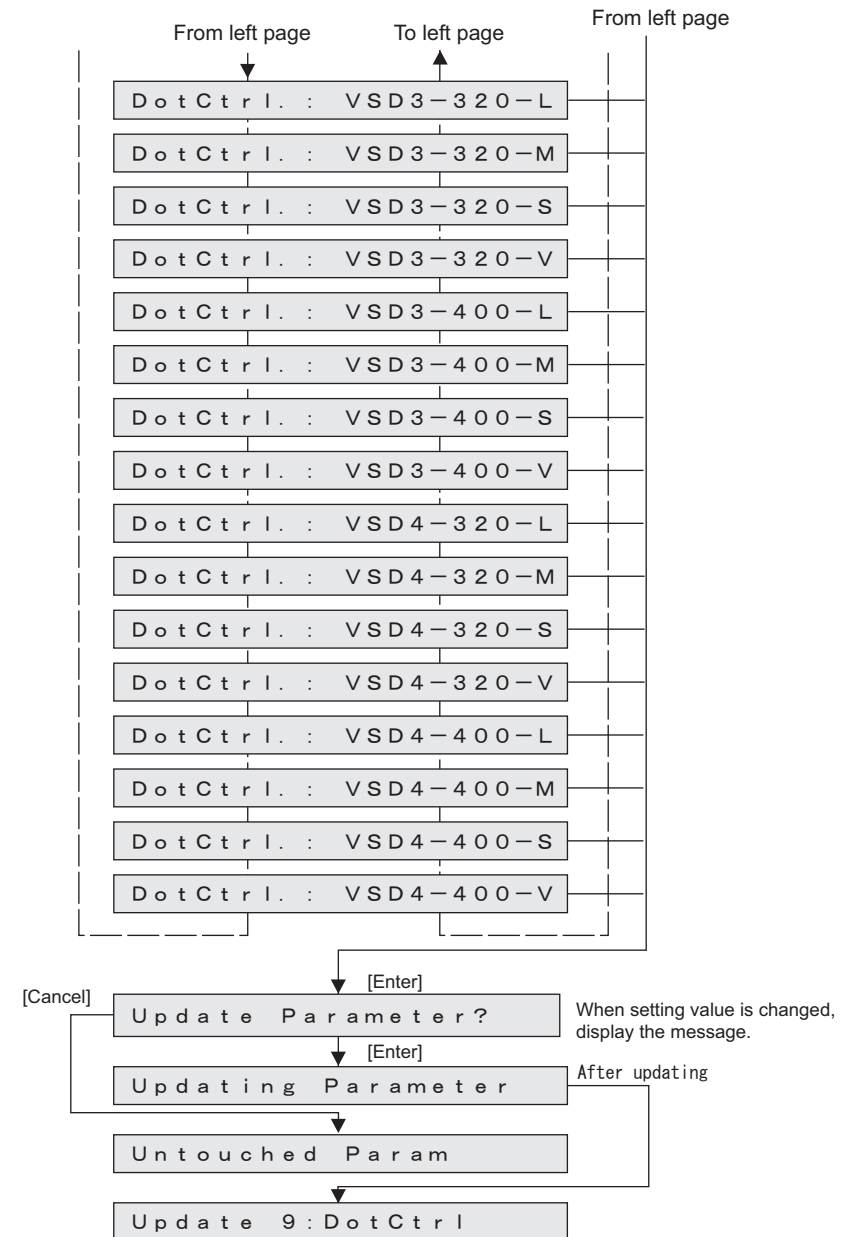
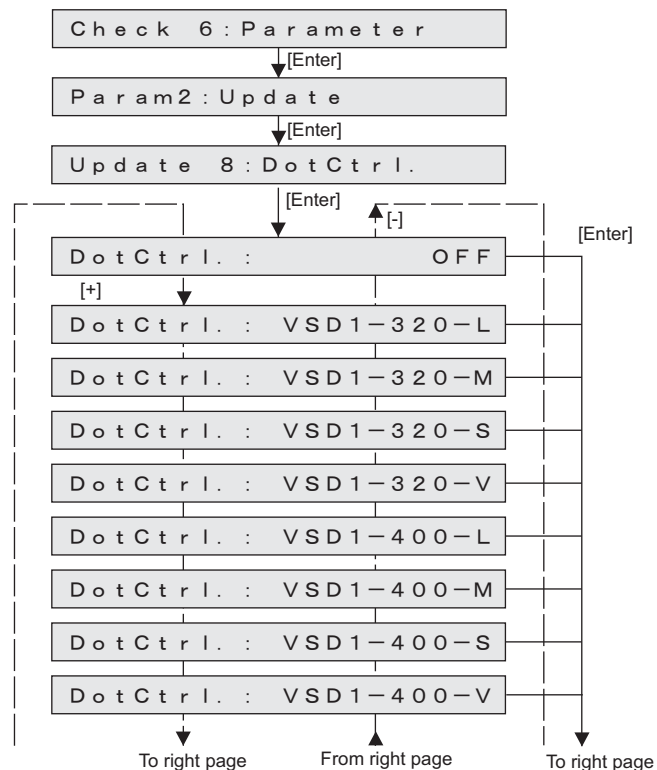
Setup the waveform and dot size when printing.

When OFF is set, they are determined automatically to match printing.

TIP

This is not used for maintenance operation.

- L:Large, M:Medium, S :Small, V:Variable
- When Variable dots are specified, printing is performed as 2 bit/1 dot.
Therefore, when printing the 1 bit/dot data, the printing result is reduced to half the size (in the CR direction).

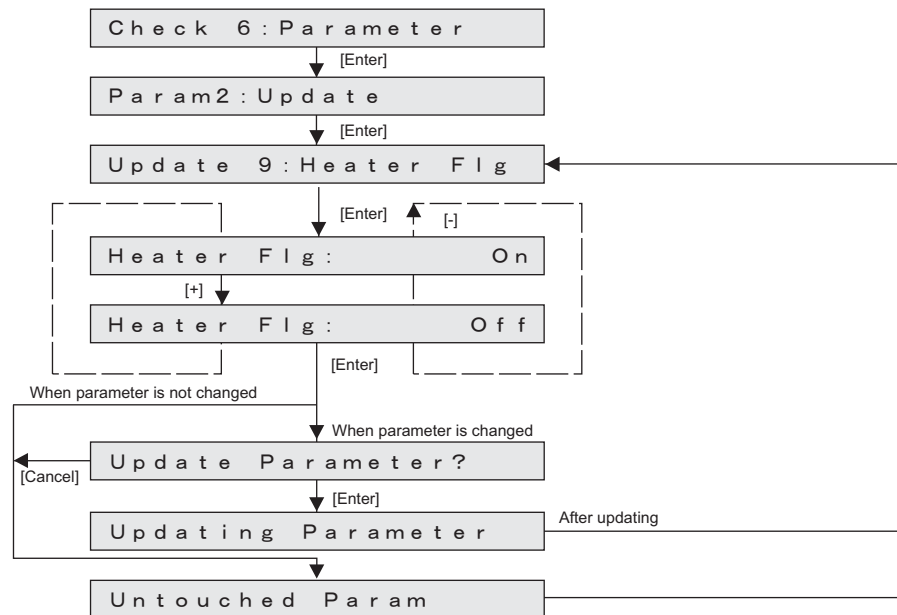


(8) Heater Flg

Heater flag is updated.

NOTE

- If you set it to "Heater flag Off", the heater is not warmed up during adjustment printing or standby mode.
- Heater flag settings are not saved;
If you turn the power off and back on again, the setting is reset to "Heater flag Off".

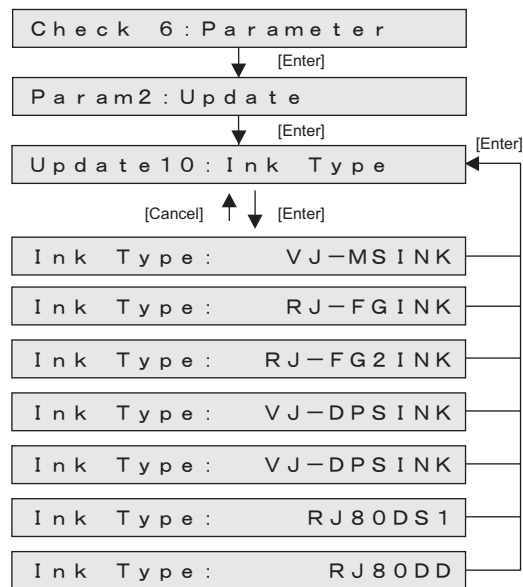


(9) Ink Type

Check the ink type you want to use.

NOTE

You can only check the ink type; you cannot change the ink type here.

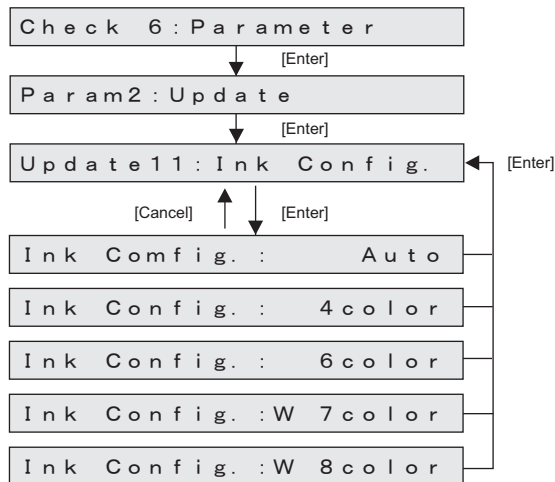


(10)Ink Config..

This menu is used to update Ink configuration.

NOTE

You can only check the ink configuration; you cannot change the ink type here.



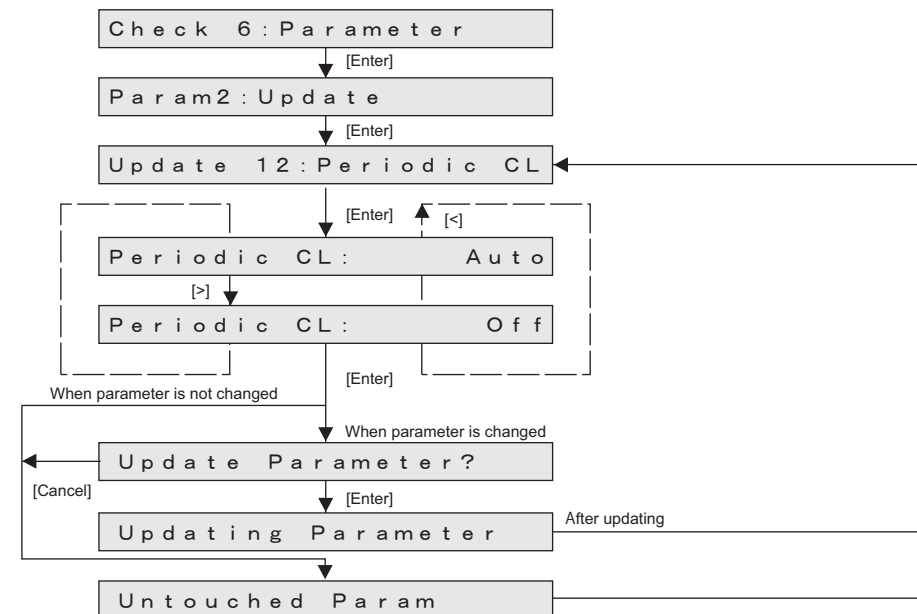
(11)PeriodicCL

Of the automatic cleaning function is effective, and set the invalidity.

Setting	Contents
Auto	An automatic cleaning function is effective.
Manual	An automatic cleaning function is invalid

TIP

- Default: Auto (Automatic)
- Panel menu setting of the user modes is unrelated setting.



(12)Uni/Bi Ptn

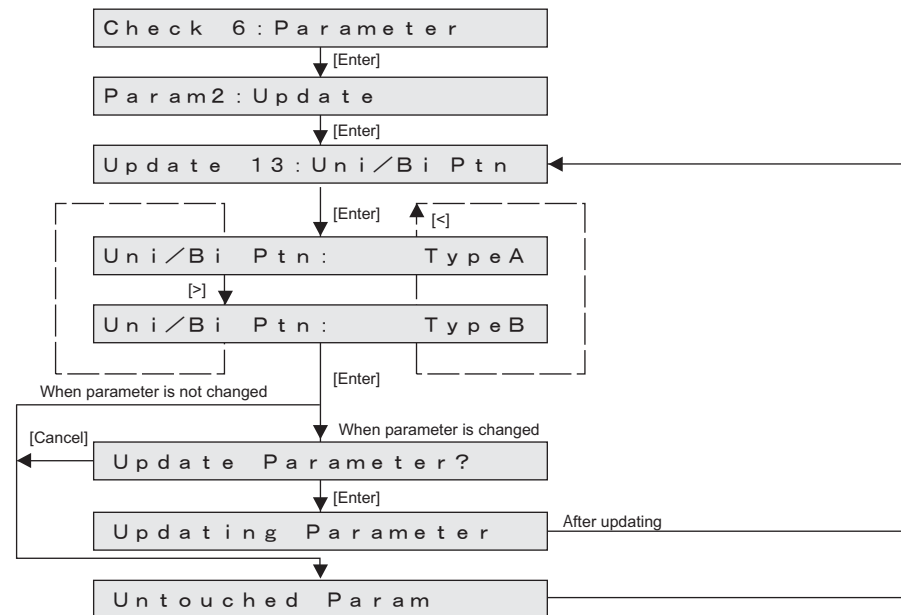
Set the Uni/Bi patterns to print using the self diagnosis function.

The changes in the settings you make in this section affect the adjustment patterns printed using UniD, BiD, BiD ALL, or Adjustment ALL.

TIP

Type A: Line pattern (default)

Type B: Line pattern + Block pattern



(13)Thickness

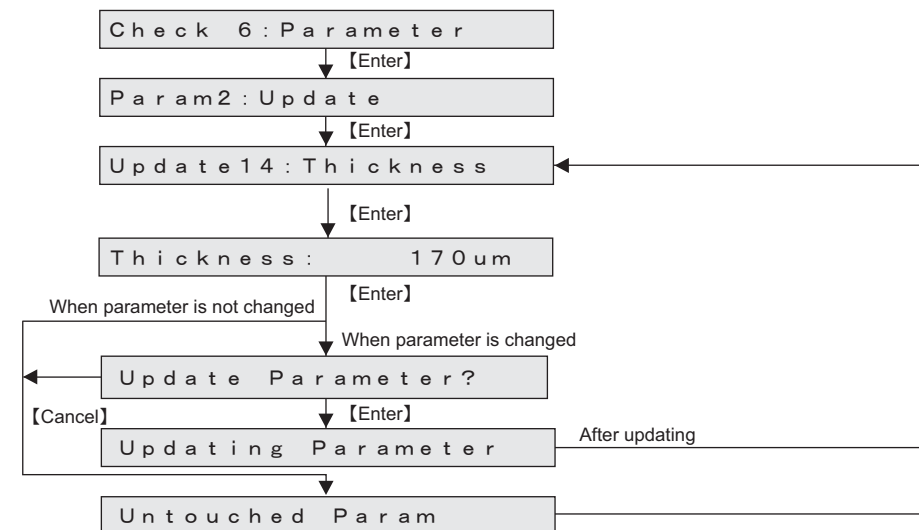
The standard of the media thickness used as the standard of a printer is set up. This media thickness serves as an initial value of the media thickness of a user mode.

TIP

When media thickness is changed, the image quality in a user mode is adjusted automatically.

NOTE

- set the setting values by [+] key / [-] key.
- setting range: 80 ~ 1300μm
- unit: 10μm
- initial value: 170μm (This value is used at the time of printer manufacture.)



5.10 Servo Setting Menu

NOTE

Because this is a menu for evacuating 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, 310.320cps
320cps CCW	Servo setting of CR CCW direction, 310.320cps
400cps CW	Servo setting of CR CW direction, 400cps
400cps CCW	Servo setting of CR CCW direction, 400cps

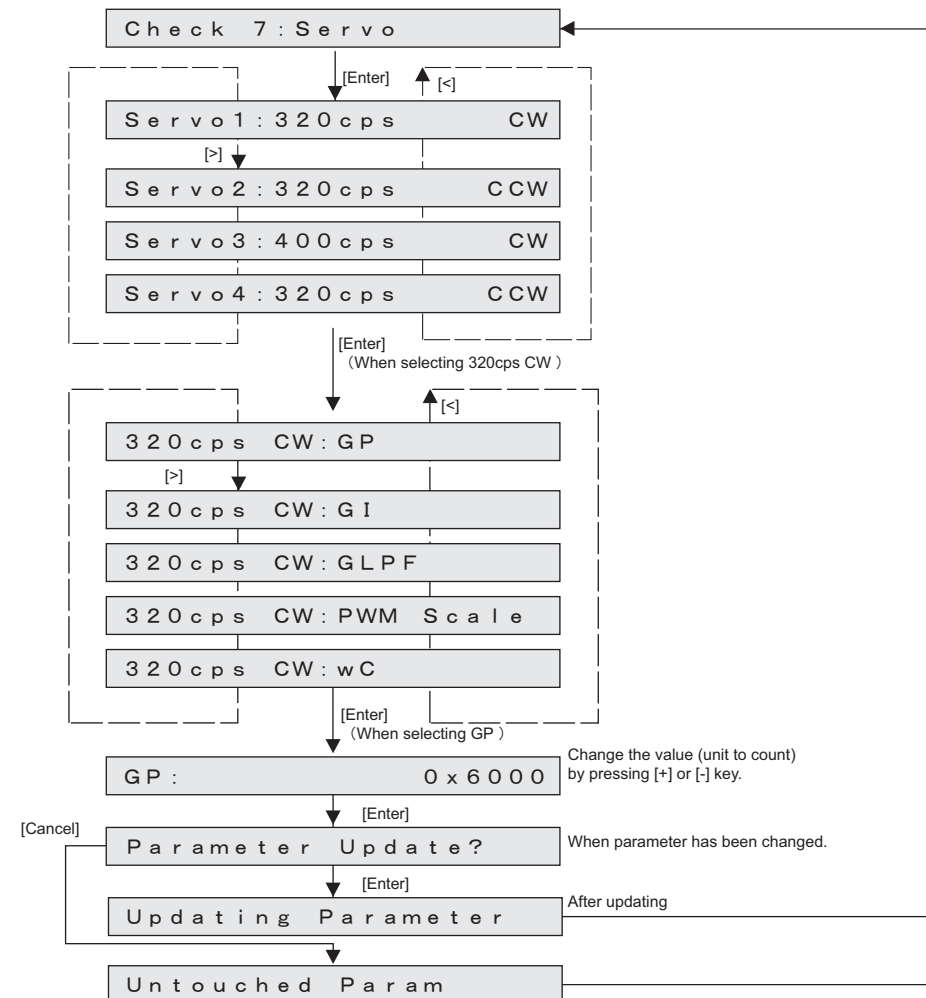
Servo setting items	
Items	Contents
GP(Proportional gain)	Proportional gain setting
GI(Integral gain)	Integral gain setting
GLPF(Low path filter)	Low path filter setting
PWM(PWM scale)	PWM scale setting
ωC	ωC setting

The minimum / maximum / count value for each item is shown below.

Values of setting Items			
Items	Min.	Max.	Count
GP(Proportional gain)	0x2000	0x7800	0x200
GI(Integral gain)	0x0002	0x0800	1
GLPF(Low path filter)	0	255	1
PWM(PWM scale)	10	15	1
ωC	30	60	5











The initial value for each item is shown below.

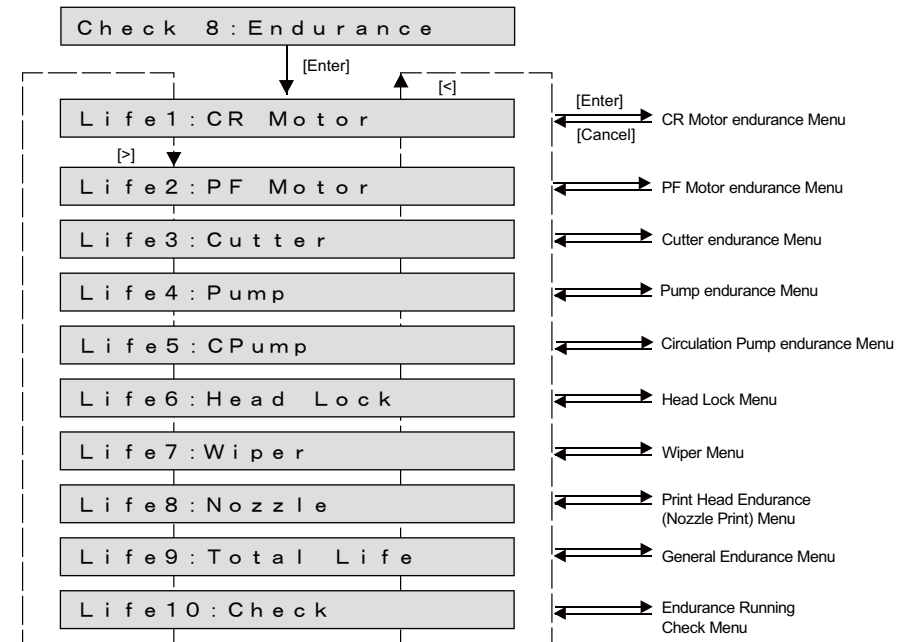
Item	G P	G I	GLPI	PWM	ωC
320cps CW	0x4800	0x0080	228	13	45
320cps CCW	0x4800	0x0080	228	13	45
400cps CW	0x3000	0x0080	200	13	45
400cps CCW	0x3000	0x0080	200	13	45



5.11 Endurance Running Menu

This menu is used to perform endurance running of printer mechanicals.
The endurance running menu includes the following items.

Item	Contents	Reference
CR Motor	Performs Carriage stroke to perform the endurance running of CR motor.	 "5.11.1 CR Motor Endurance Menu"
PF Motor	Performs media feeding operation to perform the endurance running of PF Motor.	 "5.11.2 PF Motor Endurance Menu"
Cutter	Performs endurance running of Cutter.	 "5.11.3 Cutter Menu"
Pump	Performs endurance running of Pump Motor.	 "5.11.4 Pump endurance Menu"
CPump	Performs endurance running of Circulation Pump Motor.	
Head Lock	Performs endurance running of Head lock.	 "5.11.6 Head Lock Menu"
Wiper	Turns ON/OFF Wiper.	 "5.11.7 Wiper Endurance Menu"
Nozzle	Performs sequential printing to perform the endurance running of Print head.	 "5.11.8 Print Head Endurance (Nozzle Print) Menu"
Total Life	Performs endurance running on CR axis (CR motor, Bearing, Tube, etc.) and PF axis (PF motor, etc.) simultaneously.	 "5.11.9 General Endurance Menu"
Check	Confirms the number of endurance running cycles.	 "5.11.10 Endurance Running Check Menu"



5.11.1 CR Motor Endurance Menu

This menu is used to perform carriage stroke to perform the endurance running of CR motor. The available settings are shown below.

Item	Contents	Values	Remark
Speed (CW, CCW)	Set Carriage running speed (CW direction, CCW direction).	310, 320, 400, 420	Unit:cps
Width	Travel distance of Carriage	400~757	mm
Life Count	Set the number of endurance running cycles.	-1, 1 to 10000	-

CAUTION

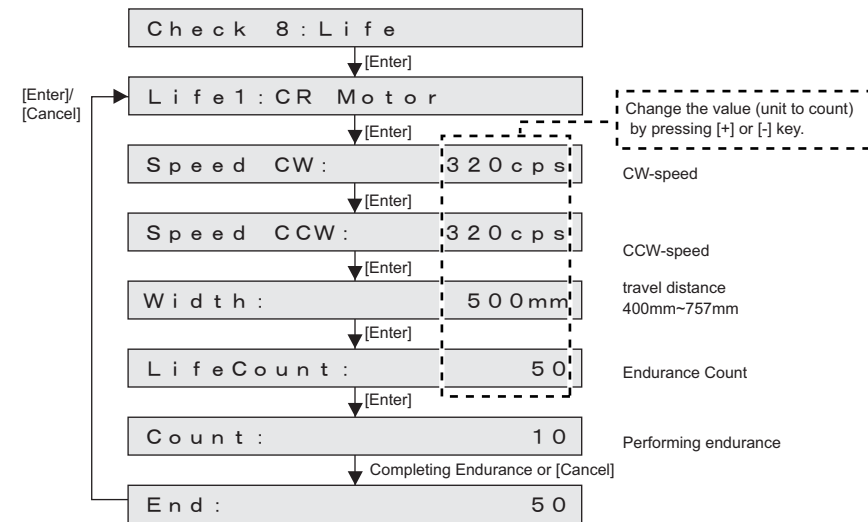
When performing the CR motor endurance running, install Ink cartridges.
If the CR motor endurance running is performed without ink cartridges, ink inside the tube may leak through the ink holder during Carriage movement.

NOTE

When a speed mode is "Low", the part of 400 is printed with 240.

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.



5.11.2 PF Motor Endurance Menu

This menu is used to perform media feeding operation to perform the endurance running of PF motor .

The available settings are shown below.

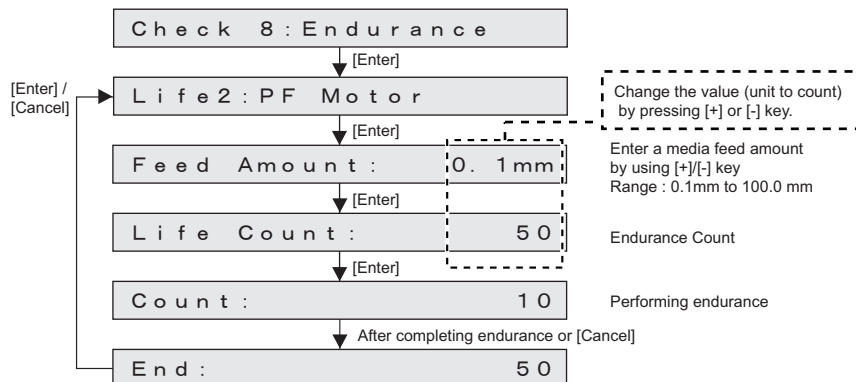
Set item	Contents	Set value	Remark
Feed Amount	Set the media feed amount per endurance running cycle.	0.1 to 100	unit: mm
LifeCount	Set the number of endurance running cycles.	-1, 1 to 10000	-

T I P

- The following table shows the motor transfer parameters to media feed amount.

Speed	35cps
Acceleration	0.05G
Deceleration	0.05G

- If the number of endurance running cycles is set to -1, the PF motor 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.



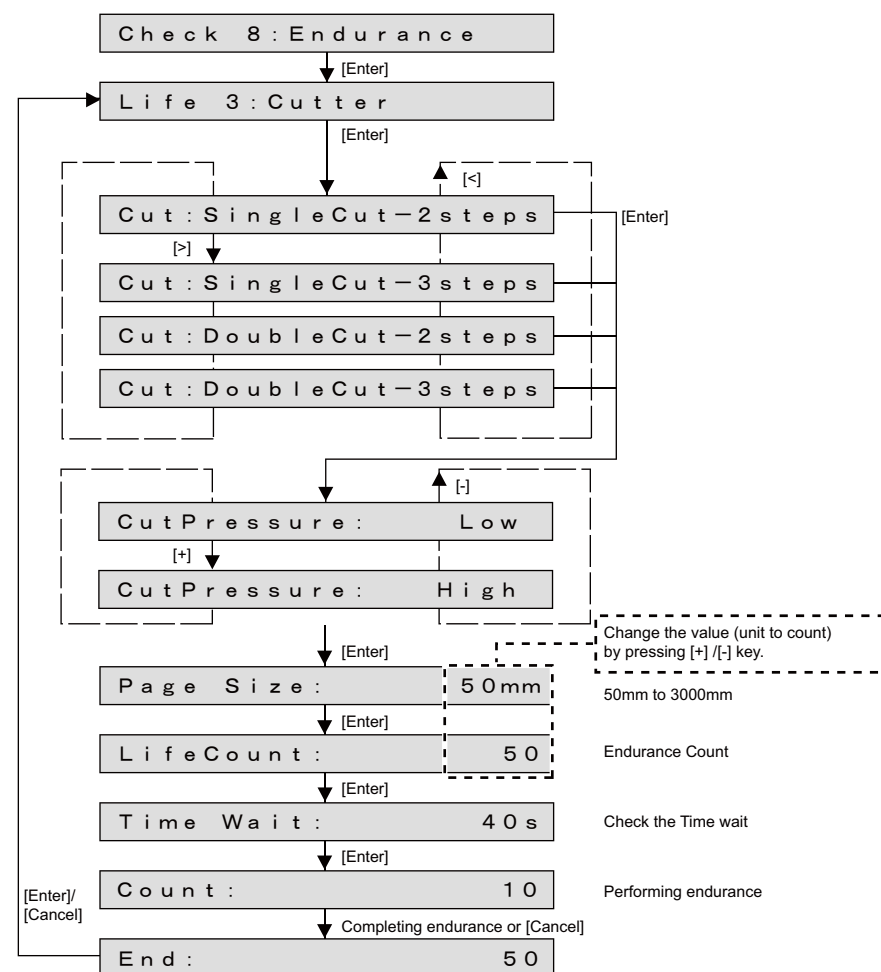
5.11.3 Cutter Menu

Media is cut as many times as specified with the specified cutting method.
Refer to the following table for the set values of cutter endurance operations.

Set item	Contents	Set value	Note
Cut	Set the cutting method.	SingleCut-2steps SingleCut-3steps DoubleCut-2steps DoubleCut-3steps	-
CutPressure	Set the pressure when cutting the media/	Low/High	Low/High
Page size	Set the media feeding amount per endurance operation.	50 to 3000	Unit: mm
Life count	Set the number of endurance operations.	-1, 1 to 10000	-

TIP

- If the number of endurance running cycles is set to -1, Pump motor 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.



5.11.4 Pump endurance Menu

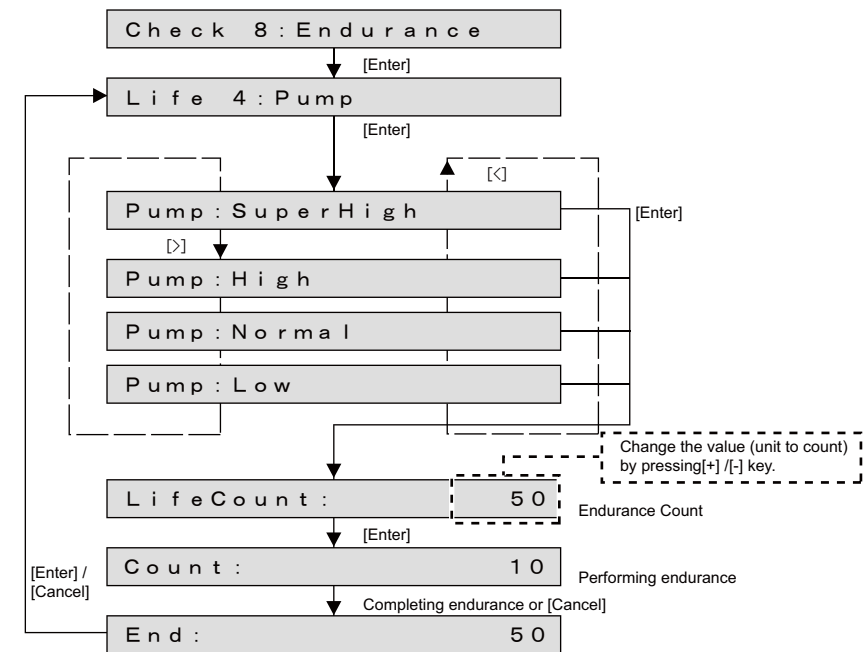
This menu is used to perform endurance running for Pump.
You can drive Pump motor according to your desired settings.

The available settings are shown below.

Set item	Contents	Set value
Running speed	Set the running speed of Pump.	Super high / High / Normal / Low)
Life Count	Set the number of endurance running cycles.	-1, 1 to 10000

TIP

- If the number of endurance running cycles is set to -1, Pump motor 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.



The movement sequences of the pump endurance are as follows.

- 1 Pump endurance running starts.
- 2 Rotates at the specified suction speed. This rotation is counted as one cycle.

Super high : 10.0 s
High : 10.0 s
Normal : 10.0 s
Low : 10.0 s

- 3 The number of endurance is counted +1. Back to Step 2 above.
(Repeat the specified number of times.)
- 4 Pump endurance running ends.

5.11.5 CPump endurance Menu

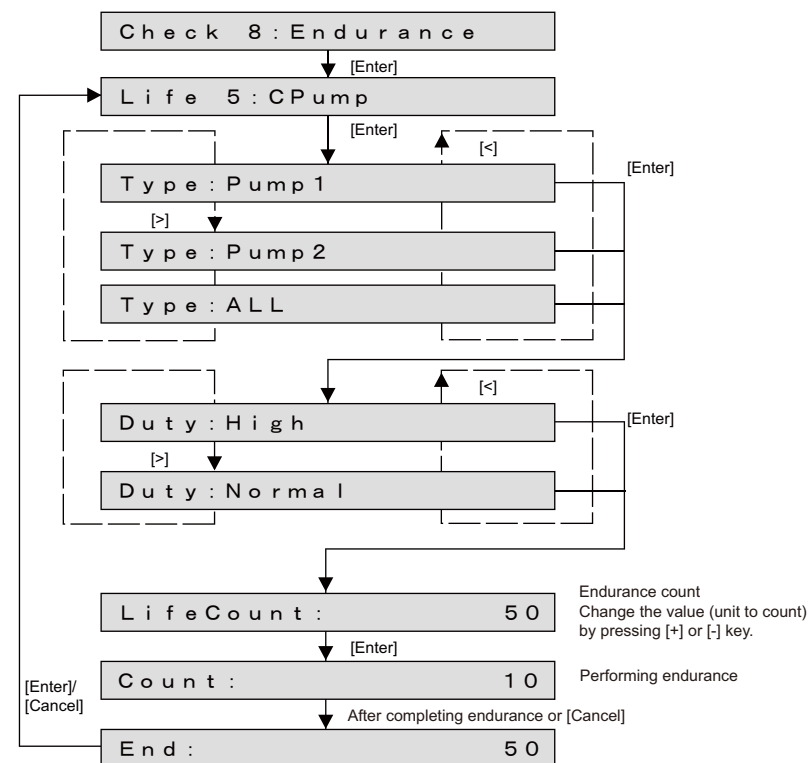
This menu is used to perform endurance running for Circulation Pump.
You can drive Circulation Pump motor according to your desired settings.

The available settings are shown below.

Set item	Contents	Set value
Type	select a CPump.	Pump1/Pump2/ALL
Duty	Set the running speed of CPump.	High / Normal
Life Count	Set the number of endurance running cycles.	-1, 1 to 10000

TIP

- If the number of endurance running cycles is set to -1, Pump motor 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.



The movement sequences of the circulation pump endurance are as follows.

- 1 Circulation Pump endurance running starts.
- 2 Rotates at the specified suction speed. This rotation is counted as one cycle.
 - High : 3.0 s
 - Normal: : 3.0 s
- 3 The number of endurance is counted +1. Back to Step 2 above.
(Repeat the specified number of times.)
- 4 Circulation Pump endurance running ends.

5.11.6 Head Lock Menu

This menu is used to perform endurance running of Carriage lock.

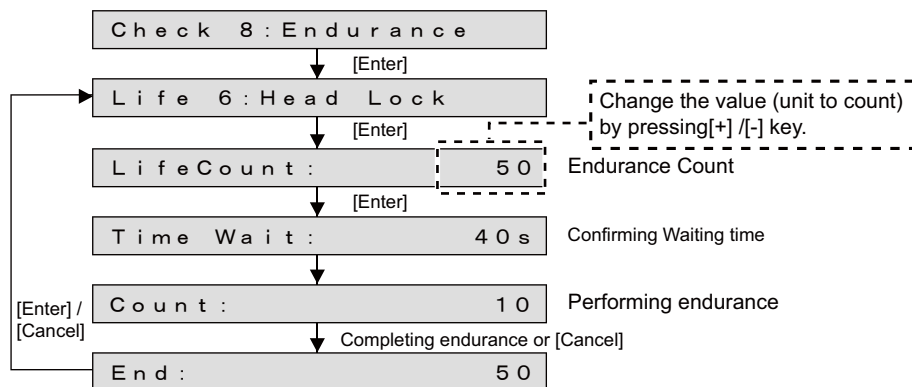
Head is locked/unlocked by the number of times set.

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, 1 to 10000	-

T I P

- If the number of endurance running cycles is set to -1, Head lock 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.



5.11.7 Wiper Endurance Menu

This menu is used to perform endurance running of Carriage lock.

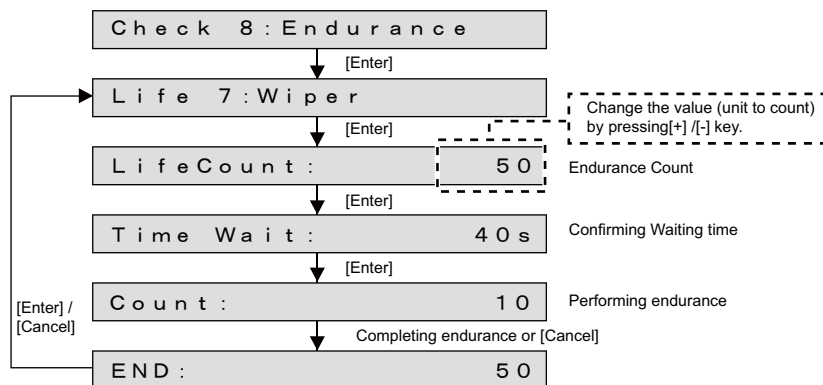
Head is locked/unlocked by the number of times set.

The available settings are shown below.

Set item	Contents	Set value	Remarks
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, Wiper 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.



5.11.8 Print Head Endurance (Nozzle Print) Menu

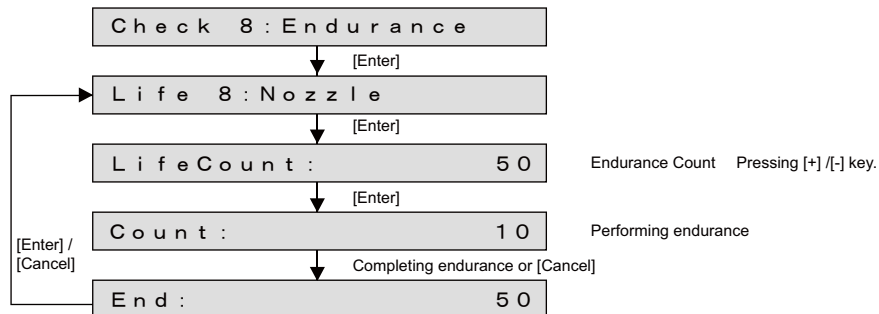
This menu is used to perform sequential printing to perform the endurance running of Print head.

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 heads 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.
- printing method
speed: 320cps
wave form: VSD4
dot: Large



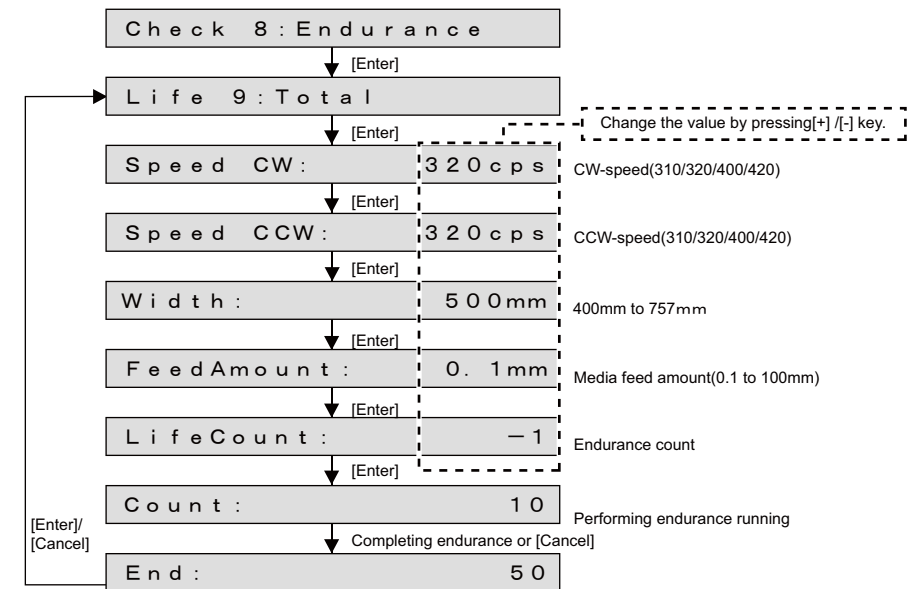
4 color setting



5.11.9 General Endurance Menu

This menu is used to perform endurance running on the CR line (CR motor, Bearing, Tube, etc) and PF line (PF motor, etc) simultaneously.
The available settings are shown below.

Set item	Contents	Set value	Note
Speed CW Speed CCW	Set Carriage running speed (CW direction, CCW direction).	310 / 320 / 400 / 420	Unit: cps
Width	Set the shift distance of the carriage.	400 to 757	Unit: mm
Feed Amount	Set the media feed amount per endurance running cycle.	0.1 to 100.0	Unit: mm
LifeCount	Set the number of endurance running cycles.	-1, 1 to 10000	-

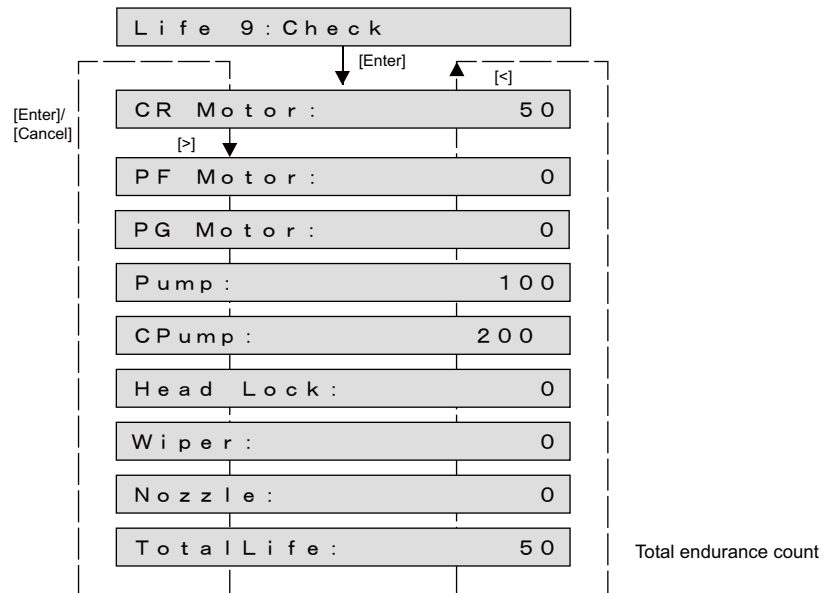


TIP

- 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 endurance, etc.
 - Carriage stroking: 1 stroke
 - Media feed: 1 cycle
- If the number of endurance running cycles is set to -1, Carriage and PF Motor continuously repeat 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.

5.11.10 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.



5.12 Media Feed Menu

Feeds the set media (forward and backward).

Cuts the set media.

When it is before initialization of the machine, carry out initialization of the machine.

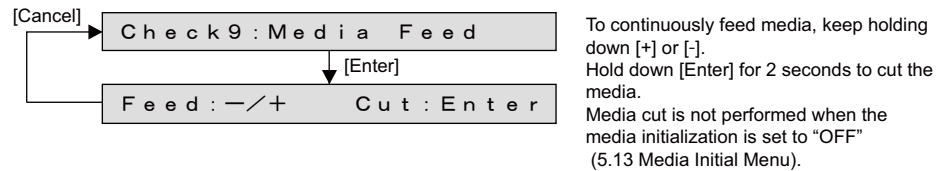
[−]key: front feed

[+]key: back feed

[Enter] key: hold the [Enter]key down for 2 seconds

(When 'MediaInitial' setting is set to 'Off', not to cut a media.)

If you continue pushing the [+] / [−]key, it feed consecutively.



TIP

This is the same function as the ["5.12 Media Feed Menu"](#)

5.13 Media Initial Menu

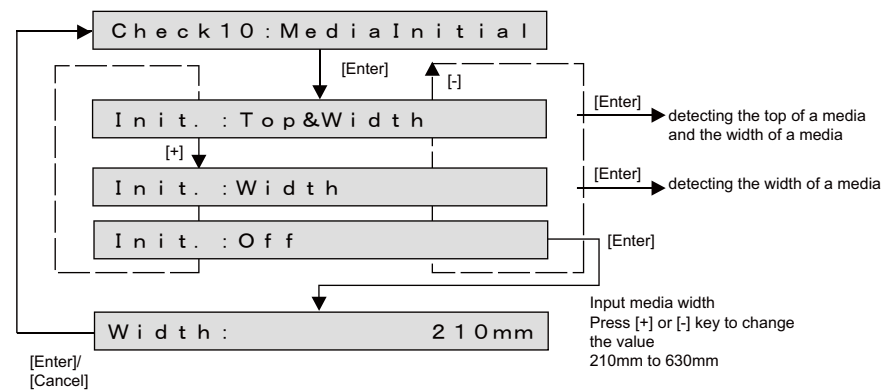
This menu is used to set the media detection.

Media detection default value for the standard mode (user mode) is used when starting up the self diagnosis mode.

When it is set to Off, set the media width in the media width setting menu.

Setting items for the media detection menu are as follows:

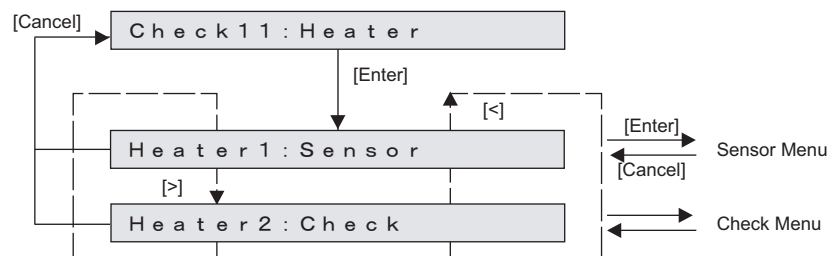
Item	Contents
Top & Width	Media width and top edge of the media are detected.
Width	Media width is detected.
Off	Media detection Off.



5.14 Heater

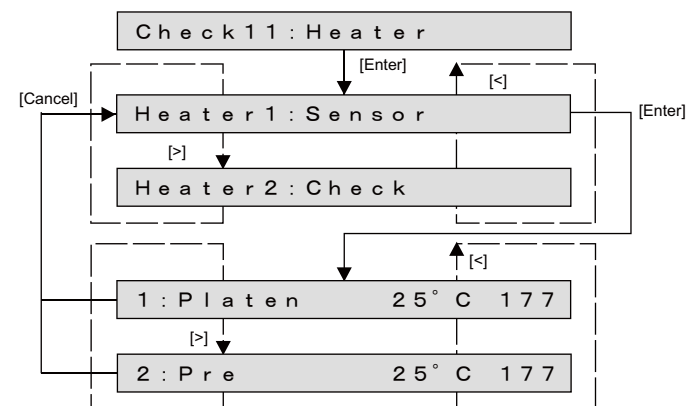
Check the following items for the heater.

Setup item	Contents
Sensor	Pre-heater thermistor (for abnormal temperature detection) Platen heater thermistor
Check	Check heater operation



5.14.1 Sensor

The status of the sensors related to the heater is displayed on the panel.

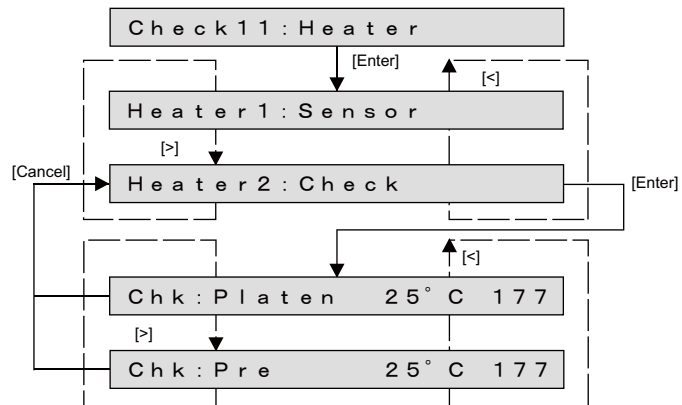


5.14.2 Check

Check if the heater works properly.

Set the target temperature as 45 degrees and control the heater temperature. This continues until the cancel key is pressed.

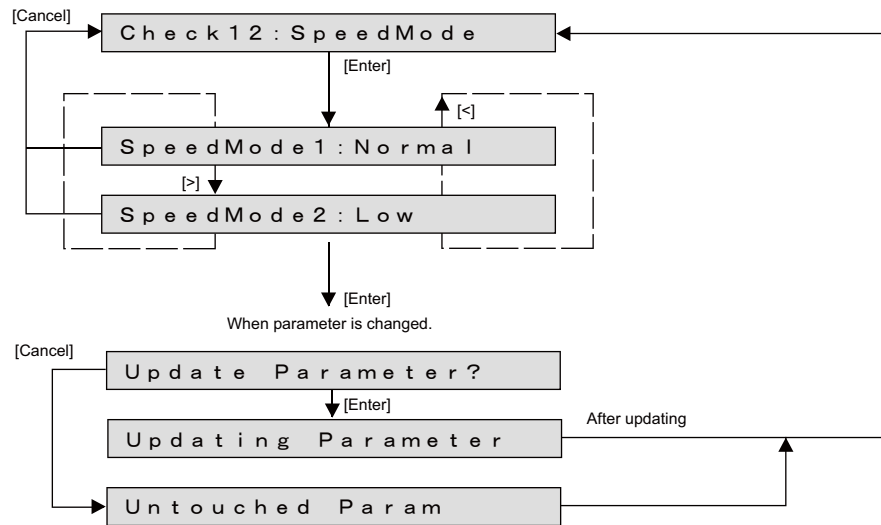
When the target temperature has been reached, the control function works to keep the same temperature.



5.15 Speed mode

Set the print speed for user mode.

Item	Contents
Normal	320cps/400cps
Low	320cps/240cps



NOTE

- When set to “Low”
 - Print speed is changed in user mode menu.
User Type - Type - Adjustment print - Custom adjustment print menu
 - Confirmation pattern, Rough adjustment pattern, and Adjustment ALL pattern are printed at 320cps/240cps.
 - Rough adjustment pattern and Adjustment patterns D to F are printed at 240cps and then adjusted.

6 Maintenance Mode 2

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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.

 [8.2.2 Operation panel](#)



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

NOTE

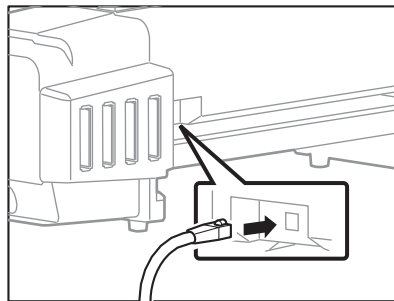
When using the Maintenance Mode 2 function of VJ-628, there are the following two methods.

- Using Panel Window in MSA
 **(1) Usage of Maintenance Panel (MSA)**
- Using Jig Panel Assy
 **(2) Connecting Jig Panel Assy**

(1) Usage of Maintenance Panel (MSA)

(1-a) Usage of Maintenance Panel Window

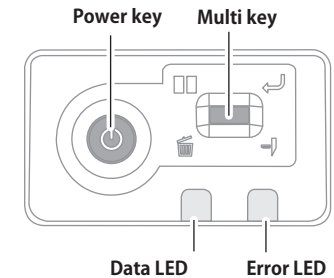
- 1 Turn OFF the printer.
- 2 Insert Connector of Network interface cable into Network interface connector located in the back of the printer.



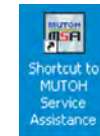
- 3 Press Power key to ON.
- 4 If data LED and error LED light up, pressing the multi-key is continued.


TIP

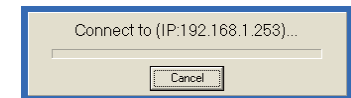
If Data LED and Error LED repeat lighting and putting out lights by turns, it means having started in board manager mode.



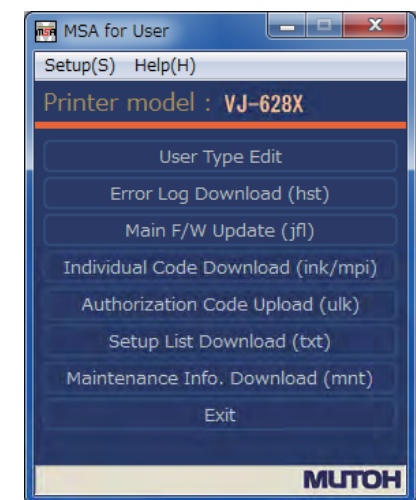
- 5 Double-click the [Shortcut to MUTOH Service Assistance.exe], and check that the application starts correctly.
At the first startup, it shall be started in English mode.



- 6 Automatic printer model selection is started.
 **(9) Confirming Startup of the "MUTOH Service Assistance"**

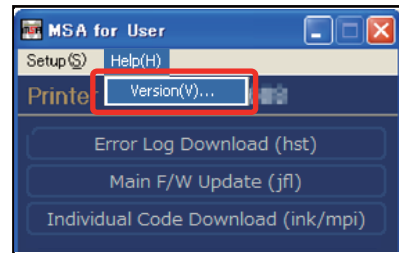


- 7 After having chosen printer model, main window appears.



- 8 On User mode main window, click [Help] - [Version].

[Version information] window appears.

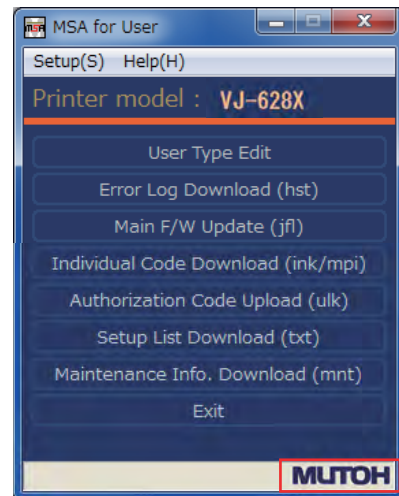


- 9 Double-click the MUTOH logo (1) and then the MSA icon (2).

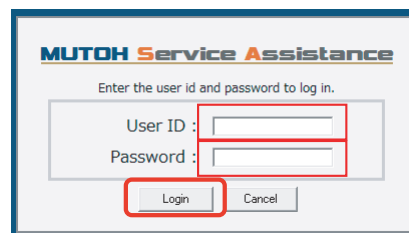
Then click [OK].



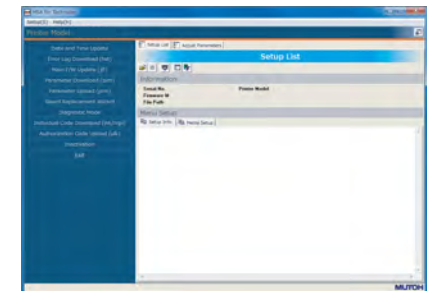
- 10 Double click [MUTOH].
Login window will be displayed.



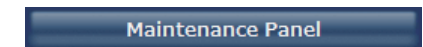
- 11 Enter User ID and Password.
Then click [Login].



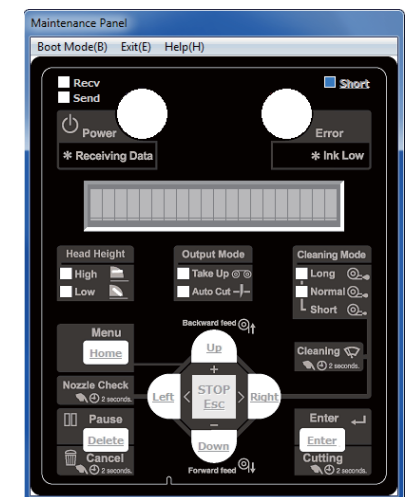
- 12 The main screen of Technician mode will be displayed.



- 13 Click [Maintenance Panel].

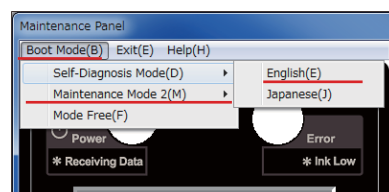


- 14 [Maintenance Panel] window will be displayed.



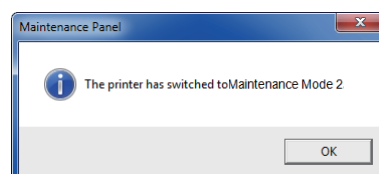
(1-b)How to start the Maintenance Mode 2

- Click [Boot Mode] and choose either [Self-Diagnosis Mode] or [Maintenance Mode 2]. Then, choose language.

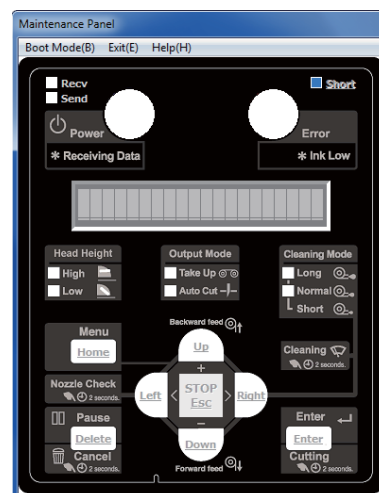
**CAUTION**

- The Maintenance Panel is not available until the PC is properly connected to the printer after the mode selection.
- The selected language is reflected in the Maintenance Panel until the printer is powered off. The initial language setting is reflected in the printer.

- When the printer is successfully switched to the mode you selected, the complete message will appear as shown at right. Click [OK] to go back to the Maintenance Panel.

**CAUTION**

- The LCD display on the Maintenance Panel is updated.
- The Maintenance Panel becomes available after the proper connection



(1-c)Maintenance Panel Display and Operation

TIP**6.2 Operations in Maintenance Mode 2**

Choose Self-Diagnosis Mode/Maintenance Mode 2 and choose language.

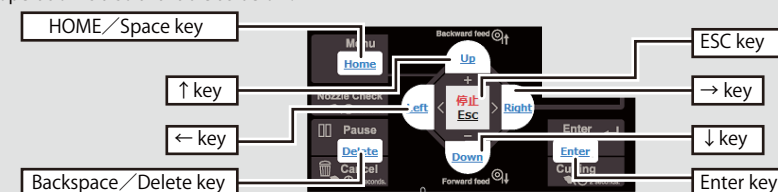
Display the communication status with the printer.
Recv: Printer information receiving status
Send: Button input sending status
Recv/Send
Green Light: Communication Success
Red Light: Communication Failed

Clicking button to operate the Maintenance Panel.

Right-clicking stops the operation.

The [STOP] button is implemented only for the Maintenance Panel to stop the operation of "Long (press)" and "10cnt".

The keyboard operation is also available as below.



Press [Shift] key and keyboard key: [Long (press)]
Press [Ctrl] key and keyboard key : [10cnt]

Exit the Maintenance Panel.

Display the Help window.

The button operation can be changed by clicking.

Short (press) → Long (press) → 10cnt

Long (press):
Press [Shift] key and keyboard key

10cnt:
Press [Ctrl] key and keyboard key

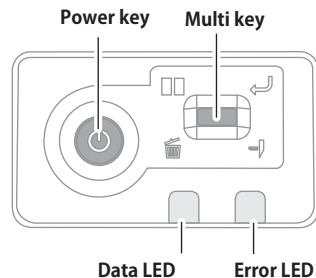
(2) Connecting Jig Panel Assy

NOTE

- When starting Self-diagnostic function or Maintenance mode 2, it is necessary to connect Jig Panel Assy (maintenance parts) to the MAIN Board of the printer. (Jig panel Assy is not enclosed by the printer.)
- Prepare Jig Panel Assy and Phillips screwdriver No.2. (refer to the following table)
- Tools & Jigs & Maintenance part

Name	No.	Remarks
Jig Panel Assy	DG-44954	the followings are enclosed Panel FFC Panel Unit Panel Sheet
Phillips screwdriver No.2	Generic product	-

- 3** When the printer is an operating state, turn the power key OFF.



- 4** Remove Power Cable.

- 5** Turn the power key ON.

NOTE

It is the work for making it discharge.

- 6** Turn the power key OFF.

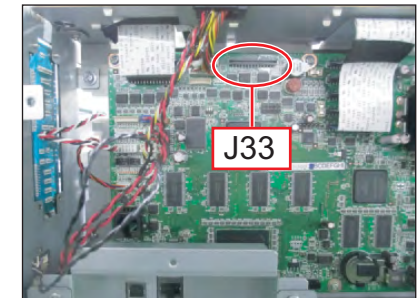
- 7** Remove Top Cover.

[3.2.1 Removing Top Cover](#)

- 8** Connect the Panel FFC to the connector J33 of MAIN Board.

CAUTION

- 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.



- 9** Connect Panel FFC to Panel Unit.

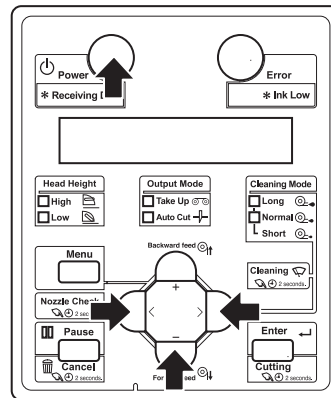
(2-a) Starting Up Maintenance Mode 2

NOTE

Before using the maintenance mode 2, make sure that the maintenance menu is displayed on Jig panel.

To run the maintenance mode 2 menu, switch the display to the normal operation status or setup menu display status.

- 1 While holding down [<] key, [Setting/Value-] key and [>] key on Jig panel simultaneously, press [Power] key. The Jig 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.

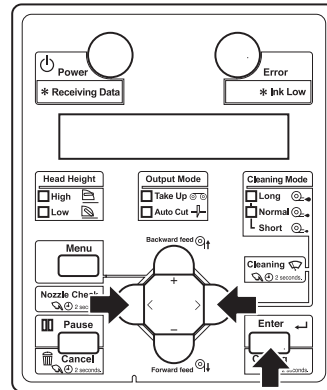
To run the maintenance menu, switch the display to the normal operation status or setup menu display status.

TIP

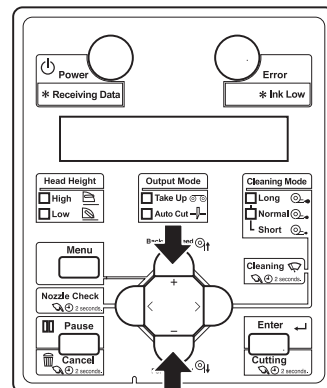
For details of operating procedure, refer to the flow chart of each diagnosis item.

- 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.

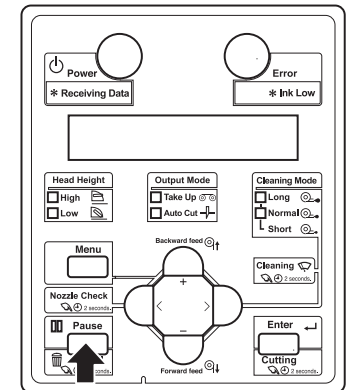
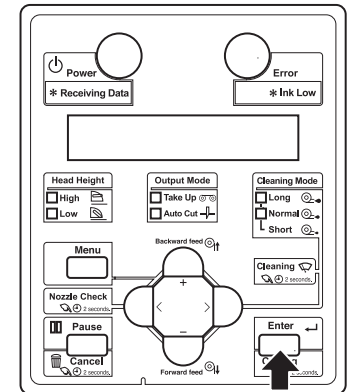


- 3 To save the changed setting, press [Enter] key on Operation panel.
*The setting is saved and the next diagnosis item is displayed.

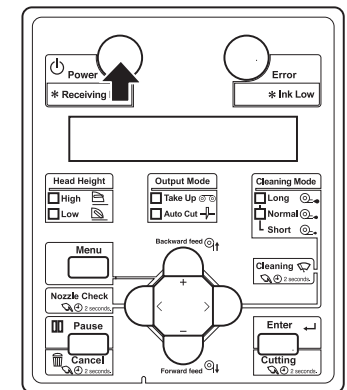
NOTE

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.








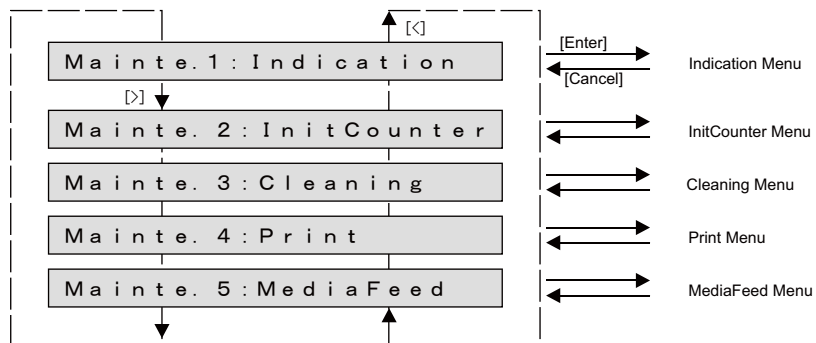
- 5 When quitting Self-diagnosis menu, press [Power] key.



6.3 Maintenance Mode 2 Menu

The maintenance mode 2 menu includes the following diagnosis items.

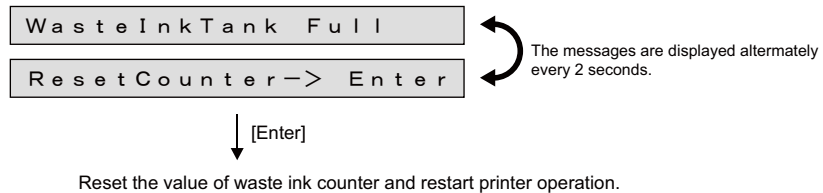
Diagnosis item	Contents	Reference
Indication	Displays the life counter.	 6.3.3 Indication Menu
InitCounter	Initializes the life counter.	 6.3.4 Counter Initialization Menu
Cleaning	Cleans Print heads.	 6.3.5 Cleaning Menu
Print	Prints the life counter.	 6.3.6 Counter Print Menu
MediaFeed	Feeds media into the printer frontward or backward.	 6.3.7 Media Feed Menu



6.3.1 Reset Waste Ink Counter

When the waste ink, generated from printing and cleaning, reaches the upper limit of the waste ink tank, “WasteInkTank Full” will be displayed on the panel and the printer will stop operating to prevent overflowing.

To start operating the printer, empty the tank and then press [Enter] to reset the value of waste ink counter.




NOTE

Make sure to empty the tank before pressing [Enter].

Even if the waste ink still remains in the tank, the counter can be reset once you press the key.




6.3.2 Error Message Display

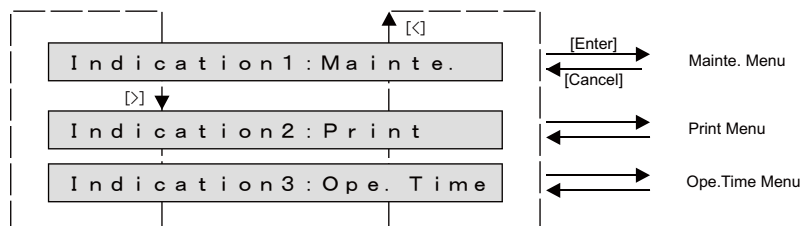
Following error messages will appear on the jig panel when any of such error occurs during ink sequences (ink charging, discharging, cleaning or longstore) or pattern printing. For how to handle the errors, see "Operation Manual" or  [2.2 Troubleshooting with Error Messages](#)

Messages	Contents
Cover Open	Front cover is open.
Lever Up	The media is not loaded.
[ALL] NoCartridge	All cartridges are not inserted.
[1] NoCartridge	The cartridge of [] is not inserted.
[ALL] Ink End	Ink of all cartridges has run out.
[1] Ink End	Ink of [] has run out.
[ALL] S/C ReadErr	IC chip cannot be read.
[ALL] S/C Col. Err	Ink cartridge is inserted into a wrong Ink cartridge slot.
[2] S/C Ink Err	This type of ink cannot be used for this printer.
[3] S/C CodeErr	An improper Ink cartridge is inserted.
[4] Broken Chip	IC chip is broken.
Smart/C Empty	A remaining amount of Smart/C has run out.

6.3.3 Indication Menu

This menu is used to display the life counters.
It consists of the following diagnosis items.

Diagnosis item	Contents	Reference
Mainte.	Total number of copies printed CR motor counter CR motor counter(accumulation) PF Motor counter PF Motor counter (accumulation) Pump counter Pump counter (accumulation) Circulation Pump1 counter Circulation Pump2 counter (accumulation) Circulation Pump1 counter Circulation Pump2 counter (accumulation) Head (A~H) discharge counter Head (A~H) discharge counter (accumulation) Cleaning number Number of Wiper use Number of Wiper Solenoid downs Number of Cut Number of Cutter Solenoid downs CRunlock position Waste Ink	 "6.3.3 Indication Menu"
Print	Number of copies printed per mode Printed area per mode Number of copies printed by effect	 "6.3.4 Counter Initialization Menu"
Ope.Time	Operating time per running mode	 "6.3.6 Counter Print Menu"



(1) Mainte. Menu

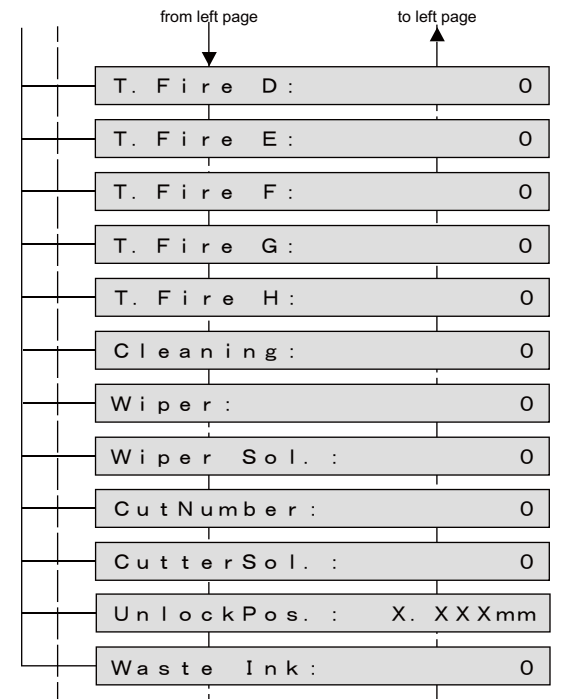
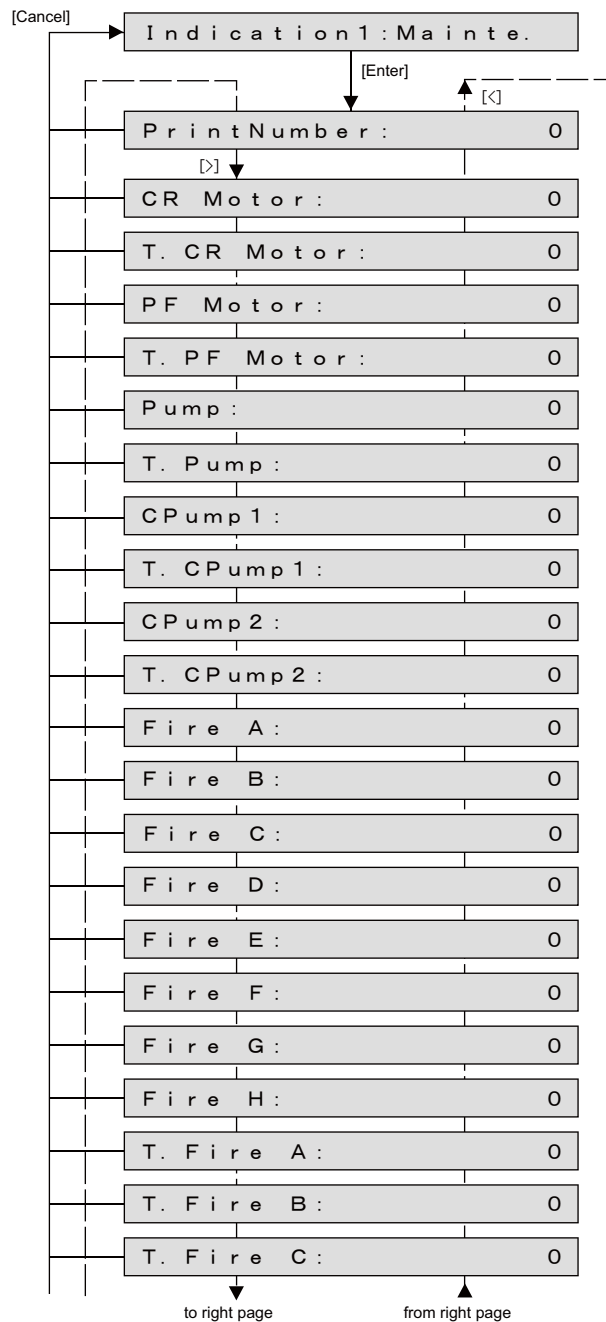
This menu is used to display the life counters.

Diagnosis item	Contents	Unit
PrintNumber	Total number of printed copies	copy
CR Motor	Life counter of CR motor	sweeping count
T.CR Motor	Life counter of CR motor (accumulation)	sweeping count
PF Motor	Life counter of PF motor	10m
T.PF Motor	Life counter of PF motor (accumulation)	10m
Pump	Life of Pump Unit counter	seconds
T.Pump	Life of Pump Unit counter (accumulation)	seconds
CPump1	Life of Circulation Pump Unit1 counter	seconds
T.CPump1	Life of Circulation Pump Unit1counter (accumulation)	seconds
CPump2	Life of Circulation Pump Unit2 counter	seconds
T.CPump2	Life of Circulation Pump Unit2 counter (accumulation)	seconds
Fire A	Life counter of Head nozzles A line	mega dot
Fire B	Life counter of Head nozzles B line	mega dot
Fire C	Life counter of Head nozzles C line	mega dot
Fire D	Life counter of Head nozzles D line	mega dot
Fire E	Life counter of Head nozzles E line	mega dot
Fire F	Life counter of Head nozzles F line	mega dot
Fire G	Life counter of Head nozzles G line	mega dot
Fire H	Life counter of Head nozzles H line	mega dot
T. Fire A	Life counter of Head nozzles A line (accumulation)	mega dot
T. Fire B	Life counter of Head nozzles B line (accumulation)	mega dot
T. Fire C	Life counter of Head nozzles C line (accumulation)	mega dot
T. Fire D	Life counter of Head nozzles D line (accumulation)	mega dot
T. Fire E	Life counter of Head nozzles E line (accumulation)	mega dot
T. Fire F	Life counter of Head nozzles F line (accumulation)	mega dot
T. Fire G	Life counter of Head nozzles G line (accumulation)	mega dot

Diagnosis item	Contents	Unit
T. Fire H	Life counter of Head nozzles H line (accumulation)	mega dot
Cleaning	Number of cleanings	times
Wiper	Life counter of Wiper	times
Wiper Sol.	Number of Wiper Solenoid downs	times
CutNumber	Number cutting	times
CutterSol.	Number of Cutter Solenoid downs	times
UnlockPos.	Displays unlock position	0.001mm
Waste Ink	Displays the amount of Waste Ink	nl

T I P

- 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)
- Maximum value : 99999999 (accumulation counter : 999999999)
- over the Maximum value : 99999999 (accumulation counter : 999999999)

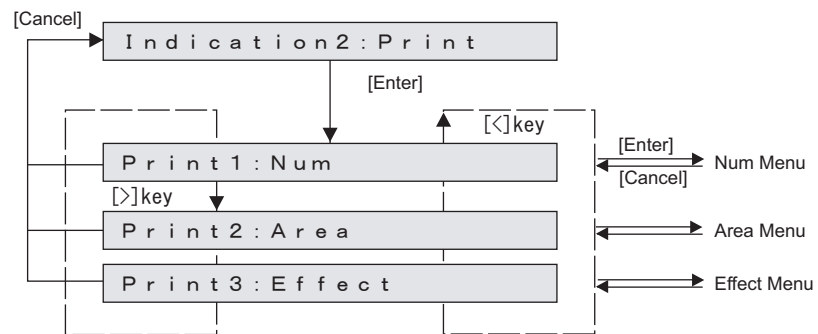


unadjusted : x.xxxmm
 other than unadjusted : 99.999mm~
 -99.999mm

(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.)

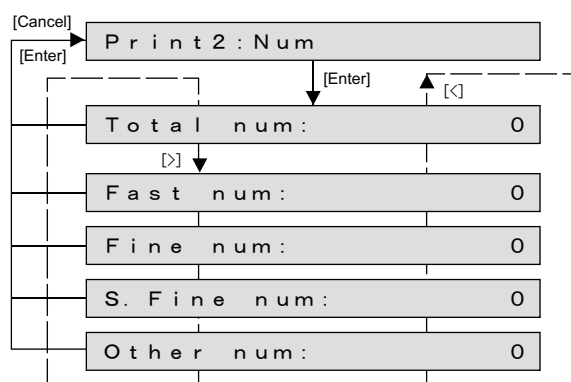
T I P

Displayed as a decimal.

Maximum value : 99999999

When the count goes over the max. value: 99999999

Diagnosis item	Contents	Unit
Total num	Displays the counter value of the total number of printed copies of all modes	Copies
Fast num	Displays the counter value of the number of printed copies of "Fast".	Copies
Fine num	Displays the counter value of the number of printed copies of "Fine".	Copies
S.Fine num	Displays the counter value of the number of printed copies of "S.Fine"	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.)

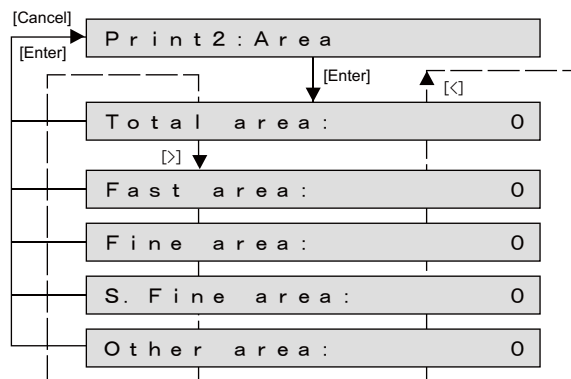
T I P

Displayed as a decimal.

Maximum value : 99999999

When the count goes over the max. value: 99999999

Diagnosis item	Contents	Unit
Total area	Displays the counter value of the total print area of all modes	m ²
Fast area	Displays the counter value of the print area of "Fast".	m ²
Fine num	Displays the counter value of the print area of "Fine".	m ²
S.Fine num	Displays the counter value of the print area of S.Fine.	m ²
Other area	Displays other counter values of the print area.	m ²



(2-c)Effect

Check the number of the printed copies per effect. (Excluding the inner patterns.)

T I P

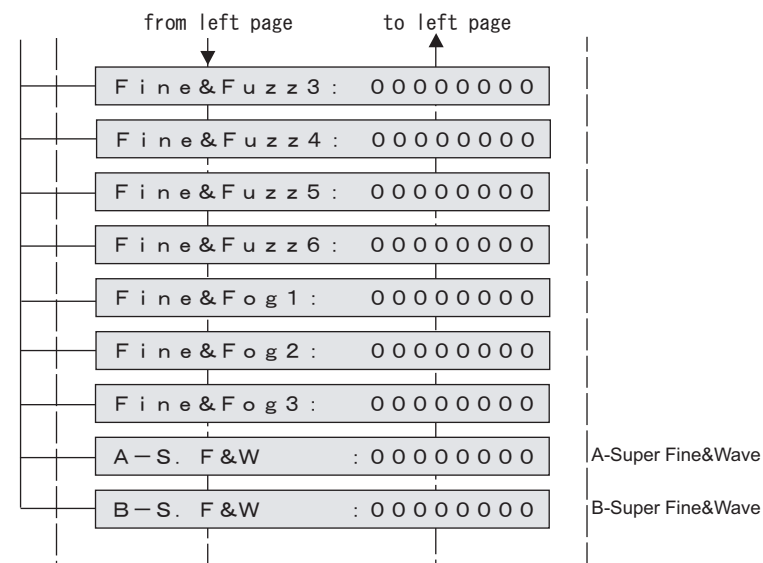
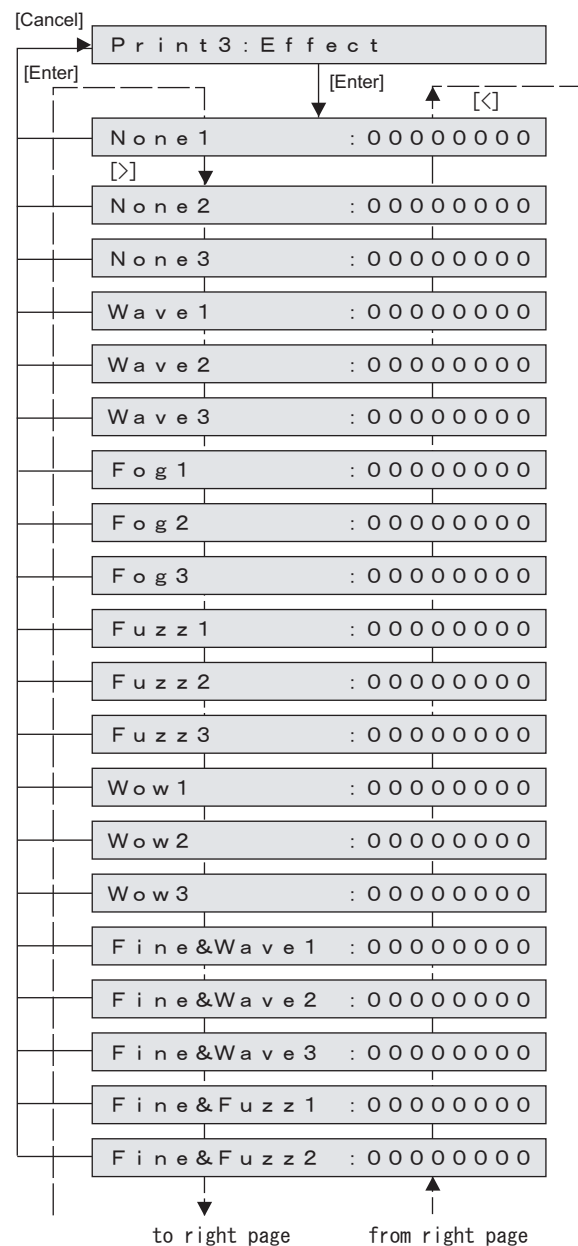
Displayed as a decimal.

Maximum value : 99999999

When the count goes over the max. value: 99999999

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&Wave3	Number of printings in Fine&Wave3	
Fine&Fuzz1	Number of printings in Fine&Fuzz1	
Fine&Fuzz2	Number of printings in Fine&Fuzz2	

Diagnosis item	Contents	Unit
Fine&Fuzz3	Number of printings in Fine&Fuzz3	copies
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.

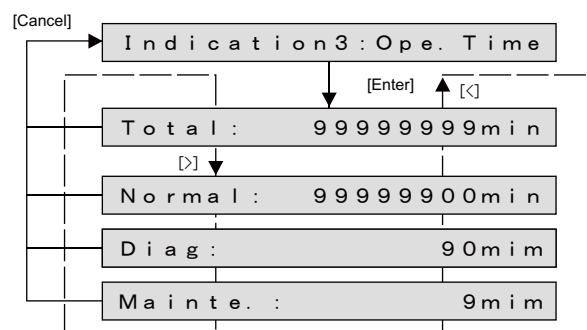
TIP

Displayed as a decimal.

Maximum value : 99999999

When the count goes over the max. value: 99999999

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.	

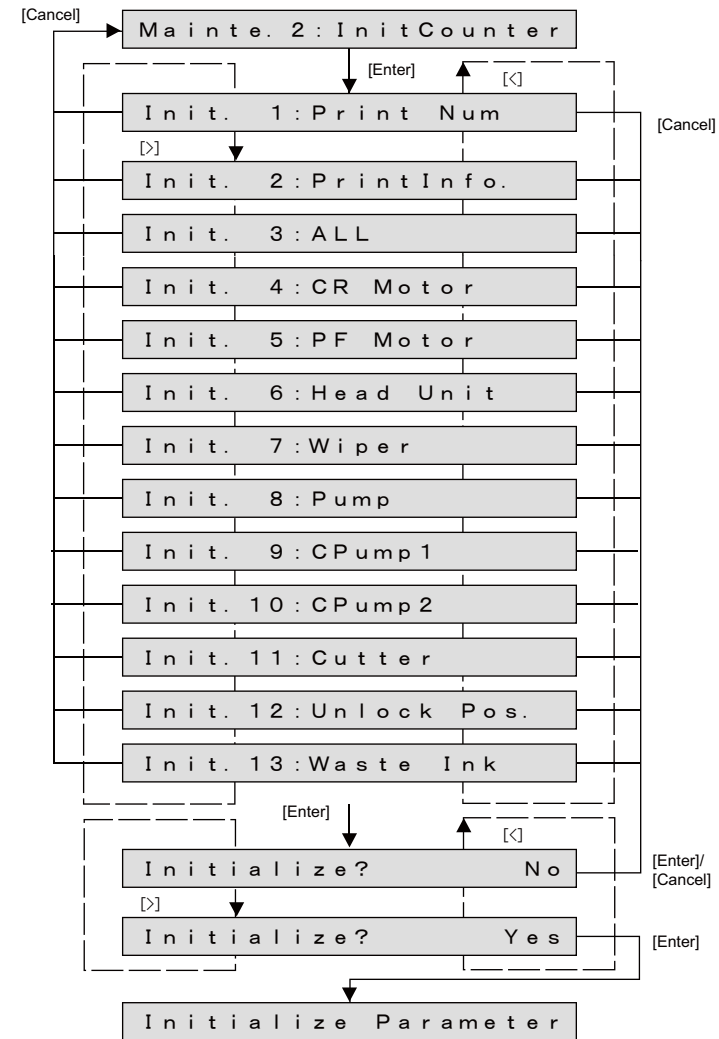


6.3.4 Counter Initialization Menu

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	total print counter.
Print Info.	number of printed copies per mode, print area per mode, and the number of printed copies per effect
ALL	Timer,Life counter,Mechanical counter,Mechanical adjustment values,Head ID.
Timer	Timer.
CR Motor	CR motor life counter.
PF Motor	PF motor life counter.
HeadUnit	Head nozzle life counter
Wiper	Wiper life counter
Pump	Pump life counter
CPump1	Circulation Pump1 life counter
CPump2	Circulation Pump2 life counter
Cutter	Cutter life counter
Unlock Pos.	the position of unlocking Head lock
Waste Ink	Waste Ink amount counter

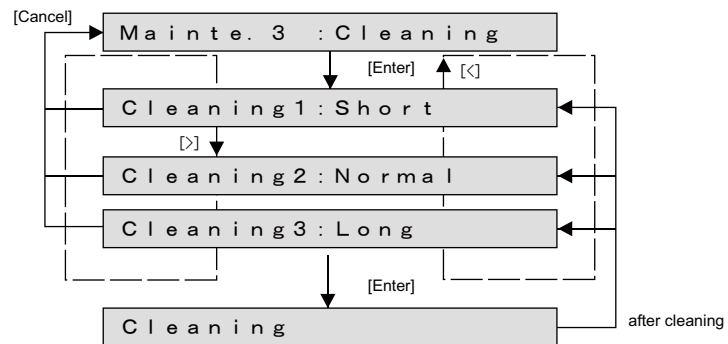


6.3.5 Cleaning Menu

This menu is used to clean Print head.

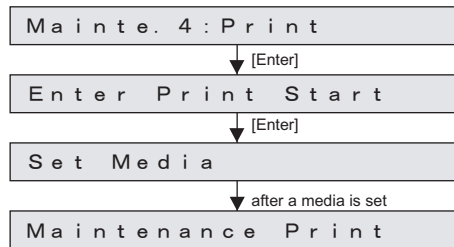
The Cleaning menu includes the following diagnosis items.

Diagnosis item	Description
Short	Performs short cleaning
Normal	Performs Normal cleaning
Long	Performs Long cleaning



6.3.6 Counter Print Menu

This menu is used to print the life counter values.



6.3.7 Media Feed Menu

Feeds the set media (forward and backward).

Cuts the set media.

When it is before initialization of the machine, carry out initialization of the machine.

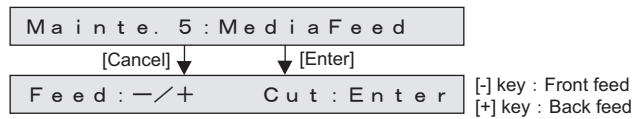
[-]key: front feed

[+]key: back feed


[Enter] key: hold the [Enter]key down for 2 seconds

(When 'MediaInitial' setting is set to 'Off', not to cut a media.)

If you continue pushing the [+] / [-]key, it feed consecutively.



TIP

This is the same function as the  [5.12 Media Feed Menu](#).

7 Maintenance

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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 “Periodic Replacement Parts “ 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 name	Maintenance part numbers	Remark
VJ628 Periodic Maintenance Kit	DG-44737	Exploded View Maintenance

7.2.2 Parts Which Require Inspection/Replacement

Table 7-1 Periodical Inspection Part List

Part	Timing	Check point	Action
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.
T 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 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

 [6.3.4 Counter Initialization Menu](#)

Part life information of this printer is shown in the table below.

Part	Life expectancy	Warning display	How to restore	Replacement parts	Remark
CR motor	4,370,000 passes	Check Life [CR motor]	Counter clear	At the first warning: CR motor CR following movement belt pulley (Check Ink tube as well.) At the next warning: Replace CR cable after above parts is replaced.	 3.6.1 Replacing CR Motor  3.6.11 Replacing CR Return Pulley Assy  3.9.4 Replacing Ink Tube P.152  3.9.3 Replacing CR FFC
PF motor	21Km	Check Life [PF motor]	Counter clear	Replace as necessary	 3.7.1 Replacing PF Motor
Print head	6 × 10 ⁹ (6 thousand million) dots	Check Life [Head]	Counter clear	Replace as necessary	 3.8.15 Replacing Head
Pump Motor	300 hours	Check Life [Pump] Check Life [CPump1] Check Life [CPump2]	Counter clear	Replace as necessary	 3.10.1 Replacing Waste Fluid Pump

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

No.	Name	Part number	Remarks
1	Phillips screwdriver No.2	Generic product	More than 250 mm shaft length is recommended.
2	Phillips screwdriver No.2	Generic product	Less than 50 mm shaft length is recommended.
3	Phillips screwdriver No.1	Generic product	-
4	slotted screwdriver	Generic product	-
5	slotted screwdriver (precision)	Generic product	-
6	Box driver	Generic product	For replacing CR board assemblies
7	Flat-shaped ratchet driver	Generic product	-
8	Long-nose pliers	Generic product	-
9	Tweezers	Generic product	-
10	Hex wrench (2.5 mm)	Generic product	-
11	Hex wrench (2.5mm)	Generic product	For screws retaining Head base, with shaft length of 150mm or longer and not L-shaped
12	Hex wrench (1.5mm)	Generic product	-
13	E ring holder (E-2.5)	Generic product	-
14	E ring holder (E-6)	Generic product	-
15	Penlight	Generic product	-
16	tube cutter	Generic product	For replacing Valve Heads or Ink tubes
17	Measure	Generic product	For replacing Steel belt, longer than 3m

No.	Name	Part number	Remarks
18	Loupe	Generic product	For confirming adjustment pattern
19	magic marker	Generic product	-
20	plastic bag	Generic product	-
21	Thread Locker	Generic product	Three bond 1401
22	waste cloth	Generic product	-
23	acetate tape	Generic product	width: 18mm、30mm

(2) 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 straight-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. 2 N (204gf) for measurement Manufacturer: Ohba Keiki Seisakusho Co., Ltd.
6	Dedicated paper	-	To adjust printing precision.
7	PG Adjusting Jig (1.1/1.3)	DG-43193	For Print head height adjustment (1.1mm/1.3mm)
8	Cutter Holder adjustment Jig	DG-43191	-
9	Valve Head Washing kit (VJ Ink)	DG-41787	-
10	Level	Generic product	For confirming installation environment.
11	Jig Panel Assy	DG-44954	-

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 attention not to lubricate too much on a part.


Parts name		Location	Manufacturer	Model name
PF drive section	Up/down gear on pressure lever	Apply to gear.	Dow Corning Toray Co., Ltd.	MOLYKOTE(R)EM60L GREASE
CR drive section	Y rail	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
	Drive pulley	Apply to the drive pulley.	Dow Corning Toray Co., Ltd.	MOLYKOTE(R)EM-60L GREASE
	Pressure cam	Apply to cam part.	Dow Corning Toray Co., Ltd.	SUPERMULPA SS32 (Super multi dia tetrat)
	Roller guide	Apply to the front surface of Roller guide.	Dow Corning Toray Co., Ltd.	MOLYKOTE(R)EM-60L GREASE
Cursor section	Rack	Apply to Gear.	Dow Corning Toray Co., Ltd.	MOLYKOTE(R)EM-60L GREASE

Parts name		Location	Manufacturer	Model name
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 base pressing screw	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 the  Installation Manual

8 Product Overview

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.....387

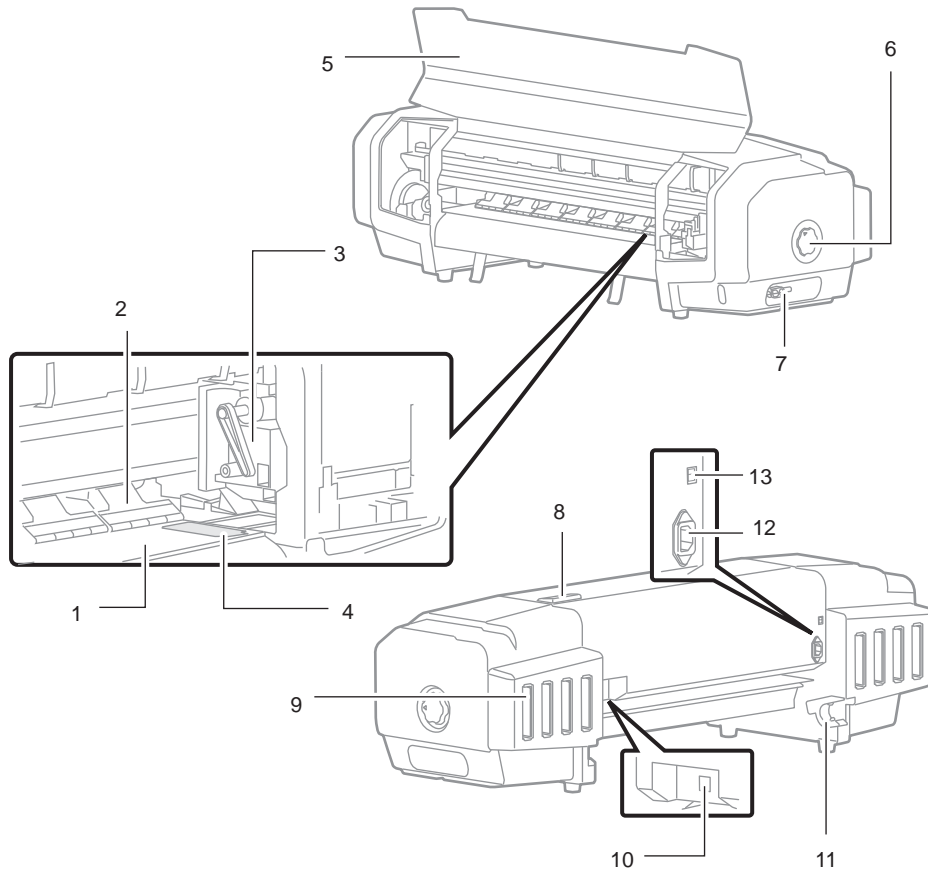
8.1 Introduction

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 Appearance



No.	Name	Function
1	Platen	Media will be printed on this. There is a suction fan and a heater inside.
2	Media Pressure Arm	Media are suppressed to Platen. The media fixing handle is being interlocked with.
3	Carriage	The print head and the cutter are built in.
4	Media Holding Plate	It is in a front cover. By attaching to the both ends of media, the curvature of media can be stopped to some extent.
5	Front Cover	It opens at the time of media loading and maintenance operation, etc.
6	Media Fixing Handle	It turns at the time of loading of media, and removal.
7	Waste Fluid Tube	It is a tube for discharging waste fluid.
8	Operation Panel	A setup of a operating condition, and the status display of a printer and a setup of various functions are performed.
9	Cartridge Slot	Ink cartridges and Cleaning cartridges are attached.
10	Network Connector	An Ethernet cable is connected.
11	Scroller Holder	Roll media are loaded.
12	Power Connector	A power cable is connected.
13	Line Voltage Selection Switch	It changes Voltage.

8.2.2 Operation panel

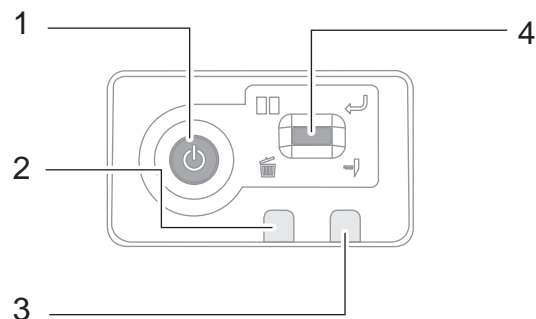
(1) Operation Panel

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



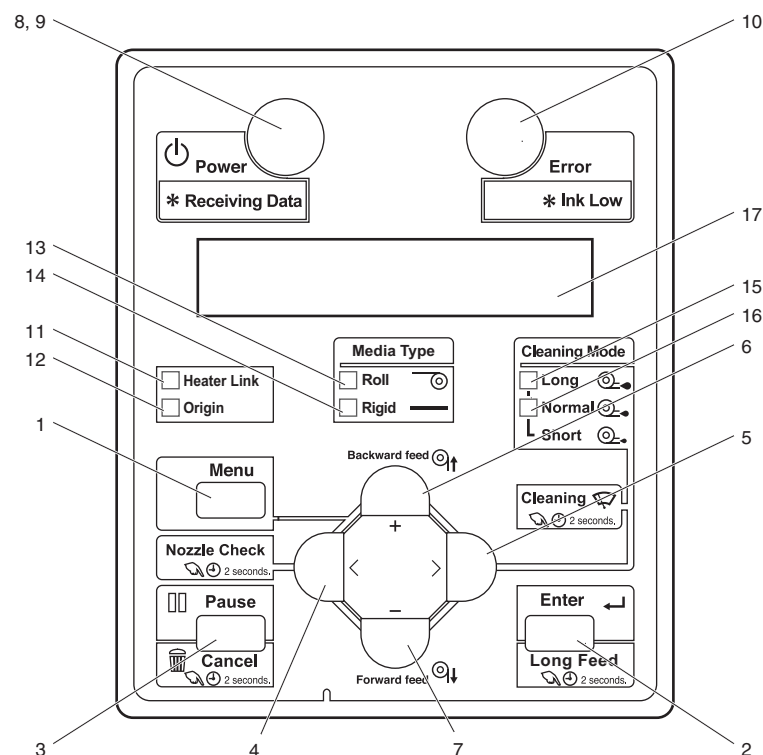
No.	Name	Function
4	Multi Key	<p>Various functions are carried out according to a situation.</p> <p>while printing:</p> <p>(press) A stop/resumption of printing</p> <p>(press and hold) Cancellation of printing (data deletion) under printing standby:</p> <p>(press and hold) Cutting Media</p> <p>When waiting for decision at the time of cooperation with VSM.:</p> <p>(press) fixedness while warming up:</p> <p>(press) The compulsive start of printing</p> <p>Under error occuring :</p> <p>(press) Buzzer stop</p>

No.	Name	Function
1	Power Key	The light is switched on blue in power supply ON state.
2	Data LED	By green blink, under reception and analysis of printing data is displayed.
3	Error LED	An error and warning are displayed by red lighting and blink.

(2) Jig panel

NOTE

When starting Self-diagnostic function or Maintenance mode 2, it is necessary to connect Jig Panel Assy (maintenance parts) to the MAIN Board of the printer.
(Jig panel Assy is not enclosed by the printer.)



(2-a) 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](#) for more details.

No.	Name	Normal	Setup menu display
1	[Menu]key	Shifts to the Setup menu.	Shifts from Setup menu display to Normal.
2	[Enter]key	Restarts printing when the printing is suspended.	<ul style="list-style-type: none"> Select the menu to be set, and shifts to the next hierarchy. The setting is determined and saved.
	[Long Feed] key	Feeds a specified amount of media when pressed for more than two seconds.	—
3	[Pause] key	Pauses printing.	—
	[Cancel] key	Press and hold this key for more than two seconds to do the following operations: <ul style="list-style-type: none"> When printing: Forcefully terminates printing and deletes one file of the remaining data. When receiving or analyzing: Deletes data that are already received and analyzed, and delete the next data. 	<ul style="list-style-type: none"> Returns to the previous menu hierarchy.Changes made in the setting are discharged. Shifts from Setup menu display to Normal.
4	[<] key	—	Changes the set value.
	[Nozzle Check] key	Press and hold this key for two seconds or more to perform Nozzle Check printing.	—
5	[>] key	Sets Cleaning Mode. <ul style="list-style-type: none"> The lamp of Cleaning Mode that you set lights up in green. 	<ul style="list-style-type: none"> Down the menu level in the directory tree. Changes the set value.
6	[Backward↑] key	Media is fed in the reverse direction.	—
	[+] key	—	<ul style="list-style-type: none"> Changes to the previous item in the displayed menu. The setting is changed to the forward direction. The numeric value is decreased during numerical input.

No.	Name	Normal	Setup menu display
7	[Forward↓] key	Media is fed in the forward direction.	-
	[-] key	-	<ul style="list-style-type: none"> Changes to the previous item in the displayed setting. The setting is changed to the reverse direction. The numeric value is decreased during numerical input.
8	[Power] key	Turns printer ON and OFF.	Turns printer ON and OFF.

(2-b)Display section

No.	Name	Color	Status	Description
9	Power lamp	Blue	Lamp ON	Power ON.
			Lamp blinks	<ul style="list-style-type: none"> Data is received and analyzed. Performing media initial operation.
			Lamp OFF	Power OFF.
10	Error lamp	Orange	Lamp ON	An error has occurred The error content is displayed on the LCD
			Lamp blinks	The remaining amount of ink is low.
			Lamp OFF	There is no error.
11	Heater Link lamp	Green	Lamp ON	Blower heater is in the "Printer Link" condition.
			Lamp OFF	Blower heater is in the "Manual" condition.
12	Origin lamp	Green	Lamp ON	"Origin" is activated.
			Lamp OFF	"Origin" is deactivated.

No.	Name	Color	Status	Description
13	Roll lamp	Green	Lamp ON	"Roll media" is set as "Media type".
14	Rigid lamp	Green	Lamp ON	"Media type" is set as "Rigid".
15	Long lamp	Green	Lamp ON	<ul style="list-style-type: none"> Cleaning Mode is set to Long. When the Normal lamp is also turned on, Cleaning Mode is set to Short.
			Lamp OFF	Cleaning Mode is set to Normal.
16	Normal lamp	Green	Lamp ON	<ul style="list-style-type: none"> Cleaning Mode is set to Normal. When the Long lamp is also turned on, Cleaning Mode is set to Short.
			Lamp OFF	Cleaning Mode is set to Long.
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 (when using Jig Panel)

(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](#)

(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 Operations in Maintenance Mode 2](#)

8.3.2 Switching Operation Status (when using Jig Panel)

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.

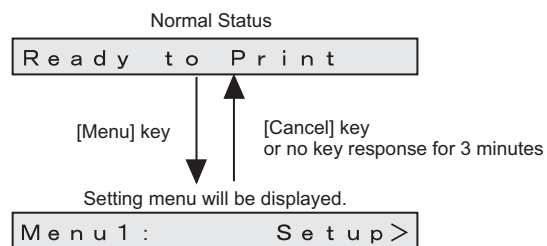
TIP

 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:

TIP

 [5.2.2 Starting Up](#)

(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.

TIP

 [6.2.1 Starting Up](#)

9 Specifications

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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-628X
Printing method		On-demand piezo drive
Motor driving method		Firmware servo / DC motor
Media feeding method		Roll media: Rear feeding / front ejection
Media fixing method		Pressurizing roller manual- down method
Media supply and ejection		Roll media : Rear feeding/ / front ejection
Roll media	Outer diameter	150mm or less
	Tube diameter	2 inch / 3 inch
	Weight	less than 9kg
	Maximum length	610mm
	Maximum thickness	0.3mm
	Maximum print width	600mm
Print margin		< Roll Media > Front: Max 15mm (For continuous print: 5mm) ,Rear: 5mm (Maximum end edge of media is 40mm) ,Left: 5mm~25mm,Right: 5mm~25mm
Head height adjustment		Manual: 1.2mm/2.5mm
CPU		64Bit RISC CPU
Memory		256MB
Command		MH-RTL (RTL-PASS)
Interface		Ethernet (10BASE-T/100BASE-TX)

Item		Specifications
Ink	Supply system	Supplied through tubes from independent color cartridges
	Ink bag	each 220ml ± 5ml 4 color setting: Black, Cyan, Magenta, Yellow 6 color setting: Black, Cyan, Magenta, Yellow, Light Cyan, Light Magenta 8 color setting: Black, Cyan, Magenta, Yellow, Light Cyan, Light Magenta, White, Metallic
Environmental condition	Operation condition	Temperature: 20° C ~ 28° C Humidity: 40% ~ 60%、No condensation
	Printing accuracy coverage	Temperature: 22° C ~ 28° C Humidity: 40% ~ 60%、No condensation
	Change rate	Temperature: within 2° C per one hour Humidity: within 5% per one hour
	Storing condition (Ink not filled)	Temperature: -20° C ~ 60° C Humidity: 20% ~ 80%、No condensation Storage life: six months
	Storing condition (Ink filled)	Temperature: 5° C ~ 30° C Humidity: 20% ~ 80%、No condensation Storage life: within 4 days
Power	Voltage	AC100-240V
	range	AC90V ~ 264V
	Frequency	50Hz / 60Hz ± 1Hz
Power consumption	Printing	830W or less
	When the power is off.	1.1W or less
Outer diameter	height	365.6mm (main body only) 1165.6mm (when dedicated stand is installed)
	width	1188mm
	depth	422.9mm (main body only) 590mm (when dedicated stand is stand)
Weight		main body: Approx 31.8kg dedicated stand: Approx 8.7kg

9.3 Interface specification

This section describes each type of interface specifications supported by this product.

9.3.1 Network interface specification


Item	Specification
Network type	Ethernet IEEE802.3
Network I/F	10BASE-T / 100BASE-TX Automatic transfer type (RJ-45 Connector twist pair cable) MDI / MDI-X Automatic transfer
Corresponding protocol	TCP/IP

9.4 Options/Supplies List

9.4.1 Supplies


(1) Ink Cartridges

TIP

- For more information about the operations and supply items, contact your local MUTOH dealer.  {Operation Manual}
- For problems resulting from using a non-suggested media will exempt the warranty.


(2) Media

TIP

- For more information about the operations and supply items, contact your local MUTOH dealer.  {Operation Manual}
- For problems resulting from using a non-suggested media will exempt the warranty.

(3) Other

TIP

- For more information about the operations and supply items, contact your local MUTOH dealer.  {Operation Manual}
- For problems resulting from using a non-suggested media will exempt the warranty.

9.5 Choosing 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 environment 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.

(1) Installation Environment Requirements

Choose a place for printer installation following the requirements of the table below.

Floor loading capability		2940Pa (300kgf/m ²) or over
Electrical specifications	Voltage	AC180V ~ 264V
	Frequency	50/60Hz ± 1Hz
Environmental conditions	Operation environment	Temperatures: 20 °C to 28 °C Humidity: 40 % to 60 %, No condensation
	Printing accuracy warranty range	Temperatures: 22 °C to 28 °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: 30 days (Perform the maintenance operation written in the operation manual.)

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.

(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](#).
Do not use the printer without dedicated stand.

10 Appendix

10.1 Introduction395

10.2 Maintenance Part List395

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 April 30, 2015).
The part number below is identical to that of the exploded view.

Table 10-1 Board Box

Name	No.	Exploded View	Remarks
Head Cable Assy	DF-49017	H-50	-
JUNC ID Cable Assy	DG-44717	H-54	-
JUNCTION2 Board Assy	DG-43396	H-48	-
MAINBoard Assy	DG-44712	H-16	-
MAIN DC Cable Assy	DG-42993	H-24	-
IL Dummy Cable Assy	DG-44713	H-18	-
Cooling FAN (24V) Assy	DG-45354	H-29	-
FG Cable Assy	DG-43741	H-40	-
AC SEL SW Cable Assy	DG-44720	H-62	-
Slide Switch Assy	DG-44719	H-60	-
Power Board Assy	DG-43172	H-21	-
AC JUNC-Power Cable Assy	DG-44714	H-23	-
JUNC ID Cable 2Assy	DG-44718	H-55	-
JUNC FFC Assy	DG-44716	H-51	-
Inlet AC JUNC Cable Assy	DG-44715	H-39	-
AC Inlet Assy	DG-43177	H-37	-

Table 10-2 Y Rail Assy

Name	No.	Exploded View	Remarks
CR Motor Relay A1Assy	DF-48991	B-43	-
CR Motor Assy	DG-44693	B-40	-
Pressure Roller Spring	DF-49691	B-16	-
Pressure Roller Assy	DF-49053	B-18	-
Pressure Roller Axis Assy	DF-49054	B-19	-
Pressure Arm Assy	DF-49052	B-17	-
Fence Guide Assy	DF-49027	B-82	-
T Fence Spring Assy	DG-44690	B-83	-
CR HP Sensor, Lever Sensor	DF-49471	B-62	-
CR Origin Sensor Cable Assy	DG-44691	B-63	-
Lever Sensor Cable Assy	DG-44692	B-65	-
CR Return Pulley Assy	DF-49047	B-49	-
		B-50	-
P_REAR Sensor Assy	DG-42945	B-74	-
CR Belt A1Assy	DF-49044	B-44	-
T Fence A1Assy	DF-49024	B-81	-

Table 10-3 Cursor

Name	No.	Exploded View	Remarks
Cutter Solenoid Spring Assy	DF-49062	A-131	-
Cutter Spring	DG-43484	A-134	-
P-Edge Sensor Assy	DG-43319	A-137	-
Cutter SOL Cable Assy	DG-43318	A-140	-
CR Encoder Assy	DG-42947	A-48	-
CR HP Sensor, Lever Sensor	DF-49471	A-34	-
PG Origin Sensor Cable Assy	DG-43315	A-43	-
Cursor Roller Arm Assy	DF-49065	A-19	-
		A-20	-
		A-21	-
		A-22	-
Carriage Assy	DG-44688	-	refer to Exploded View
Mini Latch S Assy	DG-44689	A-28	-

Table 10-4 Head Base

Name	No.	Exploded View	Remarks
IA5540 Head Assy	DG-43988	A-81	-
Head FFC Assy	DG-44687	A-88	including 1 piece
Valve Head Assy	DG-41543	A-82	-
		A-93	-
		A-94	-
		A-95	-
O Ring M6	DF-46671	A-95	including 100 pieces
VJ628 Periodic Maintenance Kit	DG-44737	A-82	-
		A-93	-
		A-94	-
		A-95	-
		A-70	-
		A-72	-
HeadFG Assy	DF-49018	A-75	-
Carriage Assy	DG-44688	-	refer to Exploded View
Cutter Solenoid Assy	DF-42234	A-130	-

Table 10-5 CR Board

Name	No.	Exploded View	Remarks
Steel Bare Assy	DG-44704	E-11	-
Ink Tube_JUNRON3-4(2m)	DG-45566	E-1	-
Head FFC Assy	DG-44687	A-88	including 1 piece
CR Board Assy	DG-42959	A-109	-
CR FFC Assy	DG-44703	E-17	including 1 piece

Table 10-6 Cable Guide

Name	No.	Exploded View	Remarks
Clamp FFC32Assy	DG-44741	E-19	-
Clamp Bare 64 Assy	DG-44743	E-20	-
Clamp Tube Assy	DG-44742	E-18	-
Steel Bare Assy	DG-44704	E-11	-
Tube Guide FilmAssy	DG-44705	E-16	-
CR FFC Assy	DG-44703	E-17	including 1 piece
Ink Tube_JUNRON3-4(2m)	DG-45566	E-1	-

Table 10-7 PF Motor

Name	No.	Exploded View	Remarks
PF ENC Scale Assy	DF-49028	D-20	-
Speed Reduction Pulley Assy	DF-49051	D-17	-
PF Timing Belt Assy	DG-44700	D-13	-
PF Encoder Assy	DG-44701	D-32	-
PF Motor Assy	DF-49020	D-27	-
PF Motor Cable Assy	DG-44699	D-26	-
G Roller Plate Assy	DF-49049	D-7	-
Slide Axis Support Assy	DG-44702	D-2	-

Table 10-8 Frame R•Heater

Name	No.	Exploded View	Remarks
HEATER Assy	DG-44696	D-14	including 1 piece
Thermistor Assy	DG-44695	C-4	including 1 piece
Carriage Fixing Plate Assy	DG-44734	L-1	-
		L-2	-
		L-3	-
Media Holder Assy	DG-44697	C-86	including 1 piece
Scroller Holder Roller Assy	DG-44698	C-59	including 4 pieces

Table 10-9 Frame L•Scroller

Name	No.	Exploded View	Remarks
Adsorption Fan Assy	DG-42988	C-80	-
Adsorption Fan Cable Assy	DG-44694	C-82	-
Bottom Guide Assy	DG-44730	K-14	including 2 pieces
Scroller Holder Roller Assy	DG-44698	C-68	including 4 pieces

Table 10-10 Cartridge R

Name	No.	Exploded View	Remarks
I/C Holder Assy 1	DG-45562	F-1	common parts
I/C Holder Assy 2	DG-45563	F-4	
I/C Holder Assy 3	DG-45564	F-5	
I/C Holder Assy 4	DG-45565	F-6	
		F-8	
		F-9	
		F-10	
		F-11	
		F-12	
		F-14	
		F-15	for I/C Holder Assy 1
		F-16	for I/C Holder Assy 2
		F-17	for I/C Holder Assy 3
		F-18	for I/C Holder Assy 4
		F-60	for I/C Holder Assy 1
		F-61	for I/C Holder Assy 2
		F-62	for I/C Holder Assy 3
		F-63	for I/C Holder Assy 4
		F-19	common parts
		F-12	
		F-20	
		F-55	
		F-56	
		F-57	
		F-58	
		F-59	

Table 10-10 Cartridge R(Continued)

Name	No.	Exploded View	Remarks
Ink ID Board Assy	DF-43968	F-55	-
Holder Pressure Spring	DF-43967	F-56	-

Table 10-11 Circulation pump

Name	No.	Exploded View	Remarks
Diaphragm Pump Assy	DG-43907	F-72	-
Circulation Pump Relay Cable Assy	DG-45567	F-78	-

Table 10-12 Cartridge L

Name	No.	Exploded View	Remarks
I/C Holder Assy 1	DG-45562	G-1	common parts
I/C Holder Assy 2	DG-45563	G-4	
I/C Holder Assy 3	DG-45564	G-5	
I/C Holder Assy 4	DG-45565	G-6	
		G-8	
		G-9	
		G-10	
		G-11	
		G-12	
		G-14	
		G-15	for I/C Holder Assy 4
		G-16	for I/C Holder Assy 3
		G-17	for I/C Holder Assy 2
		G-18	for I/C Holder Assy 1
		G-60	for I/C Holder Assy 4
		G-61	for I/C Holder Assy 3
		G-62	for I/C Holder Assy 2
		G-63	for I/C Holder Assy 1
		G-19	common parts
		G-12	
		G-20	
		G-55	
		G-56	
		G-57	
		G-58	
		G-59	

Table 10-12 Cartridge L(Continued)

Name	No.	Exploded View	Remarks
AC JUNCTION Board Assy	DG-44710	G-70	-
Ink ID Board Assy	DF-43968	G-55	-
Binding Band	DG-44940	G-77	-
Holder Pressure Spring	DF-43967	G-56	-
AC JUNC Power Cable Assy	DG-44714	H-23	-
AC SEL SW Cable Assy	DG-44720	H-62	-
Inlet-AC JUNC Cable Assy	DG-44715	H-39	-
AC JUNC CNT Cable Assy	DG-44711	G-72	-

Table 10-13 Maintenance

Name	No.	Exploded View	Remarks
Cleaner Head Assy	DF-49687	I-58	-
Wiper Solenoid SDC630KG	DG-41090	I-49	-
Wiper SOL Cable Assy	DG-44723	I-51	-
Cap Head Assy	DG-41179	I-24	-
Diaphragm Pump Assy	DG-43907	I-70	-
Vacuum FAN Relay2 Assy	DF-48995	I-72	for Diaphragm Pump
Waste Fluid Tank Unit Assy	DG-45368	I-85	-
		I-86	-
		I-87	-
		I-88	-
		I-90	-
VJ628 Periodic Maintenance	DG-44737	-	refer to Exploded View

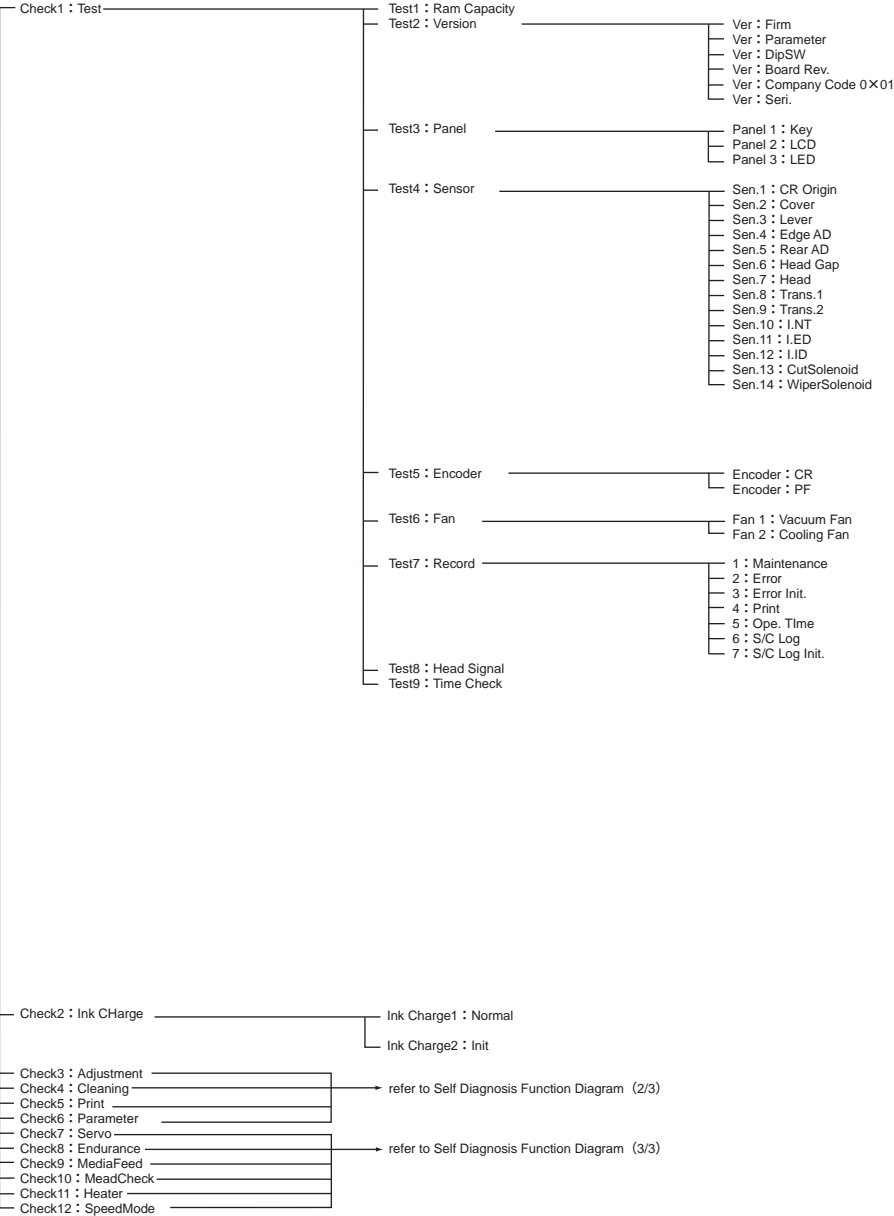
Table 10-14 Cover

Name	No.	Exploded View	Remarks
Cover Switch Assy	DG-42956	J-17	-
Cover R Cable Assy	DG-44729	J-20	-
Switch Lever Assy	DG-44728	J-18	-
PANEL Board Assy	DG-44726	J-6	-
Label (Caution Cutter) Assy	DG-44731	K-31	-
Switch Panel Cable Assy	DG-44727	J-10	-

Table 10-15 Other

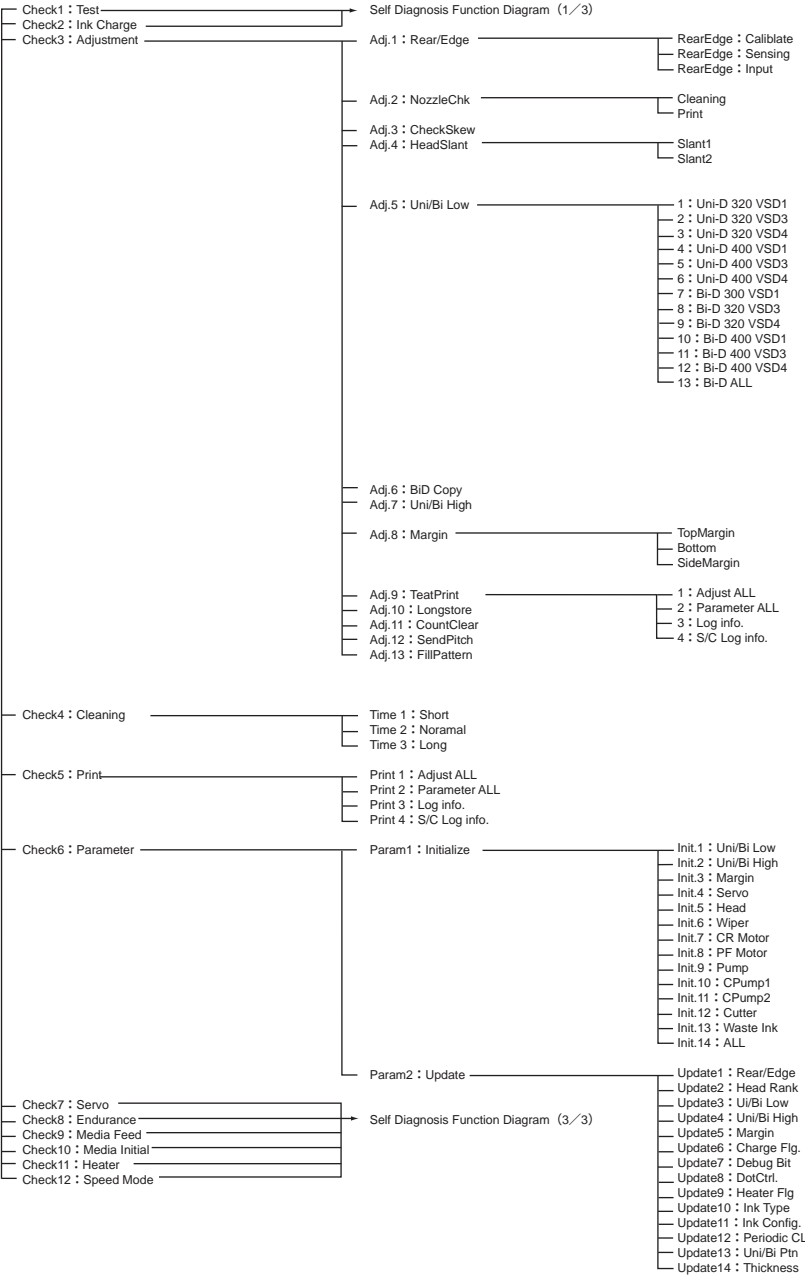
Name	No.	Exploded View	Remarks
PG Adjusting Jig (1.1/1.3)	DG-43193	-	-
Ink Tube JUNRON_3-4(2m)	DG-45566	-	diameter : 3φ length : 2m
Reuse Tie5NVOB Assy	DG-44733	K-16	including 1 piece
Valve Head Washing Kit (VJ Ink)	DG-41787	-	-
Cutter Holder Adjusting Jig	DG-45003	-	-
Caster (With no stopper) Assy	DG-44938	-	including 1 piece
Caster (With a stopper) Assy	DG-44939	-	including 1 piece
Jig Panel Assy	DG-44954	-	-

Self Diagnosis Function Diagram (1／3)

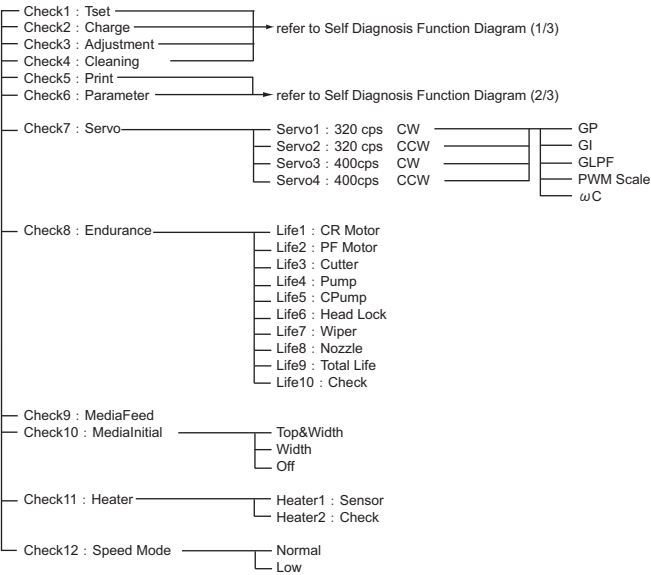


Self Diagnosis Function Diagram (2／3)

Ver. 1.00

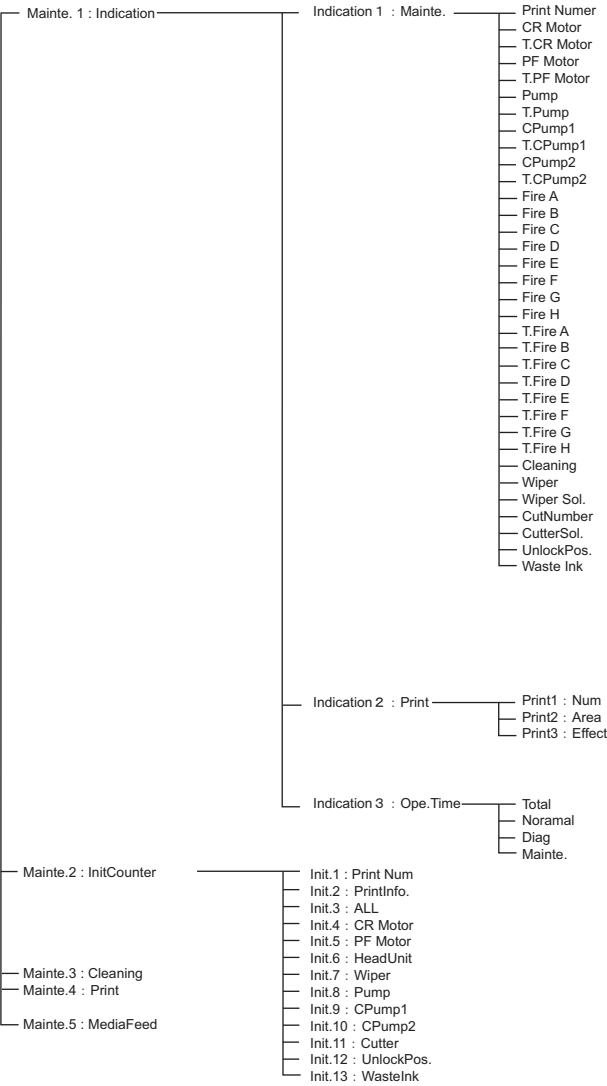


Self Diagnosis Function Diagram (3/3)

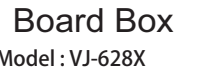


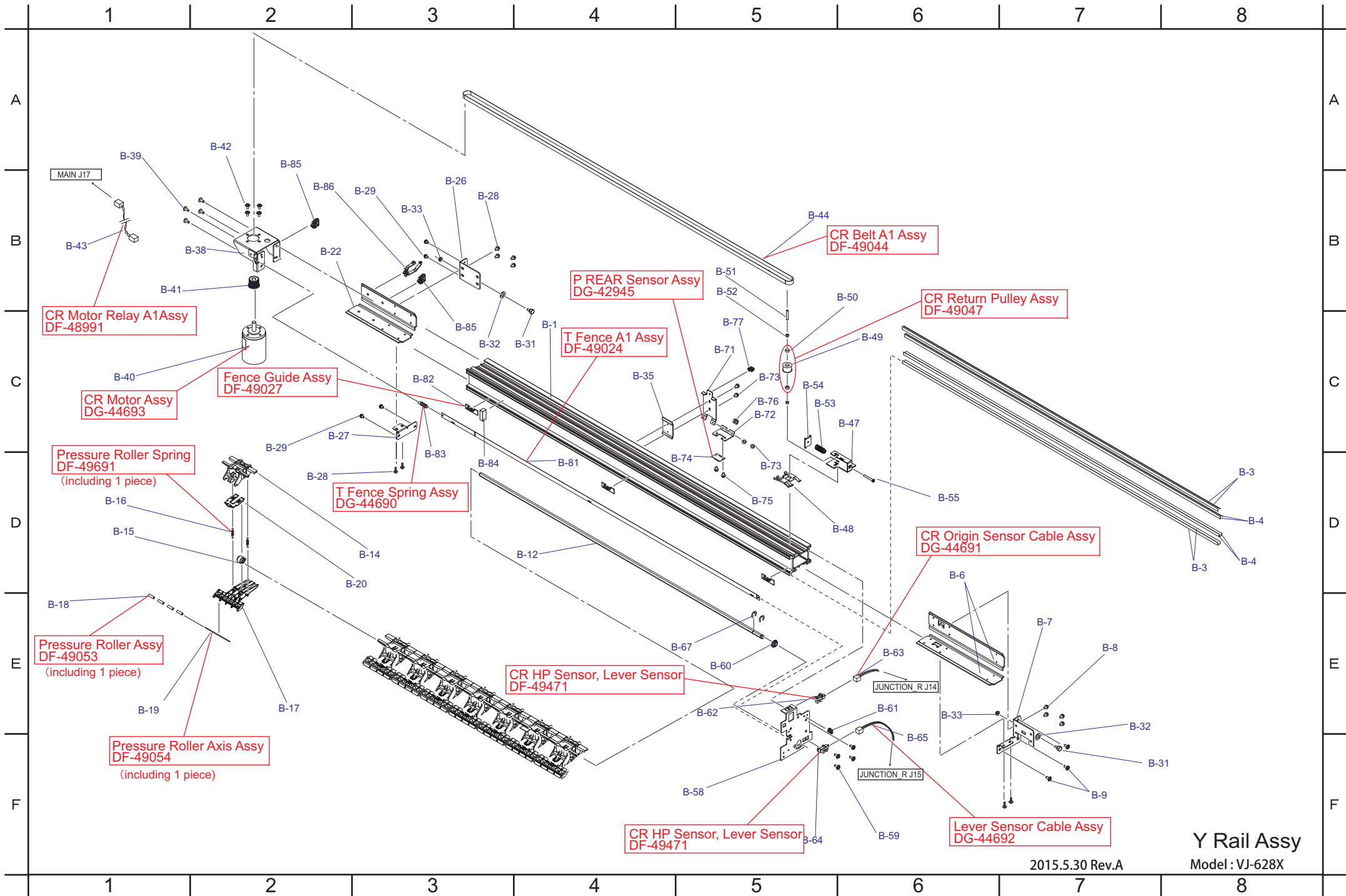
Maintenance Mode 2 Function Diagram

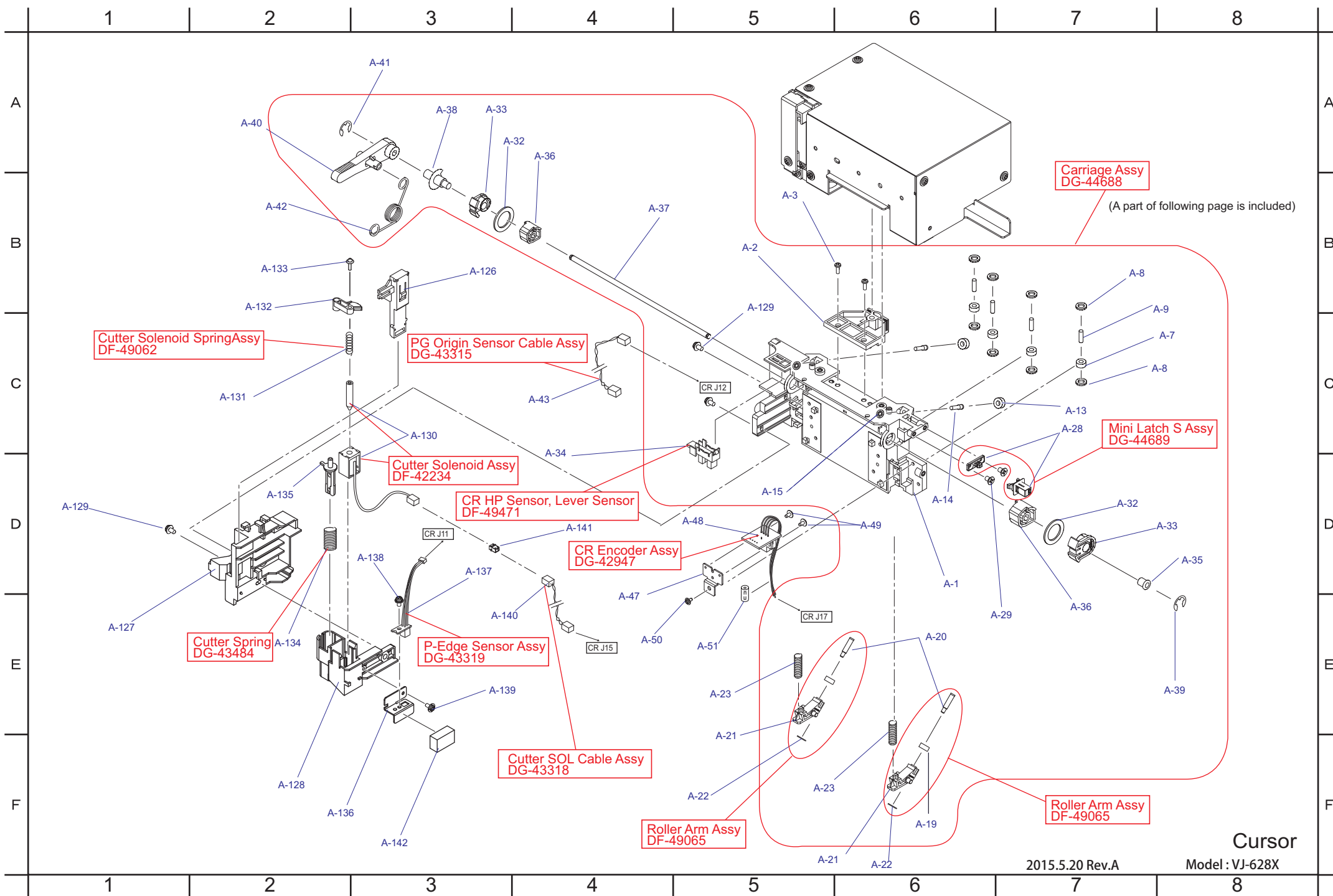
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Carriage Assy
DG-44688

(A part of following page is included)

Mini Latch S Assy
DG-44689

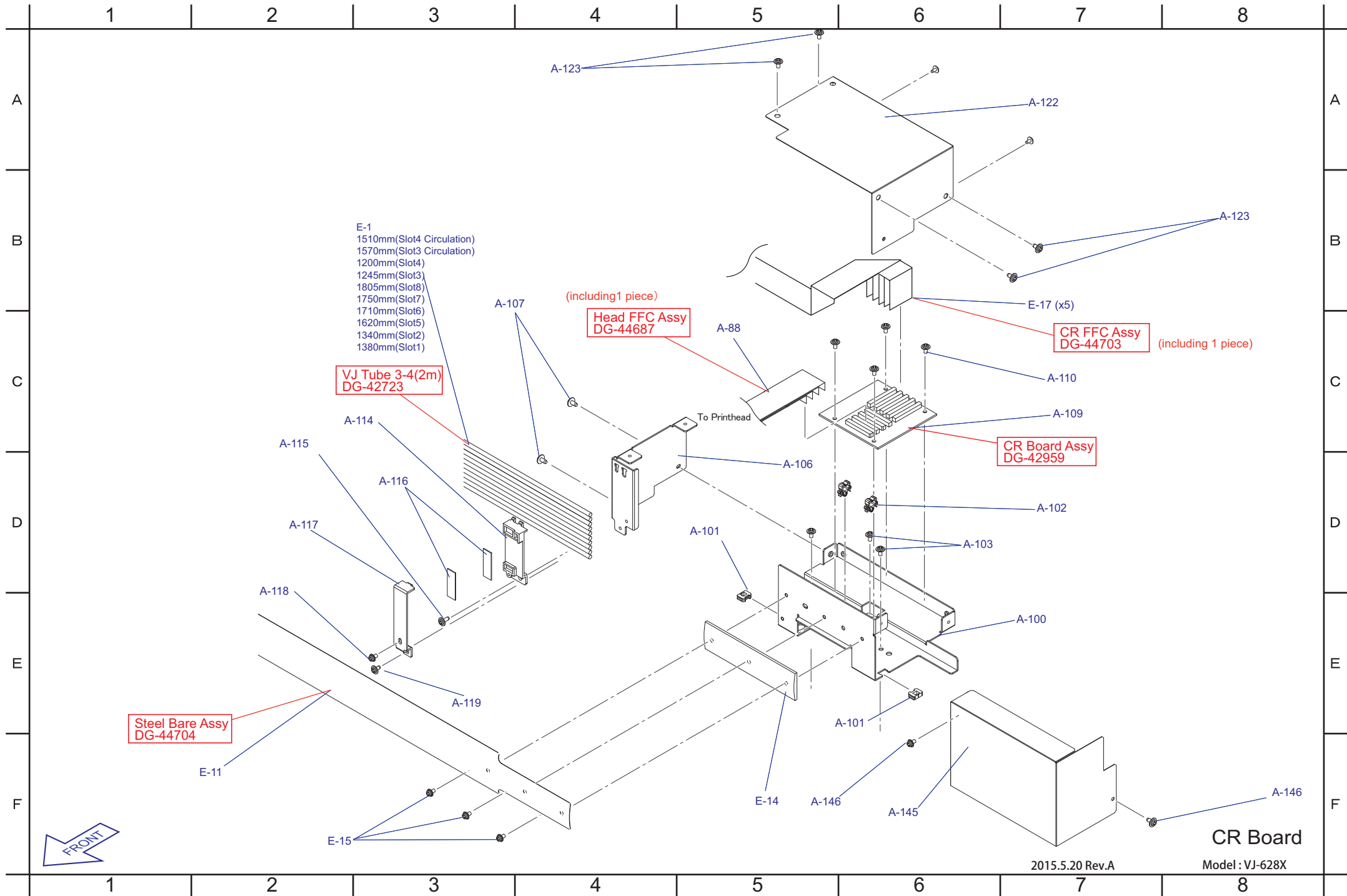
Roller Arm Assy
DF-49065

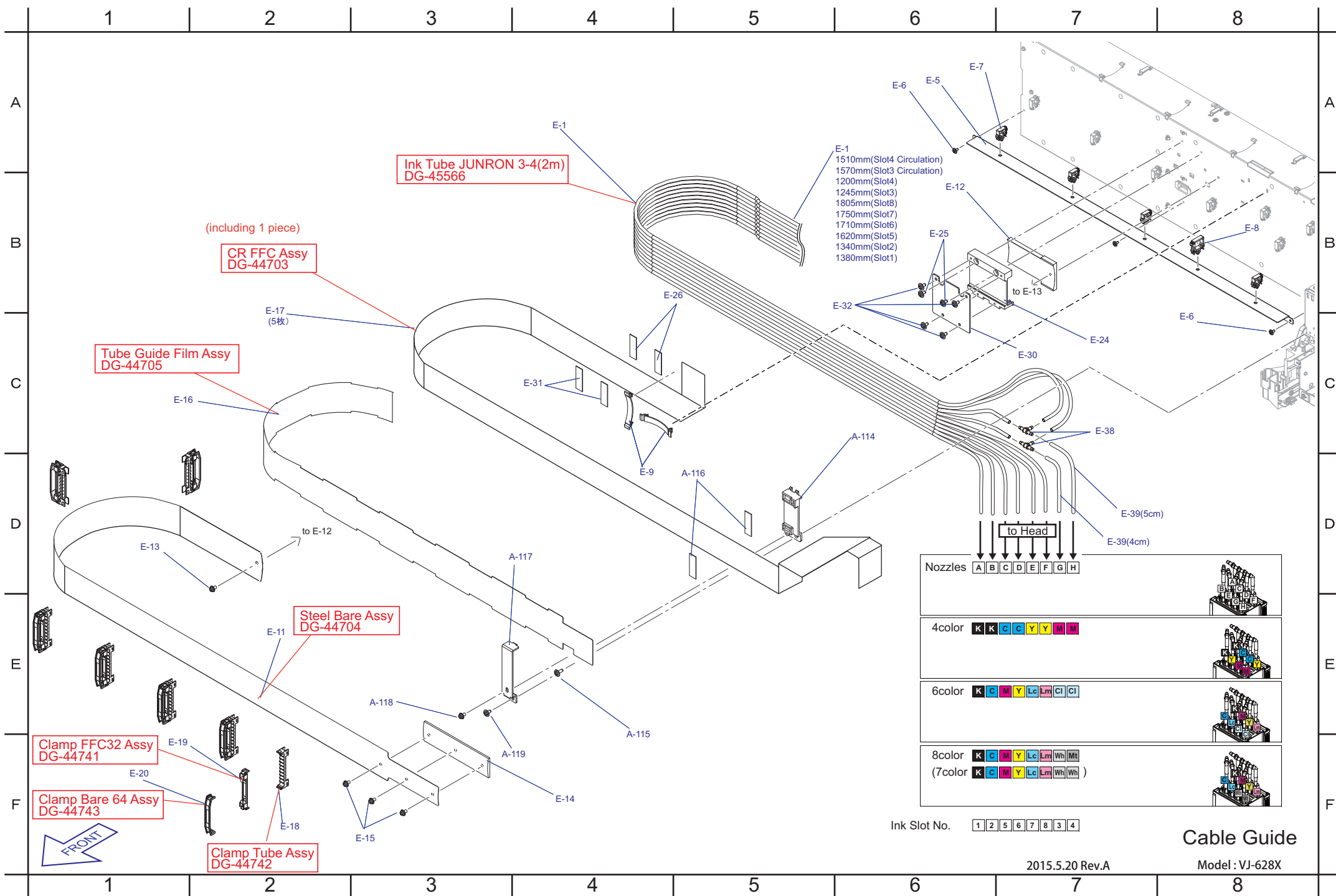
Cursor

Model : VJ-628X

2015.5.20 Rev.A



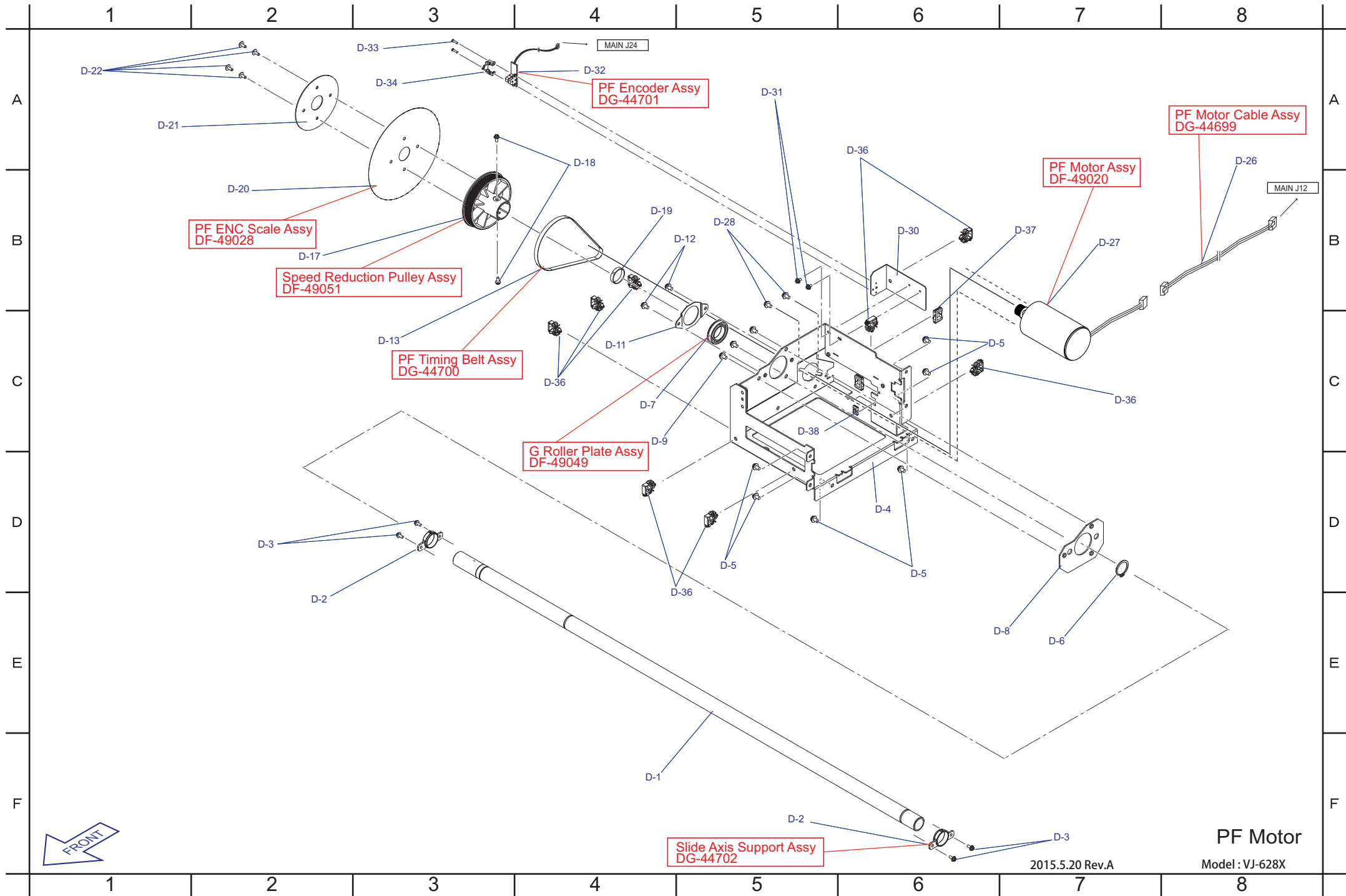




2015.5.20 Rev.A

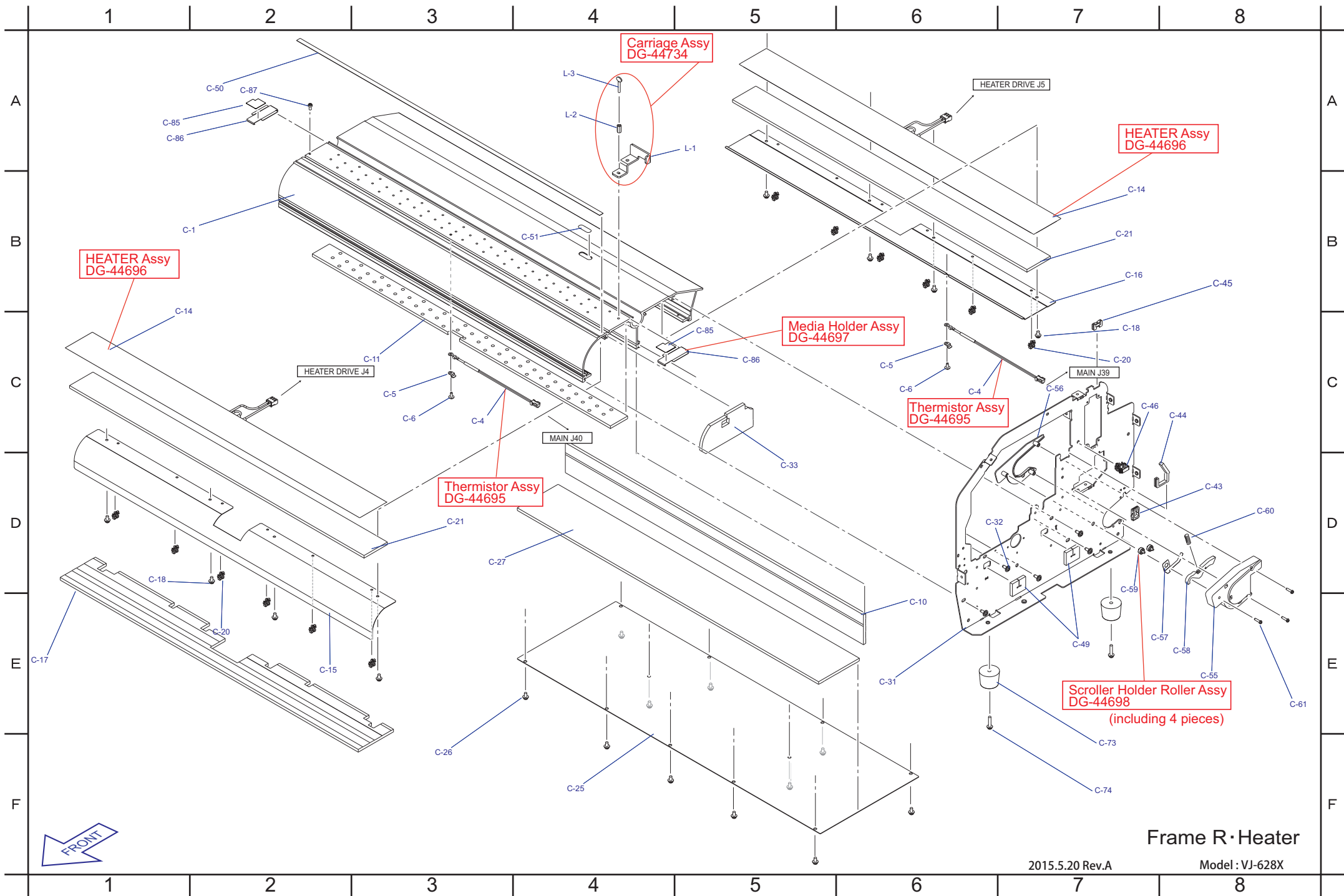
Cable Guide

Model : VJ-628X



2015.5.20 Rev.A

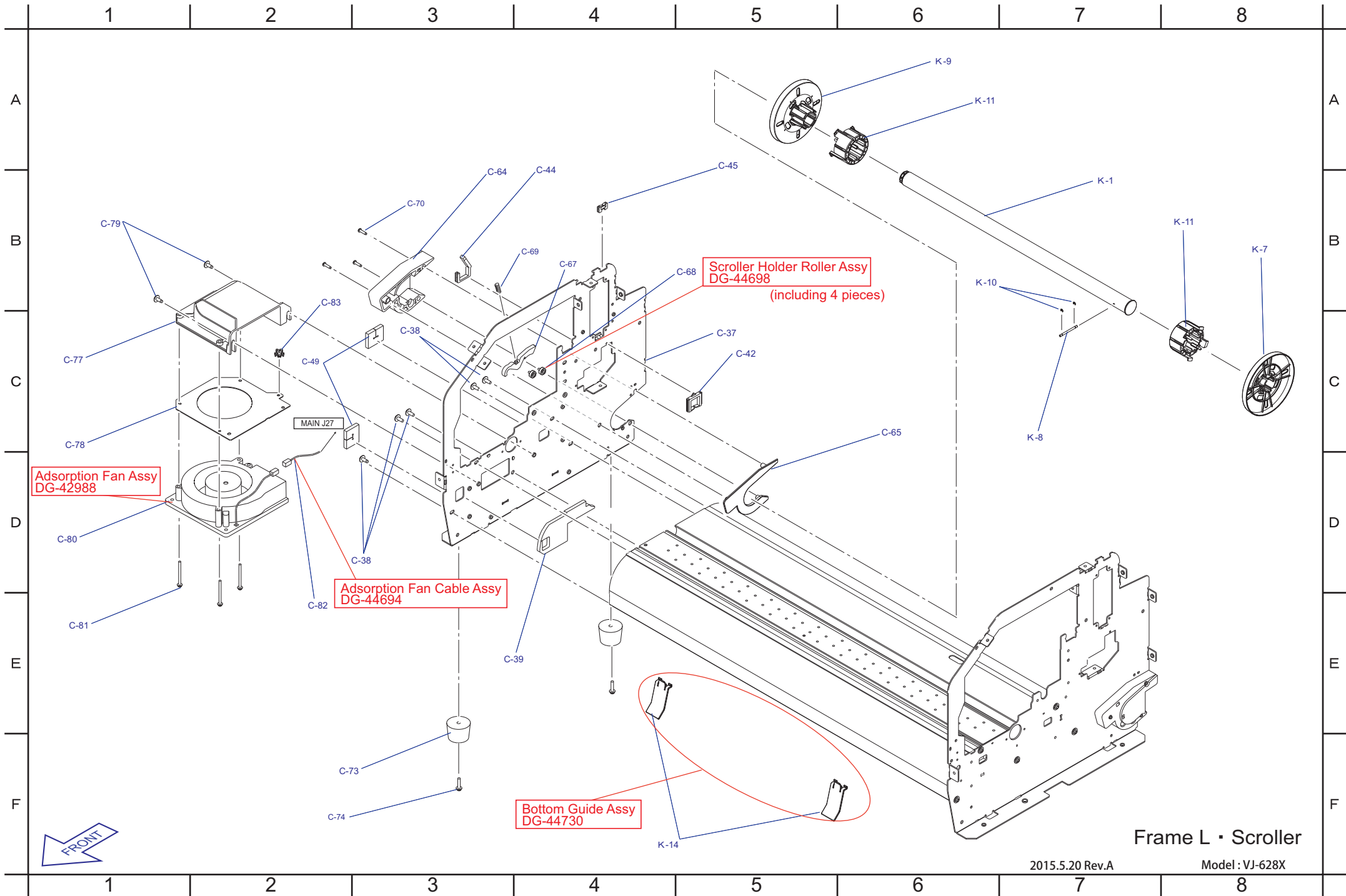
PF Motor
Model : VJ-628X



Frame R · Heater

2015.5.20 Rev.A

Model : VJ-628X

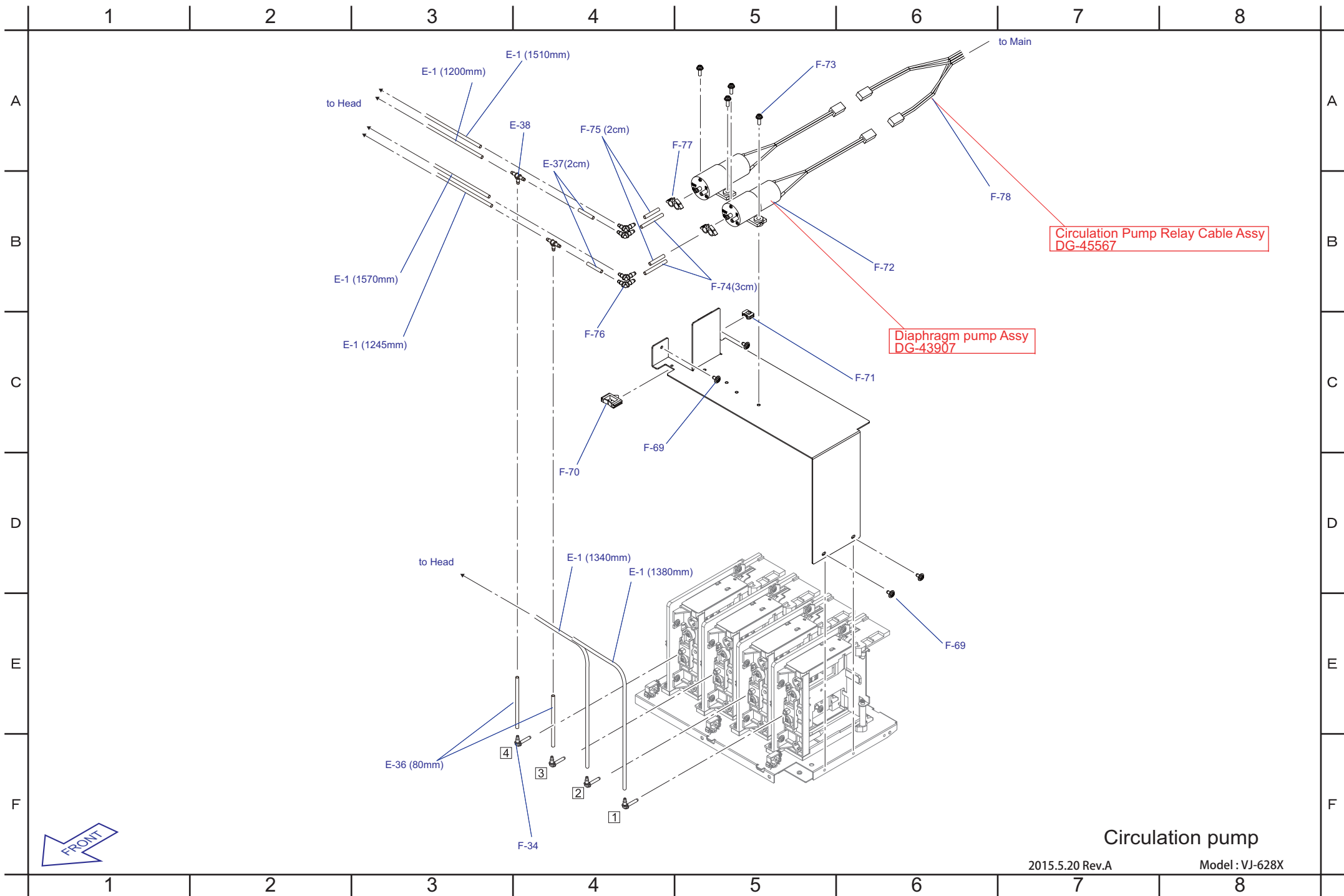


Frame L - Scroller

2015.5.20 Rev.A

Model : VJ-628X

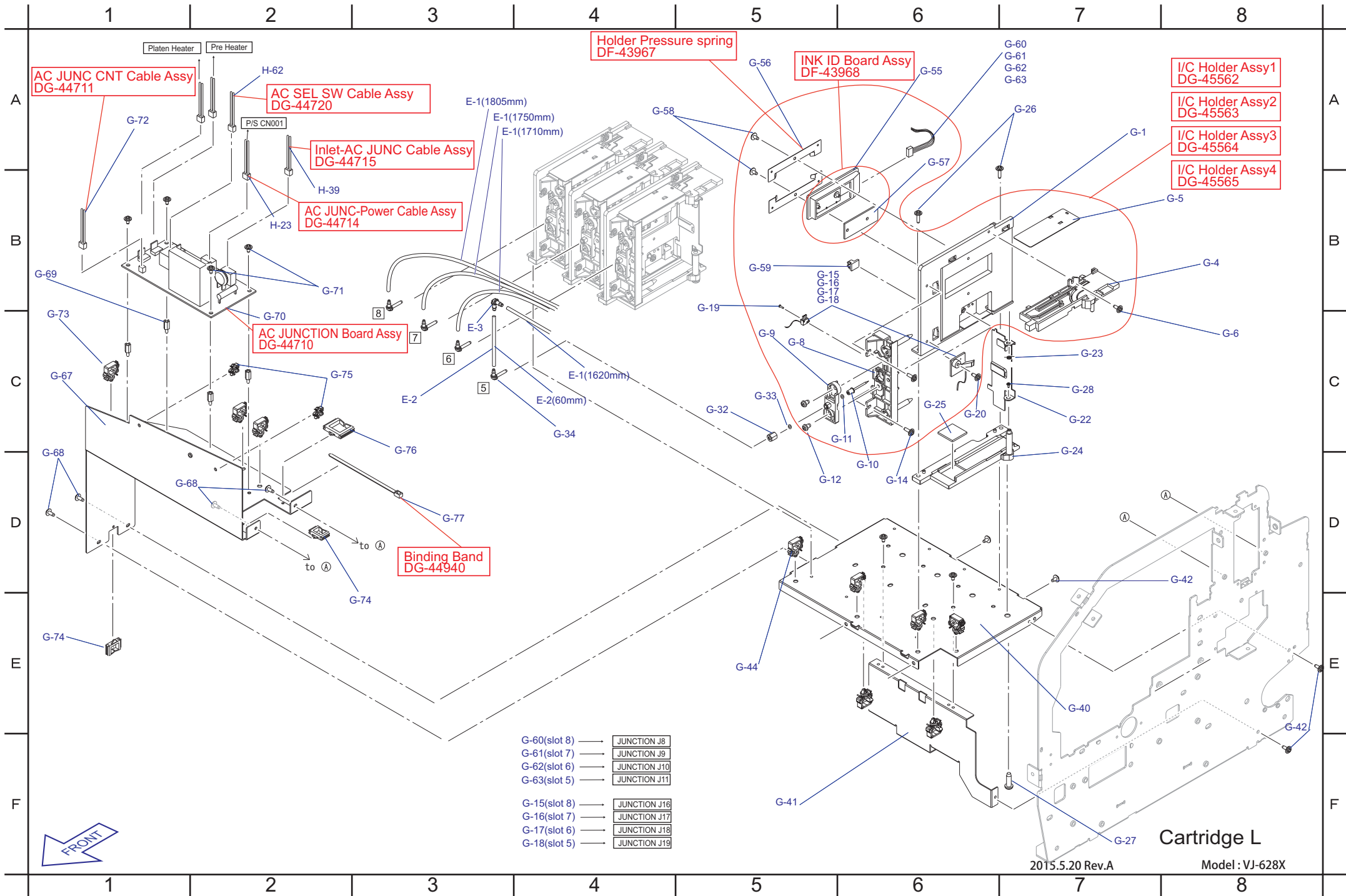




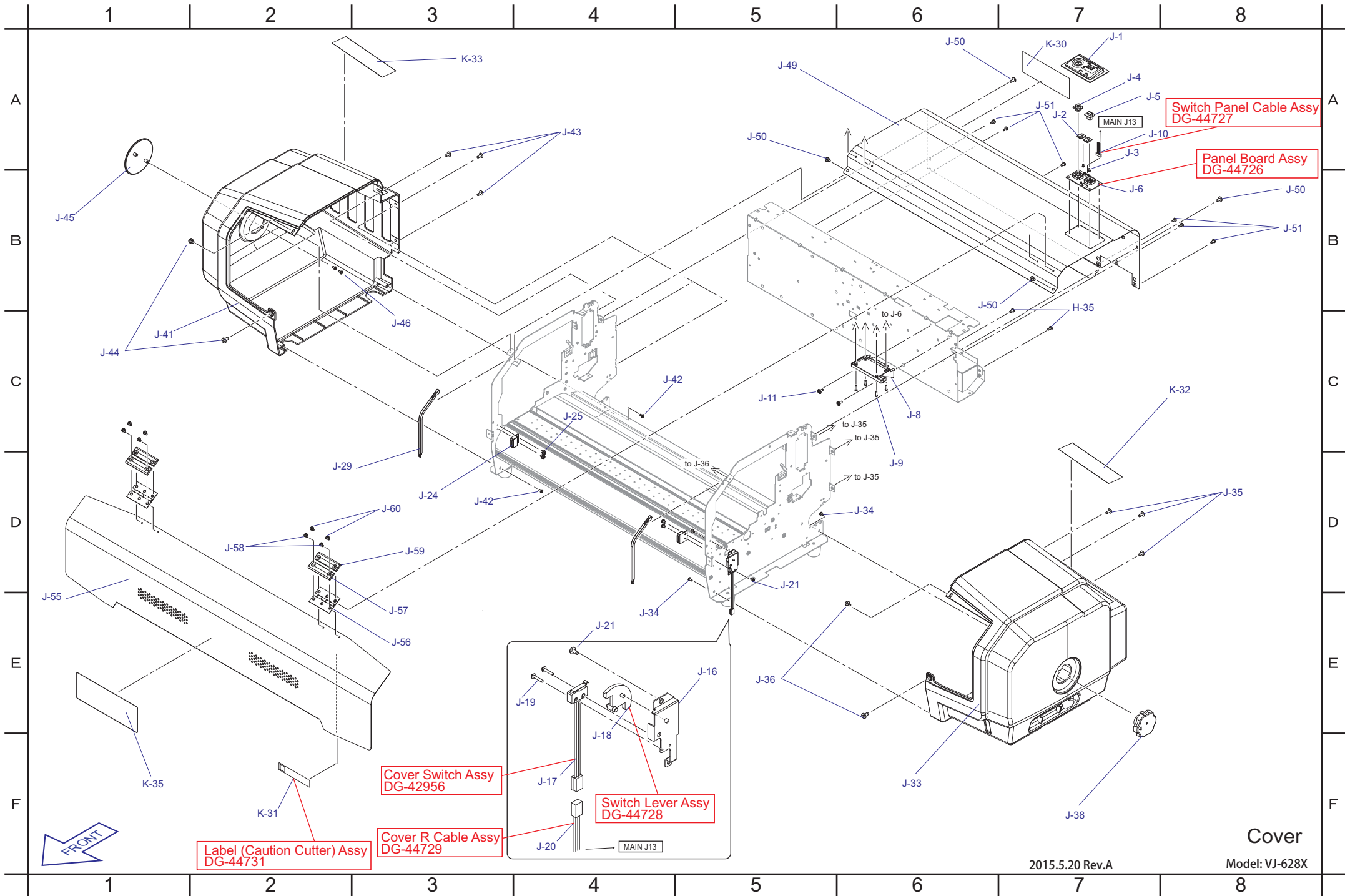
Circulation pump

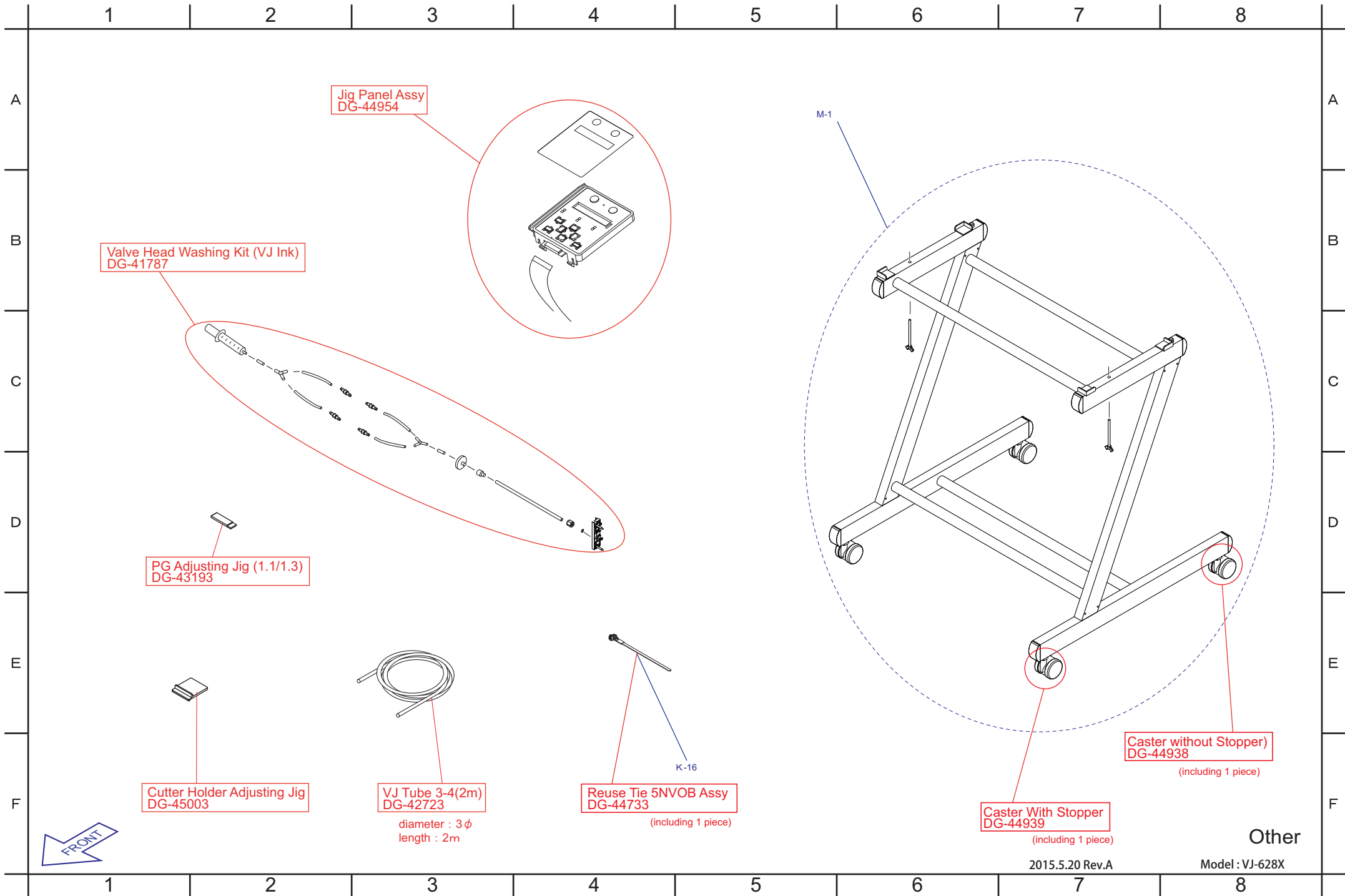
2015.5.20 Rev.A

Model : VJ-628X









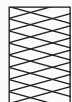
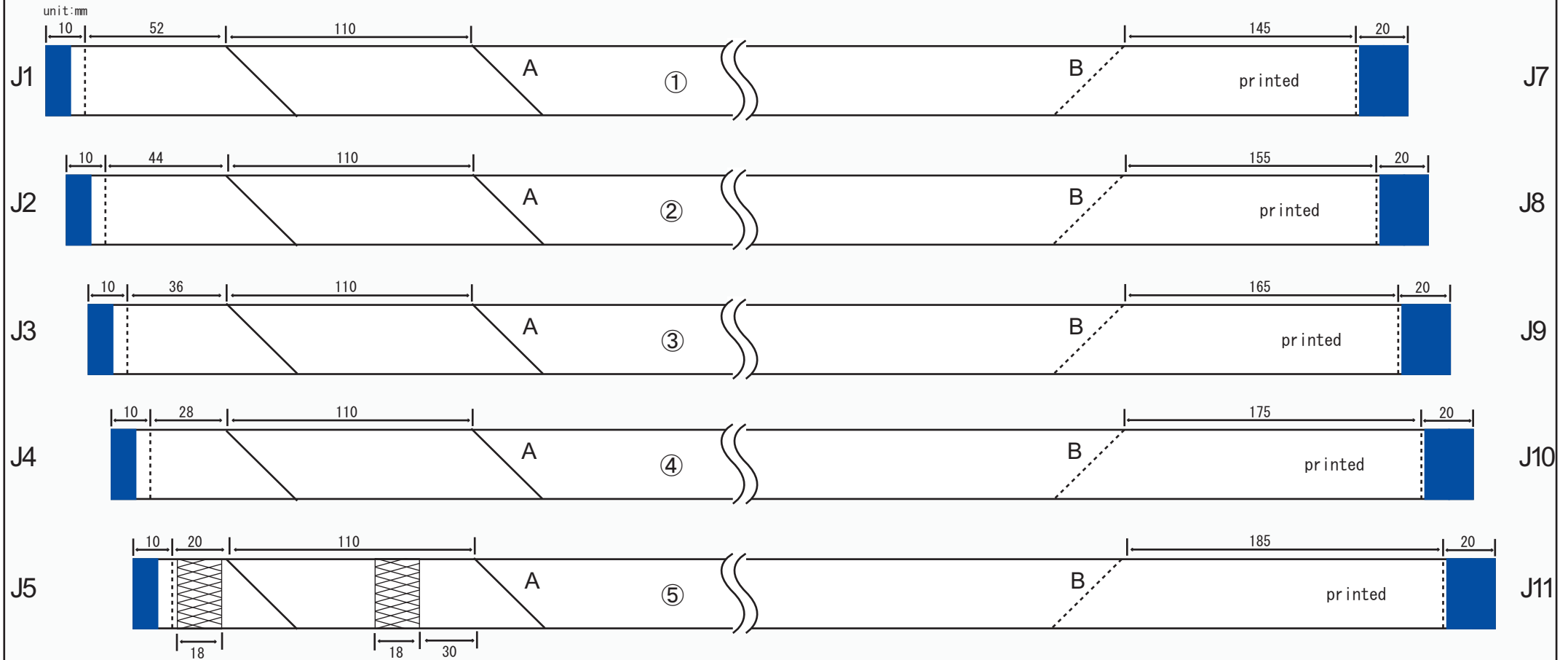
- (i)It bends by the score A, piled up in order of ①,②,③,④,and ⑤ from the bottom so that the position of the score A may suit.
- (ii)After bending, it piles up in order of ①,②,③,④,and ⑤ from the bottom so that the position of the chip box line B may suit.

—— mountain fold
 - - - - - valley fold



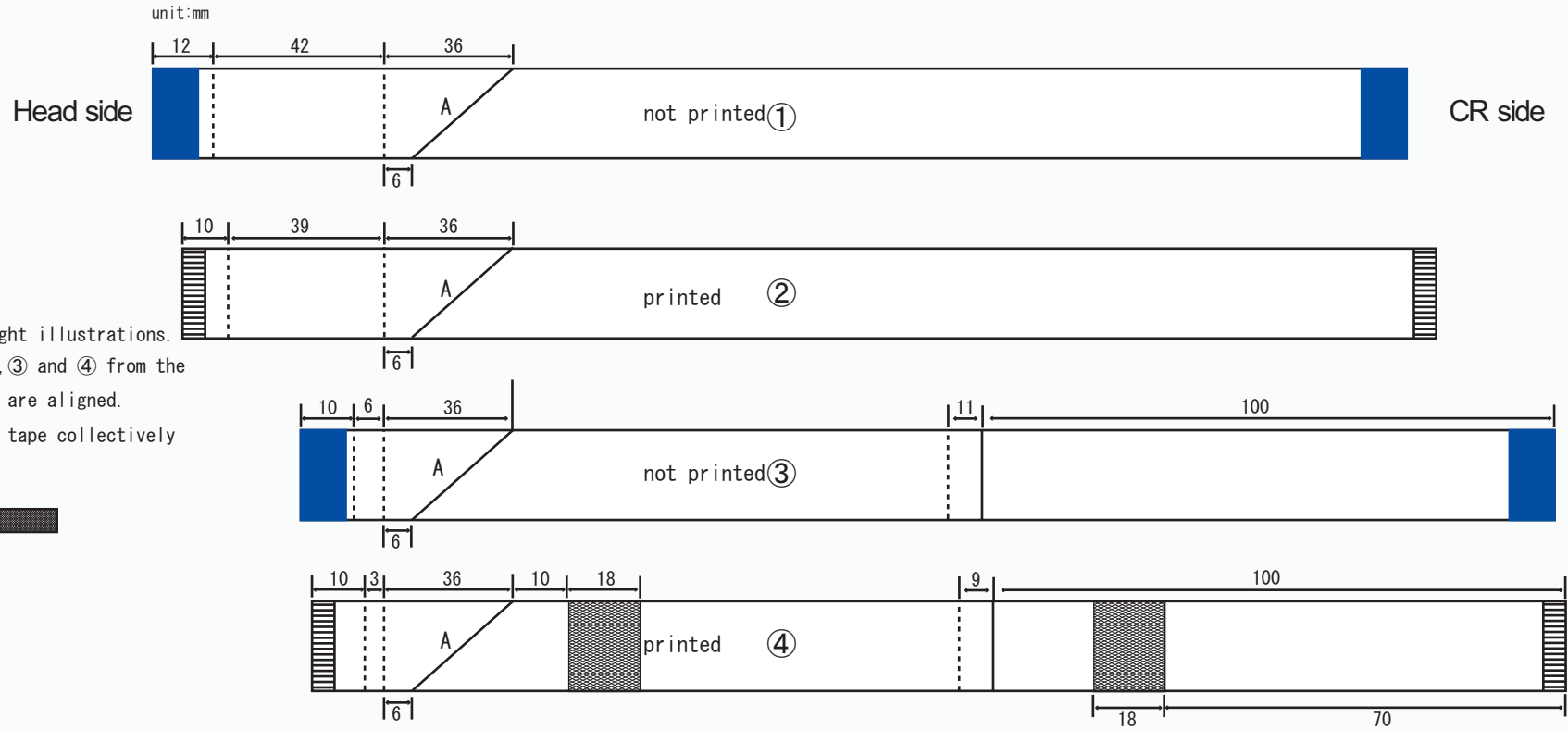
CR Board side

MAIN Board side



An acetate tape is rolled and it fixes, after piling up five sheets.

1Folding direction



(i) Fold the FFC with reference to right illustrations.

(ii) FFC is piled up in order of ①, ②, ③ and ④ from the bottom so that the folding line A are aligned.

(iii) Four FFCs are fixed by an acetate tape collectively at ■■■ of ④. (1.5 ~ 2 rounds)

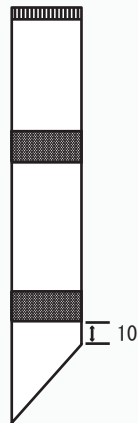
2 Means of Attachment of Acetate Tape and Ferrite Core

An acetate tape (18 mm in width) is attached (it winds 1.5 round).

Right (i) expresses FFCs piled up four sheets.

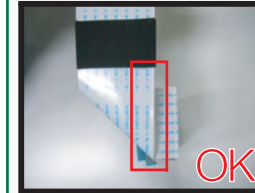
Acetate tape ■■■

(i)

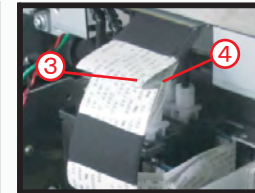


NOTE

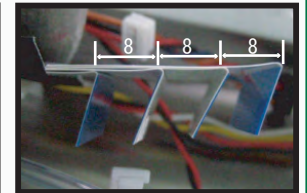
When acetate tape is attached, make sure FFCs are not misalignment.



In the following part, ③ and ④ are bent in piles.

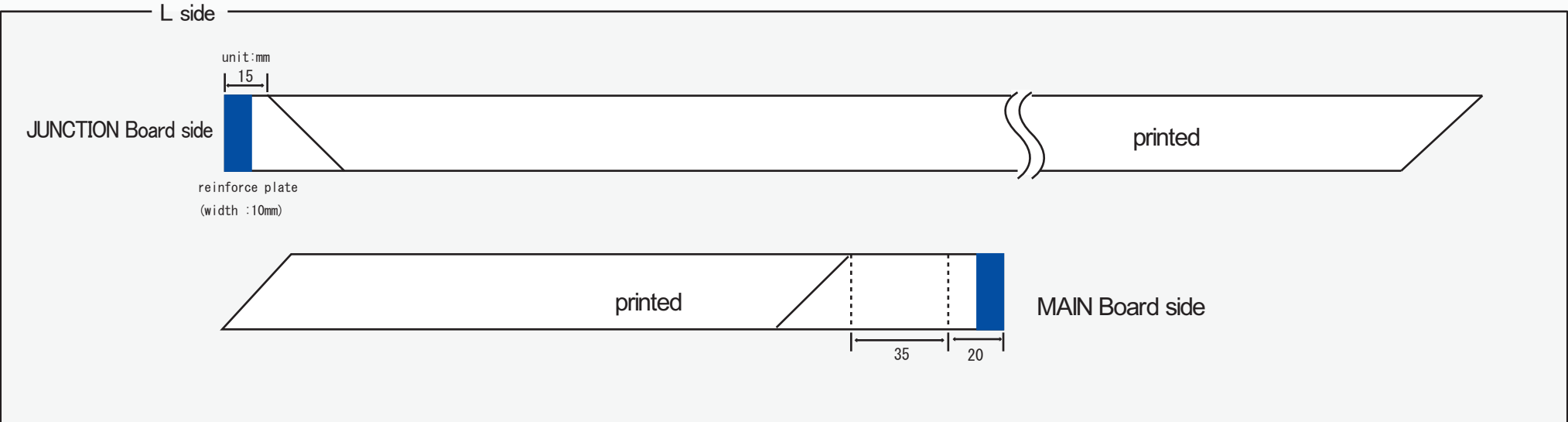
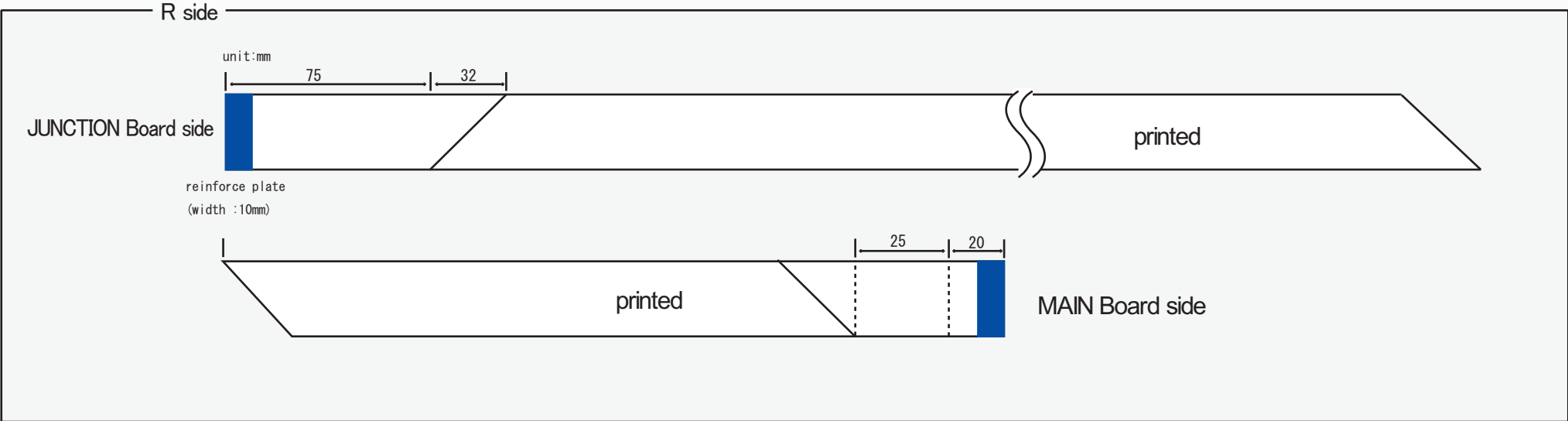


The intervals of FFCs on CR board connection side are 8 mm.



(i)Fold FFC refers to the following illustrations.

—— mountain fold
----- valley fold





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